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ART. XIII.—DESCRIPTIONS OF NEW SPECIES OF NORTH AMERICAN HYMENOPTERA, AND OBSERVATIONS ON SOME ALREADY DESCRIBED. By THOMAS SAY. Communicated Feb. 1835.

FAMILY TENTHREDINETÆ.

Genus ACORDULECERA, Say.

ARTIFICIAL CHARACTER.

ANTENNÆ filiform, 6-jointed, short; radial cellule one; cubital cellules three, the second smallest.

NATURAL CHARACTER.

Antennæ six-jointed; 1st and 2d joints subequal, the second larger; third joint longest but equal to the following ones in diameter; remaining joints gradually shorter; terminal joint not longer than the second: mandibles arcuated, acute; a prominent tooth on their middle: labrum prominent and distinct: radial cellule rather large: cubital cellules three; first elongated, as long

again as the second : carpus large : tibiæ with one pair of spines at tip.

OBSERVATIONS.

The family of which this new genus is a member, was divided by Leach into 9 Stirpes, all of which have 9 or more joints in the antennæ excepting the 1st, 2d, and 5th. Of these, two genera only, have 6-jointed antennæ, viz. ZAREA and PERGA, Leach ; but both have clavate antennæ and in many respects are at variance with the characters of the present insect. In a later work, the "Entomologische Monographien," by Dr. Klug, which that author has done me the favor to send me, are the two new genera PACHYLOSTICTA and SYZYGONIA, both of which have clavate antennæ, and therefore, like the preceding, cannot possibly include our insect.

SPECIES.

A. dorsalis. Black ; hypostoma, a base of the tergum and feet whitish.

Inhabits Indiana.

♂ ♀ Black, with minute whitish hairs: *nasus*, *labrum* and *mouth* white: *mandibles* rufous at tip: *thorax* with the anterior segment, curving to the base of the wing, white; line of the insertion of the wings white: *wings* a little dusky; nervures fuscous: *tergum* pale yellowish on the basal disk, blackish brown at tip: *venter* more or less yellowish-white, dusky or blackish at tip: *feet* and *coxæ* whitish-green.

Var. α . Feet and part of the costal rib green; scutel and posterior portion of the stethidium whitish.

Var. β . Thorax and abdomen entirely black.

Length three twentieths of an inch.

This insect is common.

HYLOTOMA, Latr.

1. *H. scutellata*. Fulvous; head and thorax, excepting the humerus and scutel, blackish.

Inhabits United States.

♀ *Body* reddish-yellow: *head* blue-black: *thorax* blue-black; each side before the wings, including the superior portion of the pleura, reddish-yellow: *scutel* elevated, bright reddish-yellow: *metathorax* with two oblique, oblong, white spots: *wings* dusky violaceous: *pectus*, *neck*, *incisure of the stethidium* (and *feet*?) blue-black: *anal segment* at tip black.

Length nine twentieths of an inch.

I do not remember in what part of the Union I found this species. The feet in the specimen are mutilated.

2. *H. calcanea*. Blackish; thorax yellow; tarsi whitish at base.

Inhabits United States.

Violaceous black: *thorax*, with the anterior superior portion of the pleura yellow; suture of the anterior segment, or collar, blackish: *wings* dusky violaceous: *tarsi* at base white.

Length less than seven twentieths of an inch.

I have also lost the particular locality of this species. They do not correspond with either of the species described by Dr. Leach.

Genus ATOMACERA, Say.

GENERIC CHARACTER.

Body rather short: antennæ with but three obvious joints; in the male ciliated: cellules, one radial, unappendiculated; three or four cubitals, the dividing nervure of the first and second being obsolete: tibiæ destitute of a spine in their middle.

OBSERVATIONS.

The name of *CRYPTUS*, applied by Jurine to one of his genera, had been previously appropriated by Fabricius to a genus of *ICHNEUMONIDES*, and is altogether synonymous with *HYLOTOMA* of Latreille, which is the anterior designation. It includes species of at least three genera, all of which are distinguished by tri-articulate antennæ. It may be thus divided, with modified characters.

HYLOTOMA, Latr. Radial cellule appendiculated: four posterior tibiæ with a spine on their middle.

H. rosæ, F.

ATOMACERA, Nob. Radial cellule simple; tibiæ destitute of a spine on their middle.

CRYPTUS, Jurine (by error). Antennæ of the male biparted; tibiæ destitute of a spine on their middle.

C. furcata, F. *C. Klügii*, Leach, &c.

1. *A. débilis*. Black; tibiæ whitish.

Inhabits Indiana.

♂ *Body* black, polished: *antennæ*, ciliæ longer than the transverse diameter of the antennæ: *mouth* dull piceous: *wings* fuliginous, a little paler at tip; first and

second cubital cellules confluent: *tibiæ*, anterior pair dull pale yellowish.

Length three twentieths of an inch.

2. *A. cellularis*. Black; abdomen rufous.

Inhabits Indiana.

♀ *Body* black, polished: *antennæ* distinctly and rather densely ciliated with hairs, which are a little shorter than the transverse diameter of the *antennæ*: *nasus*, *labrum* and *palpi* whitish: *wings* dusky violaceous; cubital cellules three; the second very small, hardly one third the length of the first, and but little wider at its tip than at its base: *abdomen* entirely yellowish-rufous: *feet*, *coxæ*, *trochanters* and *small base of the tibiæ*, whitish; *anterior pair of tibiæ* dull whitish.

Length less than one fourth of an inch.

Much smaller than *HYLOTOMA abdominalis*, Leach, which it probably resembles.

Genus THULEA, Say.

ARTIFICIAL CHARACTER.

Antennæ six-jointed; last joint clavate. *Radial cellule* one. *Cubital cellules* three.

NATURAL CHARACTER.

The *antennæ* are rather short, decidedly clavate; first joint very short, not longer than broad; second joint at least as long again as the first and somewhat more robust, cylindrical; third rather longer than the 1st and 2d together, much more slender, cylindric, hairy; fourth minute, shortest; fifth about the length of the third, sub-

cylindric, naked; sixth slightly longest, nearly equal to the 3d and 5th, a little dilated towards the tip; scutel large.

OBSERVATIONS.

This is distinguished from the genera into which Leach has divided Cimbex, Fabr. by the number and construction of the joints of the antennæ, combined with the wing cellules. It corresponds with CLAVELLARIA in its one-jointed club, but has one joint more in its antennæ, and only one radial cellule. It agrees with ZARÆA in the number of the joints of the antennæ, but not in the number which constitute the club, nor in the number of radial cellules. With PERGA it is related by the comparative magnitude of the scutel, and the number of joints of the antennæ, but differs remarkably in the proportions of the latter, as well as in the number of cubital cellules. PACHYLOSTICTA of Klug has a one-jointed club, but one joint less than the present genus, and two radial cellules; and SYZYGONIA of the same author, with a one-jointed club, has appendiculated radial cellules.

SPECIES.

T. nigra. Body black: nasus and labrum green: spot before the wings, wing-scale and feet yellowish-green.

Inhabits Mexico.

Length to the tip of the wings three twentieths of an inch.

The smallest species I have seen of this family with clavate antennæ.

ALLANTUS, Panz. Leach.

1. *A. epinotus*. Black; tergum with a white band at base; feet varied with white.

Inhabits Indiana.

Body black: *mouth* white: *tongue* piceous: *thorax* with the posterior edge of the collar, wing-scale, posterior edge of the scutel and two minute dots behind it, white: *wings* with brown nervures; *stigma* somewhat inflated: *tergum* with the posterior margin of the first segment white: *feet* white: *coxæ* with a dilated line before and behind: *anterior* and *intermediate thighs* and *tibiæ* with a black line behind, *tarsi* dusky at tips of the joints: *posterior thighs* black in the middle: *tibiæ* at base and tip, black: *tarsi*, first joint black, remaining joints black, white at base.

Length ♂ three tenths, ♀ less than two fifths of an inch.

2. *A. goniphorus*. Black; abdomen rufous; scutel and thoracic triangle yellow.

Inhabits Indiana.

♂ ♀ *Body* black: *nasus* emarginate, white: *labrum* orbicular, and with the other parts of the mouth white: *mandibles* at tip piceous: *antennæ*, basal joint white: *thorax* with a central triangle and posterior margin of the collar white: *scutel* white with a black band: *wings* hyaline; costal nervure and carpal spot yellowish; nervures fuscous: *abdomen* honey-yellow: *pleura*, with a longitudinal vitta and a line descending from the superior wing white: *feet* white; anterior pairs with a black line behind the thigh and tibia; posterior pair honey-yellow, base of the thigh, spot on the middle of the tibia, tarsus, excepting the base of the first joint, and *coxæ*, white, the latter with a black line.

Length three tenths of an inch.

A female has the basal joint of the antennæ almost black.

3. *A. apiciàlis*. Black; antennæ at tip white; abdomen honey-yellow.

Inhabits Indiana.

Body black: *antennæ*, four last joints white: *nasus* profoundly lunate, white: *labrum* obtusely angulated before, white: *thorax*, with the posterior margin of the collar and wing-scale, white: *scutel* white: *wings* hyaline; nervures black; carpus white on the basal half: *abdomen* honey-yellow: *feet* honey-yellow: *coxæ* white.

Length seven twentieths of an inch.

The white terminal joints of the antennæ strongly contrast with the remaining joints.

4. *A. epícera*. Black; abdomen, base of the antennæ and feet honey-yellow.

Inhabits Indiana.

♂ *Body* somewhat slender, black: *antennæ*, 1st and 2d joints yellow, the latter two thirds the length of the first; 3d and 4th joints yellow on the upper side: *nasus* deeply emarginate, yellow-white: *labrum* suborbicular and with the mouth whitish: *mandibles* piceous at tip: *thorax*, collar and wing-scale yellow: *wings* hyaline; nervures black; carpal spot white on the basal half: *abdomen* honey-yellow, basal segment black: *feet* honey-yellow: *coxæ* white.

Length less than three tenths of an inch.

Var. α . Scutel dull yellowish.

5. *A. cestus*. Black; a white band at base of the tergum; pleura with a white spot.

Inhabits United States.

♂ *Body* black, with large crowded punctures: *an-*

tennæ, 1st and 2d joints yellow: *nasus* hardly emarginate, with a lateral whitish spot: *thorax* with the posterior margin of the collar white: *pleura* with a white spot on the anterior upper part: *wings* tinted with fuliginous; nervures black; carpal spot wax-yellow: *tergum* with a dilated band extending to the lateral sutures, white: *feet* white, a little varied with yellowish at tips of the joints: *thighs* black at base beneath.

♀ Anal segment white: posterior coxæ at base black: posterior thighs in the middle and their tibiæ at tip black.

Length seven twentieths of an inch.

Resembles the *epinotus*, but may be at once distinguished by the white spot of the pleura.

6. *A. pannosus*. Black; mouth white; feet varied with white.

Inhabits Indiana.

♂ *Body* black: *nasus* very deeply emarginate, white: *labrum* suborbicular, truncate-subemarginate before, blackish on the disk, or within the emargination of the *nasus*: *mandibles* black at tip: *maxillary palpi* dusky in the middle of the basal joint: *thorax*, posterior edge of the collar white; wing-scale blackish: *wings* hyaline; nervures black; carpus on the inner half dull wax yellow: *pleura* immaculate: *feet*, anterior pairs white before, with a black line behind; coxæ white; tarsi white with dusky incisures; posterior pair black, incisures of the thighs, band on the tibiæ and base of the ultimate joints of the tarsi white; coxæ white, with a black spot above and beneath.

Length one fourth of an inch.

♀ Coxæ with a large black spot; posterior tibiæ with a white longitudinal line.

Length three tenths of an inch.

Much smaller than *externus*, Nob. (Western Quarterly Reporter.)

7. *A. bardus*. Black; thorax and anterior upper angle of the pleura rufous.

Inhabits Indiana.

♀ *Body* short, dilated, black: *antennæ*, 2d joint nearly as long as the first, but less dilated: *front* and *vertex* with impressed lines: *nasus* not deeply emarginate: *labrum* rounded before: *mandibles* piceous at tip: *thorax* and *humeral portion of the pleura* honey-yellow: *wings* tinged with blackish purple.

Length three tenths of an inch.

Belongs to the genus SELANDRIA, Leach. The short and dilated form is like that of *ovatus*, L. and *nigerrima*, Klug..

NEMATUS, Jur.

1. *N. vertebratus*. Green; antennæ and spots above blackish.

Inhabits Indiana.

♀ *Body* pale green: *vertex* with a black spot: *antennæ* black, fuscous towards the tip; 2d and 3d joints subequal: *nasus* white, somewhat bilobate: *labrum* not very obtusely rounded before, a little indented on the disk, white: *mandibles* piceous at tip: *thorax* trilineate with black: *scutell* black: *wings* hyaline; nervures blackish; costal nervure and carpus pale greenish: *tergum* with a vitta of blackish spots, almost obsolete towards the tip: *tarsi* dusky.

Length one fourth of an inch.

2. *N. integer*. Greenish-yellow; antennæ, spots and tergum black; costal edge not emarginate at the carpus.

Inhabits Indiana.

♀ *Body* greenish-yellow: *head* with a dilated black vitta on the vertex: *antennæ* black: *nasus* whitish, not very deeply emarginate: *labrum* white, depressed anteriorly, rounded before: *mandibles* piceous at tip: *thorax* with three much dilated, abbreviated, black vittæ; an oblique, black spot behind the scutel: *wings* hyaline; costal nervure and carpus dull waxen; no obvious emargination on the costal edge near the carpus; nervures blackish: *tergum* black; lateral edge and posterior narrow margins of the basal segments whitish: *posterior pair of tibiæ and tarsi* black.

Length over one fourth of an inch.

Resembles the preceding, but the form is much more robust, and that species has the usual emargination of the costal edge. The present species has much more of black in its color.

3. *N. longicórnis*. Black; beneath, head and before the wings whitish.

Inhabits Indiana.

Body black: *head* yellowish-white, a dilated black spot on the vertex: *antennæ* fuscous, joints elongated: *thorax* black, line before the wings and wing-scale whitish: *wings* hyaline, nervures fuscous; carpus rather large, yellowish: *beneath* greenish, or yellowish-white: *pleura* with two black spots beneath the wings, the anterior spot longitudinal.

Length three twentieths of an inch.

EMPHYTUS, Leach.

1. *E. tarsatus*. Black; tarsi and tip of the antennæ white.

Inhabits Indiana.

♀ *Body* black: *antennæ* with three and a half or four terminal joints white: *nasus* sublunate: *labrum* rounded at tip, white, or with a dusky disk: *palpi*, terminal joints whitish; *wing-scale* whitish: *wings* very slightly tinged with fuliginous; *carpus* white on the basal half: *feet*, *tarsi* and *coxæ* white: anterior pairs of *tibiæ* white: posterior pair of *tibiæ* at base white.

Length nearly one half an inch.

In form it resembles the female of *ALLANTUS atra*, L. and the thorax, as well as the abdomen, is entirely black.

2. *E. semicórnis*. Honey-yellow; tip of the *antennæ* and disk of the *pectus* black.

Inhabits Indiana.

♀ *Body* honey-yellow: *antennæ*, four terminal joints black: *nasus* deeply emarginate: *labrum* and *mouth* pale yellowish, the former rounded at tip: *stemmata* black: *thorax* with a dusky line on the two middle lobes: *scutel* dusky on the posterior edge: *metathorax* dusky near the *scutel*: *abdomen* immaculate, rather paler at base and beneath: *wings* hyaline; *nervures* blackish; base of the *carpus* yellowish-white: *pectus* before and on the middle black: *coxæ* whitish: *tarsi* pale: posterior thighs and *tibiæ* blackish at their tips.

Length over three tenths of an inch.

A very distinct species and easily recognised.

3. *E. platycerus*. Black; *tibiæ* and *tarsi* white; first and second joints of the *antennæ* very short, equal.

Inhabits Indiana.

♂ *Body* short, robust, black, polished: *antennæ* rather robust, compressed; first and second joints remarkably short, when taken together less than half the length of either of the others; remaining joints subequal, the third

hardly longest: *mouth* dull piceous: *wing-scale* dull piceous: *wings* fuliginous, with a violaceous tinge: *feet* white; thighs in the middle and coxæ black.

Length less than three twentieths of an inch.

The joints of the antennæ are shorter and more compressed than those of any other species I have seen.

4. *E. recens*. Antennæ, basal joint white; pectus and feet white.

Inhabits Indiana.

♂ *Head* black; basal joint of the antennæ, nasus, labrum and mouth white: *thorax* black, with a white collar and wing-scale: *wings* hyaline, nervures fuscous: *tergum*, on the basal half white, with three dilated black bands slightly interrupted in the middle; terminal half somewhat fulvous, with about two marginal black spots and a larger double one each side near the tip; lateral processes at tip obvious: *pectus* white: *pleura* with a dilated black line: *feet* white; intermediate tibiæ and tarsi with a black line; posterior thighs tinged with honey-yellow; their tibiæ and tarsi dusky or blackish.

Length one fifth of an inch.

XIPHYDRIA, Latr.

1. *X. maculata*. Abdomen black with seven lateral white spots.

Inhabits Indiana.

♂ *Body* black: *head* punctured on the front; with two small spots above the antennæ, anterior and inferior orbits extending in a line behind the eye, base of the mandibles, and two lines upon the vertex, white: *thorax* confluent punctured; about four short lines on the disk, white; a white spot before the wings: *wings* immacu-

late : *tergum* with seven lateral, emarginate, white dots : *beneath*, on the neck and pectus with a few white spots : *feet* honey-yellow.

Length over two fifths of an inch.

This is undoubtedly much like the *X. camèlus*, Linn. which, however, is destitute of spots on the disk of the thorax, the wings are clouded towards the tip, and there are but six lateral spots on the abdomen, the ultimate segment being immaculate.

2. *X. basàlis*. Black ; abdomen fasciate at base.

Inhabits Indiana.

♀ *Body* black, polished : *mandibles* and palpi white : *thorax*, anterior segment glaucous on the posterior margin : *wings* hyaline ; first cubital cellule confluent with the first radial, having only a rudiment of the dividing nervure : *abdomen*, two basal segments honey-yellow, more or less intermixed with black : *feet* honey-yellow ; posterior tarsi and tibiæ black, the latter white at base.

Length seven twentieths of an inch.

Found in the latter part of May.

LYDA, Fabr.

L. ocreàta. Yellowish-green, antennæ and spots blackish.

Inhabits Indiana.

♀ *Body* yellowish-green : *head* with a spot on the stemmata and three lines behind, blackish ; one or two brownish lines beneath the eyes and an obsolete one before the eyes : *mandibles* piceous at tip : *antennæ* black ; basal joint dull whitish beneath : *thorax* with a transverse black line on the collar near the neck ; another behind the collar ; about four brown spots, of which the inner

ones are smallest ; a larger brown spot behind the anterior wings : *wings* hyaline, with fuscous nervures ; carpus greenish in the middle : *tergum* blackish, dull greenish in the middle : *tarsi* and *tibiæ* exteriorly dusky : posterior *tibiæ* blackish.

Length nearly two fifths of an inch.

XORIDES, Latr.

X. humeralis, Nob. Contributions of the Maclurean Lyceum, p. 74, where I placed it, agreeably to Jurine, in his genus ANOMALON.

♂ *Antennæ* entirely black : *tergum*, first segment on each side with two longitudinal impressed lines ; second and third segments each with an impressed oblique line each side at their bases : *trochanters* partly white ; *anterior and intermediate feet* varied with whitish.

Length over two fifths of an inch.

BRACHYGASTER, Leach. (Evania, F.)

B. reticulatus. Black ; first joint of the *antennæ*, and anterior pairs of feet piceous.

Inhabits Indiana.

Body black, reticulate with large punctures : *antennæ* not longer than the trunk, with close set, subequal joints ; first joint subclavate, piceous, longest ; second joint not longer than broad, shortest, about half the length of the third : punctures on the posterior face of the metathorax more dilated than those of the thorax : *wings* hyaline ; nervures fuscous : *petiole* about as long as the abdomen, punctured : *abdomen* orbicular, polished, impunctured : *feet*, two anterior pairs piceous.

Length about one fifth of an inch.

I agree with Leach in the propriety of separating this group from EVANIA. In addition to the great dissimilarity of the neurulation of the wings, the proportional length of the posterior feet and of the antennæ is quite different.

PIMPLA, F.

1. *P. humida*. Black; feet yellow; thorax with white lines; abdomen with white lateral spots.

Inhabits Indiana.

Body black, transversely rugulous: *anterior orbits* and *palpi* white: *thorax* with rather large, transverse wrinkles; wing-scale, line before the wing, and two abbreviated dorsal lines white: *wings* immaculate: *nervures* blackish; stigma at base whitish; second cubital cellule petiolated: *scutellum*, posterior margin white: *abdomen* falcate; segments, excepting the first, with a rather large, rounded, whitish, lateral spot: *oviduct* at least as long as the body: *pectus* and *feet* honey-yellow: *tarsi* whitish, incisures dusky: *tibiæ* whitish, posterior pairs blackish at tip.

Length over half an inch.

Form and magnitude of *P. ptérelas*, Nob., which, however, is destitute of white spots and lines.

2. *P.?* *petiolatus*. Black; varied with yellowish-white; second cubital cellule minute, petiolated.

Inhabits Indiana.

Body black, densely punctured: *hypostoma*, *mouth*, and *antennæ* beneath, whitish: *thorax* with a wide, white line before the wings: *wings* hyaline; *nervures* blackish; stigma whitish towards the base; second

cubital very minute, the petiole being elongated: *scutel* dull honey-yellow: *tergum* densely punctured; two basal segments with an elevated, abbreviated line; that of the second segment parted into several at base, that of the first segment dilated into a groove at base; basal segment with a tubercle each side and an elevated line on the lateral margin, continued on the second segment: *pleura* and *pectus* honey-yellow varied with white: *coxæ* and *trochanters* white; posterior pair of *coxæ* honey-yellow: *feet* pale honey-yellow; posterior pair of thighs at tip, their tibiae from the middle to the tip and their tarsi black: *venter*, in the middle, white.

Length nearly three tenths of an inch.

A small frontal escutcheon and sessile abdomen led me to place this insect here, although the palpi are not dilated and the wing cellules differ.

AGATHIS, Latr.

1. *A. polita*. Black; antennæ, tibiae and tarsi yellowish.

Inhabits Indiana.

♂ *Body* deep black, highly polished: *head* yellow: *vertex*, *front* and *eyes* on the posterior margin, polished, black: *antennæ* honey-yellow: *mandibles* honey-yellow, black at base and tip: *posterior orbits* and posterior margin of the vertex, yellow: *occiput* obscure honey-yellow: *thorax* with a double, yellow, central spot, cordate spot on the scutel, abbreviated, transverse line beneath it, and posterior margin of the metathorax, yellow: *wings* blackish-brown; second cubital cellule quadrangular: *tergum* with a yellow band on the posterior margin of the first and second segments, slightly interrupted

in the middle: *feet* honey-yellow: *posterior thighs* black; the *tibiæ* pale, and *tarsi* yellow.

♀ *Thorax* with a hardly visible, piceous *vitta* on each side of the central spot; *abdomen* towards the tip attenuated.

Length nine twentieths of an inch.

2. *A. ornata*. Black, varied with yellow; *tergum* yellowish, fasciate with fuscous.

Inhabits Indiana.

♂ *Body* black, polished: *head* yellow, a black frontal spot confluent with a black transverse line of the vertex, that is continued on the posterior margin of the eyes: *antennæ* honey-yellow, somewhat dusky above: *mandibles* blackish at tip: *thorax* with a broad, yellow margin, interrupted before, and double central spot: *scutel* and two or three small spots beneath it yellow: *metathorax* with a small spot behind the wing and posterior margin yellow: *wings* fuliginous; *stigma* and costal nervure honey-yellow; second cubital cellule quadrangular: *tergum* yellow, becoming greenish behind, segments with a broad blackish band at base, the anterior bands broader: *pleura* with more of yellow than black: *feet* yellow: *coxæ* varied with honey-yellow: *posterior thighs*, their *tibiæ* at tip, and *tarsi* at tip, honey-yellow.

Length less than half an inch.

Resembles the preceding.

ICHNEUMON.

1. *I. suturalis*. Ferruginous; *scutel* yellow; *sutures* black.

Inhabits North America.

Body pale ferruginous: *antennæ* black beyond the

middle: *trunk* with black sutures: *scutel* more or less tinged with yellow: *wings* tinged with ferruginous; carpus yellowish; nervures blackish; central cellule pentangular, the side on the radial cellule rather smallest, basal and apical sides longest, not parallel: *metathorax* with slightly elevated lines in the form of an H: *tergum* with the apical sutures not black; basal segment with two slightly elevated longitudinal lines: *tibiæ*, posterior pair black at tip: *venter*, basal segment black; sutures not black: *oviduct* not longer than the breadth of the anal segment.

Var. α . Front, scutel and basal joint of the tergum at tip, yellow.

Var. β . Sutures of the tergum not obviously black.

Var. γ . Somewhat polished.

A common species, of which I obtained specimens in Mexico; it is also found in Pennsylvania, Indiana and Missouri. This must resemble the *ferrugator*, Swederus, (Trans. Stockholm Soc. for 1787) which I have not met with, unless this should prove to be a variety of it, which is very doubtful and even improbable.

2. *I. málacus*, Nob. (Contrib. Macl. Lyceum I., p. 72.) To "abdomen with an impressed line each side," ought to be added *beneath the edge*; this is a character, however, common to many species. The tergum, in a particular light, has a slight tinge of blue.

3. *I. mórulus*, Nob. (ibid, p. 73.) Annulation of the antennæ beginning with the seventh or eighth joint and ending with the fourteenth. The tibiæ and tarsi are honey-yellow; and the oviduct hardly extends beyond the tip of the abdomen.

It resembles the *málacus*, and requires the additional description I have now given, to be distinguished from it.

I have found this species in Indiana, Missouri and the N. W. Territory. The "acute angle" of the metathorax is prominent, spiniform.

4. *I. otiosus*, Nob. (ibid, p. 69.) Occurs in Indiana and N. W. Territory.

It resembles *unifasciatus*, Nob. (Amer. Entom. vol. II.) but is rather smaller, the annulation of the antennæ is differently situated, and it has two abbreviated white lines on the middle of the thorax.

5. *I. brevinctor*, Nob. (Amer. Entom. pl. 22.) Terminal segment of the tergum with a large, white, rounded spot.

6. *I. parata*, Nob. (Contr. MacL. Lyc. p. 68.) The following is a description of the opposite sex, and of some of its varieties.

Body black: *head* with yellow orbits, mouth and hypostoma: *antennæ* beneath dull honey-yellow; basal joint beneath yellow: *thorax* with two small abbreviated lines on the disk, line before the wings approaching before, and wing-scale yellow: *scutel* yellow: *wings* slightly tinged with fuliginous: *nervures* pale brownish; stigma dull honey-yellow; second cubital cellule pentagonal, the two recurrent nervures with a short process near their middles: *metathorax* with a dilated spot each side, often confluent, and a small line under the scutel: *tergum* with four dilated yellow bands: *feet* yellow; posterior thighs, excepting their base and their trochanters, black; posterior tibiæ at tip black.

Length over three fifths of an inch.

Var. α . Tergum with but two bands.

Var. β . Metathorax immaculate behind.

Var. γ . Bands of the tergum contracted in the middle.

Var. δ . Short lines of the thorax confluent, so as to form a lunate spot.

Var. ϵ . Short lines of the thorax obsolete.

A very common species. I have taken it in Missouri, Indiana, Pennsylvania and N. W. Territory.

7. *I. comptus*. Black; tergum with a yellow band on each segment.

Inhabits United States.

Body black: *head* with yellow hypostoma, orbits and cheeks: *thorax* with a line before the wings, two slender parallel lines, nearly as long as the disk, on the middle, wing-scale, and often a short line between the wing and scutel, yellow: *scutel* yellow: *wings* tinged with fuliginous; second cubital cellule pentagonal, the anterior recurrent nervure with a short process near the middle: *metathorax* with a short transverse line at tip of the scutel and two dilated longitudinal spots, yellow: *tergum* with a dilated yellow band on each of the segments, the 2d and 3d widest: *feet* yellow, or honey-yellow.

♀ with a whitish annulation rather beyond the middle line of the antennæ.

Length half an inch.

Resembles the preceding, but differs in many characters, as the two descriptions will prove.

8. *I. navus*. Black; orbits, line before the wings and lateral margin of the scutel, yellow.

Inhabits United States.

♀ *Body* greenish-black; *head* with narrow yellow orbits: *palpi* dull yellowish: *thorax* with a slender line before the wings yellow: *wings* a little fuliginous; nervures fuscous: *scutel* with a yellow lateral margin: *metathorax* with a line beneath the scutel generally interrupted into two distant dots: *thighs* at base and tip, *tibiæ* at tip, and *tarsi*, with a slight tinge of piceous: *antennæ* annulate.

♂ *Hypostoma* and *mouth* yellow: *feet* with the thighs at base and tip, *tibiæ* at tip and base of the joints of the tarsi dull yellowish.

Length from nine twentieths to three fifths of an inch.

May be distinguished from *brevicinctor*, *unifasciatus*, and *otiosus*, Nob. by its black scutel; and from *morulus* and *malacus*, Nob. by having a yellow line before the wings. I have found it in Pennsylvania, Indiana and Louisiana.

9. *I. devinctor*, Nob. (Amer. Entom. vol. II.)

It varies in having the scutel black and the feet entirely black.

Another variety has the tibiæ and tarsi ferruginous. My largest specimen was sent to me by Dr. Harris.

10. *I. duplicatus*. Black; abdomen rufous; metathorax with yellow marks.

Inhabits Indiana.

♀ *Body* black: *hypostoma*, *palpi* and *orbits* yellow: *antennæ* with a whitish annulus beyond the fifteenth joint: *thorax* with the dorsal impressed lines not deep, and extending from the middle to the anterior margin; a yellow line before the wings; wing-scale dull yellowish: *scutel* bright yellow, a little convex: *wings* slightly tinted with fuliginous; stigma dull honey-yellow; second cubital cellule four-angled; the recurrent nervures with slight processes: *metathorax* with a large yellow W behind, and a yellow spot at tip of the scutel: *tergum* rufous; second segment not distinctly excavated at base each side; first segment as long as the second, slender, black at base and tinged with yellow at tip: *coxæ* having a yellow spot: *thighs* black, the two anterior pairs varied with yellowish towards the tip: *tibiæ* yellow; anterior pairs having a black line behind; posterior pair black at

tip and at the extreme base: *tarsi* yellowish, terminal joint black at tip.

♂ Thorax with a quadrate yellow spot on the middle. Length over three fifths of an inch.

The form of the abdomen is that of an *ALOMYA*, Panz. but the wings are not remarkably short, nor are the antennæ convoluted. The markings of the metathorax are much like those of *I. pectoralis*, Nob.

11. *I. residuus*, Nob. (Contr. Macl. Lyc. p. 73) resembles *suturalis*, Nob. but is much smaller, with tri-colored antennæ.

CRYPTUS, Fab.

1. *C. orbis*. Second cubital cellule incomplete; thorax with two dorsal yellow lines.

Inhabits Indiana.

Body black: *orbits* and *hypostoma* white: *thorax* with two lines on the disk and collar white: *scutel*, transverse line beneath it, and line each side at its base diverging towards the base of the wings, white: *wings* hyaline; nervures fuscous; second cubital cellule small, rounded, pentangular, the nervure of division from the third cellule wanting: *metathorax* whitish with about three black abbreviated lines: *abdomen* long, tapering to the base: *tergum* with the posterior margin of the first and second segments white; remaining segments more or less yellowish: *pleura* white, with a black furcate line: *pectus* and *coxæ* white: *feet* honey-yellow: *posterior feet*, *coxæ* with a black line; *tarsi* white; *tibiæ* at tip and base blackish.

Length less than one fourth of an inch.

2. *C. discitérgus*. Whitish varied with black; *tergum* black, disk white.

Inhabits Indiana.

Body white, slightly tinged with yellow: *antennæ* black: *vertex* with a black dot on the locality of the stemmata: *thorax* with an abbreviated black vitta before, and another vitta on each side, confluent upon the scutel, which is also black: *metathorax* black on the disk: *wings* hyaline; nervures brown: *tergum* polished, black, with a dilated whitish spot in the middle; broadest rather behind the middle, and tapering to the base: *oviduct* less than half the length of the abdomen: *posterior thighs* with a blackish line each side: *posterior tibiæ* blackish at base and at tip.

Length nearly three twentieths of an inch.

Spins an oval, silken cocoon, of a white color slightly tinged with reddish.

3. *C. conquisitor*. Black; tergum with the posterior margins of the segments white; feet honey-yellow; posterior tibiæ and tarsi with black joints.

Inhabits Indiana.

Body black, punctured: *palpi* white: *thorax*, punctures minute; a longitudinal white line before the wings: *metathorax* not distinctly punctured on the disk: *wings* very slightly tinged with dusky; nervures blackish; stigma rather large, with its base and tip whitish; second cubital cellule oblique: *tergum* densely punctured on every part; segments on their posterior narrow margins white: *oviduct* about half the length of the abdomen: *feet* honey-yellow; intermediate and posterior tarsi white, the joints black at their tips; posterior tibiæ black, white in the middle.

Length one fourth of an inch.

Resembles *inquisitor*, Nob., but the posterior margins of the segments of the tergum are white.

4. *C. dúctilis*. Second cubital cellule petiolated; abdomen falcate.

Inhabits Indiana.

Body black; basal joint of the antennæ beneath, and mouth whitish; *thorax* without obvious impressed lines: *wings* hyaline; nervures fuscous; second cubital cellule minute, petiolated: *abdomen* arcuated, slender at base, more dilated and compressed towards the tip, but not truncate; honey-yellow, dusky at base: *oviduct* more than half the length of the abdomen, a little recurved, black: *feet* honey-yellow; anterior and intermediate coxæ and trochanters whitish; posterior feet rather more dusky.

Length under three tenths of an inch.

In the form of the abdomen and general appearance it resembles *ANOMALON ejúncidus*, Nob.

5. *C. tenéllus*. Honey-yellow; wings banded.

Inhabits Pennsylvania.

♀ *Antennæ* blackish towards the tip: *wings* hyaline; a fuliginous band before the middle, and a much dilated or double one beyond the middle including the stigma; stigma triangular and with the nervures brown; radial cellule wide; second cubital somewhat rounded, the exterior nervure wanting; apical nervure obsolete: *metathorax* beneath the scutel and at the insertion of the abdomen black: *abdomen* arcuated, blackish at tip: *oviduct* half as long as the abdomen.

Length nearly three twentieths of an inch.

6. *C. inquisitor*, Nob. (Contrib. Macl. Lyc. p. 71.) *Tergum* rather densely punctured in every part; segments with a transverse, slightly indented, obtuse line in the middle: *venter* whitish, with black lateral spots.

Var. *α*. Much larger; oviduct hardly over half the length of the abdomen.

Length two fifths of an inch.

7. *C. calipterus*. Wings yellowish, fasciate; central cellule pentagonal.

Inhabits Mexico.

Body pale ferruginous yellow: *antennæ* black, ferruginous at base, and with a white semi-annulus on the middle: *scutel* with its basal angles connected with the thorax by an elevated line: *wings* yellowish, a black band before the middle, another beyond the middle, connected in the form of a *v* with the black apical margin; central cellule pentangular, its basal and apical lines being nearly parallel: *inferior wings* with a dot in the middle, and apical margin blackish: *tergum* with the third segment dusky or black at its base: *oviduct* black, nearly as long as the abdomen: *posterior tibiæ* blackish at tip.

Length less than three fifths of an inch.

The remarkable resemblance which exists between the present insect and the *bifasciatus*, Nob. in point of color, renders it necessary, in order to prevent mistake, that we should observe that in the *bifasciatus*, the oviduct is not half the length of the abdomen, and the central cellule of its wing joins the radial cellule in an acute angle, its basal and apical lines being confluent at the point of junction with it.

8. *C. cestus*. Wings hyaline, fasciate; inferior wings dusky at tip.

Inhabits Indiana.

♀ *Body* rufous, almost sanguineous, opake: *antennæ*, excepting the two basal joints, black with a white annulus in the middle; *wings* hyaline, a blackish band on

the middle, abbreviated before; another blackish band nearer the tip abbreviated behind; tip margin dusky; second cubital cellule pentangular, its basal and terminal lines not parallel: *metathorax* a little rugose each side, with a short, compressed tubercle each side on the declivity: *tergum* with the basal segment polished; third segment black at base: *oviduct* nearly as long as the abdomen: *pleura* with the incisures punctured: *posterior tarsi* a little paler.

Length half an inch.

This is very much like *C. calipterus*, Nob. but the wings are hyaline; the cellules somewhat different; the inferior wings destitute of a central spot; the body is of a deep rufous color, &c.

9. *C. plurivinctus*. Black; segments of the *tergum* margined with white.

Inhabits United States.

Body black: *thorax* with a short line before the wings and wing-scale yellow: *wings* hyaline, with a slight dusky tinge; nervures blackish; stigma rufous at the stricture; second cubital cellule quadrangular, somewhat oblique, meeting the radial cellule in an angle: *abdomen* almost sessile: *tergum* with the first segment excavated near the base; densely punctured; all the segments with narrow, white posterior margins: *oviduct* exerted, short, hardly half the length of the abdomen: *feet* honey-yellow; posterior pair with the knees, tips of the tibiae and of each tarsal joint, black.

Length over half an inch.

♂ Hind pair of feet with an annulus on the tibiae and base of each tarsal joint, white.

The male is much smaller than the female. I obtained a female from a follicle of the common folliculate

Linnæan Bombyx, with transparent wings, which were extremely abundant a few years since in Maryland, causing much apprehension for the safety of the trees of their choice. Some of them were obtained for me, by my friend Mr. Gilliams, for examination, when I described them under the name of *hyalina*, but did not publish the account.

10. *C. grallator*. Ferruginous, with black sutures and wings.

Inhabits Indiana.

Body ferruginous: *head* slightly yellowish on the orbits: *mandibles* black at tip: *antennæ* dusky, before the tip yellowish: *thorax* with two obsolete, parallel, yellowish lines; sutures before the wings and scutel black: *wings* violaceo-fuliginous; nervures blackish; stigma ferruginous; second cubital cellule rather large, pentangular, the side of the radial cellule much the smallest; two bullæ and recurrent nervures each with one: *metathorax* with the sutures black: *scutel* rounded: *abdomen* clavate, falcate, gradually narrowed to the base, somewhat polished; posterior margins of the segments obsoletely yellowish; the base of the segments or incisures black: *pleura* and *pectus* with black sutures; separating suture between the pleura and metathorax black, including a yellow line: *oviduct* as long as the abdomen; posterior pair of tibiæ and tarsi paler than the thighs; posterior coxæ nearly as long as the thighs.

Length about three fifths of an inch.

This insect differs somewhat in appearance from its congeners. The form of the abdomen, excepting that it is not compressed, the fact that it originates higher upon the metathorax than others, and the elongated posterior coxæ give it a little the air of a *FÆNUS*, but the numerous jointed antennæ place it in this family.

11. *C. nuncius*. Black; abdomen excepting the base and tip rufous.

Inhabits Pennsylvania.

Body black: *palpi* white, blackish at tip; *antennæ* ♀ a long white annulus in the middle: *thorax* immaculate; two impressed lines: *wings* hyaline; nervures brown; stigma rather slender; second cubital cellule rather large, pentagonal, the two angles on the radial nervure nearly rectangular; recurrent nervures almost rectilinear: *tergum*, basal segment wholly or in part black; second, third and generally half of the fourth rufous or honey-yellow; remaining segments black: *oviduct* nearly half the length of the abdomen: *feet* honey-yellow; posterior pair of tibiæ at tip and knees black; posterior tarsi pale yellowish.

Length about two fifths of an inch.

I obtained many specimens from the larva of *ATTACUS promèthea*, Linn. several years ago.

12. *C. subclavatus*. Black; antennæ subclavate, at base and feet honey-yellow.

Inhabits United States.

Body black: *antennæ* on the basal half piceous or dark honey-yellow, dilating gradually towards the tip, terminal half dusky or black; first joint robust: *thorax* depressed on the posterior disk, in which are longitudinally confluent punctures; a slightly elevated line before the bi-foveolate scutellar groove: *wings*, radial cellule rather wide and short; cubital cellule pentangular, sides subequal, angles at the radial cellule nearly rectangular: *abdomen* ♀ oval, honey-yellow, dusky or blackish at base and tip: *oviduct* nearly half the length of the abdomen: *feet* honey-yellow.

Length under one fifth of an inch.

Approaches a little to the genus *HELWIGIA* by the form of its antennæ. I found one specimen in Pennsylvania and another in this State.

13. *C. micrópterus*, ♀. Black; feet and middle of the abdomen rufous; wings abbreviated.

Inhabits Pennsylvania.

Body black: *antennæ*, honey-yellow, with a paler yellow annulation: *palpi* whitish: *wings* not reaching the tip of the metathorax: *metathorax* concave behind; posterior angles a little prominent: *tergum* polished, suboval; first segment black; second and third honey-yellow; remaining segments black: *oviduct* half the length of the abdomen: *feet* honey-yellow, paler at their origin; posterior pair of thighs and tibiæ each at tip blackish.

Length one fifth of an inch.

This seems to be related to *C. abbreviatus*, Fabr. but it has no "striga alba."

OPHION, Fabr.

1. *O. purgatus*. Honey-yellow; two opaque dots in the first cubital cellule.

Inhabits Indiana.

Body pale honey-yellow, somewhat sericeous: *antennæ* rather longer than the body: *orbits* yellow, dilated before, so as to occupy the greater part of the hypostoma: *ocelli* large, prominent: *wings* hyaline; stigma slender; first cubital cellule with two opaque, subtriangular spots; second cubital cellule none: *metathorax* with a single, raised, rectilinear, transverse line, near the base.

Length about seven tenths of an inch.

This is much like an insect sent me by Mr. Winthem

as the *ramidulus*, Fabr. which has also opaque wing-spots, but is black on the tip of the abdomen. The *bilineatus*, Nob. may be distinguished from this species by having many raised lines on the metathorax and by being destitute of the opaque wing-spots. The sexes are similar in color, and both have the opaque wing-spots, which is not the case in Mr. Winthem's specimens of *ramidulus*.

2. *O. glabratus*. Honey-yellow; a glabrous spot in the large cubital cellule.

Inhabits Indiana.

Body dull honey-yellow: *head* bright yellow: *antennæ*, *mouth* and *stemmata* honey-yellow: *eyes* blackish: *wings*, first cubital cellule beyond its middle with a longitudinally oval glabrous space, but destitute of any opaque spot: *metathorax* transversely wrinkled near the petiole of the abdomen.

Length about four fifths of an inch.

Much like *purgatus*, Nob., with a similar glabrous spot in the cubital cellule, but this spot is destitute of any appearance of the opaque coriaceous spots which distinguish that species.

3. *O. mundus*. Black; antennæ, posterior tibiæ and tarsi yellow.

Inhabits Indiana.

♂ *Body* black: *head* with the front, nasus and anterior orbits greenish-yellow: *antennæ* fulvous yellow; three or four basal joints above black; the first joint beneath greenish-yellow: *trunk* with rather dense, short hairs: *wings* purple-black: *abdomen* much compressed; basal joint cylindrical; second segment as long as the first, or a little longer, compressed towards the tip: *anterior pair of feet* yellowish before: *intermediate pair* with a line before and base of the tibiæ yellowish: *pos-*

terior pair with the tibiæ, excepting the tip, and the tarsi, excepting the terminal joint, fulvous-yellow.

Length nearly one inch.

Resembles *flavicornis*, Nob., which, however, has the first segment of the abdomen considerably longer than the second. It is also allied to *morio*, Fab. but that species is described to have the wings blue, tip with brown, and the legs black, the anterior ones testaceous.

4. *O. bilineatus*, Nob. Contributions of the Mac-lurian Lyceum, p. 75.

This is the analogue of the *O. luteus*, Fab.

5. *O. brachiator*. Black; abdomen and feet yellowish; a petiolated second cubital cellule.

Inhabits Indiana.

Antennæ, first joint beneath, white: *mandibles* whitish, piceous at tip: *palpi* white; *wings* hyaline; stigma slender, blackish; second cubital cellule rather large, quadrangular, more or less petiolated from the radial cellule, anterior recurrent nervure a little arcuated, not angulated and with a white bulla; second recurrent nervure rectilinear, with a white bulla: *metathorax* with an impressed longitudinal line, and a transverse raised one at base: *abdomen* honey-yellow; first joint white at base; second joint blackish above: *feet*, posterior pair honey-yellow, tarsi blackish; intermediate pair white, with honey-yellow thighs; anterior pair white.

Length nine twentieths of an inch.

I place this in the genus *OPHION* because of the compressed, falcate abdomen, notwithstanding the existence of the second cubital cellule.

ANOMALON, Jurine.*

1. *A. attráctus*. Black ; feet and base of the abdomen honey-yellow.

Inhabits Indiana.

Body black, somewhat polished : *frontal orbits*, part of the *hypostoma* and *mouth* yellowish-white : *thorax*, line before the wings and wing-scale whitish : *wings* hyaline ; nervures fuscous, towards the base whitish ; stigma whitish towards the stricture ; second cubital cellule destitute of the exterior nervure ; recurrent nervures each with a bulla : *scutel* pale yellow : *metathorax* with a transverse pale yellow line beneath the scutel : *abdomen* honey-yellow ; posterior half of the 4th segment and the remaining segments black ; first segment sessile, with an arcuated groove in which are many elevated lines ; 2d segment with two less arcuated ones ; 3d and 4th segments each with one of the grooves ; all the yellow portion of the tergum has large close-set punctures : *feet* honey-yellow, origin of the anterior pair pale yellow : posterior tibiae black towards the base, with a large white annulus ; posterior tarsi black : *pleura* with a white line before : *pectus* having an angulated white line : *oviduct* not extending beyond the tip of the abdomen.

Length one fifth of an inch.

2. *A. ejúncidus*. Ferruginous, reticulate with large punctures ; pectus black.

Inhabits United States.

* I place in this genus, those species that are destitute of the small cubital cellule, and which have not the abdomen so compressed and truncated, as to associate with OPHION.

Body ferruginous, with crowded, discoidal punctures, giving the surface a reticulate appearance: *head* without obvious punctures; orbits tinged with yellow: *antennæ* blackish; first joint yellowish beneath: *thorax* with a slightly impressed line before, and another each side behind, obsolete; dilated sutures about the scutel black: *wings* hyaline; nervures blackish; stigma rather slender; second cubital cellule none, the anterior recurrent nervure obtusely arcuated; second recurrent nervure rectilinear: *abdomen* slender, dull honey-yellow, piceous black above and at tip, without large punctures: *oviduct* as long as the basal joint of the abdomen: *feet* dark honey-yellow: *pleura* above the anterior feet with oblique lines: *pectus* black.

Length about two fifths of an inch.

3. *A. mellipes*. Black; feet honey-yellow; posterior thighs armed with a spine.

Inhabits Indiana.

ANOMALON mellipes, Nob. Contrib. Macl. Lyc. p. 74.

♀ *Body* black, polished: *head* with the distance behind the eyes considerable: *labrum* dull piceous: *palpi* dull whitish: *thorax* with the impressed lines rather deep, rendering the thoracic lobes very distinct: *wings* with a slight dusky tint: *metathorax* with an obvious spine on each side of the posterior declivity: *feet* honey-yellow: *coxæ* and *thighs* robust, particularly those of the posterior pair, of which the thighs are armed beneath near the tip with a prominent spine: *oviduct* as long as the body, or a little longer, somewhat compressed towards the tip.

Length nearly seven twentieths of an inch.

♂ Anterior and intermediate thighs rather less robust.

Length less than seven twentieths of an inch.

Has some resemblance to a *XORIDES*, but the mandibles are bidentate, and the metathorax and anterior part of the thorax differ. It is a very distinct species. I have thought it may be useful to give the above more detailed and characteristic description than that quoted, which is too short and unimportant. A good name for this species would be *gladiator*.

4. *A. densatus*. Black; thorax rufous; tergum densely punctured.

Inhabits Indiana.

Body black, with short, small hairs: *orbits* above with a white spot; *face*, below the antennæ, and *mouth*, pale yellowish: *antennæ* ———: *thorax* reddish-brown; with an abbreviated black vitta: *scutellum* reddish-brown: *wings* hyaline; nervures fuscous; stigma yellowish: *abdomen* sublinear, not attenuated towards the base, but in the first joint: *tergum* with dense, rather large, but not profound punctures; posterior edges of the segments slightly rufous: *oviduct* nearly half the length of the abdomen: *feet* dull yellowish; *coxæ* and *trochanters* whitish; tips of the *tibiæ* and of the *tarsi* dusky.

Length ♀ over one fifth of an inch.

5. *A. recurvus*. Black; feet honey-yellow; posterior *tibiæ* and *tarsi* with black joints.

Inhabits Indiana.

Body rather slender, black: *head* not extended behind the eyes: *orbits*, *nasus* and *palpi* white: *thorax* trilobate (as in *XORIDES* and *PIMPLA*) with a white line before the wings: *metathorax* long, convex: *tergum* equal in width, basal segment a little narrower at base; segments subequal in length; first and second segments with a transverse impressed line near their tips; remaining segments, excepting the last, with a lateral, transverse, im-

pressed line at their middles: *oviduct* less than half the length of the abdomen, a little recurved at tip: *feet* honey-yellow; intermediate and posterior pairs of tarsi white, the joints black at their tips; posterior pair of tibiae black, white in the middle.

♂ much smaller; thorax tinged with piceous; hypostoma white; pectus honey-yellow; feet paler than in the female.

Length three tenths of an inch.

The metathorax is convex as in *Xorides*, elongated, but the head is transverse and not globular.

6. *A. lineatulus*. Black; anterior pairs of feet honey-yellow; tergum with minute lines.

Inhabits Indiana.

Body black, sparsely punctured: *palpi* whitish: *thorax* with two deeply impressed lines, uniting behind: *wings* hyaline; nervures fuscous: *scutellum* at base with a dilated indentation: *metathorax* with raised lines: *abdomen* gradually tapering to the base: *tergum* on the three basal joints, with numerous, small, longitudinal, raised lines; fourth and following segments with much more minute transverse ones: *feet*, anterior pairs entirely honey-yellow; posterior pair black, the incisures yellowish; posterior tarsi yellowish.

Length ♂ over one fourth of an inch.

This has some resemblance to *mellipes*, Nob., which, however, has the posterior thighs thickened and with an obvious tooth on their inferior edge.

The lineations of the tergum of the three basal segments distinguish this species.

7. *A. divaricatus*. Black; tergum with two oblique, impressed lines on each segment.

Inhabits Florida.

Body black: *wings* with fuscous nervures, dull yellowish towards the base: *abdomen* nearly sessile, minutely and densely punctured; first segment with two longitudinal, elevated lines; 2d, 3d and 4th each with two very obvious, impressed lines, originating at the base and divaricating towards the posterior angles: *feet* honey-yellow: *posterior pair*, thighs at tip, tibiæ at tip and annulus near the base, and posterior halves of the tarsal joints, black.

Length over two fifths of an inch.

Has considerable resemblance to *ICHNEUMON inquisitor*, Nob., but the impressed lines of the tergum are very oblique, and the wings are destitute of the small second cubital cellule.

8. *A. emarginatus*, Nob. Contrib. Macl. Lyceum, p. 76. This species is very remarkable by the prominence of the head in front of the insertion of the antennæ, which hence appear to be situated in a deep foveola; this character, together with the very short, robust feet, proves a close relation to *ALOMYA*, to which in fact I would refer the species, but that there is no appearance of a second cubital cellule; the antennæ have thirty-six joints.

PELTASTES, Illig.

1. *P. pollinctorius*. Black; two thoracic spots, scutel, and bands of the tergum yellow; tibiæ black.

Inhabits Pennsylvania and Indiana.

♀ *Body* black, densely and closely punctured: *head* —: *thorax* with a yellow line before the wings: *scutel* quadrate; lateral edge elevated; posterior margin, including the prominent spines, yellow: *wings* with a tint of ferruginous; nervures fuscous; stigma paler in the

middle : *metathorax* with a short transverse line beneath the scutel and dot each side at tip yellow : *tergum* slightly tinged with violaceous, particularly towards the tip ; posterior margins of the segments yellow, excepting the second and sixth, of which the former has the lateral angle obscurely yellow : *feet*, anterior pairs honey-yellow ; the thighs black behind ; posterior pair black, the thighs yellow at base.

Length about seven tenths of an inch.

♂ Basal joint of the antennæ beneath whitish : frontal escutcheon on its lateral and basal margins, extending a short distance upon the orbit, yellow : dilated joint of the palpi dull whitish : *metathorax* with a yellow spot near the posterior coxæ : coxæ and knees honey-yellow.

Length over two fifths of an inch.

The female was presented to me several years ago by Mr. Lesueur, who obtained it in the neighborhood of Philadelphia. It is much like *P. necatòrius*, Fabr. but is considerably larger, and that species is destitute of spots on the *metathorax*, and its posterior tibiæ are yellow.

The male was taken by myself in Indiana.

BANCHUS, Fabr.

1. *B. nérvulus*. Black ; anterior pairs of feet and posterior tarsi yellow.

Inhabits Indiana.

Body black : *mandibles* polished at tip : *tongue* rather prominent : *wings* dark violaceo-fuliginous ; nervures blackish ; stigma honey-yellow ; second cubital cellule quadrangular, attached to the radial cellule by a slightly petiolated angle ; first recurrent nervure with a prominent

process and a small white spot; second recurrent nervure much undulated, margined with white one half its length; exterior nervure of the cellule with a white spot: *feet*, anterior pairs, excepting the coxæ and trochanters, honey-yellow; posterior pair black, their tarsi yellow.

Length at least half an inch.

2. *B. æquatus*. Black; antennæ and feet, excepting the hinder thighs, yellow.

Inhabits Indiana.

Body black: *antennæ* yellow, at tip and base a little dusky: *hypostoma* with two slight lobes situated longitudinally, and with the mouth and orbits yellow: *thorax* with a slightly indented line each side before and another over the wings: *wings* violaceo-fuliginous; nervures and stigma blackish, the latter with a whitish dot at its stricture; second cubital cellule pentangular, the two angles on the costal side rectangular and the three corresponding sides equal, the two anal sides shorter and equal, two sides with a white spot and the two recurrent nervures with each a white spot: *wing-scale* and junction of the wings with the thorax honey-yellow: *feet*, anterior pairs honey-yellow; posterior pair with the tibiæ and tarsi yellow.

Length about half an inch.

It has much resemblance to *AGATHIS polita*, Nob.

3. *B. fugitivus*. Second cubital cellule petiolated; posterior tibiæ annulate.

Inhabits Indiana.

Body black: *antennæ* in both sexes black: *mandibles* and *palpi* white: *wing-scale* white: *wings* hyaline; nervures black, whitish at base; second cubital cellule very small, petiolated from the radial cellule: *metathorax*

not obviously excavated behind, but with somewhat raised lines; *abdomen* arcuated; towards the tip rather abruptly clavate; punctures very small: *oviduct* as long as the tip of the abdomen: *feet* honey-yellow, with a white reflection; posterior tibiae white with black tip and base; posterior tarsi black, base of the first joint white, in the male the white of the posterior tibiae is less obvious.

Length from one fourth to three tenths of an inch.

I obtained a specimen from a very pretty cocoon which is somewhat cylindric, white, with two maculated black bands.

ACÆNITUS, Latr.

1. *A. decorus*. Black varied with whitish; posterior tarsi whitish.

Inhabits Indiana.

♀ *Body* black: *orbits* white, interrupted above and before: *hypostoma* white, nasal sutures black each side: *mandibles* black: *antennæ* with ten or twelve white joints beyond the middle: *thorax* with the line over the wings, wing-scale, line before the wings, and lateral and posterior margin of the anterior lobe white: *scutel* white: *wings* hyaline, with a rounded fuscous spot at tip: *meta-thorax*, a small spot under the scutel and behind whitish: *abdomen*, posterior margins of the segments white; in profile clavate; dorsal view fusiform: *venter* white; scale prominent, acute: *oviduct* much longer than the abdomen: *pleura* varied with yellowish: *feet* honey-yellow: posterior pair of coxæ with three large yellow spots; incisures of the posterior thigh black; posterior tarsi whitish.

Length nearly three fifths of an inch.

♂ Orbits white uninterrupted: *thorax* more variegated with white: *antennæ* with about eight white joints: *scutel* with a black disk, the white margin extending forwards in the form of a V: *metathorax* black varied with white, spines prominent: *tergum*, first joint on the lateral margin white as well as the tip; second segment with a much arcuated line each side of the middle, curving forwards; remaining segments with the posterior margins dull whitish: *venter* blackish, somewhat banded: *pleura* whitish, with a black line under the wings; anterior portion black with white lines: *pectus* pale honey-yellow: *coxæ*, posterior pair with a black line.

Length nine twentieths of an inch.

This is a very prettily variegated species.

2. *A. melleus*. Honey-yellow; antennæ white, blackish at base.

Inhabits Indiana.

♀ *Body* honey-yellow: *head* with a large black spot above the antennæ; beneath the antennæ yellowish: *antennæ* white; basal third above black: *occiput* with a dusky spot: *scutel* yellow, the sutures around it black: *wings* with a blackish tip: *tergum*, sutures somewhat dusky: *tibiæ* and *trochanters* yellowish.

Length two fifths of an inch.

BASSUS, Fabr.

1. *B. sanctus*. Black; metathorax, abdomen and posterior feet sanguineous.

Inhabits Indiana.

♀ *Body* black: *palpi* tinged with piceous: *thorax*, *pleura*, *pectus*, and two anterior pairs of *feet* immaculate:

wings blackish-violaceous, with a hyaline literation in the middle; nervures black; separating nervure between the first cubital and first discoidal cellules widely interrupted; second cellule triangular; cubital cellule rather large: *metathorax* and *abdomen* bright sanguineous: *posterior coxæ* and *thighs* bright sanguineous, the intervening trochanter black; *posterior tibiæ* dull sanguineous, their tips dusky, their tarsi blackish: *oviduct* nearly as long as the body, ferruginous, with black valves.

Length over three tenths of an inch.

At first view resembles *BRACON initiator*, F.

2. *B. limitaris*. Black; feet honey-yellow.

Inhabits Missouri and Indiana.

Body black: *palpi* white: *thorax* longitudinally indented behind the middle: *wings* nearly hyaline, at base yellowish; nervures fuscous; stigma large; first cubital cellule complete; second rather large, quadrangular: radial cellule also rather large: *feet* honey-yellow; posterior pair of *tibiæ* whitish, their tips and annulus near the base black; posterior pair of tarsi black.

Length seven twentieths of an inch.

Var. α . Maxillary palpi, first joint black.

♀ *Oviduct* hairy, decurved, somewhat robust.

3. *B. gibbosus*. Black; *nasus* gibbous; terminal joints of the antennæ short.

Inhabits Indiana.

♀ *Body* somewhat polished, black: *nasus* with a prominent gibbosity: *antennæ* with the joints of the terminal third not longer than broad: *wings* slightly fuliginous; stigma robust; the abbreviated nervure at base of the stigma very robust and very near to the costal nervure: *tergum*, second segment at base with two large foveolæ: *oviduct* as long as the abdomen and thorax together:

feet, terminal half of the thighs and basal portion of the tibiae dull honey-yellow.

Length hardly over one tenth of an inch.

The smallest species I have met with.

BRACON, Jurine, Latr.

† Separating nervure between the radial and cubital cellule arcuated; second cubital cellule not very much elongated.

1. *B. pectinator*. Black; abdomen yellowish; wings blackish; cellules regular.

Inhabits United States.

Head rather large and robust, concave behind at the neck: *rostrum* not prominent: *thorax* with the dorsal sutures dilated and containing very obvious transverse lines; the transverse suture at base of the scutel with five elevated lines: *wings* dark violaceous; 2d cubital cellule shorter and smaller than the first, quadrangular; nervure forming the radial cellule rectilinear: *oviduct* exserted, black.

Length ♀ to tip of wings nearly two fifths of an inch.

I am not certain whereabouts this insect was captured, but I think I obtained it in the N. W. Territory when engaged on the northern expedition with Major Long.

It resembles the *populator*, but the rectilinear form of the nervure of the radial cellule places it nearer *rugator*, Nob. and *initiator*, F.; from the former it is distinguished by the more simple surface of the tergum, and from the latter by the much shorter second cubital cellule.

2. *B. rugator*. Sanguineous; head, wings and feet blackish; tergum wrinkled.

Inhabits Indiana.

Rostrum distinct; *head* piceous: *antennæ* black:

thorax polished: *wings* purplish-fuliginous, with three or four obsolete, small, white spots; *cellules* regular: *tergum* with numerous longitudinal, elevated lines on each segment; first segment with the lines transverse and interrupted by a large, elevated oval lobe on the disk, which has a longitudinal line and irregular rugæ; the lateral edge elevated; 2d and 3d segments with an oblique indented line at base each side: *oviduct* two thirds the length of the abdomen, black, clothed with short hairs: *feet* piceous-black.

Length ♀ three tenths of an inch.

The remarkable appearance of the tergum readily distinguishes this species from *populàtor*, Nob. which it resembles. It has a general resemblance to *B. initiàtor*, Fabr.

3. *B. hebètor*. Black; head, thoracic lines, tibiæ and base of the abdomen honey-yellow.

Inhabits Indiana.

Body black, polished: *head* pale honey-yellow; *antennæ*, region of the stemmata, of the antennæ and spot on the hypostoma, black: *mandibles* robust, black at tip: *thorax* with two obsolete, piceous, oblique lines confluent at the middle and terminating in a spot each side of the scutel: *wings* dusky, nervures black; stigma rather large; nervure from the stigma, oblique to the 2d cubital: *abdomen* depressed, oblong-ovate: *coxæ*, knees and base of the tibiæ, yellowish-white: *oviduct* shorter than the abdomen.

♂ Abdomen whitish at base.

Length nearly one tenth of an inch.

The antennæ of the male are 22-jointed and those of the female are short, more robust, fourteen-jointed. The short, thoracic piceous lines have sometimes a cruciform appearance by being continued around the scutel.

4. *B. dorsator*. Yellowish, antennæ, three thoracic lines and tip of the tergum, black.

Inhabits Indiana.

Body yellowish, somewhat fulvous, a little polished: *antennæ* short, rather robust, black; area of the stemmata blackish: *thorax* with three distant black, short lines, the anterior one shortest and impressed: *wings* hyaline, slightly dusky towards the base; cellules regular; nervures brownish; stigma triangular, yellow-brown: *tergum* with a black dot on the first segment, and dusky on the disk or towards the tip: *pleura* with a blackish line behind the wing: *pectus* blackish on the disk: *feet* with the tarsi dusky at tip.

♀ Oviduct half as long as the abdomen.

Length to the tip of the wings less than three twentieths of an inch.

Much like *hebètor*, but is somewhat larger and more robust; it may be distinguished at first by its lighter color. As in that species the first cubital cellule is wider by one third than the second at their junction, and the latter is hardly as long as the first, in either sex.

5. *B. argutator*. Honey-yellow; antennæ, terminal joint of the tarsi and oviduct, black.

Inhabits Indiana.

♀ *Body* honey-yellow, somewhat polished: *antennæ* black: *mandibles* piceous: *hypostoma* with a transverse, dilated indentation: *stemmata* blackish: *thorax* immaculate: *wings* very slightly tinged with dusky; nervures blackish; stigma yellowish in the middle; second cubital cellule as long or rather longer than the first, and nearly as wide at their junction: *tergum* of a rather paler yellow than the thorax, and opaque with minute punctures or granules, oblong-oval: *oviduct* black, half as long as the abdomen: *tarsi*, terminal joint blackish.

Length to tip of wings over three twentieths of an inch.

Of the same general habit with *hebètor*, but is considerably larger, and may be known at once apart from it, by the equality, at their junction, of the 1st and 2d cubital cellules, by the punctured tergum, &c.

6. *B. vestitor*. With prostrate hairs; basal joint of the tergum bi-sinuate at tip.

Inhabits Mexico.

♂ *Body* with very numerous, minute, prostrate hairs: *head* blackish, with dilated dull fulvous orbits; before the antennæ more prominent than above, and convex: *antennæ* dull yellowish: *thorax* dull fulvous, with three dilated black lines, of which the middle one is abbreviated before the middle: *metathorax* dusky: *wings* hyaline: *tergum* yellowish, somewhat polished towards the tip; lateral edge dusky; first segment at tip bi-sinuate or three-angled: *feet* paler: *thighs* a little dusky.

Length of the body three twentieths of an inch.

Somewhat resembles the preceding, but the hairy vesture distinguishes it from all the foregoing species.

7. *B. scrutator*. Yellowish; with prostrate hairs; 1st joint of the tergum bi-sinuate at tip, black at base.

Inhabits Indiana.

♀ Rather dull honey-yellow, with minute hairs: *head* more prominent and paler beneath the antennæ: *antennæ* dull yellowish: *stemmata* black: *thorax* with a slender black line each side: *pleura* with a black oblique line under the wings: *metathorax* black: *wings* hyaline; nervures pale brownish; stigma yellowish at base; 2d cubital cellule shorter and narrower than the first: *tergum* elongate sub-obovate, black at base, this color extending paler on each side; middle of the disk towards the base

pale yellow extending on the tip of the first segment, which is sub-bisinate or slightly three-angled; second segment as well as the first with an elevated line: *oviduct* not exerted beyond the tip of the abdomen, black.

♂ Third and following segments of the tergum annulate with black; no elevated line on the tergum, nor three angled appearance of the tip of the first segment.

Length less than one fifth of an inch.

Resembles *vestitor*, but is more slender, larger, and differently marked.

8. *B. rugulosus*. Honey-yellow; head, breast and three lines on the thorax black.

Inhabits Indiana.

Body honey-yellow: *head* with rather wide and slightly impressed punctures, which on the front are transversely confluent into minute rugæ: *mouth* obscure piceous: *antennæ* obscure piceous, black towards the tip: *thorax* somewhat tinged with sanguineous, and with three, abbreviated, blackish vittæ; behind the intermediate vitta is a rugous space, with a slightly elevated line: *wings* hyaline; nervures and carpus blackish; cubital cellules three; *metathorax* rugous, with an elevated line: *abdomen* longitudinally rugous, oblong; with three larger segments, decreasing in length; and three smaller ones at tip, taken together hardly longer than the third: *pectus* in the middle black.

Length one fourth of an inch.

The magnitude of the three basal segments of the abdomen is remarkable in this species.

9. *B. transversus*. Granulated; nervure from the stigma nearly transverse.

Inhabits Indiana.

Body densely punctured or granulated; blackish-piceous: *antennæ*, *mouth* and *feet* honey-yellow: *wings* hyaline; nervures brown; stigma large; nervure from the stigma to the second cubital cellule nearly transverse, so as to make the three angles at its contact, equal: *tergum* dull honey-yellow at base; first segment with two prominent, parallel lines; second segment occupying three fourths of the whole surface: *oviduct* shorter than the abdomen.

Length over one twentieth of an inch.

The whole surface has a minutely granulated appearance, and the nervure from the stigma is more than usually transverse, having but a very slight obliquity. In having but two principal segments to the abdomen, this species approaches the genus *SIGALPHUS*, but the venter is not deeply vaulted as in that genus.

10. *B. mellitor*. Honey-yellow; *antennæ* dusky.

Inhabits Indiana.

♀ *Body* honey-yellow, polished: *antennæ* dusky: *thorax* immaculate: *wings* hyaline; nervures fuscous; stigma yellowish at base; 2d cubital cellule as long as the first, but somewhat narrower than the greatest width of the latter: *tergum* short, oval, not polished; paler than the thorax, with minute, prostrate hairs; second segment with an indented dot each side: *oviduct* black, as long as the abdomen: *tarsi*, terminal joint blackish.

Length of the body three twentieths of an inch.

The wing-stigma is sometimes almost entirely black.

†† Separating nervure arcuated; second cubital cellule elongated; the nervure from the stigma inserted at its middle.

CELEREON.

11. *B. inescàtor*. Pale dull yellowish; palpi and feet whitish.

Inhabits Indiana.

♀ *Body* dull yellow, with a slight intermixture of honey-yellow, immaculate: *antennæ* blackish towards the tip: *mandibles* piceous at tip: *wings* hyaline, with a very slight dusky tinge, and yellowish at base; nervures of the middle of the wing and disk of the stigma fuscous: *abdomen* oblong sub-obovate: *oviduct* black, hardly half the length of the abdomen: *palpi* long, white: *feet* white.

Length of the body two twenty-fifths of an inch.

12. *B. pullàtor*. Black; abdomen at base and feet yellowish.

Inhabits Indiana.

♀ *Body* black, a little polished: *antennæ* towards the base obscure yellowish, first joint pale honey-yellow: *mouth* pale piceous: *mandibles* at tip blackish; *wings* hyaline; nervures brownish; stigma fuscous: *tergum* oblong sub-obovate, disk near the base dark honey-yellow: *oviduct* longer than the abdomen, black: *feet* pale honey-yellow.

Length less than one tenth of an inch.

13. *B. honéstor*, Nob. Contr. Macl. Lyc. vol. I. p. 78, belongs also to this subdivision.

14. *B. paulùlor*. Black; abdomen short; feet whitish.

Inhabits Indiana.

Body black: *head* large: *antennæ* fuscous, obviously longer than the body: *mandibles* yellowish: *palpi* white:

wings hyaline ; stigma elongated, slender ; second cubital cellule elongated, having the nervure from the stigma inserted at about one third its length : *abdomen* short : *oviduct* very short : *feet* honey-yellow, a little dusky towards their tips.

Length less than one twentieth of an inch.

The second cubital cellule is elongated, but the descending nervure from the stigma is inserted considerably behind the middle.

††† Separating nervure between the radial and cubital cellules reclivate. TOXONEURON.

15. *B. viàtor*. Sanguineous ; antennæ, vertex, wings and pectus black.

Inhabits Indiana.

Body rather pale sanguineous : *antennæ*, *vertex* and dilated frontal spot, part of the hypostoma and mouth, black : *thorax* with indented lines ; a black spot on the middle sometimes obsolete or wanting : *metathorax* behind black : wings blackish-fuliginous ; nervures robust, black ; stigma and costal nervure honey-yellow : *pleura*, *pectus* and *coxæ* black ; the former sanguineous near the wings : *tarsi* at tip blackish : *abdomen* depressed.

Length one fourth of an inch.

This species and the following differ from the type of the genus *BRACON* in the form of the radial and third cubital cellules, in consequence of the arcuation of the separating nervure.

It is much like *populàtor*, Nob., but among other characters it may be distinguished by the yellowish carpal spot and costal nervure, which are always black in the *populàtor*.

16. *B. populàtor*, Nob. Long's Exp. to St. Peters, Appendix, p. 323, belongs to this subdivision.

17. *B. tibiàtor*, Nob. ibid, p. 322, also of this subdivision.

18. *B. exploràtor*. Black; feet partly rufous.

Inhabits Indiana.

Body black, polished; with small, prostrate hairs: *thorax* with the impressed lines not remarkably dilated; the transverse one punctured: *wings* dusky, stigma rather large: *feet* black; thighs rufous, excepting a small portion at base, posterior pair entirely rufous; *tibiæ* rufous, black at tip.

Length three twentieths of an inch.

The thorax and head are much less hairy than those of *tibiàtor*, Nob., and that insect has the wings dusky at tip only; the present also is a smaller species.

††† Second cubital cellule confluent with the third.

ALIOLUS.

Abdomen of three principal segments.

19. *B. trilobàtus*. Yellowish-rufous; thorax and vertex black.

Inhabits Indiana.

Body rufous, tinged with yellowish: *head* black on the vertex: *antennæ* blackish, excepting the two or three basal joints; about as long as the body: *mandibles* black at tip: *thorax* somewhat trilobate, black, with an obsolete rufous central spot: *scutel* black: *wings* hyaline; nervures and robust carpus black; second cubital cellule confluent with the third; inferior discoidal cellule half as large as the central one: *posterior tibiæ* dusky except at base: *coxæ* yellowish: *abdomen* oblong subovate, short, dusky at tip; densely punctured, with three segments, decreasing in length; a small, almost concealed terminal segment.

Length ♂ one fifth of an inch.

The cubital cellules are but two, the second transverse nervure being entirely wanting, and the nervure forming the anal side of the cubital cellules is very slender; the other nervures being quite robust. If the genera throughout this order, are to be divided as in the *TENTHREDINETÆ*, I would propose the separation of this and the following species, under the generic name of *ALIOLUS*.

The character of the abdomen agrees with this genus; but the neuration of the wings seems to agree rather better with *MICROGASTER*.

20. *B. thoracicus*. Black; thorax and feet honey-yellow.

Inhabits Indiana.

♀ *Head* ———: *thorax* honey-yellow, with two oblique, lineated grooves; suture before the scutel much dilated, and profound: *wings* hyaline; radial cellule with the nervure as distinct as the others, regularly arcuated, without any angulation; second cubital cellule much dilated and destitute of the exterior nervure: *meta-thorax* black: *abdomen* minutely punctured or lineated at base, polished towards the tip, oval; second incisure indistinct: *oviduct* longer than the abdomen: *feet* honey-yellow.

Length less than one tenth of an inch.

MICROGASTER, Latr.

1. *M. énsiger*. Black; feet and each side of the base of the abdomen yellowish.

Inhabits Indiana.

♀ *Body* black, with dilated punctures and minute hairs: *mouth* honey-yellow: *palpi* white: *thorax* with a yellow wing-scale; suture before the scutel impressed

and with elevated lines: *wings* hyaline; nervures fuscous, light brownish towards the base; stigma triangular, fuscous; second cubital cellule destitute of the exterior nervure; terminal nervures obsolete: *tergum* with large close-set punctures; towards the tip somewhat polished; first segment with a yellow lateral margin, dilating a little towards the tip; third segment with a yellow point on the lateral margin: *abdomen* each side and beneath, except at tip, yellowish: *oviduct* black, nearly as long as the abdomen, with rather long hairs: *feet* honey-yellow; posterior tibiæ, excepting at base, black: posterior tarsi blackish, with the incisures pale.

♂ Coxæ and anterior pairs of tibiæ and tarsi whitish; posterior tibiæ at tip only, dusky, at the extreme base whitish; second cubital cellule complete; terminal wing-nervures distinct.

Length ♂ over one tenth, ♀ less than three twentieths of an inch.

2. *M. mellipes*. Black; thorax with oblique, lined sutures; feet honey-yellow.

Inhabits Indiana.

♂ *Body* black: *hypostoma* somewhat prominent along the middle: *stemmata* rather prominent: *antennæ* beneath towards the base piceous: *mandibles* honey-yellow: *palpi* blackish or fuscous: *thorax* with two oblique impressed lines confluent behind, in which are several transverse lines; and a transverse more dilated one at the base of the suture: *wings* hyaline; nervure of the radial cellule as distinct as the others; second cubital cellule destitute of its terminal nervure; apical nervures less distinct than the discoidal ones, but not obsolete: *tergum* somewhat fusiform, polished, a little hairy at base and tip: *venter* at base honey-yellow, pale: *thighs* and *coxæ* honey-yellow: *tibiæ* and *tarsi* dusky.

Length nearly three twentieths of an inch.

Distinguished at once from the *énsiger* by the oblique thoracic lines.

3. *M. xylina*. Tergum at tip polished; sides of the venter yellowish.

Inhabits Indiana.

Body black, much punctured: *antennæ* brownish beneath: *palpi* white: *thorax* destitute of oblique lines, but with the transverse, dilated, deeply indented groove at base of the scutel, having small raised lines within, which are not very obvious: *wings* hyaline: nervure of the radial cellule obsolete at base; second cubital cellule destitute of the exterior nervure: *stigma* triangular, fuscous: *tergum* oblong-oval, punctured, glabrous, and polished at tip; basal segment rather rough, the lateral edge a little elevated and dull yellowish; *venter* each side, excepting at tip, dull yellowish: *oviduct* not exerted beyond the tip of the abdomen: *feet* honey-yellow, tips of the posterior thighs above slightly blackish.

Length nearly one tenth of an inch.

It resembles the *énsiger* very much in its markings, but the oviduct is not exerted. Great numbers are deposited together, and they ultimately spin their cocoons and envelope them with an exquisitely fine silky substance, which has been called "animal cotton."

4. *M. congregata*. Black; thorax destitute of oblique, lined sutures; abdomen elongate, subfusiform.

Inhabits Pennsylvania.

♂ *Body* black: *mandibles* and *palpi* white: *thorax* destitute of oblique, lined sutures; transverse suture at base of the scutel dilated, profound: *wings* hyaline; radial cellule with the nervure as obvious as the others; second cubital cellule rounded, destitute of the exterior

nervure; apical nervures obsolete: *stigma* triangular, fuscous: *abdomen* oblong, subfusiform, more polished than the thorax; 1st and 2d joints densely punctured or minutely lineated; the first joint pedunculiform, arcuated, narrower than the second: *venter* along the middle pale yellowish: *feet* honey-yellow: *posterior tibiæ* at tip and *posterior tarsi* dusky.

Length over one tenth of an inch.

Resembles *mellipes*, but the thorax has not the oblique, lineated grooves; and the abdomen is more elongated, and slender at base. This basal segment, like that of *mellipes*, has a slight tubercle on each side.

In June, 1822, I obtained eighty-four individuals of this species from the larva of a SPHYNX.

5. *M. zonària*. Black; feet and band on the tergum yellowish.

Inhabits Indiana.

♀ *Body* black, punctured: *antennæ* fuscous; beneath piceous, dull; basal joint beneath honey-yellow: *mouth* honey-yellow: *palpi* white: *wings* hyaline: radial cellule with the nervure not strongly marked; second cubital cellule very small, perfect: *abdomen* not elongated; each side and band on the middle of the tergum honey-yellow: *oviduct* half the length of the abdomen, black: *feet* yellowish; posterior pair of tarsi dusky.

Length one tenth of an inch.

The fasciated tergum is an obvious character.

6. *M. carpàta*. Black; stigma large, brown; feet honey-yellow.

Inhabits Indiana.

♀ *Body* black: *antennæ* beneath and *mouth* piceous: *palpi* white: *thorax* with the suture before the scutellum not much dilated, but having the cross lines: *wings* hya-

line; nervures whitish: stigma large, triangular, light brown; nervure of the radial cellule not visible, or but slightly towards the tip; second cubital cellule destitute of the exterior nervure: *tergum* oval, somewhat polished; first segment punctured: *oviduct* nearly or quite as long as the abdomen: *feet* honey-yellow: wing-scale yellow.

Length over one tenth of an inch.

The stigma of this insect is larger and the nervures paler than those of any other species I have seen.

7. *M. bisstigmata*. Stigma elongated, appearing double.

Inhabits Indiana.

♂ *Body* black, polished: *antennæ* at base and *mouth* piceous: *thorax* with two oblique sutures and one at the base of the scutel: *wings* hyaline; nervures pale brownish; nervure of the radial cellule as distinct as the others, rectilinear, parallel with the rectilinear part of the costal edge; second cubital cellule destitute of the exterior nervure; stigma much elongated, the length being obviously more than three times the greatest breadth, brown; a stigma-like spot at the origin of the nervures of the discoidal cellule on the costal margin much smaller and distinct from the stigma: *abdomen* elongate, subclavate, being slender at base: *feet* pale honey-yellow.

Length about one tenth of an inch.

The much elongated stigma and the small spot which precedes it, being larger and more separate than usual, readily distinguish this species.

8. *M. calliptera*. Wings yellowish at base, bifasciate with blackish.

Inhabits Indiana.

Stethidium black: *feet* honey-yellow: *wings*, at base and stigma yellowish; a blackish band upon the two

discoïdal cellules ; and another blackish band across the stigma, along the descending nervure to the small second cubital and continued dilating to the anal margin, where it is almost confluent with the other band ; terminal third hyaline ; inferior wings blackish, yellowish on the basal third, this color extending along the costal margin.

This is larger than either of the preceding species.

CHELONUS, Jur.

1. *C. parvus*. Black ; base of the antennæ, and anterior thighs yellowish.

Inhabits Indiana.

Body densely punctured : *antennæ*, first joint beneath honey-yellow : *palpi* whitish : *thorax* with dilated punctures, particularly on the disk and anteriorly : *scutel* and *metathorax* with dilated punctures ; the latter truncate behind : *wings* hyaline ; nervures blackish, pale at base ; stigma large ; second cubital cellule small, subtriangular : *abdomen* without apparent sutures ; densely punctured ; the punctures longitudinally confluent into wrinkles, which are more prominent at base : *venter* profoundly concave, excavated : *coxæ* black : *trochanters* whitish : *thighs*, anterior pair honey-yellow ; the other pairs blackish : *tibiæ* whitish, posterior pairs blackish at tip : *tarsi* whitish.

Length over one tenth of an inch.

The neuration of the wings corresponds with the *dentatus*, F., but the abdomen exhibits no more appearance of divisions than that of *sulcatus*, Jur., and the venter is very profoundly excavated. The metathoracic spines are very short and obtuse.

2. *C. sericeus*, Nob. (SIGALPHUS, Long's Ex. to St.

Peter's, II. p. 321.) Agreeably to the generic characters given by Jurine, this species as well as the following belongs to this genus, on account of the undivided abdomen: still, however, the *dentatus*, F., which has two distinct sutures on the tergum, is also referred by some modern naturalists to this genus.

3. *C. basilaris*, Nob. (SIGALPHUS, *ibid.* p. 322.) much like *parvus*, Nob., but is larger, the 2d joint of the antennæ, mandibles, and feet except at tip, are pale yellowish.

DIPLOLEPIS, Geoff. Leach.

(Antennæ filiform, joints cylindric. Three cubital cellules.)

1. *D. armatus*. Black; antennæ and feet ferruginous; scutel with a conic spine.

Inhabits Indiana.

Body black, polished: *antennæ* ferruginous; first joint not longer than the third, black; second joint globular, black; third and following joints cylindrical, subequal; terminal joint rather longest: *scutel* with a prominent conic, acute spine: *wings* hyaline; *nervures* pale brownish: *feet* honey-yellow: *venter* on the inferior edge honey-yellow: *thorax* with two grooves: *collar* and first segment of the tergum with close-set raised lines.

Length to tip of wings three twentieths of an inch.

The scutellar spine is very prominent, elevated and obvious, as in *FIGITES ediogaster*, Panz. but the thorax is not so much sculptured as in that species.

2. *D. 5-lineatus*. Black; feet rufous; scutel with a spine.

Inhabits Indiana.

Body black, polished: *antennæ*, first joint rather shorter than the third: *scutel* rough with about five raised lines; at tip a broad, compressed, carinate, sub-acute spine: *wings* hyaline; nervures brown: *pleura* and *first joint of the tergum* with close-set raised lines: *feet*, excepting the inferior surface of the thighs, dull honey-yellow.

Length three twentieths of an inch.

Aside from the color of the *antennæ* and of the inferior surface of the thighs, the *scutel* differs from that of the preceding species in being rugose, or with about five elevated lines, and its terminal spine is much broader at the base and less conic.

3. *D. impatiens*. Black; feet ferruginous; *scutel* mutic.

Inhabits Indiana.

Body black, polished, obsoletely tinted with piceous: *antennæ* piceous-blackish: *mandibles* ferruginous: *scutel* with the margin deeply depressed and rugose; the disk elevated, oval, with an acute edge, within which, on the posterior half, is an indentation and a more slight indentation before it, each side of which are two or three punctures: *wings* hyaline, nervures pale brown: *abdomen* acute at the tip of the *tergum*: *feet* ferruginous or rather piceous.

Length three twentieths of an inch.

4. *D. pedatus*. Black; feet yellowish; *antennæ* piceous; third joint long.

Inhabits Indiana.

Body polished, impunctured, black: *antennæ* yellowish-piceous; 1st joint not much longer than the second; third joint much longest, equal to the 4th and 5th together, and a little arcuated; remaining joints subequal,

oval-cylindric: *nasus* with a longitudinal indentation each side before: *mandibles* piceous: *thorax* without dorsal grooves, but a simple one over the wings: *wings* with a very slight obscure tint; *nervures* brown: *feet* honey-yellow.

Length ♂ less than one twelfth of an inch.

Differs from the two preceding species by the elongated third joint of the antennæ.

5. *D. stigmatus*. Black; feet yellowish; wings with a large stigma.

Inhabits Indiana.

Body polished, black: *antennæ* piceous; basal joint yellowish; second joint closely united to the first, shortest, almost spherical; 2d and 3d joints subequal: *wings* hyaline, *nervures* yellowish; stigma large, triangular: *abdomen* dull rufous: *feet* pale honey-yellow.

Length about one twentieth of an inch.

FIGITES, Latr.

(Antennæ moniliform, thicker towards their extremities. Second cubital cellule wanting.)

1. *F. impatiens*. Black; mandibles and feet piceous.

Inhabits Indiana.

♀ *Body* polished black: *antennæ* piceous-black, two thirds the length of the body, with scattered hairs; beyond the sixth joint moniliform; terminal joint ovate conic: *mandibles* piceous; area of the stemmata a little elevated; behind which, on the occiput, are oblique impressed lines: *scutel* with the margin depressed and rugose, the disk oval, the edge obscurely piceous, with an indentation behind, within the edge: *wings* hyaline; *nervures* yellowish: *feet* piceous.

Length three twentieths of an inch.

I am by no means satisfied with the only essential characters I can find of the genera *DIPLOLEPIS* and *FIGITES*. The present species closely resembles the *DIPLOLEPIS impatiens*, Nob. The scutel has an indentation as in *scutellaris*, Latr. and some other species.

2. *F. mellipes*. Black; feet honey-yellow; wings ciliate.

Inhabits Indiana.

♀ *Body* black, polished: *mouth* piceous: *antennæ* a little hairy, piceous: *wings* hairy and ciliate; more particularly ciliate at tip; *nervures* piceous: *feet* honey-yellow, somewhat paler at base and including the coxæ.

Length one twenty-fifth of an inch.

LEUCOSPIS, Fabr.

L. fraterna. ♀, Black, varied with yellow; oviduct longer than the abdomen.

Inhabits Indiana.

Body black, densely punctured: *head* with an obscure silvery reflection before and on the front in the cavity of the antennæ bright green; vertex varied with obscure violet and greenish: *antennæ*, basal joint yellow anteriorly: *collar* margined each side and behind with yellow and with a yellow transverse abbreviated line on the anterior middle: *thorax* with an abbreviated line over the wings and a transverse one on the scutel yellow: *wings* somewhat fuliginous: *pleura* with an oblique, yellow line over the posterior feet: *tergum*, first segment with a dull ferruginous-yellow band at base and a subterminal yellow one; on the middle of the tergum on each side a transverse yellow spot; a yellow band on the posterior submargin of the penultimate segment; and a double

yellow spot at tip of the ultimate segment: *oviduct* longer than the abdomen, reaching almost to the scutel: *tarsi* and *anterior tibiæ* ferruginous, the latter dusky on the middle: *intermediate tibiæ* and *knees* yellow, tinted with ferruginous behind: *posterior thighs* dentated beneath, yellow at base and tip; *tibiæ* yellow before, somewhat ferruginous behind.

Length seven twentieths of an inch.

♂ Tergum on each side anterior to the middle, a slightly carinated line; lateral yellow spot on the middle none; a yellow band on the middle or a little posterior to the middle, and towards the tip another yellow band; on the posterior declivity is an abbreviated longitudinal yellow line or spot; sides with a yellow spot or line interrupted from the extremities of the two posterior bands; of these two spots the anterior one is sometimes wanting, and in some specimens is a lateral yellow point near the tip.

Length three tenths of an inch.

Closely resembles *affinis*, Nob. in color and markings, but besides other differences the present species is larger and more robust, and the oviduct is longer than the abdomen. A female specimen was sent me by Dr. Harris, and I obtained several males and one female in this State. Dr. Harris's specimen varies in having only a rudiment of the yellow spot of the middle of the tergum.

I have obtained them chiefly on the blossoms of the parsnip.

CHALCIS, Fabr. Latr.

1. *C. amæna*. Yellow, variegated with black.

Inhabits Indiana.

Body with large, close-set punctures ; yellow, slightly tinged with green : *occiput* and *antennæ*, excepting the basal joint beneath, black : *thorax* quadrilineate with black, the intermediate lines confluent at the middle, and all united by a transverse line behind and by a slender transverse line at the suture of the first segment, on which the lines do not extend : *scutel* with a longitudinal black line : *metathorax*, excepting at base, black : *abdomen*, petiole black, about one third as long as the abdomen : *tergum* moderately arcuated ; each segment having a black band : *pleura* black, about four yellow spots : *posterior pair of feet* with their coxæ at tip, maculated band, inferior edge and tip of the dilated thighs, tip and base of the tibiæ, black ; the thighs are about the size of the abdomen, with six or eight large prominent black spines, the superior one divided into three or four.

Length less than one fifth of an inch.

A very handsome species ; I obtained it from the pupa of a THECLA.

2. *C. débilis*. Dull honey-yellow ; anterior pairs of feet whitish.

Inhabits Indiana.

Front yellowish towards the mouth ; a black line from the antennæ to the vertex : *antennæ* dusky, paler beneath : *thorax* punctured, with three black vittæ ; *scutel* with a black line : beneath the petiole are two whitish spines : *petiole* as long as the posterior coxæ, blackish, whitish at the tips : *abdomen* polished, the incisures blackish : *posterior feet*, coxæ with a black line on the inner side ; thighs nearly equal to the abdomen ; tibiæ whitish, blackish in the middle ; tarsi white.

Length three twentieths of an inch.

EURYTOMA, Illig. Latr.

1. *E. orbiculata*. Blackish; feet, excepting the middle of the thighs, yellowish.

Inhabits Indiana.

Body brassy-black, reticulate with punctures: *antennæ*, first joint honey-yellow: *scutel* obtusely rounded at tip; suture at its base not dilated: *wings* hyaline; nervures brown, branch of the radial nervure not longer than the part that extends beyond it on the edge: *abdomen* in profile almost orbicular, glabrous, polished; petiole punctured, longer than the posterior coxæ and trochanters: *feet* honey-yellow: *thighs*, excepting at their origin and extremity, black.

Length less than one tenth of an inch.

The joints of the antennæ are unequally gibbous.

2. *E. studiøsa*. Black; terminal joint of the antennæ as long as the two preceding ones together.

Inhabits Indiana.

♀ *Body* reticulate with crowded punctures: *antennæ* moniliform, of eight joints, geniculate; second joint shortest; 3d joint hardly longer than the 4th, and gradually a little shorter to the penultimate; ultimate joint about as long as the two preceding ones together, conic-ovate, with a very slight appearance of being three-jointed: *thorax*, anterior segment in breadth at least equal to twice the length; suture at the scutel not dilated: *scutel* obtusely rounded behind: *wings* hyaline; nervure much arcuated from the edge, its confluence with the edge about as long as the branch, which is subclavate: *abdomen* polished, impunctured; above oval; laterally orbicular; peduncle shorter than the posterior coxæ and trochanters: *knees* and tips of the *tibiæ* honey-

yellow: *tarsi*, particularly the two posterior pairs, whitish.

Length less than one tenth of an inch.

EULOPHUS, Geoff. Latr.

1. *E. dicladus*. Blackish metallic; *tibiæ* and *tarsi* white.

Inhabits Indiana.

Body brassy-blackish, more or less tinged with cupreous, punctured: *antennæ* larger towards the tip; terminal joint larger than the preceding one, conic-compressed; two long slender branches, originating near the base and nearly as long as the *antennæ*: *tergum* tinged each side with green: *feet* blackish: *tibiæ* and *tarsi* white.

Length nearly one twentieth of an inch.

The terminal joint of the *antennæ* in the female is considerably larger than the others.

2. *E. basalis*. Greenish; feet, tip and base of the *antennæ* white.

Inhabits Indiana.

♀ *Body* granulated, brassy-green, with a slight violaceous reflection: *antennæ* yellow-white, 3d, 4th and 5th joints dusky: *abdomen* blackish-violaceous, basal disk whitish, and a small whitish spot at tip: *feet* white, including the anterior *coxæ*: *coxæ* with a small, acute tubercle before: *tarsi*, terminal joint dusky.

Length about one fifteenth of an inch.

I observed a number of the pupæ of this insect, congregated together on the under side of a leaf of the button-wood (*PLATANUS occidentalis*, L.). They were of a blackish color, and adhered to the leaf in a vertical

posture, by the extremity of the abdomen. Came out last of June.

This is much like *E. damicórnis*, Kirby, which, however, has a shade in the middle of the wings; antennæ not shaded in the middle and the posterior thighs of the female are dusky in the middle. I have five females, but not one male.

The last joint of the antennæ is evidently divided into three segments.

3. *E. hircinus*. Black, with sparse, long hairs; feet and base of the tergum yellowish.

Inhabits Indiana.

Body black: *antennæ* yellowish; terminal joints dusky: *mouth* yellowish: *thorax*, *head* and *wings* at base, with long sparse hairs: *wing-scale* honey-yellow: *tergum* on the basal disk yellowish: *feet*, including the *coxæ*, pale yellow: *venter* on the disk yellowish.

Length over one twentieth of an inch.

Quite distinct from the preceding by the long hairs of the head and thorax.

PERILAMPUS, Latr.

P. platigáster. Blackish; face impunctured.

Inhabits Indiana.

Body brassy-blackish, punctured: *head* polished, impunctured before: *occiput* somewhat lineated transversely; before the eyes a little punctured: *thorax* with a glabrous, polished line each side: *scutel* short, obtuse, rounded, slightly emarginate at tip: *wings* hyaline; nervures brown: *tergum* quadrate, angulated each side, simply arcuated above, shining blackish: *feet* blackish, with a tinge of green: *tarsi* yellowish.

Length about three twentieths of an inch.

Differs from *P. hyalinus*, Nob. by color; and in that species the face is very obviously punctured, the scutel is larger and more acutely emarginated, and the abdomen is elevated above, into an acute, transverse ridge.

TORYMUS, Dalm. (Misocampus, Klug.)

1. *T. ocreatus*. Green, tinged with blue; base of the antennæ, tibiæ and tarsi whitish.

Inhabits Indiana.

Body bright green, more or less tinged on the pleura, abdomen and thighs with blue or purplish; reticulately punctured: *antennæ* black; first joint before, dull whitish: *mandibles* and *palpi* piceous: *scutel*, on the posterior half with very small punctures: *wings* hyaline; nervure brown: *abdomen* polished, impunctured; terminal joint ♀ brassy: *oviduct* as long as the body, fuscous: *tibiæ* and *tarsi* whitish.

Length one tenth of an inch.

Resembles *bedeguaris*, F. but is smaller, the abdomen and thighs differently colored, and the minute puncturation of the posterior half of the scutel strongly contrasts with the larger discoidal punctures of the basal half. It inhabits the receptacle of a *LIATRIS*.

The male has generally more of the purple tinge.

2. *T. pavidus*. Cupreous-green; no large punctures; tibiæ and tarsi yellowish.

Inhabits Indiana.

Body coppery-greenish, with the appearance of minute granules or scales: *antennæ* black: *hypostoma* with the carinate line very distinct: *mandibles* piceous: *wings* hyaline; nervure pale brownish: *abdomen* bluish-green:

feet honey-yellow: *thighs* bluish-green; posterior pair of tarsi whitish.

Length ♂ nearly one tenth of an inch.

The surface has no large and obvious punctures like those which distinguish the preceding.

SPARASION, Latr.

S. famélicus. Slender; abdomen longitudinally lineated.

Inhabits Indiana.

Body much elongated, very slender; with small punctures; black: *antennæ*, six basal joints dull yellowish, remaining joints close-set; 2d and 3d joints equal: *mandibles* piceous: *thorax* with the anterior segment arcuated, each side to the wings; two distant, dorsal, longitudinal, impressed lines: *wings* hyaline; nervure not distant from the edge, branch divaricating from the edge, not dilated at its tip: *metathorax* with longitudinal, elevated lines: *abdomen* elongated, with numerous, longitudinal, parallel, elevated lines both on the tergum and venter: *feet* honey-yellow.

Length over three twentieths of an inch.

CERAPHRON, Jur. Latr.

1. *C. armatus*. Wings fuliginous in the middle; tergum striate at base.

Inhabits Indiana.

Body black, with rather distant punctures: *thorax* with three longitudinal lines before, approaching behind: *wings* fuliginous in the middle; nervure, carpal spot and branch robust, fuscous; the carpal spot or stigma rather

large and truncated: *scutel* with two small spines at tip: *metathorax* with a small spine or tubercle each side: *tergum* depressed, with numerous close-set engraved lines extending to the middle of the length: *feet* piceous: *thighs* blackish.

Length more than one tenth of an inch.

A very distinct species.

2. *C. stigmatus*. Lateral margin of the *tergum* extending beyond the abdomen.

Inhabits Indiana.

Body black, minutely punctured: *antennæ*, first joint equal to the four following joints taken together: *thorax*, anterior segment with the three impressed lines distinct: *wings* hyaline; stigma large, semi-orbicular, brown; nervure of the incomplete radial cellule robust, brown, hardly longer than the stigma: *tergum* polished, slightly lineated at base; the segments extending each side beyond those of the venter: *anterior* and *intermediate tibiæ* and *tarsi* piceous.

Length over one twentieth of an inch.

These two species belong to the second division of Jurine's CERAPHRON.

PROCTOTRUPES, Latr.

1. *P. obsoletus*. Black; feet and *antennæ* honey-yellow.

Inhabits Indiana.

Body polished, black: *antennæ* honey-yellow, simple: *palpi* white: *thorax* with a yellowish wing-scale: *wings* hyaline; nervure from the radial cellule continued to the middle of the wing; discoidal and anal nervures hardly distinct: *feet* honey-yellow: *oviduct* about as

long as the first joint of the posterior tarsi, gradually attenuating from the abdomen to the tip, and continuing the curve of the tergum downward.

Length to the tip of the oviduct nearly one fifth of an inch.

2. *P. abruptus*. Black; feet and first joints of the antennæ honey-yellow.

Inhabits Indiana.

Body polished, black: *antennæ* rather short, with close-set, short, obvious hairs; two or three basal joints very obscurely honey-yellow or piceous; joints beyond the middle not twice the length of their breadth: *mouth* obscurely piceous: *wings* hyaline; nervure of the radial cellule not extended toward the middle of the wing; discoidal and anal nervures not obvious; wing-scale dull yellowish: *feet* honey-yellow: *oviduct* curved rapidly downward, almost deflected, not gradually attenuated, but somewhat cylindric at base, and hardly longer than the basal joint of the posterior tarsi.

Length one tenth of an inch.

3. *P. pallidus*, Nob. (Contrib. Macl. Lyc. vol. I. p. 80.)

This species is remarkable in having but a very short, bifid process extending from the tip of the abdomen. The sexes are not well understood. Jurine says that the antennæ have the same number of joints and that the pointed valves which terminate the abdomen are nearly alike in both sexes. But the present insect leads me to suppose that the male has not been hitherto known. At the extremity of its abdomen are two, very short, parallel filiform processes, which are probably characteristic of the male sex in this genus. It seems, therefore, possible that the *pallidus* may prove to be of the same species as

P. caudatus, Nob. notwithstanding their great apparent difference. But this cannot be determined without more specimens, and a better acquaintance with them both.

Since the above was written, I have obtained many specimens of this species, all corresponding in apparent sexual character, excepting that in some, the second joint of the antennæ is so far immersed in the first, as to be hardly visible; still as it is not, in any, much exerted, this character is probably dependent on the greater or less degree of contraction in drying.

CINETUS, Jur.

C. mellipes. Black; feet honey-yellow.

Inhabits Indiana.

Body polished, black, hairy: *antennæ* fuscous; basal joint honey-yellow: *vertex* tinged with piceous: *mouth* obscure honey-yellow: *thorax* with two impressed lines: *wings* immaculate, ciliate; nervures of the radial cellule extended a little towards the base and centre of the wing; the two anal nervures very distinct; stigma not obvious: *abdomen*, peduncle with longitudinal, impressed lines; second segment very large, composing the chief part of the abdomen: *feet* honey-yellow.

Length one tenth of an inch.

BETHYLUS, Latr.

1. *B. cellularis*. Black; antennæ, tarsi and anterior tibiæ piceous.

Inhabits Indiana.

Body black: *head* with a raised line passing between the antennæ before: *antennæ* piceous: *wings* with a very

slight tinge of fuliginous; nervures yellowish; stigma double, fuscous; a small, additional, triangular cellule at the tip of the brachial cellules: *abdomen* polished: *feet* black: *tarsi* and *anterior pair of tibiæ* and *tarsi* piceous.

Length about one tenth of an inch.

This species is remarkable by the supernumerary cellule.

2. *B. musculus*. Black; antennæ and feet yellowish; abdomen depressed.

Inhabits Indiana.

Body somewhat polished, impunctured, black: *antennæ* dusky, honey-yellow towards the base: *mandibles* honey-yellow: *thorax* with the anterior segment not much elongated; dorsal impressed lines very obvious: *wings* hyaline; radial nervure extended, equally distinctly near to the tip of the wing; discoidal cellule none: *metathorax* minutely and densely punctured or granulated above, and minutely lineated each side: *abdomen* depressed, polished, piceous black, distinctly petiolated: *feet* honey-yellow: *thighs* a little dusky in the middle.

Length over one twentieth of an inch.

This is the smallest species I have met with.

3. *B. pedatus*. Black; antennæ and feet honey-yellow.

Inhabits Indiana.

Body black, with scattered hairs: *antennæ*, particularly at base, obscurely honey-yellow; first joint long: *thorax* minutely punctured: *metathorax* punctured and lineated: *tergum* polished: *feet* dull honey-yellow.

Length over one tenth of an inch.

This species and the following are remarkable for the brevity of the inflected tip of the radial nervure, which is not at all arcuated, but points obliquely inward.

4. *B. centratus*. Black; tarsi and tip of the tibiae obscure piceous.

Inhabits Indiana.

Body black, polished, with scattered hairs: *antennæ* with an obsolete piceous tint, excepting the basal joint: *metathorax* with discoidal punctures and lineations: *wings* hyaline; two brachial cellules; a simple, short, oblique rectilinear inflection of the tip of the radial nervure pointing towards the centre of the wing: nervures pale: *tergum* polished: *tibiae* and *tarsi* obscure piceous; the latter blackish at tip.

Length less than three twentieths of an inch.

This species is considerably larger than the preceding and differs in the color of the antennæ and of the feet.

COPTERA, Nob.

ARTIFICIAL CHARACTER.

Wings without nervures; superior wings folded and with a fissure at tip; abdomen of two segments.

NATURAL CHARACTER.

Body moderately slender: *head* longitudinally oblong, truncate or a little excavated before, over the insertion of the antennæ: *eyes* lateral, rounded, entire: *stemmata* three: *antennæ* submoniliform, gradually enlarging a little towards the tip; basal joint longest and dilated: *wings* without obvious nervures; superior wings large, folded longitudinally in two, and at the tip of the fold with a profound fissure; inferior wings rather slender: *abdomen* composed of but two segments, of which the basal one is somewhat petioliform: *feet* moderate.

OBSERVATIONS.

This new genus differs from all others with which I am acquainted, that have nerveless wings, by having the superior wings doubled, by an equal fold, and at their tips a deep and obvious fissure. I have, as yet, seen only the male.

SPECIES.

C. polita. Black; feet honey-yellow.

Inhabits Indiana.

Body polished, black: *head* anteriorly rugose and bi-angulated: *antennæ* at base, excepting the first joint, piceous: *thorax* with two impressed lines: *wings* with short hairs and ciliate: *abdomen* oblong-oval, basal segment with elevated lines.

Length about one twelfth of an inch.

Taken on the window July 20.

PSILUS, Jur.

1. *P. terminatus*. Black; feet and base of the *antennæ* honey-yellow.

Inhabits Indiana.

Body black, polished, with a few, rather long, scattered hairs: *antennæ* thirteen-jointed, elongated, geniculate between the second and third joints, honey-yellow; first joint in a frontal groove; second joint elongated, subfusiform, third joint cyathiform; remaining joints moniliform, equal to the eleventh joint, which is abruptly dilated and with the twelfth equal, subquadrate, black; thirteenth joint subequal to the preceding, globose-ovate, black: *wings* with short ciliæ, and with short hairs;

nervures none; stigma triangular, black: *abdomen* dull honey-yellow at base; first segment half as long as the thorax: *feet* honey-yellow.

Length over one twentieth of an inch.

Although the wings entitle this species to a place in Jurine's *PSILUS*, yet the antennæ are entirely different from those of the type *P. elegans*, resembling considerably those of his *P. antennatus*.

2. *P. abdominàlis*. Antennæ clavate, as long as the body; black, abdomen whitish.

Inhabits Indiana.

Body black: *antennæ* broken at the second joint; first joint one fourth the whole length, whitish; second joint obconic; terminal joint ovate-fusiform, longer than the three preceding joints together: *wings* very deeply ciliated: *abdomen* whitish, particularly at base: *tarsi* whitish.

Length about one fortieth of an inch.

3. *P. apicàlis*. Antennæ at the tip of the head, which is a little prominent.

Inhabits Indiana.

Body black, polished: *antennæ* as long as the body, fuscous, with subquadrately moniliform joints; basal long joint honey-yellow; terminal joint not much longer than the preceding one; inserted at the tip of the head; beneath the antennæ is a rather broad prominence; costal nervure but little less than half the length of the wing, triangular and black at its tip: *feet* honey-yellow: *petiole* distinct.

Length one twenty-fifth of an inch.

It is probable that the present insect is related to the *P. cornutus* of Panzer, but I have not the means of comparing.

4. *P. colon*. Wings with a dusky dot before the middle.

Inhabits Indiana.

Body black, polished: *antennæ* nearly as long as the body; terminal joint as long as the first and equal to the four preceding joints together: *wings* hyaline; an oval, dusky spot a little beyond the tip of the costal nervure and extending nearly across the wing; costal nervure with its terminal half more dilated than the basal portion and blackish: *tarsi* and *anterior pair of tibiæ* honey-yellow.

Length one twenty-fifth of an inch.

Readily distinguished by the dusky wing-spot.

ANTEON, Jur.

A. tibiàlis. Black; *tibiæ* and *tarsi* dull yellowish.

Inhabits Indiana.

Body polished, black: *metathorax* punctured and with longitudinal slightly elevated lines: *tergum* towards the tip with a few, rather long black hairs: *tibiæ* and *tarsi* dull yellowish-white.

Length about one tenth of an inch.

HEDYCHRUM, Latr.

1. *H. obsolètum*. ♀ Thorax on the disk very slightly punctured; abdomen entire at tip.

Inhabits Indiana.

Body green, varied with purplish: *thorax* on the disk tinged with purple, and with sparse, slightly impressed punctures: *wings* fuliginous: *metathorax* and *pleura* with discoidal punctures, and a confluent blackish, double, in-

dented spot behind: *tergum* with a purple reflection, less obvious on the posterior segment; punctures slightly impressed, more obvious each side and on the terminal segment; terminal segment about equal to the preceding, perfectly entire at tip: *venter* bronze: *tarsi* brown.

Length less than one fourth of an inch.

Differs from *ventrâle*, Nob., which has the terminal segment slightly longer than the preceding one and very obtusely and slightly emarginate at tip, and the thoracic punctures are not sparse on the disk; the *sinuòsum*, Nob. has a deep and acute emargination at tip of the terminal segment of the tergum.

2. *H. spéculum*. ♂ Green; tergum and disk of the thorax impunctured.

Inhabits Indiana.

Body green, varied with purplish: *antennæ*, excepting the first and second joints, blackish: *head* with discoidal punctures, vertex and posterior margin impunctured: *thorax* impunctured, polished, with an impressed, abbreviated line each side of the middle: *metathorax* with discoidal punctures: *wings* fuliginous: *tergum* impunctured, polished; terminal segment hardly half as long as the preceding one, obsoletely punctured each side, at tip obtusely emarginate: *tarsi* pale honey-yellow: *venter* brassy.

Length less than three twentieths of an inch.

The smallest species I have yet met with in this country.

PYRIA, Lepel. & Serv.

P. tridens, L. & P. Encyc. Meth. CHRYSIS *carinata*, Nob. Contrib. Macl. Lyc. p. 82.

FORMICA. L.

A. First cubital cellule without recurrent nervure.

1. *F. mellea*. Honey-yellow ; scale truncate.

Inhabits Louisiana.

♂ *Body* entirely honey-yellow : *eyes* rather prominent, black, short oval : *wings* very slightly tinged with yellow ; *nervures* yellow : *scale* robust, broad, truncate, and having a slight tubercle each side before, less than half the height of the abdomen and not higher than the length of its base.

Length nine twentieths of an inch.

Sent to me by Mr. Barabino. The small discoidal cellule, so distinct in the wing of *F. rufa*, *F.*, does not exist in this species.

2. *F. lauta*. ♀ *Body* piceous, more or less varied with black ; the piceous color prevails chiefly on the stethidium and mouth : *mandibles* with larger and regular punctures ; between the antennæ a slender, impressed line : *thorax* with generally a black line each side : *scutellum* darker than the thorax : *wings* with yellowish nervures ; no recurrent nervure ; inferior nervure of the cubital cellule arising from the middle of the tip of the brachial cellule ; the terminal line of this latter cellule is nearly rectilinear and transverse ; anal nervure rectilinear at base, angularly undulated and slightly communicating with the tip of the axillary nervure : *abdomen* black ; first segment often piceous : *feet* honey-yellow : *tibiæ* and *tarsi* darker.

Length over three tenths of an inch.

♂ Entirely black, excepting the wings, which are like those of the female : the thorax has a distinct, longitudinal impressed line before, which sometimes exists in the female, but less distinct.

Length over one fifth of an inch.

Inhabits Indiana. Common.

3. *F. impàris*. ♀ *Body* light honey-yellow, impunctured: *head* small: *eyes* oval, black: *mandibles*, teeth black: *wings* very slightly tinged with fuliginous; no recurrent nervure; terminal line of the brachial cellule angulated, the anal half being oblique; anal nervure robust to its tip, arcuated from its origin, scarcely undulated, not communicating with the axillary nervure: *scale* emarginate at tip, often deeply and acutely: *tergum*, disks of the incisures a little deeper colored.

Length nearly three tenths of an inch.

♂ Very small in comparison with the female; black: *mouth* piceous: *feet* dull honey-yellow: *thighs*, excepting the knees, black.

Length less than three twentieths of an inch.

This species is common in Indiana. The great disparity in color and magnitude between the male and female, would deceive, as to their specific identity.

They appeared in great numbers on the 2d of April; the males swarmed around small bushes, alighting on the branches and leaves. The females were but few.

B. First cubital cellule with a recurrent nervure.

4. *F. séssilis*. Peduncle concealed by the abdomen.

Inhabits Indiana.

Body blackish: *mouth* dull honey-yellow: *antennæ* rather long: *thorax* with the three segments very distinctly marked: *peduncle* composed of a simple, oblong body; destitute of a scale, unless it be depressed and united to the surface of the peduncle, concealed by the first segment of the abdomen: *abdomen* projecting over the peduncle and having a deep and well defined groove beneath the first segment for its reception: *feet*, except-

ing at base, dull honey-yellow: *wings* with the discoidal cellule, small, quadrate; first cubital cellule not broader than the radial, and bounded by a right line; nervure of the second cubital cellule obsolete.

Length ♀ three twentieths of an inch: neuter about one tenth of an inch.

The projection of the superior part of the basal segment of the neuter abdomen is more remarkable than that of the female. It probably belongs to the genus *POLYERGUS*.

A variety is much paler, even honey-yellow.

5. *F. triangularis*. Discoidal cellule subtriangular; blackish-piceous.

Inhabits Indiana.

Body blackish-piceous or obscure reddish-brown: *hypostoma* convex and somewhat carinate: *mandibles* piceous: *wings* whitish; nervures pale; discoidal cellule subtriangular, the superior angle being very obtuse; first and second cubital cellules not separated by a petiole; anal nervure abruptly angulated on the anal submargin: *scale* rather thin, elevated: *tarsi* honey-yellow.

♂ *Body* darker.

Length ♀ over one tenth of an inch; ♂ about the same.

Var. α . Recurrent nervure none.

Var. β . Recurrent nervure obsolete or incomplete.

Resembles *séssilis*, Nob. but the scale is obvious; the discoidal cell is more triangular and the nervure of the 2d cubital is obvious.

6. *F. dislocata*. Yellowish; anal nervure almost dislocated at the anal emargination.

Inhabits Indiana.

Head black: *hypostoma* distinctly carinated: *front*

with an acute, longitudinal, elevated line over the insertion of each antenna and a slightly impressed line in the middle: *antennæ* and *mandibles* piceous: *thorax* honey-yellow, dusky before: *wings* tinged with fuliginous; nervures dusky and very distinct; recurrent nervure forming a quadrate cellule less than half the size of the first cubital; anal nervure abruptly angulated near the anal emargination of the edge, and almost dislocated in that part, the terminal portion being arcuated at each extremity: *scale* thick, prominent, obtuse, entire: *abdomen* blackish, with prostrate hairs, and sparse elevated ones and regular ciliæ on the edges of the segments; first segment honey-yellowish at base, without any indentation opposite the scale: *feet* honey-yellow.

♂ Trunk and scale entirely pale honey-yellowish: scapus of the antennæ, hypostoma and mouth pale yellowish: abdomen somewhat piceous.

Length three tenths, ♂ less than two fifths of an inch.

Not uncommon in the forest, running rapidly upon the branches and leaves of bushes.

7. *F. subsericea*. Black, minutely sericeous; abdomen impunctured.

Inhabits Indiana.

Body impunctured, black, very minutely sericeous: *thorax* with an impressed line before: *wings* dusky; discoidal cellule about half as large as the first cubital, a little narrower before: *scale* obtuse, or widely rounded at tip, somewhat truncate.

Length ♂ less than two fifths, ♀ over two fifths of an inch.

My specimen of the female has the legs entirely black; and of two males one has the legs honey-yellow, with the exception only of the base of the coxæ; and the other

also with honey-yellow legs has the coxæ, trochanters and even the base of the thighs black. It is one of the large species called "wood ants."

ATTA.

A. fervens, Drury, vol. III. p. 58, pl. 42, f. 3. I obtained a female of this species in Mexico, and on comparison with an individual of the *cephalotes* sent me by Dr. Klug, I find it to be a closely allied species. The color of the wings and their neuration are the same; but the body is more hairy or downy, and its brown color is not so deep, (the color is much too black in my copy of Drury, agreeing better with the *cephalotes*, than with Drury's description.) The head is not so large, so deeply indented above, nor so acute at the posterior angles. The impressed, longitudinal line on the anterior part of the thorax, so distinct in *cephalotes* is not, or is scarcely visible in *fervens*. Judging from these two specimens, I am convinced that the *fervens* ought to be admitted into the modern books as a distinct species.

MYRMICA, Latr. Klug.

1. *M. lineolata*. ♀ Black, more or less varied with piceous: *antennæ* subclavate; at tip clothed with dense, short, whitish hairs: *front* with a longitudinal impressed line, terminating before in a small triangular impression between the *antennæ*; the whole head, excepting the vertex, occiput and *antennæ*, striate with close-set very small lines, which are rather larger on the mandibles: *wings* hyaline; nervures yellowish-brown; small cubital cellule none: anterior segment of the petiole deeply striate

longitudinally each side, decidedly longer than the second which is subemarginate above: *abdomen* oval, truncate, subemarginate at base: *pleura* striate like the head behind.

Length over three tenths of an inch.

♂ much more slender; transverse incisure between the wings more obvious; segments of the petiole not so deeply divided.

Length over three twentieths of an inch.

Neuter. Piceous varying to black; abdomen cordate, almost always black.

Length under three twentieths of an inch.

This species is very common in various parts of the United States even in houses, and may be observed, by every one, going in procession. The radial cellule is slender and elongated, the including nervures being nearly parallel; the inner nervure does not quite attain the edge. The first cubital cellule is hardly larger than the discoidal cellule, the recurrent nervure of which enters the first cubital at the middle. Second cubital extending to the tip of the wing.

2. *M. corrugata*. Honey-yellow; wings with three complete cubital cellules.

Inhabits Indiana.

♂ *Body* dark honey-yellow, almost piceous: *antennæ* whitish; first joint not longer than the second and third together; second joint rounded, thickest: *metathorax* with two obtuse tubercles instead of spines: *wings* hyaline; nervures and stigma pale yellowish; second cubital cellule complete, nearly as long as the first cubital and petiolated from the apical angle of the discoidal cellule, which is oblong subquadrate; the descending nervure from the stigma enters the second cubital: *abdomen*, first

joint somewhat gibbous at tip; second segment rounded: feet whitish.

Length over three twentieths of an inch.

♀ Somewhat darker than the male: metathoracic tubercles spiniform; first abdominal segment almost emarginate at the superior tip; second segment short and wide; first joint of the antennæ long; head anteriorly with numerous, approximate, impressed lines.

Length one fifth of an inch.

Appeared on the wing July 19th.

3. *M. opposita*.

♂ *Body* black, minutely and densely granulated: *antennæ* dusky; pale yellowish towards the tip; first joint slightly longer than the second and third together; second joint obtusely obconic: *hypostoma* convex: *mandibles* piceous: *thorax* with a glabrous line extending to the middle: *wings* dusky; second cubital cellule turbinate, petiolated from the angle of the discoidal cellule, its longitudinal nervures equally curved; nervure separating the second and third cellules in a direct line with the nervure from the stigma; discoidal cellule quadrate: *metathorax*, spines short, acute: *abdomen* polished, not obviously granulated; second node with an impressed line above, dividing the surface into three slight lobes: *venter* and *feet* tinged with piceous.

Length over three twentieths of an inch.

Neuter. Dull honey-yellow: *head* minutely lineated: *antennæ*, first joint long: *stethidium* rather largely granulated; spines prominent, acute, reaching nearly to the tip of the first node: *abdomen* glabrous, polished; second node without impressed line.

Length less than one fifth of an inch.

4. *M. inflecta*. Black; wings dusky; discoidal cellule oblong.

Inhabits Indiana.

♂ *Body* a little hairy, lineated with impressed lines, which are more distinct on the metathorax, black, slightly tinged with piceous: *antennæ* with a piceous tinge; first joint not longer than the three following ones together: *wings* dusky; discoidal nearly as long again as broad; second cubital sessile, the separating nervure from the first cubital rather abruptly inflected towards the base, and nearer the base almost obsolete, the other including nervure rectilinear; separating nervures between the first cubital and radial, and the second and third cubitals, forming a broken or slightly dislocated line, the former almost entering the third cubital: *metathorax* without lineations on the posterior declivity, the spines distinct: *abdomen* polished, without lines; petiolar segments or nodes very distinct, subequal, the posterior one rather larger and spherical: *feet* more obviously tinged with piceous at base.

Length less than one fifth of an inch.

The connexion between the radial and second cubital is very slightly petiolated, and the separating nervure between the first and second cubitals, is almost or quite angulated, and is less distinct towards its junction with the discoidal cellule.

5. *M. dimidiata*. *Body* pale yellowish: *thorax* somewhat tinged with piceous: *wings* with a very slight tinge of yellowish; discoidal cellule in length nearly twice its breadth; separating nervure between the first and second cubital cellules abruptly ending at the middle of the usual length, being entirely wanting on the basal half.

Length over one fifth of an inch.

6. *M. molésta*. ♀ *Body* pale honey-yellow, immaculate: *antennæ* with the two ultimate joints much larger

than the others ; the terminal one as large again as the penultimate one : *wings* whitish ; smaller cubital cellule none ; discoidal cellule very small, less than half as large as the first cubital ; first cubital receiving the recurrent nervure near its base ; nervure of the radial cellule terminating abruptly before the tip ; the two other apical nervures feebly traced towards the tip and not reaching the tip : *metathorax* unarmed.

Length less than three twentieths of an inch.

This is called the "little yellow ant," and is frequently found in houses in great numbers. They sometimes eat vegetable food, and some of my garden seeds have severely suffered by their attacks. They also devour grease, olive oil, &c. Their sting is like the puncture of a very fine needle. I placed a piece of meat on a window board frequented by these little depredators ; it was soon absolutely covered by them, and thus enabled me to destroy thousands, every few hours that I returned to examine the bait, for several days, during which time their apparent numbers scarcely diminished.

7. *M. minuta*. Pale yellowish ; destitute of spines on the metathorax.

Inhabits Indiana.

Body whitish-yellow : *head* rather large : *antennæ*, terminal joint three times as long as the preceding one : *eyes* small, black and placed low down : *peduncle* rather long : *abdomen* oval ; very pale honey-yellow.

Length (neuter) less than three fifths of an inch. [Is it not the same as the *molésta*? Editors.]

This may possibly prove to be an *ATTA*. I obtained only a single specimen, which was found entangled in the nails and tarsi of a specimen of *GORYTES phaleratus*, Nob. in my cabinet. It does not appear to have a spine on any part, but there are a few scattered hairs.

MUTILLA, Linn.

* *Eyes emarginate.*

1. *M. contrácta*. Black; above ferruginous; wings blackish.

Inhabits Arkansaw and Missouri.

Body entirely black beneath, inclusive of the feet: *above* ferruginous-yellowish: *head* black below the line of the eyes: *metathorax*, *petiole*, anterior and lateral declivities of the abdomen black. ♂ anterior half of the first segment of the tergum black: *wings* blackish-fuliginous, somewhat paler in the middle; second cubital cellule wide beneath and contracted but not angulated at the radial cellule; third cubital cellule so much contracted at base that its extreme nervure is opposite to and joins the recurrent nervure.

Length about half an inch.

The neuration of the wings somewhat resembles that of the *maura*, F. and is nearly the same as that of the *erythrina*, Klug, of Mexico. I obtained several specimens from Missouri, and Mr. Nuttall gave me one from Arkansaw.

2. *M. hexàgona*. ♂ Black; abdomen honey-yellow.

Inhabits Indiana and Missouri.

Body black, much punctured, and with a slight reflection of silvery hairs, particularly on the head, on the anterior segment of the thorax and on the metathorax: *thorax* with four slight, impressed lines, and numerous confluent punctures: *metathorax* reticulate with punctures, and with a slight groove from the base nearly to the middle: *wings* dark purplish-fuliginous; radial cellule rounded at tip, not truncate; third cubital cellule

rounded hexangular, with abbreviated nervures from the two outer angles; a white line passes through the cubital cellules, and a white spot is in the outer discoidal cellule: *abdomen* rufous or bright honey-yellow; first or petiole segment black: *feet* silvery hairy.

Length from half an inch to nearly seven tenths.

The neururation of the wings is much like that of the *M. Itálica*, F. even to the white line and small spot; but the third cubital cellule is still more regularly hexagonal and the radial cellule is not truncate at tip like those of the *Itálica* and *melanura*, Klug, and many other species.

3. *M. vigilans*. ♂ Black; large abdominal segment, excepting its anterior and posterior margins, rufous.

Inhabits Pennsylvania.

Body black; with large, dense punctures: *thorax* with three, somewhat elevated lines and a slight appearance of another each side: *wing-scale* convex, lineate on the margin; the outer and hinder margins lineated with minute, elevated, parallel lines: *wings* purplish-black; radial cellule truncate at tip; first cubital cellule bisected by a white line; second cubital gradually and regularly narrowed to the base, with an abbreviated white line at tip; third cubital hexagonal, not contracted, the two exterior angles with abbreviated nervures; exterior discoidal cellule with a white dot: *metathorax* discoidally punctured; dorsal groove extending beyond the middle; large basal segment of the abdomen with large remote punctures, smaller and closer on the sides, bright rufous, its basal and terminal margins black.

Length over three fifths of an inch.

Resembles *M. Itálica*, F. but differs in greater depth of color, in the lineations of the wing-scale, greater length

of the metathoracic groove and the larger and distant puncturing of the larger segment of the tergum. It is also larger.

** *Eyes entire or the emargination obsolete.*

EPHUTA.

4. *M. erythrina*, Klug. Scarlet-red, beneath black; wings blackish.

Inhabits Mexico.

Body with dense, bright scarlet-red hairs above; beneath black: *antennæ* and inferior part of the head black: *wings* black-violaceous; radial cellule truncate at tip; third cubital cellule pentagonal, contracted on the anal side, its apical nervures almost obsolete: *metathorax* black: *abdomen*, anterior declivity of the basal segment extending in an angle on the superior portion of the segment, black; petiole black: *venter* with a slight scarlet-red band rather behind the middle. ♀ with a black dot rather behind the middle of the tergum.

Length about nine twentieths of an inch.

I obtained a female of this species in Mexico, and Dr. Klug has favored me with the sexes, differing in no respect from mine, except in being a little larger.

5. *M. scrùpea*. ♂ Black; with dilated punctures; tergum with a whitish band.

Inhabits Indiana.

Body black, a little hairy, and having large punctures, which on the stethidium and head are confluent and discoidal: *mandibles* piceous before the tip: *wing-scale* also punctured: *wings* slightly dusky; nervures blackish; stigma not distinct, or none; second cubital cellule larger than the first; the third largest; separating nerv-

ure of the 2d and 3d cellules rectilinear: *metathorax* reticulate with larger discoidal punctures and having at base an oblong triangle: *tergum*, first segment short, abruptly smaller than the second, petioliform, with discoidal punctures, hairy, abrupt before, and on the anterior inferior tip having an angle on each side; second segment with the punctures rather distant, profound, with a band of whitish hairs on the posterior margin; remaining segments with numerous whitish hairs, and a dorsal elevated line.

Length less than three tenths of an inch.

Rather smaller than *nigrìta*, F. and may be distinguished by the more dilated punctures; the basal segment of the abdomen being suddenly smaller than the second, and shorter than in *nigrìta*; by the abdominal band, and different configuration of the wing cellules. The emargination of the eyes is very small and acute.

6. *M. gibbòsa*. Black; petiole as long as the second abdominal segment; wings dusky at tip.

Inhabits Indiana.

♂ *Body* black; with numerous gray, but not concealing, hairs; densely punctured; punctures large on the head and trunk: *wings* hyaline; at tip and including the radial cellule, fuliginous; stigma moderate; third cubital cellule incomplete: *abdomen*, first segment petioliform, as long as the second, and somewhat gibbous at tip, distinguished from the second by a deep stricture.

Length over three tenths of an inch.

Resembles *scrùpea*, Nob., but is larger, has a stigma and longer petiole. It is also like *nigrìta*, F. but is larger, with a much more obvious stigma; wings dusky at tip; the petiole more gibbous at tip, &c.

TENGYRA, Latr. Klug.

T. stygia. Black ; mandibles piceous at tip.

Inhabits Indiana.

Body entirely black, immaculate, punctured: *mandibles* piceous at tip ; near the tip one-toothed: *wings* hyaline ; nervures black, separating nervure of the first and second cubital cellules wanting: *stigma* obvious, black: *abdomen*, segments contracted near the incisures: *oviduct* not extending beyond the terminal processes and concealed beneath them.

Length two fifths of an inch.

Resembles *T. sanvitàli*, Latr., but is larger, with a much larger stigma, and each abdominal segment is much more contracted before its posterior incisure.

METHOCA, Latr.

M. bicolor. ♀ Rufous ; head and part of the tergum black.

Inhabits Indiana.

Body pale yellowish-rufous, polished: *head* black: *antennæ* rufous, terminal joints piceous: *mandibles* and *palpi* rufous: *thorax*, segments subequal; anterior and posterior ones convex, subovate, intermediate one with two slightly elevated convexities: *abdomen* ovate-subfusiform: *tergum* with a transverse, triangular black spot at the tip of the second segment, another on the third, the remaining ones confluent.

Length one fourth of an inch.

The abdomen does not contract abruptly to the petiole but subsides gradually. Vander Linden says that the species of this genus are the females of species of TENGYRA. [Ann. des Sc. Nat. Jan. 1829, p. 48.]

TIPHIA, Fabr. Latr.

T. tarda. *Body* polished, black, punctured: *mandibles* piceous in the middle: *metathorax* with three longitudinal lines, and the minute lines on the margin of the posterior declivity very regular and obvious: *wings* tinged with honey-yellow; *nervures* brown; *stigma* black: *incisure* of the first abdominal segment not very much contracted; second segment at its basal margin with the minute longitudinal lines very regular and distinct: *palpi* dull piceous.

Inhabits Indiana.

Length about three tenths of an inch.

The smallest species I have seen, and may be distinguished from its American congeners by its size. The male has the metathoracic lineations more distinct. It is smaller than the *femorata*, of Europe.

MYZINE, Latr. Klug.

1. *M. hamatus.* Black; thorax spotted and abdominal segments margined with yellow; the latter not abruptly emarginate each side.

Inhabits Indiana.

♂ *Body* black, polished, with small punctures; *nasus*, *labrum*, tip of the basal joint of the antennæ, two spots between the antennæ and base of the mandibles yellow: *collar* on the anterior margin, interrupted in the middle and on the posterior margin, yellow: *thorax* with a spot in the middle emarginate before, yellow: *metathorax*, a transverse yellow spot near the scutel and an obscure yellow, longitudinal spot each side at tip: *tergum* with a perlaceous iridescence; on each segment a slender yel-

low band on the posterior submargin, a little undulated obtusely on its anterior edge, not abruptly emarginated on each side; on the anterior submargins of the segments an impressed transverse line: *pleura*, a small yellow spot beneath each wing: *wings* hyaline, a slight dusky margin at tip: *feet*, coxæ with a yellow spot: *tarsi*, excepting their tips; *thighs* at tip or a line above, and anterior pairs of tibiæ yellow: *venter* five spotted each side.

Length from three fifths to seven tenths of an inch.

This is so much like *M. subulàta*, Nob. that it is not without much hesitation that I give it as distinct. It is, however, much larger and more robust, and the form of the bands of the tergum is different; those of the *subulàta* being abruptly notched each side of the middle as in the *valvulus*, Fabr., whereas in the bands of the present species, instead of the abrupt notch, is an obtuse and dilated undulation of the edge.

A variety occurs in Missouri, of which the wings are yellowish, and the second recurrent nervure is confluent with the dividing nervure of the second and third cubital cellule.

2. *M. subulàtus*, Nob. (*Sapyga*, Western Quarterly Reporter.) A variety inhabits Mexico in which the abdominal bands are less abruptly emarginate each side.

SAPYGA, Latr.

S. centràta. Black, with yellow spots; abdomen 5-banded.

Inhabits United States.

Body black: *head* ———: *thorax* with a transverse spot each side before, two on the middle, one beneath the superior wing, and two large ones behind, yellow:

wings hyaline; nervures fuscous: *stigma* brown: *radial cellule* fuliginous: *tergum*, each segment excepting the first, with a yellow, dilated band on its middle and more or less interrupted: *venter* with a transverse spot each side on the 3d, 4th and 5th segments: *feet* yellow: *thighs*, except at the tip, black: *tarsi* honey-yellow.

Length about three tenths of an inch.

Var.? *α*. Spots ferruginous.

Length nearly two fifths of an inch.

I have hardly a doubt that the individual here given as a variety is a distinct species; but as my specimens are much mutilated, I am unwilling to venture to separate them.

POMPILUS, Fabr. Latr.

1. *P. calipterus*. Wings bifasciate; antennæ and feet honey-yellow.

Inhabits Indiana.

Body black, polished, slightly pruinose: *antennæ* honey-yellow, a little dusky towards the tip: *nasus*, at tip, *mandibles* and *palpi* honey-yellow: *wings* hyaline, with a blackish band on the middle and a much broader one crossing the second and third cubital cellules; the latter hardly reaches the anal margin; basal series of transverse nervures dislocated at the externo-medial nervure: *feet* honey-yellow; *tarsi* with the ultimate joint blackish; intermediate and posterior pairs of feet more or less varied with blackish.

Length three tenths of an inch.

A very pretty species, of which I have as yet obtained but two specimens. It is probably allied to the *bifasciatus*, Fabr.

2. *P. architectus*. Dark purple ; wings hyaline.

Inhabits Ohio.

♀ *Body* dark bluish-purple, somewhat hairy : *head* black in front, with short, dense, yellowish-cinereous hair : *mandibles* at tip piceous : *wing-scale* dark piceous : *wings* hyaline, nervures blackish : second and third cubital cells not unusually contracted at the radial cellule, but almost equal in that part : *feet* black : *tergum*, anal segment polished.

Length about three tenths of an inch.

This insect forms neat mud nests under prostrate logs and stones. They consist of short cylinders, agglutinated together alternately, and each composed of little pellets of mud, compressed, or rather appressed to each other. When these are adjusted to their places on the edge of the cylinder, each has a fusiform shape and the slender end of one laps over that of another, and the convex part of the pellet of the succeeding layer is placed against this duplicature so as to restore the equality of the edge. This arrangement gives the surface an alternate appearance.

The basal series of transverse nervures is very slightly dislocated.

3. *P. biguttatus*, Fabr. The individual described by Fabricius appears to be a female. Coquebert gives its length at nine twentieths of an inch, but it sometimes exceeds half an inch in length. The male is over three tenths of an inch in length ; it is destitute of the anterior white striga of the thorax, and the tip of the tergum has a white reflection ; the posterior half of the metathorax also has a white reflection. The basal series of transverse nervures is not dislocated, in this species.

4. *P. lepidus*. Black ; abdomen and wings purplish.

Inhabits Mexico.

♂ *Body* black, slightly sericeous: *wings* dark purplish; second and third cubital cellules a little narrowed at the radial cellule, particularly the latter, which is less than two thirds the length of the second cellule, in that part; basal series of transverse nervures not dislocated: *meta-thorax* with a very slight reflection of purplish, and without any impressed line; the posterior edge obviously reflected: *tergum* with a distinct purplish reflection: *beneath* black; in a favorable light a very slight purplish reflection may be perceived on the thighs.

Length two fifths of an inch.

5. *P. 5-notatus*. Tergum on the second segment with two white spots; third segment with a white interrupted band.

Inhabits Indiana.

♀ *Body* black: *head* with a slight white reflection before; and a very slender white line on the posterior orbit: *wings* on the apical margin black; basal series of transverse nervures not dislocated: *tergum* with a white dot each side before the middle, on the second segment; third segment with a white, interrupted band at base; on the fourth segment at base, is an obsolete, whitish spot each side, sometimes wanting; anal segment with a white spot at base.

Length two fifths of an inch.

Resembles *biguttatus*, Fabr. but is distinguished by the two or four more white spots on the tergum, as well as by the white spot on the anal segment.

7. *P. mellipes*. Black; feet yellowish rufous.

Inhabits Indiana.

♀ *Body* black, somewhat sericeous with silvery hairs: *antennæ*, joints long, distinct: *mandibles* piceous at tip:

palpi whitish: *wings* hyaline; third cubital cellule very little contracted before, larger than the second; first recurrent nervure entering the second cellule at the middle; basal series of transverse nervures dislocated: *feet* bright honey-yellow, the coxæ only black.

Length over two fifths of an inch.

8. *P. (Miscus) cornicus*. Black; wings a little dusky; basal line of transverse nervures widely dislocated by the externo-medial nervure.

Inhabits Indiana.

♀ *Body* black, immaculate: *wings* dusky; nervures blackish; second cubital cellule somewhat conic, the anterior basal nervure entering the radial cellule in a much arcuated direction, so as not to form an angle with it; third cubital cellule not much contracted anteriorly; basal series of transverse nervures widely dislocated, that portion which is between the externo-medial and anal nervures is equal to the length of the dislocation: *abdomen* polished: *mandibles* at tip piceous.

Length less than one fifth of an inch.

♂ *Wings* less obscure: anterior tibiæ and tarsi obsoletely dull yellowish.

Length one fourth of an inch.

9. *P. (Miscus) petiolatus*. Tergum fulvous near the base; third cubital cellule petiolated.

Inhabits Indiana.

♀ *Body* black, a little sericeous: *wings* blackish; third cubital cellule decidedly petiolated: *tergum* with the terminal half of the first segment, and the greater portion of the second segment yellowish-fulvous.

Length over two fifths of an inch.

The petiolated character of the third cubital cellule resembles that of the *P. niger*, Fabr. The basal series of transverse nervures is distinctly dislocated.

[To be continued.]