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J. C. Crawford
United States National Museum

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In this paper are included, in addition to the descriptions of new parasites of economic importance, records of some North Dakota bees from O. A. Stevens, a series of specimens having been given to the United States National Museum. All the illustrations, with the exception of those of *G. hagenowi*, were made with a camera lucida.

Superfamily APOIDEA.

MELISSODES FOXI, new species.

Melissodes trifasciata Fox, female, Trans. Amer. Ent. Soc., vol. 18, 1891, p. 347, not of Cresson.

Melissodes mimica Fox, male, Trans. Amer. Ent. Soc., vol. 18, 1891, p. 347, not of Cresson.

Female.—Length about 10–11 mm. Similar to *M. trifasciata* Cresson, but the pubescence of head and thorax ochraceous instead of griseous, the plurae with no dark hairs; front and middle tibiae and middle and hind femora, in addition to the tarsi and hind tibiae, fulvous; abdominal hair bands more ochraceous.

Male.—Length about 8 mm. Similar to the female, but with the clypeus, labrum, and base of mandibles lemon yellow; legs, except coxae and trochanters, fulvous.

Habitat.—Portland, Jamaica.

Type.—Cat. No. 18179, U.S.N.M. (female).

Four males and four females from the Fox collection, three of the males (paratypes) being labeled only "Jamaica."

In the collections of the United States National Museum are two females from Utuado, Porto Rico, collected in January, 1899, by Mr. August Busck, which, while they have the thorax clothed with griseous rather than fulvous pubescence and the abdomen with a metallic luster, are certainly the true *M. trifasciata* of Cresson, and are the ones used in the comparison made in the above description.

M. mimica Cresson has, as a reexamination of the type by Mr. E. T. Cresson, jr., shows, the clypeus only, yellow. *M. rufodentata* Fabricino, male, is very similar in general appearance to *foxi* but the dorsum of the mesonotum is without dark hair.

MEGACHILE DAVIDSONI Cockerell.

The United States National Museum has four females and two males of this from Los Angeles County, California, June, collection Coquillett, and a male and female from Roosevelt, California, July 1, 1913, J. E. Graf, collector. The male has the sculpture of the female, but lacks the remarkable projection on the clypeus as well as the basal tooth of the mandibles. In the male the clypeus has at apex a short median carina and the lateral angles are produced; the mandibles on the lower margin slightly beyond the middle have a large tooth which on its distad margin is furnished with a golden fringe; the anterior coxae have a long spine; joints one and two of the anterior tarsi are dilated, joint 3 distinctly longer than first or second, the fourth slightly shorter and the fifth slightly longer than third; last dorsal segment strongly notched at apex, and with a tooth on each side at base.

OSMIA GEORGICA Cresson.

Osmia louisiana COCKERELL.

A specimen of this species collected at Plummer's Island, Maryland, May 15, 1914, on *Phacelia dubia* (Crawford, collector) has been compared with the type by Mr. Rohwer and it is identical with Professor Cockerell's type.

PROTOXAEA GLORIOSA (Fox).

Five females from Sabinal, Texas, all collected by Mr. F. C. Pratt; two were taken June 10, 1910, one of them "on *Salvia;*" three June 13, 1910, one "on *Salvia,*" two "on *Salvia pitcheri;*" one male from Barstow, Texas, A. W. Morrill, collector, marked "Aug. 11–12, 1905."

These specimens did not correspond in all particulars with the original description and Mr. J. R. Malloch was kind enough to examine the types and found that the furrow from the anterior ocellus extends only to lower margin of antennal sockets; that the furrow on the labrum is not always distinct, that the punctures of the clypeus medially are finer and sparser than elsewhere and do not make transverse rugae, and that the depressed apical margins of the abdominal segments are greenish.

This agrees perfectly with the specimens before me. In them the labrum is best described as being medially longitudinally rugose and the clypeus as having a median, longitudinal, shiny, sparsely punctured line.

PROTOXAEA TEXANA (Friese).

Victoria, Texas, "9.8.11" in cotton field, J. D. Mitchell, one male.

CALLIOPSIS ABDOMINALIS Cresson.

Seventy-four specimens from Cotulla, Rosser, College Station, Calvert, Hallettsville, Clarendon, Wolf City, and Dallas, Texas, indicate that the normal form has the scutellum and metanotum together

with more or less of the propodeum fulvous. The species varies considerably, as some specimens have the mesonotum and part of the plurae fulvous, and the black on the abdomen is also sometimes almost lacking. In none of the females of the series before me are the scutellum and metanotum black and in only two males is this true. In a few males these sclerites are only obscurely reddish.

PANURGINUS PIERCEI Crawford.

Mr. O. A. Stevens has this species from Fargo, Dickinson, and Valley City, North Dakota, taken on *Helianthus annuus, H. petiolaris, H. maximiliani, H. scaberrimus,* and *Grindelia squarrosa.* Of the four males taken, three have normal face markings, but the fourth had the dog-ear marks yellow. In two of these specimens the depressed median line on the clypeus is not very distinct

PANURGINUS MALVASTRI Swenk and Cockerell.

Dickenson, North Dakota, on *Malvastrum coccineum* July 4, 1912, two females (C. H. Waldron, collector) in the collection of Mr. O. A. Stevens, one of which has been given to the United States National Museum.

PANURGINUS SIMULANS Swenk and Cockerell.

Fargo, North Dakota, on *Helianthus annus* (cultivated), *H. maximiliani,* 9 males, 11 females; on *Taraxicum taraxicum* 1 male, Dickinson, North Dakota, on *H. petiolaris* 1 male. All from the collection of O. A. Stevens. Of the 10 males only 3 have any yellow on the front of the scape.

PANURGINUS RENIMACULATUS Cockerell.

Mr. Stevens took the sexes of this species together, and the male is not the one assigned to the species by Swenk and Cockerell. The true male resembles that of *P. nebrascensis* very closely but has the flagellum light yellowish-red beneath (in *nebrascensis* it is dark or at most obscurely reddish).

Mr. Stevens took 30 females at Fargo, North Dakota, on *Aster exiguus, A. chinensis, A. paniculatus, Grindelia squarrosa,* and *Boltonia asteroides* and one at Grand Forks on *G. squarrosa;* 15 males at Fargo and one at Grand Forks on *G. squarrosa;* also one at Dickinson on *H. petiolaris.*

PANURGINUS INNUPTUS Cockerell.

There is in the collection of the United States National Museum one male which I collected at West Point, Nebraska, on *Bidens,* which has the labrun yellow. Mr. Stevens took this species and also *P. nebrascensis* at Fargo, North Dakota.

In his collection there are also some females which do not belong to any of the above species, so that there are still some forms to be recorded from his region.

HALICTUS MARINUS Crawford.

On August 8, 1913, Mr. Frederick Knab took at Virginia Beach, Virginia, four males and two females of this species. He stated that the species was abundant on grasses on the beach just above the high tide limit.

AUGOCHLORA SORDISCUTIS Vachal.

The collections contain several females from San Jose, Costa Rica (Crawford, collector). One of the original series was sent to Mr. Vachal, and the determination was made by him.

Superfamily CYNIPOIDEA.

Genus XYALOSEMA Dalla Torre and Kieffer.

Solenaspis ASHMEAD.

In the table of genera by Dalla Torre and Kieffer [1] there are several characters, which a reexamination of the genotype shows are incorrect. The eyes are hairy, the marginal cell is open along the anterior border, and the scutellum does not possess a median furrow but rather a subdepressed area bounded on each side by an indistinct longitudinal carina. In some specimens of *X. bifoveolata* Cresson from the West Indies these two carinae are very distinct.

XYALOSEMA BIFOLEATA (Cresson).

This species described in the genus *Aspicera* must be transferred to this genus.

ANDRICUS CHAMPIONI Cameron.

Cynips championi CAMERON, Biol. Cent. Amer. Hym., vol. 1, p. 70.
Andricus championi ASHMEAD, Ent. News, vol. 10, 1899, p. 193.
Cynips ashmeadi DALLA TORRE and KIEFFER, Das Tierreich, fasc. 24, 1910, p. 440.

Dr. A. Duges in a letter to Dr. L. O. Howard wrote that Ashmead was in error in stating that his specimens came from the roots of oak, that on the contrary they came from twigs. It was due to this error that Dalla Torre and Kieffer considered that the Ashmead material must be another species and gave a new name for it.

Superfamily SERPHIDOIDEA.

HEXAPLASTA MARLATTI, new species.

Female.—Length about 1.25 mm. Dark chestnut brown with the head and apex of the abdomen somewhat darker; legs, including coxae, almost honey color; base of antennae almost the same as legs, the club brownish, pedicel distinctly shorter than the scape, first joint of funicle almost twice as long as pedicel (fig. 1); scutellum,

[1] Das Tierreich, Lief. 24, p. 73, 1910.

except elevation, irregularly rugose, the elevation at base with a large fovea and in front of it two large punctures on each lateral margin; wings hyaline, veins light yellowish, first abscissa of the radius distinctly shorter than the second.

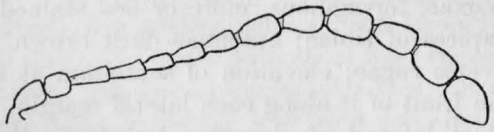

FIG. 1.—HEXAPLASTA MARLATTI. FEMALE ANTENNA.

Male.—Length about 1.12 mm.; antennae about 1.5 mm. Similar to the female but darker in color; joints of the funicle almost three times as long as broad (fig. 2).

Type-locality.—Warrenton, Virginia.

Described from two females and three males reared by Mr. C. L. Marlatt from cow dung with *Haematobia* under dates September 10, 1889 (the types and two paratypes), and September 13, 1889, and recorded under Bureau of Entomology number 4285/22.

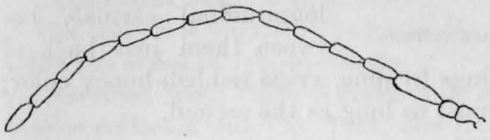

FIG. 2.—HEXAPLASTA MARLATTI. MALE ANTENNA.

Type.—Cat. No. 18296, U.S.N.M.

The species is named in honor of the collector.

The antennal drawings are both from the type-specimens and were made with a camera lucida from slide mounts.

HEXAPLASTA FUNGICOLA, new species.

Female.—Length about 1.25 mm. Black, abdomen basally, especially on sides, dark reddish; legs, including coxae, light brown, femora and tibiae slightly darker; antennae reddish brown, club somewhat darker, scape short, the pedicel almost as long as scape, slightly shorter than the first joint of the funicle (fig. 3); scutellum, except elevation, irregularly rugose, elevation of scutellum with a large fovea apicad and in front of it two large punctures on each lateral margin; wings hyaline, the veins almost whitish, first abscissa of the radius very slightly shorter than the second.

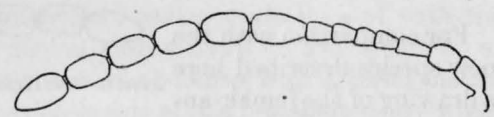

FIG. 3.—HEXAPLASTA FUNGICOLA. ANTENNA OF FEMALE.

Male.—Length about 1 mm.; antennae about 1.25 mm. Similar to the female, except in secondary sexual characters; joints of the funicle about twice as long as broad (fig. 4).

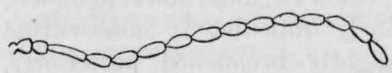

FIG. 4.—HEXAPLASTA FUNGICOLA. ANTENNA OF MALE.

Type-locality.—Washington, District of Columbia.

Type.—Cat. No. 18297, U.S.N.M.

Described from eight females and seven males from a large series reared from Dipterous larvae in mushrooms, *Russula pectinata*, *R. roseipes*, and *Armillaria mellea*, collected July 3–August 30, by Mr. C. H. Popenoe and Miss M. T. Van Horn.

HEXAPLASTA WEBSTERI, new species.

Female.—Length, about 1.75 mm. Black, the legs, including coxae, ferruginous, more or less stained with dusky on femora and apices of tibiae; antennae dark brown (fig. 5); occiput with transverse rugae; elevation of scutellum at apex with a large fovea and in front of it along each lateral margin, two large punctures; scutellum laterad of elevation longitudinally rugose, the rugae slightly curved and subparallel with the sides of the elevation; scutellum apicad of elevation irregularly rugose; propodeum with two rather widely separated longitudinal carinae, between them just back of middle a large depression; wings hyaline, veins reddish-honey color; first abscissa of the radius almost as long as the second.

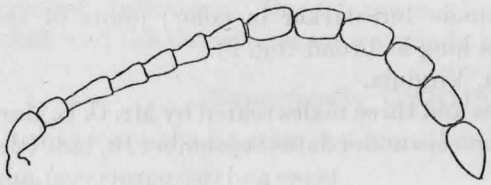

FIG. 5.—HEXAPLASTA WEBSTERI. FEMALE ANTENNA.

Habitat.—Wellington, Kansas.

Host.—*Euxesta nitidiventris.*

Type.—Cat. No. 18295, U.S.N.M.

Described from three specimens under Bureau of Entomology, United States Department of Agriculture. Webster No. 7327, H. T. Osborn, collector.

The species is named after Prof. F. M. Webster.

The sketch of the antenna is from the right antenna of the type, mounted in balsam.

HEXAPLASTA ZIGZAG Riley.

For comparison with the new species described here a drawing of the female antenna, made from one of the type series, is given (fig. 6).

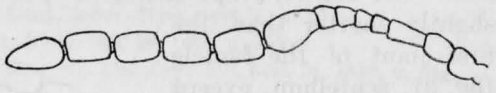

FIG. 6.—HEXAPLASTA ZIGZAG RILEY. ANTENNA OF FEMALE.

FIGITES POPENOEI, new species.

Female.—Length, about 2.5 mm. Black; antennae, except scape, red; pedicel slightly longer than broad, first joint of funicle as long as scape, second very slightly shorter than the first, the following shorter, subequal in length, the last joint about as long as the first; face above antennae finely reticulated, below rugulose and reticulated, post-vortex rugulose, post-orbits finely reticulated; mesoscutum smooth, parapsidal furrows very slightly broadened posteriorly, between them at apex an elongate triangular depression; mesoscutum at base with two indistinct lines extending caudad about half the length of scutum, parapsidal areas at outer edge with longitudinal furrow, the disk with a longitudinal elevated carinate line, scutellum

irregularly rugose, the foveae at base separated by a rather wide wall, rugae on middle of scutellum somewhat elevated; legs, except the almost black coxae, reddish, the hind femora brown; wings hyaline, the veins almost colorless; first abdominal segment strongly longitudinally rugose, second segment at base with short finer rugae.

Male.—Length, about 2.5 mm. Similar to the female; face below antennae with finer sculpture than in female and with two large smooth spots; pedicel globular, first joint of funicle longer than the scape, second joint of funicle indistinctly shorter than the first, the following joints almost subequal in length, the last joint slightly longer than the preceding; legs somewhat darker in the female; second abdominal segment without carinae.

Type-locality.—Washington, District of Columbia.

Type.—Cat. No. 18293, U.S.N.M.

The species is named in honor of Mr. C. H. Popenoe, who accumulated the series of fungus insects.

Described from three females and one male reared from *Boletus bicolor* collected July 23, 1912, one female issuing August 10, 1912, the other specimen, September 9, 1912.

Differs from the description of *F. albinervis* in having the posterior orbits not transversely striate and in the second joint of the funicle being about as long as the first.

ZELOTYPA FUNGICOLA, new species.

Female.—Length, about 2.5 mm. Very dark brown, with the legs, including coxae, and the scape and pedicel light yellow; rest of antennae light brown; pedicel slightly longer than broad, shorter than first joint of funicle but about as long as second joint of funicle; petiole, seen from above, somewhat swollen medially and with the carinae almost absent, the medial carina more or less apparent at base and at apex; second segment of abdomen with a basal medial longitudinal depression and on each side of it a few short ones; wings almost hyaline, marginal cell short, about twice as long as the marginal vein, recurrent nervure obsolete, represented only by a darkened line.

Male.—Length, about 2 mm. Similar to the female but the first three joints of the antennae yellowish, the pedicel almost globular, first joint of the funicle strongly excised beneath, antennae not reaching to apex of petiole, petiole slightly shorter than in female, more distinctly swollen and with the dorsal carinae more indistinct; recurrent nervure present.

Type-locality.—Clarendon, Virginia.

Described from numerous specimens reared from Dipterous larvae in *Boletus felleus* collected October 6, 1911, by Mr. B. A. Reynolds.

Type.—Cat. No. 18294, U.S.N.M.

This species differs from all those described by Ashmead in having the petiole above not striate and by its being swollen medially.

Genus GENIOCERUS Ratzeburg.

To this genus Kourdumoff assigns those species formerly referred to the genus *Tetrastichus*, which have more than one bristle on the submarginal vein. This is unsatisfactory, since it brings together species which have from one to four ring joints in the antennae. In many of these species, the ring joints are so minute as to appear as one unless resolved under a very high power. To illustrate this point, I give here an illustration of the antenna of *G. hagenowi* (fig. 7), which under ordinary magnification appears to have one ring joint and a detailed drawing, greatly enlarged (fig. 8), showing more plainly the four ring joints which occur in this species, both drawings being made from a slide mount. Other species belonging to this genus, as restricted by Kourdumoff, which I have examined, have only one ring joint and still others two or three, it being impossible, as in *hagenowi*, to tell the correct number unless a slide mount is made of an antenna.

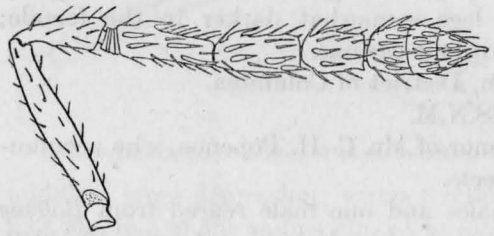

FIG. 7.—GENIOCERUS HAGENOWI. FEMALE ANTENNA.

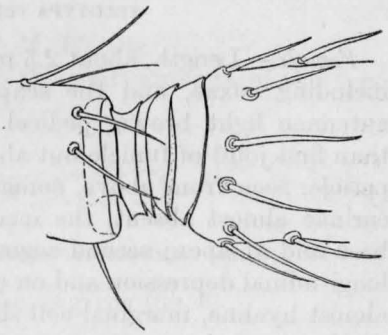

FIG. 8.—GENIOCERUS HAGENOWI. DETAIL OF FEMALE ANTENNA TO SHOW RING JOINTS.

Mr. Girault has attempted to divide this series, using the number of ring joints together with the median furrow on the mesoscutum. Kourdumoff has pointed out that this latter character is of absolutely no value, since in a series of the same species specimens will be found with the furrow and others without it. In describing new species I have, therefore, for the present simply used the divisions as made by Kourdumoff.

GENIOCERUS CHRYSOPAE, new species.

Female.—Length about 1 mm. Dark green, antennae brownish testaceous, with one ring joint (fig. 9); mesoscutum and scutellum finely longitudinally sericeously lineolate, median furrow on mesoscutum and median pair of furrows on scutellum indistinct, the latter about one-third as far apart as length of scutellum; propodeum almost

twice as long as metanotum, without a median carina, the spiracles very large, round, prominent; submarginal vein with two bristles; femora dark brown, tibiae and tarsi, except apical joint, yellowish white.

Habitat.—Batesburg, South Carolina.

Type.—Cat. No. 18380, U.S.N.M.

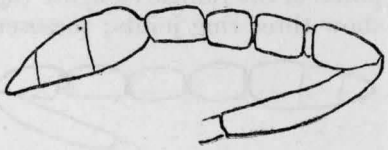

FIG. 9.—GENIOCERUS CHRYSOPAE. FEMALE ANTENNA.

Reared from cocoons of *Chrysopa* in connection with various other parasites under Bureau of Entomology, United States Department of Agriculture, Hunter number 3414. The lack of a median carina on the propodeum is characteristic of this species.

GENIOCERUS JUNIPERI, new species.

Female.—Length about 1.5 mm. Lemon-yellow, with dark brown markings on the rear of head, front of pronotum, a small brown spot on each lateral angle of pronotum, and one on front of axillae; suture between mesoscutum and scutellum brown; propodeum medially, spot on each side of abdominal segments and the apical margins of segments more or less suffused with brownish scape yellow with a brown spot above, rest of antennae brownish; joints of funicle elongate (fig. 10); seen under high power, the antennae show three ring joints; head and thorax finely sericeous; median furrow of mesoscutum rather indistinct, median pair of furrows on scutellum about half as far apart as length of scutellum; propodeum with median carina hardly as long as the metanotum; submarginal vein with about four bristles; legs yellow with the apical joint of tarsi brown; venter along median line somewhat brownish; sheaths of ovipositor apically distinctly brown.

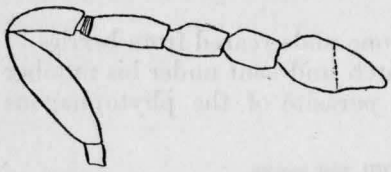

FIG. 10.—GENIOCERUS JUNIPERI. FEMALE ANTENNA.

Type-locality.—Ithaca, New York.

Type.—Cat. No. 18381, U.S.N.M.

Described from 11 specimens reared from berries of *Juniperus virginiana* by Mr. S. Marcovitch and sent under his number lot 30, sub 8 with the additional information that the species is phytophagous. Paratypes vary in having more brown, the mesoscutum medially with a large brown spot in front; vertex, parapsidal areas anteriorly, sides of propodeum with brown spots; the abdomen with the brown bands more pronounced.

GENIOCERUS MARCOVITCHI, new species.

Female.—Length about 2 mm. Blue-black or greenish-black; joints of the funicle elongate (fig. 11); under high power the antennae show three ring joints; mesoscutum and scutellum finely longitudinally sericeous, median furrow on mesoscutum indistinct; metanotum with two yellow spots on disk; propodeum with median carina short, hardly as long as the metanotum; submarginal vein with three or four bristles; legs blue-black, the knees, extreme bases and apices of tibiae and tarsi except apical joint whitish.

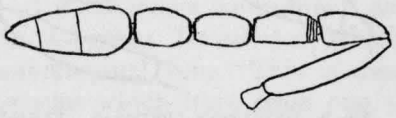

FIG. 11.—GENIOCERUS MARCOVITCHI. FEMALE ANTENNA.

Allotype.—Length, 1.75 mm. Similar to the female, the first joint of the funicle about as long as pedicel, much shorter than the second joint, joints 2 to 4 being subequal in length, club not enlarged, almost twice as long as last joint of funicle; tibiae yellowish-white with a brown stripe inwardly.

Habitat.—Ithaca, New York.

Type.—Cat. No. 18382, U.S.N.M.

Described from three females and one male reared from berries of *Juniperus virginiana* by Mr. Marcovitch and sent under his number lot 30, sub 17. It appears to be a parasite of the phytophagous *Eurytoma* living in these berries.

GONATOCERUS GIBSONI, new species.

Female.—Length about 1 mm.; sheaths of ovipostor about 0.33 mm. Very dark brown, base of abdomen narrowly light yellow; antennae slightly longer than insect, brown, the scape much lighter; first joint of funicle about as long as pedicel, second and third joints longer, subequal, fourth very slightly longer, fifth, sixth, and seventh longer than fourth, subequal, eighth shorter, about as long as first; club about twice as long as fifth joint, coxae and trochanters yellow, femora and tibiae, except yellow apices, light brown; sheaths of ovipositor brown, almost as long as abdomen; wings very slightly fumated; abdomen strongly compressed.

Allotype.—Length about 1 mm. Similar to the female except in secondary sexual characters, the antennae much longer than the body, joints of funicle almost equal in length, the first slightly shorter, the thirteenth somewhat longer than preceding.

Type-locality.—Tempe, Arizona.

Host.—Eggs of *Dracculocephala mollipes.*

Described from specimens bred May 20, 1914, by Mr. E. H. Gibson and recorded under Webster No. 12211 sub A, the types on slides in balsam.

Type.—Cat. No. 18495, U.S.N.M.

Allied to *G. rivalis* Girault and *maga* Girault but the female differs from both in the fourth joint of the funicle not being shorter than preceding, in the more elongate antennae, and the longer ovipositor.