

wings fusco-hyaline with a small black stigmal dot, and with the last two-thirds of the outer costal edge black, other veins brownish; legs yellowish, anterior and middle femora infuscated in middle, the thick oval posterior femora yellowish-brown, a broad dark medio band occupying one-third or more of the surface, the band is also extended over on to the tibiae as may be seen when these are drawn up into the femoral groove, the latter armed with about eighteen small but regular teeth, tarsi pale yellowish, unguis black.

Captured on rose galls. I do not think it parasitic on the galls; it was probably attracted there by some larvæ.

EURYTOMA III.

Eurytoma bicolor Walsh, Amer. Entom. vol. ii, p. 298, 1869.

Eurytoma prunicola Walsh, loc. cit. fig. 1.

This species I have bred from the cynipidous oak gall (*C. q. rugosa* Ashmead. It agrees very well with Walsh's description excepting its larger size and the whole abdomen being black. He says: "♀ with the long medial or fifth joint always rufous and the fourth generally piceous." I am therefore in doubt whether the determination is correct.

Var. *globulicola* Walsh, loc. cit.

Eurytoma auriceps Walsh, loc. cit. p. 299.

Var. *seminatrix* Walsh, loc. cit.

Eurytoma punctiventris Walsh, loc. cit.

Recognized here from one ♀ bred from the cynipidous oak gall *C. q. batatoides* Ashmead.

Eurytoma abnormicornis Walsh, loc. cit.

Eurytoma diastrophii Walsh, loc. cit.

Var. *Bolteri* Riley, First Mo. Report, p. 177, 1869, illustrates ♂ and ♀ antennæ; Walsh, Am. Entom. vol. ii, p. 299, 1869.

Eurytoma studiosa Say, Bost. Journ. Nat. Hist. vol. i, 1835; Say, Am. Entom. ed. LeConte, vol. ii, p. 720; Am. Entom. vol. ii, p. 299.

Eurytoma orbiculata Say, Bost. Journ. Nat. Hist. vol. i, 1835; Say, Am. Entom. ed. LeConte, vol. ii, p. 720; Am. Entom. vol. ii, p. 299, 1869.

Walsh was unable to identify this species and seemed to think the "laws of coloration forbid its existence." Neither Walsh's want of success in finding it, nor are the laws of coloration sufficiently demonstrated, to warrant its rejection.

Eurytoma gigantea Walsh, loc. cit. p. 300.

Eurytoma cretheis Walker, Ann. Soc. France, 2me, Serie i, 150.

Eurytoma Hecale Walker, Ann. Soc. Ent. France, 2me, Series i, 151.

Eurytoma lanulæ Fitch, Fifth Report on noxious and other Insects of New York State Agricul. Soc. p. 817, 1859.

Eurytoma phylloxeræ n. sp.—♀.—Length .10 inch. Black. Head and thorax coarsely punctate and sparsely covered with short whitish pubescence;

SEPTEMBER 9, 1881.

Director Dr. LÉCONTE in the chair.

The Publication Committee announced the completion of the Transactions of the American Entomological Society to page 134.

Dr. Horn on behalf of the author presented the following paper, entitled

Studies on the North American CHALCIDIDÆ. with descriptions of New Species from Florida.

BY WILLIAM H. ASHMEAD.

Jacksonville, Florida.

[PAPER No. 1.]

The following is the beginning of a series of papers on our North American Chalcididæ—a large and extensive family of parasitic hymenopterous insects comprising the minute forms, which are, however, readily distinguished from all others by their elbowed antennæ and almost veinless wings.

Although they are among the most interesting and brilliantly colored of the order Hymenoptera; yet up to the present time, when we take into consideration the extent of our continent, comparatively few species have been described.

These studies are not intended to be exhaustive but merely preliminary—*i. e.*, an attempt to ascertain and group together all that has been written on the subject, and at the same time describe the new forms brought under my observation in Florida.

The species belonging to the genera *Leucospis*, *Smicra* and *Chalcis*, have been exhaustively treated by our well known Hymenopterist Mr. E. T. Cresson, in a memoir published in Vol. IV, Trans. Amer. Ent. Soc. 1872. I have, therefore, only to record the new species since its publication.

SMICRA Spinola.

Smicra gigantea Ashmead, Canadian Entomologist, vol. xiii, p. 96, 1881.

Smicra decem-punctata n. sp.—♀.—Length .23 inch. Head, thorax and the large posterior coxæ brown-black, punctate; eyes greenish, ocelli black, smooth, and shining; antennæ brown becoming reddish-brown towards tip, finely pubescent, scape short; thorax slightly convex, microscopically covered with whitish pubescence, collare very short, transverse, with two small red medio dots; parapsidal grooves distinct, an oblong red spot at anterior corners of prescutellum with smaller ones at posterior corners; two indistinct dots on piece in front of base of wings; scutellum somewhat pentagonal, lateral sides only margined with red which becomes slightly wider posteriorly; abdomen fusiform, attenuated to a sharp point, reddish-brown becoming black towards tip, peduncle moderate;

antennæ 7-jointed and of a uniform yellowish-brown, joints of flagellum excepting terminal joint moniliform, the latter clavate three times as long as penultimate and showing indications of two distinct sutures; abdomen black, smooth and shining, fourth segment unusually large; wings hyaline, veins almost hyaline. legs yellowish-brown, coxæ black, tibiæ and tarsi yellowish approaching white.

Described from one ♀ bred June 11th, from the hickory gall *Phylloxera caryæ-scissa* Riley.

This species is not parasitic on the phylloxera, but on an orange-colored dipterous larva, very common in these galls.

Eurytoma succinipedis n. sp.—♀.—Length .12 to .14 inch. Head and thorax brown-black, coarsely punctate and microscopically pubescent; antennæ 8-jointed, rufous, base of flagellum infuscated and with the ultimate twice as long as the penultimate joint; abdomen black, smooth and shining, lateral turfs of whitish pubescence on sixth segment; wings hyaline, veins brown; legs rufous, coxæ black, the rufous of tibiæ shading off towards tips and tarsi into yellowish.

♂.—Length .10 inch. Antennæ 7-jointed, black; thorax free from pubescence; abdomen small with peduncle very long, otherwise as in ♀.

Described from one ♂ and four ♀♀ bred from cynipidous oak gall *C. g. succinipes* Ashmead.

Eurytoma albipes n. sp.—♀.—Length .12 inch. Coal black. Head and thorax coarsely punctate and free from pubescence; eyes brown; antennæ entirely black; basal margin of præscutellum finely rugoso-punctate; disc of scutellum not so coarsely punctate as at sides; abdomen black, smooth and shining, fourth, fifth and sixth segments pubescent; wings hyaline, veins yellowish; legs black, joints and extreme tips of tibiæ yellowish, feet pure white.

♂.—Length .08 inch. Agrees with ♀ excepting as follows: Eyes are black; antennæ 7-jointed, nodules armed with long whitish hairs; head and thorax sparsely covered with whitish pubescence; abdomen and legs pitchy black; peduncle two-thirds as long as abdomen; feet only white.

This easily recognized species was captured at large.

DECATOMA Spin.

Decatoma varians Walsh, Am. Entom. vol. ii, p. 300, fig. 2, ♂ & ♀, 1869.

Var. *dubia* Walsh, loc. cit.

Decatoma nigriceps Walsh, loc. cit.

Var. *excrucians* Walsh, loc. cit.

Decatoma hyalipennis Walsh, loc. cit. p. 301.

Decatoma simplicistigma Walsh, loc. cit.

Decatoma nubilistigma Walsh, loc. cit.

Decatoma flava Ashmead, Can. Ent. vol. xiii, p. 134.

Decatoma quercus Ashmead, loc. cit. p. 135.

Decatoma lanæ Ashmead, loc. cit.

Decatoma phellos Ashmead, loc. cit. p. 136.

Decatoma foliatæ Ashmead, loc. cit.

Decatoma batatoides Ashmead, loc. cit.

Decatoma bicolor n. sp.—♀.—Length .10 to .12 inch. Head, thorax, antennæ and legs a dark brown; head and thorax coarsely punctate, sparsely microscopically pubescent; eyes dark; posterior tibiæ infuscated; abdomen black, smooth and shining; wings hyaline, a large smoky bottle-shaped blotch extending two-thirds across the wings.

An easily recognized species. Described from five specimens—four captured at large and one bred from cynipidous live oak root gall *Dryorhizoxenus floridanus* Ashmead.

Decatoma catesbæi n. sp.—♀.—Length .05 to .06 inch. Uniform honey-yellow. Head and thorax coarsely punctate and microscopically sparsely pubescent; ocelli and eyes dark; abdomen very slightly infuscated, wings hyaline, stigmal blotch very small; legs honey-yellow, tibiæ and feet pale.

Described from two ♀ bred May 13th, from cynipidous oak gall *C. q. catesbæi* Ashmead.

ISOSOMA Walker.

Isosoma hordei Harris; Walsh, Am. Ent. vol. ii, p. 329, fig. 3 ♀, fig. 4 ♂ and ♀.

Eurytoma hordei Harris; Fitch, 3d. N. Y. Rep. p. 159.

Eurytoma tritici Fitch, 3d. N. Y. Rep. p. 159.

Eurytoma secalis Fitch, 3d. N. Y. Rep. p. 159.

Eurytoma fulvipes Fitch, 3d. N. Y. Rep. p. 159.

Isosoma vitis Saunders, Can. Ent. vol. ii, p. 25; Riley, 2d. Mo. Rep. p. 92.

CALLIMOME Spinola.

Callimome ebria Osten Sacken, Trans. Am. Ent. Soc. vol. iii, p. 58, 1870.

Callimome dura Osten Sacken, loc. cit. p. 59.

Callimome advena Osten Sacken, loc. cit. p. 59.

Callimome tubicola Osten Sacken, loc. cit. p. 60.

Callimome flavicoxa Osten Sacken, loc. cit. p. 61.

Callimome Sackenii Ashmead.

C. brevicauda Osten Sacken, loc. cit. p. 62.

This species I have changed to above as *brevicauda* was preoccupied in the genus by Walker *vide* Eng. Mag. i, 126.

Callimome magnifica Osten Sacken, loc. cit. p. 62.

Callimome chrysochlora Osten Sacken, loc. cit. p. 63.

Callimome solitaria Osten Sacken, loc. cit. p. 64.

Callimome splendidus Barnstone, mss. Walker, Ann. Nat. Hist. xiv, 11; Brit. Mus. List i, 20.

Callimome cecidomyæ Barnstone, loc. cit.

Callimome Theon Walker; Ann. Soc. Ent. France, 2me Serie.

Callimome Cissus Walker, loc. cit.

Callimome rea Walker, Ann. Nat. Hist. xii, 194.

Callimome cœrulea n. sp.—♀.—Length .20; ovip. .23 inch. Uniform brilliant blue; head transverse, very short, microscopically punctate; ocelli prominent, smooth and dark, eyes brown, face pubescent, cheeks slightly pubescent; thorax microscopically transversely punctate; scutellum bordered posteriorly by a small ridge; ovipositor long, black; wings hyaline, ligaments of wings and veins brownish; legs red-brown, tarsi paler, unguis brown.

♂.—Length .15 inch. The posterior femora are blue, the tibiæ are darker and the usual structural differences easily distinguish it from the ♀; otherwise I can see no difference.

Described from several specimens bred from cynipidous oak gall *C. q. cinerea* Ashmead.

Callimome recemareæ n. sp.—♀.—Length .18 to .20; ovip. .28 inch.

This species in color and markings resembles *C. cœrulea* very much and for a long time I was of the opinion that they were identical. A more careful examination soon dispelled the illusion. It may be easily distinguished by a more slender form, by punctation, being more coarsely punctured than *cœrulea*, by the face being covered by a dense silky pubescence, by the antennæ being brownish, scape reddish, by the much longer ovipositor, and by the yellowish-red pubescent legs. In *cœrulea* the legs are not pubescent.

The ♂ is .16 inch in length, and is difficult to distinguish from ♂ of *cœrulea*. It may be distinguished however by the scutellum being divided in the middle by a transverse suture, by all the femora being blue excepting at tips and by a darker abdomen.

Described from two specimens raised from cynipidous oak gall *C. q. recemaria* Ashmead.

Callimome ænea n. sp.—♀.—Length .10; ovip. .08 inch. Head and thorax greenish-golden, microscopically punctate; head transverse, pubescent; eyes brown; antennæ brown; scape reddish; thorax microscopically pubescent; abdomen gold bronze, ovipositor black; wings hyaline, veins brown; legs, coxæ and femora brown, posterior pair darkest, tibiæ lighter, tarsi pale, unguis brown.

♂.—Length .06 to .08 inch. Uniform bronze with coxæ black and tibiæ with a dusky blotch on middle of upper surface; coloration otherwise as in ♀.

Described from several specimens raised from cynipidous oak gall *C. q. virens* Ashmead.

Callimome brevissimicauda n. sp.—♀.—Length .12 inch; ovip. .04, some specimens hardly that. Head greenish-golden, microscopically scratched; ocelli prominent, dark; eyes brown; antennæ black, scape yellowish, mouth parts brown; thorax microscopically and slightly transversely punctate, pubescent and of a greenish-gold color, with a bluish or purplish tinging on collare, præscutellum and parapsides; scutellum greenish-golden, finely uniformly punctate; meta-thorax purplish or bluish, rugose; side pieces beneath the wings smooth, metallic-green; abdomen greenish-brassy, smooth and shining, dorsal base of first segment purplish or bluish, ovipositor dark brown or black; wings hyaline, tip of

costal vein and stigma brownish; legs and coxæ yellowish, posterior coxæ bluish, tarsi paler.

Described from numerous specimens bred from the cynipidous black-berry gall *Diastrophus nebulosus* Osten Sacken.

Callimome elegantissima n. sp.—♀.—Length .19; ovip. .20 inch. Head and thorax a brilliant gold; head transverse, very short, ocelli prominent, brown; eyes prominent bright red; mouth and surroundings black, face covered with short whitish pubescence with a few on cheeks; antennæ black; thorax very coarsely punctate; collare transverse, narrowed in front and not so coarsely punctate as mesothorax and sparsely covered with short whitish pubescence, parapsidal grooves distinct, triangular pieces at base of scutellum, and scutellum coarsely punctate and covered sparsely with whitish pubescence, the small pieces on either side of the triangular pieces situated at base of wings smooth and purplish; side pieces beneath the wing metallic-blue; abdomen ovate, compressed, smooth and shining, of a greenish-golden color, a large metallic-blue dorsal blotch, tip of abdomen and venter metallic-blue; wings hyaline, veins slightly yellowish; legs brown, tarsi paler, posterior femora metallic-blue and punctate, ungues dark brown.

Described from one ♀ bred from cynipidous oak gall *C. q. ficus* Fitch?. A very brilliant species.

Callimome virentis n. sp.—♀.—Length .14, ovip. .05 inch. Head and thorax bright metallic-green. Head transverse, finely shallowly punctate, with purplish and violet reflections; ocelli prominent, brown; eyes brown, face sparsely pubescent, mouth parts brown; antennæ dark brown, scape reddish or brown; thorax very finely punctate, with coarser punctures scattered over it; præscutellum violaceous, parapsides tinged with same; scutellum greenish-golden, punctate; metathorax purplish, beneath the wings smooth and purplish; abdomen smooth, shining, metallic-green, first segment above bluish-purple, ovipositor black, venter purplish; wings hyaline, veins yellowish; legs yellowish-red, tarsi yellowish, hind coxæ purplish, ungues brown.

Described from several specimens raised from the cynipidous oak gall *C. q. virens* Ashmead.

The following species does not belong to this group, but I insert it here, on account of the interest attached to it, being probably the first discovered in this country.

Chirocerus floridanus n. sp.—♀.—Length .10 inch. Black. Head and thorax microscopically confluent punctate; antennæ 12-jointed, long, filiform, rather widely apart, scape long, joints of flagellum short, a little longer than broad and finely pubescent, last joint longer than penultimate; collare not visible from above; parapsidal grooves distinct; præscutellum divided by a central longitudinal groove; scutellum oval, microscopically punctate; wings hyaline, iridescent, costal edge brown ending in a dark brown semicircular stigma, with a rather long slightly curved stigmal vein springing out from lower hinder margin, and extending to about half the distance to outer edge of wing; legs red-brown; abdomen long, ovate, black and highly polished, with a few whitish hairs converging around anus.

♂.—Length .08 inch. Head and thorax above brown-black somewhat shining and microscopically rugoso-punctate; eyes prominent, brown; antennæ 10-jointed,

7-branched, black and pubescent, each joint from second armed at tip with a long pilose branch, these gradually decrease in size towards tip, becoming obsolete on ninth joint; thorax stout, rounded in front, convex and narrowing posteriorly, pubescent; collare not visible, parapsidal grooves distinct, a distinct medio-longitudinal groove on præscutellum; scutellum moderately large, roundish; pleuræ margined around the edge with coarse punctures; abdomen small, fusiform, black, smooth and shining; with a distinct but short peduncle; wings hyaline, no subcostal vein, stigma same as in ♀, the stigmal branch not quite as long as in ♀; legs brown, posterior femora black, tibiæ yellowish.

This unique and interesting little species is the first of the genus discovered in America.

Described from one ♂ and one ♀ bred in March, from the pine aphid *Lachnus australi* Ashmead. This pine aphid suffers from the attacks of many internal foes; besides the above I have bred three other chalcids and two ichneumon flies, which will be described in some future paper.

OCTOBER 14, 1881.

Director Dr. LeConte in the chair.

The Publication Committee announced the completion of the Transactions of the American Entomological Society to page 148.

In behalf of Mr. Ashmead, Dr. Horn presented types of nearly all the species described in the paper presented at the last meeting, for the cabinet of the American Entomological Society.

Dr. McCook exhibited some small Hymenoptera hatched from the nests of Mud-Wasps. He also placed before the meeting the nests and cocoons of some spiders, showing the means made use of for their protection and concealment.

Dr. Horn exhibited a new *Cychnus* from Washington Territory, belonging to the sub-genus *Sphæroderus*, this being the first known occurrence of the latter west of the Mississippi.

A female *Xenorhipis* was also shown. This has the antennæ not very different from *Melanophila* or *Agrilus* while the male antennæ are flabellate.

Dr. LeConte gave his views regarding the dispersion of Coleoptera in times following the glacial epoch. At the time when the present circumpolar regions were much warmer than now and the continents probably less separated or even joined, the fauna was perhaps the same in the entire region. The glacial invasion extended farther south in the Atlantic region than in the Pacific, obliterating in great part the Coleoptera of this side of the continent while the Pacific slope was less disturbed. Consequently the species of the latter region being the