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## A COLEOPTEROUS CONUNDRUM.

BY ANNIE TRUMBULL SLOSSON.

A year ago, May 1902, I had a peculiar entomological experience. I had returned from Florida to my home in New York about the middle of April, had spent two or three weeks arranging and classifying my captures of the winter, sending off duplicates and doubtful species to specialists, and preparing my collection for the summer months of my absence. A full fortnight must pass before I should leave town for my New Hampshire summer home, and I already pined for a little collecting. Suddenly I recalled the existence of some old boxes of insects which had been crowded out of my regular collection-room some years before. They were in a closet opening from a hall on the second floor. This closet had been built especially for the preservation of woollen clothing and its protection from ravages of the devouring moth, its walls, shelves and drawers being made of red cedar. But after a period of many years—nearly forty, I think—the wood has lost its protective odour, and the place is often visited by insect pests. It, however, still bears the name of the "cedar-closet," and here had been stored for several years the overflow from my collection. In a leisure hour, one chilly May day, feeling a touch of the entomologist's fitful fever, I said to a friend, in a sportive mood, "I am going to try the cedar-closet, who knows what discoveries I may make in those old boxes of bugs?" As unconscious of the great discovery awaiting me there as was probably Isaac Newton before that attractively gravitating apple fell to the ground, I started on my quest. The first box I opened contained lepidoptera from Franconia, chiefly moths, taken several years before, and of little value or rarity. It was a wreck, clouds of dust rose from it as I lifted the cover, and broken bits of wings and bodies rolled about as I moved the box. Disagreeable, stealthy *Anthrenus* larvæ, of all sizes, glided about among the ruins. Of course this must be attended to, and the infested specimens thrown away; so I carried the box with its contents to my room for further examination.

There was a little fire burning in a low grate, and into this I began throwing the insect debris. As I tried to pick up some of the slippery *Anthrenus* larvæ I noticed among them what seemed to be tiny brown ants. I had never seen any ants in the cedar-closet, so wetting my finger I lifted one of the little creatures and dropped it into a poison bottle. When it was quiet I took it out and examined it with my magnifying glass. It was no ant, but—what was it? I had never seen anything resembling it. Indeed, for a time I was not sure even to what order it belonged. Was it hemipterous, hymenopterous, coleopterous, or what? I put a half dozen specimens into the bottle, and a little later mounted two of them on a card triangle and sent them to Mr. Liebeck, in Philadelphia, for identification. At this juncture I felt no excitement, not much curiosity. Though quite unfamiliar to me, the species was probably well known to experienced entomologists as a museum pest; thus I thought to myself. But next day came a postal from Mr. Liebeck. He did not recognize my capture; had seen nothing like it; had it not been introduced with some of my specimens from South Florida? he asked. "It is a very curious insect, apterous, you see. Though provided with jaws and elytra, the usual characteristics of coleoptera, its antennæ seem very peculiar ones for a beetle. But I will examine it further and report." Thus he wrote, and I began to feel the first thrill of interest. This certainly could not be a familiar museum pest if such an experienced entomologist as Mr. Liebeck failed to recognize it. I went back to my box of infested moths and sought more specimens of the cunning little pest, securing about twenty specimens. These I carried with me to the mountains when I went there the latter part of May. Soon after my arrival in Franconia I sent specimens to Mr. Frederick Blanchard, and he wrote concerning them: "These beetles are very queer indeed; I haven't at present the slightest idea what they are related to. They reminded me at first sight of certain small Hemiptera. I hope to send you something further about them before very long."

A fortnight later Mr. Blanchard wrote again: "The very remarkable little beetle which you found devouring your specimens with *Anthrenus* is still an interrogation. I can, so far, find nothing at all like it in any of my boxes. A week ago I sent sketches with details, asking Henshaw's aid, but I haven't a word from him yet. The beetle is so very peculiar it should be easily identified if well known. The antennæ appear to be entire and alike in both specimens, but with only nine joints, 3-5 being

rather difficult to count, they are so small. One of the long joints is shorter than the others, but I don't recall whether it is the 7th or 8th. This is a very peculiar form of antenna, and would still be so if there were the normal number of eleven joints. Your insect is furnished with a single ocellus between the eyes, which is a very rare character in beetles. Some Dermestidæ have one ocellus, and in the Homalini of the Staphylinidæ there are two somewhat distant ones. The only other instance I have been able to find is in the case of *Hylotomus bucephalus*, from Sierra Leone, belonging to the family Paussidæ, which is not represented in this country. Here there are again two ocelli. I shall probably hear from Cambridge in a day or two, and will write you again." A few days later he wrote: "I heard from Henshaw yesterday. Like myself, he is unable to furnish any clue at all to the beetle's relations. I think that all that can be said of it is that it is a member of the great Serricorn series, which includes such a variety of types. In the Leconte and Horn Classification this embraces families XXXIX.—LI., but Casey (Jour. N. Y. Ent. Soc., Vol. VI., p. 76) is inclined to go further and add several other groups, hitherto considered Clavicorn. Just where your beetle comes in I can't say. The whole arrangement of the Serricornia would have to be carefully studied first, as it does not appear that your anomaly belongs to any recognized family." I had, in one of my letters to Mr. Blanchard, spoken of the varied contents of the cedar-closet in which the puzzling pest was found, and hinted jocosely that the presence of some ancient Egyptian relics, mummy wrappings, beads and images of Osiris, might possibly account for this strange visitant. He writes: "I note your playful remarks about a possible relation to ancient Egyptian dynasties, disclosed from the tombs of the Pharaohs and starting upon a new career of uselessness, and am reminded of the stories of still fertile seeds of grain reported to have been taken from tombs in the land of the Nile."

In the meantime I had sent specimens to Messrs. Schwarz and Fall. The former was too busy just then to reply, but I heard through others that he was unable to throw any light on the matter. Mr. Fall wrote: "I have just received your letter and the box containing specimens of that most astonishing little creature found eating your specimens in New York. I would like much to know the circumstances a little more exactly. Were the specimens attacked native or exotic? If native, were they from Florida? And how long had they been in the box? Could they have found access from any other source in the closet itself? I feel sure that

the beetle is not a member of our fauna. I saw Mr. Schwarz in Washington, and asked him if he had located your find. He said he could make nothing of it. I shall at once send one, at least, of the specimens to Dr. Sharp, and will promptly report to you what he says. An attempt to place it with our classification gives only negative results, but it certainly possesses as many points in common with the Lymexylidæ as with any family which we have. But that frontal ocellus!! And those antennæ!!! I hope to study it further soon." A few weeks later Mr. Fall wrote again, and, referring to what he calls "your conundrum which none of us can guess," he said: "I sent a specimen to Dr. Sharp, of Cambridge, England, and have to-day received a letter from him, in which he admits never having seen anything like it. There is nothing at all resembling it in the Palearctic fauna," he says. He doesn't know what family to assign it to, but suggests that it may belong to the Dermestidæ, on the strength of the frontal ocellus. The mystery deepens. The creature is such a ghostly, unsubstantial thing for a beetle—a regular coleopterous ghoul—that I almost find myself wondering if, when I look in the box again, I won't find it vanished into thin air. Did you find it actually feeding on the specimens? Was there sign of larvæ? Pardon my numerous questions, but the case is so remarkable that I would get all possible information. We must, perhaps, put some coleopterous Sherlock Holmes on the trail to run this fellow down." After another letter from me he writes: "The fact that you found numerous larvæ of *Anthrenus* in your box of moths would certainly account for the damage done, but the further fact of shaking these little creatures from the bodies of the moths would indicate that they themselves were not entirely guiltless. I suppose the age and character of the box is such that the beetles could not possibly have come from its wood or lining? Well, I give it up." And there my story practically ends.

Before I left New York in May I had bottled all the specimens I could find in the infested box and returned it, with its debris of half-devoured insects, to the cedar-closet. There also were at least a half dozen similar boxes containing insects, all infested by *Anthrenus*, and possibly other pests, but not one of the little anomalous creatures could be found among these. On my return in October I at once opened the closet and examined my "traps" with their tempting bait. Not a sign of the curious beetle was there. Nor has it ever reappeared. My little stock obtained a year ago is much diminished, I having sent specimens to various correspondents. Shall I ever find more specimens of what I have sometimes,

in chat over my discovery, styled *Ignotus enigmaticus*? I trow not. For me—a woman, and therefore, of course, full of vain imaginings—those creatures had no beginning; no egg, grub or pupa preceded them; no weary, slow-paced evolutionary process developed the strange little beings. They sprang into full, perfect imago life in those May days, having no family, no relations, belonging to no class, their secret to be unlocked by no key, artificial or natural; unfathomable mysteries, unsolvable problems, unguessable conundrums. Was it to confound the wise they came? to fulfil a prophecy I find in a certain old book, "Then shall the seers be ashamed, and the diviners confounded"?

#### BUTTERFLY NOTES FROM TORONTO FOR 1902.

BY J. B. WILLIAMS, F. Z. S.

On the 24th of May I went collecting, with a friend, in High Park. We each took a specimen of the Tailed-Blue (*L. comyntas*), but found, as we had expected, that it was too early for Scudder's Blue. On turning over an old boot that was lying on the grass, I saw a chrysalis of *L. Scudderii* attached to the under side; an ant was also on the sole of the boot, and ran round and round and over the chrysalis several times before going away; being, apparently, quite agitated by the disturbance. Is it possible that this ant was keeping some sort of guard over the chrysalis, as ants are supposed to do over the larvæ of *L. Scudderii*? Its presence on the boot may have been merely accidental, but still, its movements gave me the impression that it was loth to leave the chrysalis, and would have liked to carry it away, if that had been possible.

A slight touch removed the pupa from the boot, and I kept it until the 30th of May, when the butterfly emerged, and proved to be a female.

On September 20 and 27 I collected in two places where large numbers of the Clouded Sulphur (*Colias philodice*) were flying about, and noticed a good-many of the white female form. I took five of them, altogether, and saw several more that I did not capture.

In 1901, I do not remember seeing a single white specimen. Is it right to speak of these females as albinos; at any rate, in the ordinary sense in which that word is used? Mr. Grote suggested, in the CANADIAN ENTOMOLOGIST for April, 1902, the probability of the dark female form "glaucus" of *Papilio turnus*, being a recurrence of the colour of an earlier species from which it had been derived; as female butterflies generally represent the conservative element, and males the liberal or progressive side, of insect life.

The white female of *Philodice* may, therefore, be a colour survival of some whitish butterfly from which all the species of *Colias* were originally derived. Some of them have still altogether white females; while others, like our *Philodice*, have the two forms—the older type being the scarcer of the two. Northern Asia seems to be the special home of the genus, so that the original *Philodice* may have come to us from north-east Siberia, via Alaska; and perhaps somewhat resembled the existing Arctic Sulphur (*C. nastes*).

There is a small opening in the woods at High Park, where Leonard's Skipper is usually abundant, during the brief period of its existence as a butterfly. A stream runs along one side, and grass and flowers and bits of marshy ground make it an ideal home for several members of the Skipper family.

On the 30th of August I found plenty of males there that had recently emerged, but none of the other sex. By the middle of September females were plentiful, but males hard to find. One wet and cloudy afternoon, when all other butterflies had disappeared, two specimens of *Leonardus* were seen resting on the flowering plants in this opening. I went there on September the 27th, hoping to bring home some live females and secure some eggs, but all had disappeared. So that in this locality, apparently, their butterfly existence lasts for barely one month out of the twelve. Many common butterflies were scarce last summer, owing, I suppose, to the comparatively cold and wet season; but the Skippers did not seem to be much affected thereby, and were plentiful all through the summer.

#### TWELVE-SPOTTED ASPARAGUS BEETLE IN CONNECTICUT.

*Crioceris 12-punctata*, Linn., is an introduced species, and has been working northward from Maryland, according to Professor J. B. Smith, who some time ago informed me that it was present in New Jersey, and would in time reach Connecticut. The first specimen recorded from the State was taken by a student assistant June, 16th, 1902, who collected a single specimen on asparagus upon the Station grounds in New Haven. On May 23rd, 1903, I took male and female specimens from the same locality. We may now expect this species to become thoroughly established here as a pest of asparagus, injuring the plants in the same manner as the common asparagus beetle, *C. asparagi*, Linn.—W. E. BRITTON, New Haven, Conn.

## A NEW CULICID GENUS RELATED TO CORETHRA.

BY D. W. COQUILLET, WASHINGTON, D. C.

The genus *Corethra* was founded by Meigen in 1803,\* on *Tipula culiciformis*, De Geer, and in April, 1844, Loew erected the genus *Mochlonyx*,† on *Corethra velutina*, Ruthe, basing it on the shortened first joint of the tarsi, a character mentioned by Ruthe in his original description. The characters of the tarsi of *culiciformis* cannot be ascertained from De Geer's description and figures.‡ On page 386 of the same volume of his Memoires, which contains the account of this species, is a description and brief account of a related species, which he named *Tipula crystallina*, with a reference to Reaumur's Memoires, V., plate 6, figures 4-15, where, at 4 and 7, a more slender larva without a trace of a subanal respiratory tube is shown, contrasting with the broader larva furnished with a large respiratory tube, as represented in De Geer's figures of *culiciformis*; the descriptions and figures which these authors give of *crystallina* do not indicate the characters of the tarsal joints of the adult. Thus matters stood at the time that Loew erected his genus *Mochlonyx*, and continued so until the year 1883.

In that year Dr. Fr. Meinert, of Copenhagen, published the results of his breeding of the adults from these two forms of larvæ,§ asserting that the tubeless larva of *crystallina* produced an adult with elongated first tarsal joints as in *Corethra* in the sense of Loew, whereas the adult bred from the larva of *culiciformis* had the very short first tarsal joints of *Mochlonyx*. Some of the adults last mentioned were submitted to V. von Röder, of Hoym, Germany, an experienced dipterologist, who confirmed their reference to *Mochlonyx*,|| adding that, with the exception of having the hairs on the abdomen and legs shorter, they are identical with Ruthe's species, two specimens of which were in his collection, received from Ruthe himself. It seems very certain, therefore, that the type species of

\*Illiger's Magasin, II., p. 260. †Ent. Zeit. Stettin, p. 121. ‡Memoires, VI., p. 372, pl. 23, figs. 3-12. §Overs. Kon. Danske Vid. Selsk. Forh., pp. 1-17, and Resume, pp. 7-11. ||Entom. Nach., July, 1885, p. 217.

*Mochlonyx*, if not the same, is at least congeneric with that of *Corethra*; in other words, Loew applied the former name to the wrong division of *Corethra*, in consequence of which his proposed new generic name is a pure synonym of the latter.

Owing to the mistake of Loew, it will be necessary to give a new generic name to the group representing *Corethra*, Loew (not Meigen), and for this genus the name *Sayomyia* is proposed, in honour of the immortal Thomas Say; it will be readily recognized among the short-beaked Culi-*cidæ* by having the hairs of the antennæ gathered into whorls, the intervening spaces being almost bare, and by having the first tarsal joint longer than the second. The type species is *Corethra punctipennis*, Say.

The genus *Corethra* (= *Mochlonyx*) has not yet been reported from this country. Several years ago I received a specimen from Mrs. Annie T. Slosson, collected at Franconia, N. H., and later two more specimens were received from the same source, while in April of the present year the same species was detected at Mt. Vernon, Va., by Mr. W. V. Warner, of the U. S. National Museum. This species will readily be recognized by its banded legs and mottled wings, and may be characterized as follows: *Corethra cinctipes*, new species.

Blackish brown, the apices of the antennal joints except the last joint, the halteres, bases of the segments of abdomen in the male, base and under side of femora, a broad band near four-fifths of their length, their extreme apices, bases of tibiæ and a band near one-fourth of their length, also bases of the first three or four joints of the tarsi, yellow; hairs of male antennæ brown, their bases yellow, those at tips of antennæ almost wholly yellow; thorax grayish pruinose, marked with four black vittæ; wings grayish hyaline, hairs of veins black and with yellow ones as follows: on the bases and apices of the veins, on the first vein where the second issues from it, on the second vein where the third issues from it and at the point where it forks, on the fourth vein at the insertion of the cross-vein and also where this vein forks, and on the fifth vein where it forks; first sub-marginal cell nearly twice as long as its petiole, cross-vein at apex of second basal cell less than its length before the one above it; tarsal claws of male each bearing two long, slender teeth on the under side, one near the base and the other near the middle, those of the female with a single tooth near the base of each; length, 3 to 4.5 mm. Five males and one female. Type No. 6839, U. S. National Museum.



## SOME NEW RECORDS OF COCCIDÆ.

BY GEO. B. KING, LAWRENCE, MASS.

The following list of Coccidæ, which have been sent to me for study, adds considerably to the known range of a large number of species, while several new food-plants are indicated; and as no records of the species herein cited, have appeared, to my knowledge, other than in one or two instances in some of my published papers on the *Coccidæ*, it seems, therefore, that these miscellaneous results should be recorded. It will also show to some extent what is being done in a private laboratory for the advancement of science. I have classified the records for my own convenience into States as follows :

## MAINE.

These were all collected and sent to me by Mr. Oliver O. Stover, of Freeport, Maine, in 1901; the first two species living out of doors and the remainder being found under glass in greenhouses.

*Calymnatus hesperidum* and *Aspidiotus hederæ* on *Hedera hybernica* were associated together.

*Mytilaspis ulmi*, L., on apple twigs, Portland, Me.

*Chionaspis furfurus*, Fitch, on bark of apple, Westbrook, Me.

*Diaspis Boisduvalii*, Sign., on *Latania barbarica* and *Livingstonia Chinensis*, Portland, Me.

*Aspidiotus hederæ*, Vall., on *Oleander* at Westbrook, and on *Japonica variegata*, Portland, and on *Hedera hybernica* at Portland, Me.

*Calymnatus hesperidum*, L., on *Yucca*, Westbrook, Me.

## VERMONT.

These were collected by Mr. C. Abbot Davis, of Providence, R. I., in 1902, at Burlington, Vt.

*Eulecanium quercitronis*, Fitch., on oak.

*Pulvinaria innumerabilis*, Rathv., on maple.

## CONNECTICUT.

Prof. W. E. Britton, of the Connecticut Agricultural Experiment Station, New Haven, Conn., sent the following in 1902 :

*Saissetia filicum*, Boisduv., on fern (*Eyrtonium falcatum*) in Station greenhouse.

*Saissetia hemisphærica*, Targ., on fern (*Pteris trimula*), and *Dryopteris mollis*? in Station greenhouse.

*Eulecanium Kingii*, Ckll., on sassafras, and an *Eulecanium*, Sp., found on grapevine, Bristol, Conn., which were in poor condition and undeterminable.

Dr. Geo. Dimmock, of Springfield, Mass., on a short collecting trip found the following species in Conn. in 1900 :

*Saissetia hemispherica*, Targ., on two distinct species of fern in a greenhouse, Warehouse Point, Conn.

*Mytilaspis ulmi*, L., on leather leaf (*Cassandra calyculata*) and on *Fraxinus Americana*, Milford, Conn.

*Chrysomphalus dictyospermi*, Marg., on *Ficus elastica* under glass, Enfield, Conn.

*Asterolecanium variolosum*, Ratz.—Sent to me recently by Prof. Britton ; on scarlet oak ; found by the superintendent of parks in Hartford, on a single tree in a nursery. The scales evidently had killed the tree, as the twigs sent me were dead.

#### RHODE ISLAND.

Mr. C. Abbot Davis collected and sent the following in 1902 :

*Eulecanium nigrofasciatum*, Perg., on soft maple in Roger Williams Park, Providence, R. I., and attended by ants.

*Eulecanium quercitronis*, Fitch., on black and white oak and white maple ; also on cork tree (imported) in Roger Williams Park, Prov., R. I.

*Eulecanium Fletcheri*, Ckll., on white cedar, Providence.

*Eulecanium cerasifex*, Fitch., on wild black cherry, peach and pear.

*Eulecanium Cockerelli*, on wild black cherry, Prov., R. I.

*Eulecanium persicæ*, Fabr., on linden and pear, attended by *Formica lasioides*, var. *picea*, Em.

*Eulecanium Canadense*, Ckll., on red and white maple, tulip tree, linden and two other imported trees, species unknown, in Roger Williams Park, Providence.

*Eulecanium cynosbati*, Fitch., on locust, Providence.

*Calymnatus hesperidum*, L., on orange in a dwelling-house, Providence.

*Pulvinaria innumerabilis*, Rathv., on an imported tree in Roger Williams Park, Prov.

*Pulvinaria rhois*, Ehrh., on sumac, Providence.

*Kermes Kingii*, Ckll., on black oak, in Roger Williams Park, Prov.

*Kermes pubescens*, Bogue, on white oak in Roger Williams Park, Prov.

*Gossyparia ulmi*, Geoff., on bark of elm in Roger Williams Park, Prov.

*Phenococcus acericola*, King, on maple, Providence.

*Aspidiotus*, sp., probably new, on white pine, Providence; not sufficient for study.

*Chionaspis furfurus*, Fitch., on bark of apple, Providence.

*Chionaspis pinifolii*, Fitch., on white and Scotch pine, Roger Williams Park, Prov.

*Chionaspis Americana*, Johns, on elm, Providence.

*Mytilaspis ulmi*, L., on dogwood?

The following species were found associated together: *E. cerasifex* and *E. Cockerelli* on wild cherry, *E. persicae* and *E. Canadense* on linden, *E. persicae* and *E. cerasifex* on pear, *E. cerasifex* and *E. Cockerelli* on elm.

#### GEORGIA.

The following were received from Prof. W. M. Scott, State Entomologist of Georgia, 1902:

*Pulvinaria innumerabilis*, Rathv., on pecan and black gum at Albany.

*Eulecanium magnoliarum*, Ckll., on *Magnolia grandiflora*, Marshallville.

*Eulecanium tulipiferae*, Cook, on tulip tree.

#### MISSISSIPPI.

The following were received from Prof. Glenn W. Herrick, of the Mississippi Agricultural Experiment Station in 1902:

*Chrysomphalus tenebricosus*, Comst., on maple, Vicksburg, Miss.

*Aspidiotus perniciosus*, Comst., on peach, Deean, Miss.

*Aspidiotus Forbesi*, Johns, on peach, Stinson, Miss.

#### ILLINOIS.

*Eulecanium fraxini*, King, on bark of ash, Urbana, Ill., sent in by Prof. F. M. Webster, January, 1903.

*Eulecanium Folsomi*, Ckll. This is a small flat species found by Prof. Folsom in 1902 on paw-paw, at Urbana, Ill.

Antennæ 6-jointed, in  $\mu$  as follows:

Joints	1	2	3	4	5	6
	40	36	92	16	20	40
	40	36	96	20	24	36

Legs thin; coxa, 88; femur and trochanter, 108; tibia, 92; tarsus, 76; claw, 16; marginal spines of two sizes, 16 and 32  $\mu$  long. Stigmatal spines in threes, middle one 60  $\mu$  long; laterals, 32  $\mu$  long. I think the above species is yet to be published by Prof. Cockerell.

## IOWA.

These were sent by Prof. Cockerell, collected by Prof. W. D. Hunter in 1900, now of the Dept. of Agriculture at Washington, D. C.

*Eulecanium Cockerelli*, Hunter, Ames, Iowa.

*Eulecanium Websteri*, King, on *Celtis occidentalis*; also on *Acer saccharinum*, Ames, Iowa.

## ARIZONA.

*Pulvinaria innumerabilis*, Rathv., on *Acer negundo*, Prescott, Ariz.; coll. Cockerell, March 27, 1902.

## CALIFORNIA.

The following species were collected by Prof. Cockerell while taking some students and teachers through part of California in the summer of 1901, and were referred to me for study:

*Aspidiotus hederæ*, Vall., on leaves of *Eucalyptus*, Pasadena, Calif.

*Aspidiotus rapax*, Comst., on *Isomeris arborea* at San Pedro, Calif.

*Eriococcus adenostomæ*, Ehrh., on *Adenostoma* at La Jolla, Calif.; also on the same food-plant at San Pedro, Calif.

*Ceroplastes irregnaris*, on *Atriplex confertifolia* and *A. polycarpa* at Lone Pine, Inyo Co., Calif. They occur only near or under the ground.

*Dactylopius salinus*, Ckll. on grass on cliffs by the sea at La Jolla, Calif.

*Chionaspis pinifolii*, Fitch, on *Pinus*, sp.

*Pseudolecanium Californicum*, Ehrh.

*Saissetia oleæ*, Bern., was also found on this trip by Prof. Cockerell.

*Saissetia hemisphærica*, Targ., on pepper tree (*Schianus malla*), La Jolla, Calif.

## COLORADO.

The following species were collected by Prof. Bethel, High School, Denver, Colorado, and sent to Prof. Cockerell, who turned them over to me:

*Chionaspis Lintneri*, Comst., on *Ceanothus*, Steamboat Springs, Colorado.

*Phenacoccus Cockerelli*, n. sp.

♀ Scale red-brown, resting on a small white cottony sack projecting a little behind the insect's body. Size small; owing to its position upon the twigs, an accurate measurement could not be obtained. Cleared and pressed under a cover glass, 2 mm. in diameter, a little narrow behind. Derm colourless, mouth-parts yellowish-brown, antennæ and legs slightly tinged with yellow. Anal lobes well developed, rounded, with one long bristle and several short spear-shaped spines and a few thin hairs; they also show several round gland pits, these due, perhaps, to some of the spines being lost in process of clearing. No spines, pits or hairs on the derm.

Antennæ 9-jointed; measurements in  $\mu$ , joints:

1	2	3	4	5	6	7	8	9
36	52	48	36	40	36	36	32	60

Front leg coxa, 80; femur and trochanter, 200; tibia, 132; tarsus, 72; claw, 28. Hab.—On *Amelanchier*, Steamboat Springs, Colorado.

*Aspidiotus Howardi*, Kkll. (var. *ancylus* ?), on ash (*Fraxinus*), Denver, Col., July 28, 1902. The scales on the under side of leaf (along the mid-rib) are very pale, while those on the upper side are dark. The leaf on both sides along the mid-rib is faded to a light yellow, due from the infestation.

These were sent to Prof. Cockerell by Prof. Gillette, of the Agricultural Experiment Station, Fort Collins, Col. A single scale on currant twig, which proved to be *Eulecanium quercifex*, Fitch.

*Phenacoccus Cockerelli*, on service berry (*Amelanchier*), at Gunnison, Col.; coll. Prof. Ball, Sept. 20, '92. In some respects these differ from those secured from Prof. Gillette and described above. They are a little larger; when boiled in liquid potash, they turn to a deep bright claret colour. The females were filled with young larvæ, and this might account for the size. The insect is viviparous.

*Pulvinaria innumerabilis*, subsp., *Betheli*, n. subsp.—♀ Scale dark brown, ovisac as in *innumerabilis*, cleared and pressed under cover glass 4 mm. in diameter. Derm practically colourless, slightly tinged with yellow. Antennæ 8-jointed; measurements are, in  $\mu$ :

Joints	1	2	3	4	5	6	7	8
	68	56	80	72	44	28	52	44
	68	52	86	68	60	40	32	48

Front leg coxa, 120; femur and trochanter, 220; tibia, 160; tarsus, 92. Stigmatal spines thin, sharp, 24  $\mu$  long.

Hab.—On birch (*Betula*), in Colorado; collected by Prof. E. Bethel, sent to Prof. Cockerell by Prof. Gillette, who supposed them to be *P. betule*, Linn.-Signoret. In the antennæ it is near to *P. tile*, King and Ckll., but this scale is much larger and of a different colour.

#### NEW MEXICO.

These were sent by Prof. Cockerell in 1901:

*Chionaspis pinifolii*, Fitch., on *Pinus*, sp., at Arroyo Pecos, East Las Vegas, N. M.

*Dactylopius gutierrezie*, Ckll., on *Gutierrezia*, at Arroyo Pecos, East Las Vegas, N. M.; coll. Mrs. W. P. Cockerell.

*Pseudolecanium Californicum*, Ehrh., East Las Vegas, N. M.

*Dactylopius pseudonifæ*, Ckll., on house fern, East Las Vegas, N. M.

*Orthezia occidentalis*, Dougl.; alt., 8,000 feet above the sea level; Peulah sapello Canon, N. M.

*Eulecanium pruinosum*, var. *kermoides*, Tyrrell, 1896. This species was described in the Annual Report of the California Experiment Station, in 1896, by Miss M. W. Tyrrell, as *Lecanium pruinosum*, var. *kermoides*, found on oak in California. In Prof. Cockerell's Check List, p. 339, it is listed, and he states that he doubts if it belongs to *pruinosum*; in his first Supplement, p. 394, it is listed as a synonym of *quercitronis*. In October, 1902, he collected some scales infesting *Quercus Emoryi* (Emory's oak), at Las Vegas, Hot Springs, N. M., at about 7,000 feet alt.; examples of these he forwarded to me, and in his note accompanying them stated that he believed them to be *L. kermoides*. The ♀ scales are red-brown, kermes-like in shape, average size 3½ mm. in diameter and 3 mm. high. Antennæ 7-jointed; joint (1) 32, (2) 32, (3) 48, (4) 48, (5) 20, (6) 20, (7) 40; joints one and two are equal in most cases; three and four are equal, when not, joint four seems to be the longest; five and six are equal and shortest. Leg coxa, 96; femur and trochanter, 148; tibia, 100; tarsus, 68. The species in the antennæ comes near to *E. quercitronis*, Fitch. There is no doubt that *kermoides* is a distinct species. In a recent letter from Prof. Cockerell he says he believes Mr. Pergande holds that *kermoides* is a distinct species. It, however, belongs to a very puzzling group where the antennæ are very variable. In *quercitronis* I

have found joints 3 and 4 to be equal in length, sometimes 3 longer than 4, and again 4 would be longer than 3, and in one instance joint 3 was very long, 108  $\mu$ ; in this case joint 4 was only 24  $\mu$  long.

*Pulvinaria innumerabilis*, on *Aesculus octandra*, East Las Vegas, N. M., Oct. 14, 1902.

### A NEW SAWFLY.

BY R. A. COOLEY, AGRICULTURAL COLLEGE, BOZEMAN, MONTANA.

The Sawfly here described is a common pest on the leaves of various species of *Populus* in Montana, and a Bulletin dealing with its life-history and economic significance is about to be published from the Montana Experiment Station. We give here an outline of its life-history, followed by descriptions of the two sexes.

The adults appear on the foliage in May and continue there for about eight weeks. The female deposits her eggs singly on the very young, tender leaves, and at the same time stings them in such a way as to cause the edge to fold under on the lower surface. The egg is found under the epidermis in the end of the fold nearer the petiole. One edge or both edges may be folded. The larva, at first, feeds in the fold, eating off the surface of the leaf, but later ventures out and eats holes in the leaves, always preserving the fold for a retreat. The cocoon is formed in the fold and drops to the earth with the leaf. This leaf, among the others on the ground, forms the hibernating place for the insect.

In this paper the writer has adopted the form of description used by Mr. C. L. Marlatt in his valuable "Revision of the Nematinae of North America."

*Pontania Bozemani*, n. sp.—*Female*.—Length 6 mm.; robust; emargination of clypeus a semicircle; lobes of the clypeus rounded; longest hairs of the mouth-parts about as long as the distance from lobe to lobe of the clypeus; lateral furrows of the vertex broad and rather shallow; ocellar basin distinctly defined; frontal crest almost absent; antennae moderately slender, 4 mm. long, with joints 3 and 4 subequal, joint 5 shorter, joints 6, 7, 8 and 9 still shorter and subequal in length; sheath acuminate, hairy below at the apex; claws cleft for one-third their length. Colours principally resinous-yellow and black; antennae, large spot on vertex, thorax above except sides of pronotum, dorsum of first abdominal segment, most of dorsum of second and spot on the next four

or five segments, glossy black; spot under base of wings, spot at base of posterior coxa, black; remainder of body resinous-yellow, except the sheath, which is very dark, around the mouth-parts, which is very light, and the posterior tarsi, which are darker above. Stigma light at base; veins brownish, lighter at base of wings. Wings iridescent.

*Male*.—Length 5.75 mm. Differs from the female in being less robust, in having the clypeus more widely excavated, in having the entire dorsal surface of the abdomen back to genital parts glossy black, and in having a larger spot of black at base of posterior coxa.

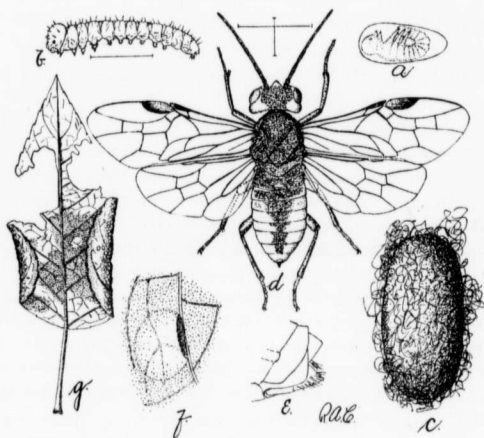


FIG. 6.

## EXPLANATION OF FIGURES.

- a.—Egg, showing the nearly mature embryo.
- b.—Larva.
- c.—Cocoon.
- d.—Adult female sawfly.
- e.—Side view of extremity of abdomen of female.
- f.—Egg-pocket under epidermis.
- g.—Leaf affected by the species.



CLASSIFICATION OF THE FOSSORIAL, PREDACEOUS AND  
PARASITIC WASPS, OR THE SUPERFAMILY  
VESPOIDEA.

BY WILLIAM H. ASHMEAD, A. M., SC. D., ASSISTANT CURATOR, DIVISION  
OF INSECTS, U. S. NATIONAL MUSEUM.

(Paper No. 15.—Continued from Vol. XXXV., p. 158.)

FAMILY XII.—Myrmosidæ.

1899. Myrmosidæ, Family, Ashmead; Journ. N. Y. Ent. Soc.,  
VII., p. 49 and 52.

1903. Mullidæ, Famille (*partim*), André; Wytzman's Gen. Ins.  
Fam. Mutillidæ.

This family, as here defined, is, I think, a *natural* one, although some of the genera have been placed previously, by different authors, in other families, with the *Scoliidæ*, *Myzinidæ*, *Mutillidæ*, etc.

The females in this family may always be easily recognized by the thorax, which is distinctly divided into *two* parts, while the males, except in three or four cases, are easily distinguished by the genitalia, the hypopygium terminating in a sharp aculeus, which curves upwards, as in males in the family *Myzinidæ*, with which they are often confused.

The males belonging to the genera *Myrmosa*, Latreille; *Ephutomma*, Ashmead, and *Myrmosida*, Smith, have, however, the hypopygium unarmed, while in the South American genus, *Bradynobænus*, Spinola, it is tridentate, as in some *Thynnidæ*.

The venation of the front wings in all of these genera is, however, distinctive, and no difficulty will attend their recognition, as besides venation there are other characters.

The genus *Myrmosida*, Smith, I know only from the description and figure; it appears to approach nearest to *Apterogyna*, Latreille, although the hypopygium is apparently unarmed. It also resembles a male ant of the family *Poneridæ*, and particularly to males in the subfamily *Pseudomyrminæ*; if it is not an ant, then it is a Myrmosid, and it is placed in the subfamily *Apterogyninæ* provisionally.

Three distinct subfamilies may be recognized, one, the *Apterogyninæ*, first pointed out by Mr. Ernest André, as follows:

Table of Subfamilies.

Abdomen normal, *without* a constriction between segments 2 and 3,  
at most with a constriction between segments 1 and 2 . . . . . 2.

- Abdomen *with* a strong constriction between segments 2 and 3, the first two segments being more or less nodiform.....3.
2. Thorax in female almost round, not or hardly longer than wide; head quadrate; mandibles falcate; maxillary palpi 3-jointed; labial palpi 2-jointed; *males* winged, the front wings *without* a marginal and a discoidal cell; hypopygium at apex tridentate.....Subfamily I.—Bradynobaeninae.
- Thorax in female not nearly round, much longer than wide; head variable, the maxillary palpi more than 3-jointed, the labial palpi more than 2-jointed; *males* winged, the front wings *with* a marginal and a discoidal cell; hypopygium ending in a single aculeus, which curves upwards, rarely unarmed.....Subfamily II.—Myrmosinae.
3. Front wings in males (except in *Myrmosida*, Smith, which has a marginal cell and two cubital cells) *without* marginal and discoidal cells; hypopygium, except in *Myrmosida*, Smith, ending in a single upward curved aculeus; females readily known by the constriction between segments 2 and 3. Subfamily III.—Apterogyninae.

SUBFAMILY I.—Bradynobaeninae.

This subfamily, so far as the characters of the males are concerned, approaches nearest to the *Thynnidae*, the hypopygium being tridentate, much as in *Thynnus*, Fabr. but the venation is quite different.

The marginal and the discoidal cells are absent, and thus show an affinity with the *Apterogyninae*. The female, however, is quite different from any in either the *Myrmosinae* or the *Apterogyninae*, the thorax being very short in outline, almost round, while the head is quadrate, the mandibles falcate, the maxillary palpi 3-jointed, the labial palpi 2 jointed. Only one genus is known:

- Female, wingless.....1.  
 Male, winged.....2.
1. Thorax in outline almost round; head quadrate; mandibles falcate.....Bradynobaenus, Spinola.  
 (Type B. Gayi, Spin.)
2. Front wings without a marginal cell, the discoidal cells wanting; hypopygium tridentate.....Bradynobaenus, Spinola

SUBFAMILY II.—Myrmosinae.

1896. Myrmosini, Tribe I. (*partim*), Ashmead; Trans. Am. Ent. Soc., XXII., p. 180.

1903. Methocinæ, Subfamily (*partim*), André; Wytzman's Gen. Ins. Fam., Mutillidæ, p. 6.

1903. Myrmosinæ, Subfamily (*partim*), André; Opus. Cit., p. 12.

1903. Mutillinæ, Subfamily (*partim*), André; Opus. Cit., p. 13.

To this subfamily belong the majority of the known genera and species falling in the family *Myrmosidæ*. It is easily separated from the *Bradynobaeninae* by the shape of the thorax in the females and by the armature and venation of the males. The group comes closest to André's subfamily *Apterogyninae*, but may be easily distinguished from it by the absence of a strong constriction between the second and third abdominal segments, and by the totally different venation of the front wings.

Two distinct tribes may be recognized as follows:

Table of Tribes.

Females.....	1.
Males.....	2.
1. Ocelli present.....	Tribe I.—Myrmosini.
Ocelli absent.....	Tribe II.—Chyphotini.
2. Front wings with the marginal cell long, or not especially short; hypopygium unarmed.....	Tribe I.—Myrmosini.
Front wings with the marginal celi usually short; hypopygium armed with an aculeus which curves upwards....	Tribe II.—Chyphotini.

TRIBE I.—Myrmosini.

The females in this tribe resemble those belonging to the family *Mutillidæ*, but are easily recognized by having the thorax divided into two distinct divisions, and from the tribe *Chyphotini* by having *distinct* ocelli.

The males are easily distinguished by having the hypopygium *unarmed*.

Table of Genera.

Females.....	1.
Males.....	2.
1. Thorax quadrangular, the pronotum as wide as the meso-metathorax, usually rugoso-punctate, or coarsely punctate; maxillary palpi 6-jointed, labial palpi 4-jointed.....	Myrmosa, Latreille. (Type <i>Mutilla melanocephala</i> , Fabr.)
Thorax not quadrangular, compressed at the sides from the meso-metathoracic angles; mandibles strongly excised beneath, with a projection towards base.....	Ephutomma, Ashmead. (Type <i>Mutilla incerta</i> , Radoszk.)

2. Marginal cell long; *four* cubital cells, the second and third each receiving a recurrent nervure.....Myrmosa, Latreille.  
Marginal cell shorter, triangular; *three* cubital cells, the second triangular, receiving the first recurrent nervure near its middle, the third hexagonal; eyes large, extending to the base of the mandibles, emarginate within.....Ephutomma, Ashmead.

## TRIBE II.—Chyphotini.

1896. Chyphotini, Tribe III., Ashmead; Trans. Am. Ent. Soc., XXII., p. 179 (Cyphotini).

1903. Methocinae, Subfamille, André; Wytzman's Gen. Ins. Fam., Mutillidae, p. 6.

The absence of ocelli in the females and the armed hypopygium in the males, which terminates in a single aculeus that curves upwards, as in males in the family *Myzinidae*, readily separate this tribe from the *Myrmosini*.

## Table of Genera.

- |   |                                     |
|---|-------------------------------------|
| Females.....  | 1.                                  |
| Males.....  | 4.                                  |
| 1. Thorax not quadrate, quite differently formed.....   | 2.                                  |
| Thorax quadrate, the sides parallel.  |                                     |
| Head large, quadrate, wider than the thorax; mandibles long, at apex bidentate, sinuate or subemarginate beneath; pygidium with a pygidial area.....  | Brachycistis, Fox.                  |
|   | (Type B. petiolatus, Fox.)          |
| 2. Eyes round or nearly; abdomen petiolate or subpetiolate.....   | 3.                                  |
| Eyes oval, slightly sinuate on outer margin superiorly; abdomen nearly sessile.   |                                     |
| Pronotum transverse, a little wider than the meso-metathorax anteriorly, but not wider than the same posteriorly, the sides being compressed just behind the pronotum (?). Milluta, André.                                |                                     |
| 3. Abdomen subpetiolate, the petiole broadened towards the apex and constricted before uniting with the second segment; pronotum large, nearly obtusoid, and fully as wide as the meso-metathorax, or a little wider..... | Typhoctes, Ashmead.                 |
|   | (Type Mutilla peculiaris, Cresson.) |
| Abdomen with a distinct slender petiole; pronotum campanulate, much narrower than the meso-metathorax.....  | Chyphototes, Blake.                 |
|   | (Type C. elevatus, Blake.)          |

4. Middle tibiae with *one* apical spur . . . . . 5.  
 Middle tibiae with *two* apical spurs . . . . . 7.  
 5. Front wings with *three* cubital cells, the second and third each receiving a recurrent nerve.

Cubitus in hind wings originating much *before* the transverse cubitus; second cubital cell in front wings *not* triangular, very large, trapezoidal, not much larger than the third; submedian and median cells equal, the transverse median nerve interstitial with the basal vein; mandibles bidentate . . . . . 6.

Cubitus in hind wings interstitial or nearly with the transverse cubitus, sometimes originating a little beyond it; second cubital cell in front wings more or less triangular; submedian cell usually a little longer than the median (rarely equal in some *Brachycistis*), the transverse median nerve usually not interstitial with the basal vein; mandibles bidentate.

Marginal cell very short, always much shorter than the oblong stigma; first abscissa of the radius only about one-third the length of the third cubital cell; second cubital cell triangular, usually receiving the first recurrent nerve *before* the middle, not, or rarely, longer than the third; abdomen with a more or less distinct constriction between the first and second segments; scutellum rounded, subconvex; ocelli large . . . . . *Brachycistis*, Fox.

Marginal cell not short, about as long as the large oblong stigma; first abscissa of the radius as long, or nearly, as the third cubital cell; second cubital cell at least three times as long as the third, receiving the first recurrent nerve *beyond* the middle; third cubital cell quadrate, or nearly, a little wider (higher) than long, receiving the second recurrent a little before its middle; scutellum quadrate; ocelli large, the laterals about their width from the eye margin . . . . . *Milluta*, André.\*  
 (Type *M. chobauti*, André.)

6. Marginal cell much longer than the large oblong stigma; lanceolate; first abscissa of the radius short, less than one-third the length of the third cubital cell; third cubital cell large, much longer than

\*I am greatly indebted to Mons. Ernest André, for the loan of the unique type of this genus.

wide, nearly trapezoidal, a little shorter than the second ; ocelli very large, the laterals close to the eye margin . . . Magrettina, Ashmead.  
(Type *Meria nocturna*, Morowitz.)

7. Front wings with *three* cubital cells . . . . . 8.  
Front wings with *two* cubital cells . . . . . 9.
8. Second cubital cell receiving both recurrent nervures ; the third cubital quadrangular . . . . . Chyphotes, Blake.
9. *Two* recurrent nervures, the second cubital cell receiving both recurrent nervures . . . . . Chyphotes, Blake.  
Only *one* recurrent nervure received by the second cubital cell, the second recurrent nervure always wholly absent . . Typhoctes, Ashm.

#### SUBFAMILY III.—Apterogyninae.

1899. Apterogyninae, Tribu II., André ; Spec., des Hym., d'Eur. et d'Algerie, Tome 8, pp. 57 and 65.

This group was first recognized by Mr. Ernest André. It is a singular group, of small extent, falling naturally in the family *Myrmosidae*, and not in the family *Mutillidae*, where André placed it. Only about a dozen species are known, and none have yet been found in America, although species are found in Europe, Africa and Asia. The group should, however, occur in South America, and probably has representatives there still undiscovered.

In having a strong constriction between the second and third abdominal segments the species resemble certain ants in the family *Poneridae*, and particularly those in the subfamily *Pseudomyrmicinae*, the genus *Myrmosida*, Smith, being strikingly similar to a male ant of this subfamily. I know it, however, only from the description and figure. Smith placed it in the family *Mutillidae*, but if it is a parasitic wasp and not an ant, then, on account of its abdominal peculiarities, it belongs here. Smith says nothing about the genital armature.

#### Table of Genera.

- |  |                                    |
|--|------------------------------------|
| Males . . . . .  | 1.                                 |
| Females . . . . .  | 2.                                 |
| 1. Front wings <i>with</i> a stigma, a marginal cell, two cubital cells and one discoidal cell ; head large, obtrapezoidal ; pronotum short transverse ; hypopygium (?) unarmed (Tribe I., Myrmosidini), (Singapore) . . . . . | Myrmosida, Smith.                  |
|  | (Type <i>M. paradoxa</i> , Smith.) |
| Front wings <i>without</i> a stigma or a marginal cell, and usually without a cubital cell ; one small discoidal cell ; pronotum not short,  |                                    |

transverse quadrate; hypopygium armed with an upward curved aculeus (Tribe II, Apterogynini), (Europe, Africa and Asia).....Apterogyna, Latreille.

(Type A. Olivieri, Latr.)

2. Abdomen with the first two segments nodiform; mandible narrowed, arcuate, pointed at apex.....Apterogyna, Latreille.

### GYNANDROMORPHISM IN LUCANUS ELAPHUS.

BY H. F. WICKHAM, IOWA CITY, IOWA.

Some time ago, while in St. Louis, I called on Dr. Geo. W. Bock, and saw in his collection a remarkable specimen of a female *Lucanus elaphus*, from Poplar Bluff, Mo. On my expressing interest in the matter, the Doctor very kindly gave me the insect, and I wish to put the case on record.

The chief organ affected is the left mandible (fig. 7 *a*), which is more than twice the length of the right (fig. 7 *b*), and partakes of many characters usually exhibited by the male. It is irregularly curved in outline, sparsely punctured, except at the base, where two elongate areas are coarsely and closely punctate, the larger area being on the superior face, while the smaller is lateral. The external face is flattened, trituberculate along the middle region, carinate along the upper and lower margins. The armature of the mandible is as follows: Subbasal and subapical teeth long, as in the male, the smaller intermediate teeth arranged not in one series, but in two, the lower row containing three denticles, one in front of and one behind (but below) the subbasal tooth, the other behind the subapical one; the upper series consists of five teeth forming a row, as shown in the figure, the second being bifurcate at tip. The antennæ are not affected. The head is roughly punctured, somewhat uneven, but without the characteristic ridges of the male. The prothorax is not quite alike on both sides, the left being a little longer and showing a tendency to develop the shape of the male. The front tibiæ differ from each other, the left being a little narrower than the right, the apical tooth shorter and less excurved, the subapical trifurcate, the two teeth near the middle of the tibia crowded close together. The right middle tibia has four teeth (exclusive of those around the apex), while the left has but two. The hind tibiæ are practically alike.

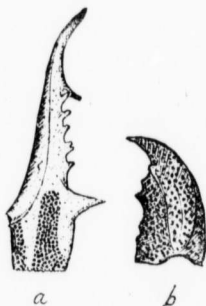


Fig. 7.

This is a curious case, showing an incomplete copying of the male characters, accompanied by considerable distortion. None of the organs affected are perfect images of their counterparts in the male, though the left mandible is sufficiently near to suggest that sex at once.

The figures will show the mandibles from above, the left on account of the downward curve of the tip, appearing shorter in proportion than it should, and, owing to their position, the lower series of teeth is not shown.

### COLOUR-BLINDNESS AMONG ENTOMOLOGISTS.

BY PROF. C. H. FERNALD, AMHERST, MASS.

It is well known that a small percentage of the people in this country, and perhaps in all countries, are more or less colour-blind, and it is a noteworthy fact that such persons are often entirely unconscious of it or do not fully appreciate its disadvantages. The officials of the railroads and certain other corporations test the applicants for situations, and if they are found to be colour-blind, or not able to distinguish colours accurately, they are not employed. It will be readily seen that if a railroad engineer or the officer of the deck on one of our large passenger ships could not distinguish between red and green signal lights in the night, most disastrous accidents might be the result.

An entomologist might be more or less colour-blind on some colours and be entirely unconscious of the fact, but the results in his descriptive work would be faulty and more or less misleading, according to the degree of imperfection in his colour vision. A correspondent wrote me a short time ago that he had a larva which he called green, but his assistant declared it to be white. It is possible that if these gentlemen were tested, the colour vision of one or the other would be found more or less imperfect.

It is to prevent any possible errors in descriptive entomology because of colour-blindness that we have adopted the plan of testing all the graduate students in entomology in the Massachusetts Agricultural College.



MERISTIC VARIATION IN *CORYDALIS CORNUTA*, LINN.

BY H. F. WICKHAM, IOWA CITY, IOWA.

Records of duplication of members in hexapod larvæ are so rare that I submit the subjoined account, drawn up from a specimen of the young of *Corydalis cornuta*, captured in the river near Iowa City, several years ago. The insect is one of a number that I took for class dissection, and as far as noted, the remainder did not depart from the ordinary type. A notice of the case was prepared at the time and sent to a scientific journal on the eve of its suspending publication, so that I think the article was never printed.

The larva under discussion measures, in its preserved state, about an inch and three-quarters in length. The duplication of parts concerns the left hind leg, where the femur, which is normal, bears a bifurcate tibia, one branch of which is longer than the other. The longer side attains a length about equal to that of the right tibia, and bears a tarsus which is approximately normal, though the claws are nearer together than usual ;

the shorter side of the tibia supports a tarsus, which in its turn shows a decided tendency to bifurcation and carries two pairs of claws.

The proportions of the parts are shown in the figure. (Fig. 8.) I am not certain that the short tarsus is drawn in proper perspective, as I accidentally broke it off at the joint marked *a* in the figure, and may have twisted it in replacing. The specimen is preserved in my collection.

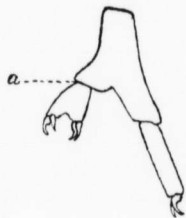


Fig. 8.

## PREOCCUPIED NAME.

I refer to Prof. Fernald's kind notice of my "Hawk Moths," CAN. ENT., 98, 1887, for the statement that the generic term *Atreus* is preoccupied, having been used by Koch in 1837 for a genus of Scorpions. I should not have troubled myself further in the matter of changing this name in the Sphingidæ, seeing that Prof. Fernald believes a separate genus for *plebeia* from *Protoparce* unnecessary, except that Rothschild and Gordon, in their exhaustive revision of the Sphingidæ, just published, retain the name *Atreus* and criticise my calling the species "*plebeius*," instead of *plebeja*. So I change the name *Atreus*, Grote, 1886, to *Paratreia*, with *P. plebeja* as type.

A. R. GROTE.

DO WE KNOW *CULEX CONSOBRINUS*, DESV.?

BY J. M. ALDRICH, MOSCOW, IDAHO.

Desvoidy published this species in 1827, in the Memoirs of the Society of Natural History of Paris, Vol. III., p. 408. The entire description is as follows :

" 27. *CULEX CONSOBRINUS*, R. D.

Simillimus præcedenti ; palpis, tarsisque bruneis.

Long. 3 lineas.

Omnino similis *Culici pipienti* : differt solum palpis tarsisque brunicosis, non flavis.

Habitat in Pennsylvania. (Musæum Dejeanianum.)"

The species preceding this, to which reference is made, is *Culex pipiens*; the length in that is also given as three lines. Nothing is said about the palpi and tarsi, further than the expression "pedes flavescentes."

This species remained unrecognized until 1896, when Coquillett, in Howard and Marlatt's Bulletin on "Household Insects" (Bull. 4, n. ser., Div. of Ent.), claimed to have identified it with a common and widespread form. He gave the following synonyms: *Punctor*, Kirby; *impatiens* and *pinguis*, Walker, and *inornatus*, Williston. The synonymy had been made out entirely from descriptions, save in the case of *inornatus*, of which Williston's type was in the National Museum for comparison. In Circular No. 40, Coquillett adds as probable synonyms, *Anopheles annulimanus*, Van der Wulp, and *Culex testaceus*, Van der Wulp.

Dr. Howard transmitted specimens of this supposed *consobrinus* to Theobald, who accepted them at their face value and redescribed the species in his Monograph of the Culicidæ, Vol. II., p. 78. He found from Kirby's type in the British Museum that *punctor* is a distinct species, which he redescribed on p. 75. As to Walker's species, he makes the following notes :

"*Culex impatiens*, Walker, may be this species (Coquillett's *consobrinus*), the type answering in nearly all respects, but the abdominal banding differs.

"*Culex pinguis*, Walker, may also be synonymous, but I do not know where the type is, and Walker's descriptions seem almost valueless, judging from the types I have seen."

Speaking of *Anopheles annulimanus*, Theobald says (1,213): "Coquillett thinks this species does not belong to the genus *Anopheles* at all. The description, he seems to think, applies to a male of *Culex consobrinus*, Desvoidy; but in this I can scarcely agree, and do not think such an authority as Van der Wulp would commit such an error."

As to *Culex testaceus*, Theobald received a specimen from Lake Simcoe, Ontario, which he identified as this species, making it distinct from the supposed *consobrinus*.

Now let us see whether the colour of the palpi and tarsi, as indicated by Desvoidy, is sufficient to distinguish a species from *pipiens*. Taking the full discussion of *pipiens* given by Theobald (Monogr., Vol. II., pp. 132-136), it is immediately seen that the female has "palpi thick, brown, with some grayish scales"; also "tarsi uniformly dark brown." In the male the palpi are "light ochraceous brown," and the "tarsi dark brown." Desvoidy's specimen was in all probability a female. It appears, therefore, that his distinctive characters are normal in *pipiens*! At any rate, *pipiens* is a variable species, and easily includes forms with all his characters.

The size given by Desvoidy is the same for both species, 3 lines. If I understand this correctly, it is about 6 mm. Theobald gives 4.5 to 5 mm. for *pipiens*, and 6 to 7 mm. for *consobrinus*. The advantage here is perhaps a little on the side of a distinct species; still, Desvoidy expressly makes it the same size as *pipiens*, which he speaks of as a very common species, so it works about as well one way as the other.

When I came to the conclusion, some time ago, that the real *consobrinus* is nothing but *pipiens*, which is known to occur in the United States as well as Europe, I wrote to Theobald and Coquillett in regard to the matter. The former replied that he had accepted the species on the supposition that Coquillett had examined the type of Desvoidy. The latter only wrote, "Repeated revisions of my first reference of *Culex consobrinus* have not caused me to change my opinion in regard to it. Size and colouring both apply better to this form than to *pipiens* or any of our other species."

I have shown exactly how much there is in the matter of "size and colouring."

The species which is now passing under the name of *consobrinus* I think should be known as *inornatus*, Williston. It was described in the Diptera of the Death Valley Expedition, North American Fauna, No. 7.

p. 253. The type of this description, as above stated, has been examined by Coquillett and found identical with the species under consideration. There is no other name which is not open to serious doubt.

*Consobrinus*, Desvoidy, may stand unidentified. Should anyone feel under necessity to "do something" with it, let him place it as a synonym of *pipiens*. Certainly no one can prove that it does not belong there, unless he can examine the type. In looking up Dejean's collection in Hagen's "Bibliotheca," I find considerable information as to certain families of Coleoptera and Lepidoptera, but nothing about the Diptera. The collection was divided, and the various parts scattered in a dozen places. So there is but little prospect that the type of *consobrinus* can be found.

The rapidly growing importance of the Culicidæ will, I trust, excuse me for occupying so much space in the attempt to set right one of our common species.

#### GOT WITHOUT SEEKING.

As I was sitting in Victoria Park, London, Ont., on one of the early days of August, 1902, a sharp click on my straw hat indicated to me that a beetle had been suddenly arrested in its erratic flight. I took off my hat and found thereon a longhorn, with the familiar outline and ornamentation of the old *Clytus* group. But there was something about it that seemed unusual to me, and the more I looked at it the more I was convinced of its novelty. So I secured it, killed and mounted it, and, as opportunity presented itself, endeavoured to determine it, but could find nothing with which it would correspond, and the books afforded me no relief. Having occasion to require the assistance of Mr. W. H. Harrington, Ottawa, upon some B. C. beetles, I sent my unique in order to secure his verdict upon it. He pronounced it to be *Xylotrechus 4-maculatus*, and remarked, "This is an interesting species, of which I have only taken one example, and that is of a yellowish colour." (Mine is whitish in the colour of its ornamentation.) "*4-maculatus* is said to be very variable in colour, so I think your specimen belongs to that species, although differing so much from mine." And that specimen now stands in what was before a blank in the Society's collection.

J. AUSTON MOFFAT.

Mailed June 30th, 1903.