



ECCOPTOGASTER PICEAE, N. SP.

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No. 2.

A NEW SPECIES OF *ECCOPTOGASTER*.

BY J. M. SWAINE, MACDONALD COLLEGE, P. Q.

The beetle here described is interesting as being the first species of its genus recorded from conifers in eastern North America. In the west *E. unispinosus* occurs in *Pseudotsuga*, and possibly in *Larix*, and *E. subscaber* and *E. præceps* occur in *Abies*. The food-plants of *E. ventralis* and *E. Californicus* have not been recorded. Of the eastern species, *E. fagi* is found in *Celtis* and *Fagus*, *E. muticus* in *Celtis*, *E. quadrispinosus* in *Hicoria*, and *E. rugulosus* in *Prunus*, *Pyrus* and *Cratægus*. The food-plants of *E. sulcatus* have not been recorded.

The species was found at Hudson, Que., May 24th, 1909, in branches of *Picea Canadensis*. Full-grown larvæ and pupæ were abundant in the ends of the larval galleries, but adults had not then appeared. Adults emerged from sticks in the laboratory on June 6th, and egg-laying under natural conditions commenced early in July in branches which had been broken by winter storms. No tunnels were found in living bark nor in limbs which I had girdled in May.

The egg-tunnels deeply score the wood lengthwise of the grain. The tunnels are divided into two portions by a nuptial chamber, situated usually near the middle, and from the nuptial chamber a short oblique tunnel leads to the entrance-hole above. From ten to thirty eggs are laid in shallow niches along each side of the tunnel, and well packed in with fine bits of wood. The larval galleries arise from the tunnels in a fairly regular manner, but soon through their windings cross each other in every direction, but still show a general tendency to follow the grain of the wood, which they deeply score. The pupal cells at the ends of the galleries are more or less deeply sunk into the wood, and are usually parallel with the surface, though sometimes oblique.

This species is most closely allied to *E. unispinosus*, but is easily separated by the shape and position of the ventral spine. In *unispinosus* the spine is flattened in the male, and the base of the hind margin attains the caudal margin of the segment. The shape is roughly triangular,

narrowed outwards to a rounded apex. In the female the spine is reduced to a carina, in a like position. The ventral spine of *picea* arises always from the middle of the nearly perpendicular face of the second sternite, and the base of the spine does not attain the caudal margin of the segment. In *picea* the caudal margins of the third and fourth sternites are not so strongly, and that of the fifth is much more strongly ridged.

The type specimens, male and female, will be placed in the Cornell University collection.

Eccoctogaster picea, n. sp.—Length, 2.2 mm. to 3 mm.; width, 1 mm. to 1.3 mm.; sides parallel; shining black, or nearly so; elytra sometimes with reddish tinge; antennæ, tarsi and portion of the mouth-parts yellowish. Head shining, subglobular, imbedded in the prothorax. Genæ punctured more strongly near the eyes and behind (beneath the pronotum), striate dorso-ventrally, striæ anastomosing. Eyes elongate, broadly emarginate in front. Dorsal face of the head with large punctures extending to the caudal margin. Antennal scape short, first segment of funicle globular, remaining six segments of funicle close-fitting and gradually wider distad, club pubescent, sub-oval, sutures strongly angulated, first suture deep, second very faint, a strongly-chitinized piece deeply imbedded in the inner half of the first suture. Front of the female slightly flattened, roughened with large, deep punctures, and intervening, sub-parallel ridges, which converge slightly cephalad. The punctures bear slender, yellowish hairs of nearly equal length. A tuft of stout, yellow hairs projects cephalad over the mandibles from the raised epistoma. In some specimens a slightly raised elongate tubercle is formed by the ridges on the middle line. The front of the male is much more strongly flattened and more densely and coarsely punctate.

Pronotum smooth, shining, glabrous, except for a few hairs near the edge, black, except for a reddish tinge around the anterior margin; caudal margin broadly rounded above, finely margined and faintly bisinuate, sides slightly rounded, gradually narrowed cephalad, and moderately constricted about the anterior margin. Side margins sharp and distinct, forming a continuation of the slightly raised caudal margin, and extending nearly the entire length of the pronotum. Venter of the prothorax coarsely punctured, more densely in front, sparsely hairy, concave on each side, smooth next the coxa and on the caudal margin. Fore coxæ prominent, moderately separated and hairy.

Scutellum large, triangular and depressed.

Elytra black, with a reddish tinge in younger specimens, sides nearly parallel, posterior outer angles rounded. Disc glabrous, sides and caudal depression sparsely hairy. Elytra deeply impressed about the scutellum, punctate-striate, the striæ distinct and deeper at the base; interspaces also punctate-striate with smaller punctures. On the sides the punctures are less regular and the striæ less distinct. At the base the elytra are thickened and roughened by larger punctures. On the slightly depressed caudal sixth the striæ become confused and the surface is rough, with large, close-set setigerous punctures.

Mesoepisternum with coarse punctures, from each of which arise two hairs. Mesopimeron more finely punctate, the punctures also with two hairs. Metasternum coarsely punctate, with single, stout setæ. Metaepisternum more finely punctate, with the central punctures bearing single, long setæ, and those near the margin two much finer setæ.

Venter of the abdomen coarsely punctate with slender setæ, very strongly excavated caudad of the first sternite. First and second sternites fused; second sternite nearly perpendicular, about as wide as the first, and bearing from the centre a blunt spine, slender, and pointing obliquely downward in the male, much shorter and conical in the female; third and fourth sternites each shorter than the second, and smooth on the caudal margins; fifth sternite longer than the third and fourth united, concave and strongly margined behind, more strongly in the male.

EXPLANATION OF PLATE 2.

Eccoptogaster piceæ, n. sp.

- Fig. 1.—Male.
 Fig. 2.—Antenna.
 Fig. 3.—Antennal club.
 Fig. 4.—Mandible.
 Fig. 5.—Labium and maxillæ from below.
 Fig. 6.—Labium from above.
 Fig. 7.—Fore leg, tarsus retracted.
 Fig. 8.—Fore tibia, inner side, showing the slight ridges.
 Fig. 9.—Side view of abdomen, ♀.
 Fig. 10.—Primary- or egg-tunnel, showing the bases of the larval galleries.
 Fig. 11.—Portion of egg-tunnel, showing eggs packed in wood-chips
 Fig. 12.—Eggs.

FIFTH MEETING OF THE ENTOMOLOGICAL SOCIETY OF AMERICA.

The fifth meeting of the Entomological Society of America was held at the Harvard Medical School, Boston, Dec. 30th and 31st, 1909. The President, Dr. Henry Skinner, presided throughout the sessions. The President announced the deaths of Henry H. Edwards, an Honorary Fellow; Prof. Mark Vernon Slingerland, a Fellow; B. H. Guilbeau, W. Brodie and H. M. S. Seib, members. Suitable resolutions on the deaths of Mr. Edwards and Professor Slingerland were adopted. The report of the Executive Committee showed among other things that 16 new members had been received during the year and 22 memberships had terminated, not including those who had died. Also that a memorial drawn up by Mr. N. C. Wood regarding the tariff on insects and signed by the President and Secretary, had been productive of no action by Congress.

The question of appointing delegates to the approaching International Congress of Entomology was referred to the Executive Committee.

The following officers were elected:

<i>President</i>	- -	Dr. John B. Smith.
<i>First Vice-Pres.</i>	- -	Dr. S. A. Forbes.
<i>Second Vice-Pres.</i>	- -	Prof. V. L. Kellogg.
<i>Secretary-Treasurer</i>	- -	Mr. C. R. Crosby.

Additional Members of the Executive Committee:

Prof. J. H. Comstock,	Prof. J. M. Aldrich,
Dr. W. M. Wheeler,	Rev. Prof. C. J. S. Bethune,
Mr. E. A. Schwarz,	Prof. Lawrence Bruner.

Member of the Committee on Nomenclature:

Prof. T. D. A. Cockerell (to succeed himself).

The report of the Committee on Nomenclature concerning the nomenclature of Gall Insects, read at the Baltimore meeting and printed in the Annals for 1909, was adopted as printed, with the provision that the Society express itself as standing with the majority of the Committee in Section V.

Mr. Brues suggested that Prof. Felt submit a list of names of Gall Insects that he thought could be accepted as standard.

Moved and carried that the request of Dr. Stiles, published in Science, for the preparation of a list of one hundred important names to be adopted by the Congress of Zoology as standard, be referred to the Executive Committee.

The following amendment to the Constitution was adopted :

Article V, Sec. 3.—Election of officers. All officers shall be elected by ballot at the annual meeting for the term of one year, and shall be eligible for re-election. Their term of office shall commence with the first of June following their election.

The Secretary was instructed to take a mail vote of all members and Fellows of the Society as to whether the present arrangement of paying separate dues and subscriptions to the Annals should be continued, or a single membership fee of two dollars be charged, and members receive without further expense the publications of the Society.

Professor Sanderson suggested the adoption of a uniform style of button for both the entomological societies meeting in affiliation with the American Association for the Advancement of Science. Referred to the officers.

The following papers were read during the sessions :

R. MATHESON.—“Remarks on the External Anatomy of the Haliplidæ.”

W. M. WHEELER.—“On the Effects of Parasitic and Other Kinds of Castration in Insects.”

A. H. MORGAN.—“Some Correlations of May-fly Structure and Habit.”

C. R. CROSBY.—“Some Observations by the Late Professor Slingerland and the Speaker on the Life-history of *Heterocordylus malinus*.” (Read by title.)

C. J. TRIGGERSON.—“The Life-cycle of the Oak Hedge-hog Gall-fly (*Acraspis erinaces*).”

F. L. WASHBURN.—“A Jumping Seed-gall on the Burr Oak.”

A. D. MACGILLIVRAY.—“The Female Reproductive Organs of *Corydalis cornuta*.”

W. L. W. FIELD.—“The Offspring of a Captured Female of *Basilarchia proserpina*.”

H. H. LYMAN.—“An Improved Drawer for Insect Cabinets and a New Substance for Lining Them.”

C. T. BRUES.—“Some Notes on the Geological History of the Parasitic Hymenoptera.”

J. C. BRADLEY.—“The Plaiting of the Wings of Hymenoptera”

T. J. HEADLEE.—“An Apparatus for the Determination of Optimums of Temperature and Moisture for Insects.”

A. D. MACGILLIVRAY.—“The Radial Sector in *Phlebotrophia Mathesoni*.”

W. T. FORBES.—“A Structural Study of Some Caterpillars.”

M. J. ELROD.—“The Blackfoot Glacier as an Entomological Burying-place.” (Read by title only.)

J. J. DAVIS.—“*Chaitophorus populifoliae*, Fitch, versus *Chaitophorus populifoliae*, Oestland.” (Read by title only.)

L. HASEMAN.—“The Life-history of a Species of Psychodidæ.” (Read by title only.)

A. G. HAMMAR.—“Notes on the Life-history of *Fidiobia flavipes*, Ashmead, an Egg Parasite of the Grape-root Worm (*Fidia viticida*, Walsh).”

A very interesting and extensive exhibition was held in conjunction with and under the auspices of the Cambridge Entomological Club in rooms adjoining the meeting hall.

The Annual Public Address was given by Dr. John B. Smith on the evening of December 30 in the hall of the Boston Society of Natural History. Title, “Insects and Entomologists: Their Relations to the Community at Large.”

On Tuesday evening the visiting entomologists were the guests of the Cambridge Entomological Club at a most enjoyable smoker held in Copley Hall.—J. CHESTER BRADLEY, Secretary-Treasurer.

STRAY NOTES ON GEOMETRIDÆ.

NO. I.—ON *PLAGODIS KEUTZINGARIA*, PACKARD.

BY GEO. W. TAYLOR, NANAIMO, B. C.

This name was published in Packard's Monograph, page 468, and attributed to Grote. The species was described from six males and one female, and is figured on plate xi, fig. 44, and plate xiii, fig. 51. The second figure was made from a specimen which seemed different from all the rest, being in fact a distinct species, afterwards separated as *P. nigrescaria*, Hulst.

The Monograph appeared early in June, 1876, and is reviewed in the July number of the CANADIAN ENTOMOLOGIST.

In the June number of the same journal is a note by Mr. Grote (page 12, Vol. VIII):

“*Eurymene Kuetsingi*, Grote

“A description and the type of this purple-black species have been sent

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to Prof. Packard for publication in his expected Monograph of the Geometræ. It is named for Mr. Kuetzing, of Montreal, who found the species."

In the August number of the CANADIAN ENTOMOLOGIST (VIII, p. 154), Mr. Grote protests against Packard having altered his manuscript specific name, but he himself in this place, perhaps by a printer's error, spells the name *Keutzingi* instead of *Kuetzingi*.

In 1882 Grote published his check list, and here we find he has fallen in with Packard's spelling, and the insect stands as *Plagodis Keutzingaria*.

In 1887 Hulst (Ent. Amer., II, 212) called attention to the fact that the two figures of Packard represent very different forms, and he proposed the varietal name *nigrescaria* for the dark form figured on plate xiii, fig. 51.

In 1896 Hulst published his "Classification," and therein lists *Plagodis Keutzingaria*, Packard, but in Dyar's list (1902) he writes *Plagodis Keutzingi*, Grote, having evidently come to the opinion that Grote's brief mention in CAN. ENT., VIII, 112, amounted to a publication of the species, and that it antedated the publication by Packard in his Monograph.

It should be noted that the Montreal collector whom Grote wished to honour was Mr. P. Kuetzing, but the specific names of the moth, except in Grote's first note, have always been written as though the gentleman's name was Keutzing.

In a paper published in May, 1907 (Ent. News, XVIII, 206), Mr. Pearsall discusses these species, and apparently assumes: 1st, that the note in CAN. ENT., VIII, 112, must be considered as a valid publication of a species *Eurymene Kuetzingi*, Grote. (Pearsall, by the way, misspells this name, as all the list-makers, including Grote himself, have done.)

2nd. That this publication antedated the publication in the Monograph of *Plagodis Keutzingaria*, Packard. On these two points no doubt Mr. Pearsall was misled by Hulst's nomenclature in Dyar's list.

3rd. That the particular specimen which Packard received from Grote (one out of seven) was the "variety" figured on plate xiii. He even goes so far as to suggest that Grote's protest (published in August, 1876) may have been the reason for the publication of this figure, thus showing that he has overlooked the fact that the Monograph was published before the protest was made.

Acting apparently on these assumptions, Mr. Pearsall adopts the name *Keutzingi*, Grote, for *nigrescaria*, Hulst, and claiming that

Keutzingaria, Packard, is thus preoccupied, he renames it *attruaria*, Pearsall.

But (1st) the mere mention of the fact that a specimen and description under a certain name had been sent to Packard for publication, does not constitute *Kuetzingi* anything more than a nomen nudum.*

(2nd) If it did, it cannot take precedence of *Keutzingaria*, because the Monograph, so far as I can learn, was published *before* the CANADIAN ENTOMOLOGIST for June came out. I am not absolutely sure of these dates, both were in June, 1876, but I have no doubt they can be definitely established.

(3rd) Grote evidently considered Packard's description and both figures as representing his species, otherwise there would have been no ground for protesting. He considered *Keutzingaria* and *Kuetzingi* as pure synonyms.

(4th) Grote, by adopting Packard's name in his list of 1882, shows that he did not look upon his note (CAN. ENT., VIII, 112) as having precedence over the Monograph.

(5th) Even if Mr. Pearsall is right in recognizing the name *Kuetzingi*, and in limiting it to the form *nigrescaria*, it seems to me that *Keutzingaria*, Packard, would be quite sufficiently different to be retained, and *attruaria* would still be unnecessary.

In my opinion, therefore, the names will stand as follows :

1876, *Plagodis Keutzingaria*, Packard.

1876, = *Eurymene Kuetzingi*, Grote, nomen nudum.

1907, = *Plagodis attruria*, Pearsall.

1887, *Plagodis nigrescaria*, Hulst.

1907, = *Plagodis Kuetzingi*, Pearsall, non Grote.

The contention in the above argument is, that the name *Keutzingaria* in the Monograph was published *before* the name *Kuetzingi* appeared in the CANADIAN ENTOMOLOGIST, but that if this was not the case, *Kuetzingi* was never properly described, and is therefore only nomen nudum, abandoned by the author himself, and cannot now be used, so that in any case the name *Keutzingaria* must stand for one part of the species figured by Packard, and as Hulst was the first to note that two forms were mixed, clearly his name *nigrescaria* must also be retained.

*I notice that the editors of the Zoological Record for 1876, in listing the new species of Lepidoptera described during the year, have the entry: *Plagodis Keutzingaria* (Grote MS.), Packard, but pass over entirely Grote's *Kuetzingi*, although they elsewhere allude to his paper in the CANADIAN ENTOMOLOGIST,

NEW SPECIES OF NORTH AMERICAN DIPTERA.

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

Family Bombyliidæ.

Metacosmus mancipennis, new species.

Black, the face, an inverted Y-shaped mark beneath the oral opening, the stems of the halteres and middle of the knobs, white; the bases of the tarsi, apical portion of the front and middle tibiæ and extreme base of the hind femora, dull yellowish. Lower end of the front, the occiput and pleura, whitish pruinose. Abdomen polished, the narrow hind margin of segments 2 to 5 whitish pruinose. Wings hyaline, unusually tapering to the base, the axillary cell not wider than the anal cell at its narrowest part, the latter cell very broadly open at its apex, marginal cell greatly widened toward its apex. Length, 5 mm.

Glenside, Pennsylvania. A male specimen collected July 5, 1909, by Mr. C. T. Greene. Type No. 12764, U. S. National Museum.

Family Dolichopodidæ.

Dolichopus virga, new species.

Male: Near *pernix*, but the third joint of the front tarsi of the male less than one-half as long as the second, etc. Head green, face densely whitish pruinose, bristles on lower part of occiput whitish; antennæ wholly black, the third joint pointed, ovate, longer than broad, the arista subapical, tapering to the apex. Body green, the mesonotum and incisures of abdomen tinged with bronze; lamellæ of the hypopygium yellowish, the upper edge narrowly bordered with black. Hairs of the calypteres black. Coxæ black, the front ones, except at the base, yellow, their front side covered with short black hairs and with several black bristles toward their apices; femora and tibiæ yellow, a spot at apex of hind femora and the broad apex of the hind tibiæ black; tarsi black, the first two joints of the front ones and base of the first joint of the middle ones, yellow; femora not provided with long hairs, first two joints of front tarsi slender, the first nearly twice as long as the second, third joint less than one-half as long as the second, slightly widening outwardly, fourth joint dilated, scarcely longer than broad, fifth joint more dilated, about as long as the third, the first three joints with very short hairs, the remaining two fringed on each side; middle tarsi plain. Wings grayish hyaline, costa not thickened, fourth vein not broken, hind margin of wings evenly rounded. Length, 5 mm.

Female: Like the male, except that the front tarsi are similar to the middle ones in colour and structure.

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Manahawkin, New Jersey. Two males and one female, collected Sept. 5, 1909, by Mr. H. S. Harbeck. Type No. 12765, U. S. National Museum.

Dolichopus dasypodus, new species.

Male: Near *plumipes*, but the first joint of the middle tarsi with scattered bristles only, not ciliate, etc. Head green, face yellow pruinose, bristles of occiput, except on the upper part, whitish; antennæ black, the first joint, except the upper edge, yellow, the second joint broader than long, arista tapering to the apex. Body green, mesonotum thinly gray pruinose, and marked with three indistinct bronze vittæ, pleura whitish pruinose, hypopygium black, the lamellæ subquadrate, white, bordered with black except basally. Front coxæ yellow, covered in front with short whitish hairs, and with many black ones along the inner side, a few black bristles toward the apex, middle and hind coxæ black, densely gray pruinose. Legs yellow, the front tarsi from apex of first joint and the middle and hind ones wholly black, apex of hind tibiæ brown; a single bristle on front side of the middle and hind femora before the apex, front and hind tibiæ subequal in length to the femora, the middle tibiæ about one-fifth longer than their femora; tarsi not dilated nor fringed, the joints becoming successively shorter, first joint of the middle tarsi enlarged and bearing several scattered bristles, apical third of the middle tibiæ whitish. Wings grayish hyaline, costa not distinctly thickened at apex of the first vein, the hind margin apparently strongly hollowed out at the apex of the third posterior cell (the wings are folded in the only specimen before me). Calypteres yellow, their hairs black. Length, slightly over 5 mm.

Female: Like the male, except that the first joint of the middle tarsi is not enlarged, its base is yellow and the bristles are few and mostly very short, hind margin of the wings evenly convex.

White Mountains, New Hampshire. A specimen of each sex collected by Mrs. Annie T. Slosson. Type No. 12766, U. S. National Museum.

Dolichopus laciniatus, new species.

Near *canaliculatus*, but the lamellæ of the hypopygium as broad as long, and very jagged at the apex, etc. Head green, the front violet-blue, face yellow pruinose, bristles of the occiput, except on the upper part, whitish; antennæ black, the under side of the first joint yellow, second joint broader than long, arista tapering to the apex; mouth-parts yellow. Body green, mesonotum thinly gray pruinose, pleura densely whitish

pruinose, hypopygium, except the basal segment, black, the lamellæ whitish, margined with black, except on the basal part of the under side. Coxæ yellow, the extreme base of the front ones partly and the middle and hind ones, except their apices, black, gray pruinose, front sides of the anterior ones covered with short black hairs. Legs yellow, the last joint of the front tarsi black, the middle and hind tarsi from the apex of the first joint brown; middle and hind femora with a single bristle before the middle of the front side, the hind ones fringed on the under side with long yellow hairs; front tibiæ subequal in length to the femora, the middle and hind ones slightly longer than their femora; front tarsi about one-third longer than their tibiæ, very slender except the last two joints, first joint twice as long as the third, the latter slightly shorter than the second, fourth joint laterally compressed, scarcely one-half as long as the third, fifth joint slightly longer than the fourth, laterally compressed and greatly widened, fringed with black hairs; joints of the other tarsi becoming successively shorter. Wings hyaline, costa distinctly thickened at apex of the first vein, fourth vein not broken, hind margin of the wing evenly convex. Calypteres yellow, the hairs black. Length, about 5 mm.

Roxborough, Pennsylvania. A male specimen collected June 7, 1908, by Mr. H. S. Harbeck. Type No. 12767, U. S. National Museum.

Family Scopeumidæ.

The synonyms of this name are: *Scatomyzides*, Fallen, 1810; *Scatophaginæ*, Desvoidy, 1830; *Cordyluridæ*, Macquart, 1835. Article 5 of the International Code of Zoological Nomenclature states that "The name of a family or subfamily is to be changed when the name of its type genus is changed." The type genus of the earliest name is *Scatomyza*, Fallen, 1810, equals *Scopeuma*, Meigen, 1800, hence the necessity for changing the name of this family.

Parallelomma setipes, new species.

Easily recognized by the colouring of the legs and the unusual number of bristles on them. Black, the front and the second joint of the antennæ yellowish-brown, the vibrissal swellings, oral cavity, palpi, apex of proboscis, halteres, tibiæ, tarsi, coxæ largely, the hind femora and apices of the others, yellow. Arista bare, strongly thickened at the base; antennæ slightly shorter than the face, the third joint about four times as long as the second, concave on its upper edge, the apex rounded. Face and front of nearly an equal width. Five pairs of dorsocentral bristles, the acrostichals arranged in two rows, extending almost across

the thorax. Body gray pruinose, thinnest on the mesonotum. Hind tibiae with three or four pairs of bristles on the outer side. Wings grayish, apical third of the first vein bristly. Length, 6 mm.

Castle Rock, Pennsylvania. Four male specimens, collected April 17, 1908, by Mr. H. S. Harbeck. Type No. 12768, U. S. National Museum.

Parallelomma flavovaria, new species.

Yellow, an ocellar spot, the thorax, except an interrupted vitta beginning on the humeri and extending above the wing, the scutellum, the first segment of the abdomen and bases of the other segments, broadest on the second segment and becoming successively narrower on each succeeding segment, black; on the second segment the black colour is prolonged backward in the middle, while on the remaining segments it is narrowest in the middle of the segments. Antennae nearly as long as the face, the third joint over three times as long as the second, rather broad, artista bare, thickened on the basal third. Front over twice as wide as either eye. Body thinly gray pruinose. Wings hyaline, shaded with gray along the costa and the hind cross-vein. Venter black, the hind margin of the segments yellow. Hind tibiae bearing outwardly three or four pairs of bristles. Length, 5 mm.

Glenside, Pennsylvania. A female specimen collected April 21, 1907, by Mr. C. T. Green. Type No. 12769, U. S. National Museum.

Plethochata atrifrons, new species.

Black, the halteres and legs, except bases of coxae, yellow. Antennae two-thirds as long as the face, the third joint oblong, less than twice as long as broad, rounded at the apex, arista pubescent, thickened on the basal third. Body gray pruinose. Front femora with several bristles and with a row of black spines on the under side of the median third. Wings yellowish hyaline, the veins yellow, bare. Length, 6 mm.

White Mts., New Hampshire. A male specimen collected by the late H. K. Morrison. Type No. 12770, U. S. National Museum.

Family Oscinidæ.

Chlorops (Diplotoxa) nigripes, new species.

Near *versicolor*, but readily distinguished by the black legs. Antennae black, the base of the third joint yellow, third joint ovate, about one and one-half times as long as wide, the lower side rounded, the upper nearly straight; arista white, the base yellow; head yellow, frontal triangle polished black, almost reaching lower end of the front, its sides nearly

straight; occiput black, the lower corners and a spot near upper corner of each eye, yellow; clypeus black, palpi yellow, proboscis black, the labella yellow. Body black, humeri ringed with dull yellowish, pleura reddish-brown, varied with black, a submedian yellow vitta; mesonotum opaque, toward the sides gray pruinose, appearing in certain lights as two irregular vittæ; scutellum slightly convex, abdomen polished. Knob of halteres whitish. Legs black, the coxæ, extreme bases of femora, the knees narrowly, and the tarsi, except the last joint, reddish-yellow. Wings grayish hyaline, small cross-vein about its own length from the small. Length, nearly 5 mm.

Trenton, New Jersey. Three specimens collected August 19, 1909, by Mr. H. S. Harbeck. Type No. 12771, U. S. National Museum.

Chlorops rufescens, new species.

Near *unicolor*, but differing in the white antennal arista, etc. Yellowish, the upper edge and apex of the third antennal joint, the palpi, an ocellar spot and a spot on lower part of the frontal triangle, black. Frontal triangle polished, not carinate, reaching the lower end of the front, the sides nearly straight on the upper four-fifths, on the remainder nearly parallel, the apex of the triangle bluntly rounded; front outside of the triangle covered with short black hairs. Third joint of antennæ orbicular, slightly broader than long. Mesonotum polished, marked with three reddish-yellow vittæ. Scutellum slightly convex. Wings hyaline, small cross-vein about twice the length of the hind cross-vein from the latter. Length, nearly 4 mm.

Delaware Co., Pennsylvania, July 23, 1893, C. W. Johnson; Pemberton, New Jersey, July 8, 1907, H. S. Harbeck; and District of Columbia, July 3, 1899. Four specimens. Type No. 12772, U. S. National Museum.

Chlorops subnigra, new species.

Near *confluens*, but the hind cross-vein more than twice its length from the small cross-vein, etc. Head yellow, the frontal triangle and occiput, except the narrow lateral and lower margins of the latter, black; frontal triangle polished, not punctured nor carinate, reaching the lower end of the front, the sides nearly straight, the apex pointed; antennæ black, the third joint orbicular, slightly broader than long, arista black; palpi yellow, clypeus with two black streaks. Thorax black, the front corners of the mesonotum and upper part of the pleura, except two large spots, yellow; mesonotum polished, not punctured. Scutellum yellow, margined with black, its upper side convex. Abdomen black, the sides

and venter largely yellow. Legs brown, the ends of the femora, of the hind tibiae, and nearly the whole of the front and middle tibiae, yellow. Halteres yellow. Wings hyaline, the second, third and fourth veins nearly straight. Length, slightly over 2 mm.

Manahawkin, New Jersey. A single specimen collected Sept. 5, 1909, by Mr. H. S. Harbeck. Type No. 12773, U. S. National Museum.

Ectecephala laticornis, new species.

Near *albistylum*, but with a much broader third antennal joint (in *albistylum* this joint is nearly three times as long as wide, narrowed on the apical part to less than one-half its width on the basal half). Head yellow, an ocellar dot, the upper edge of the third antennal joint, except basally, and the palpi, black; arista, except at base, white; frontal triangle reddish-brown, polished, prolonged to the lower end of the front, its sides concave until near the apex, then converging to the tip; third joint of antennae oblong, scarcely twice as long as wide, concave on the upper edge, only slightly wider on the basal than on the apical half; front projecting in front of the eyes about two-thirds of the horizontal diameter of the latter; face, cheeks and lower half of the occiput whitish. Body reddish-brown, the pleura irregularly striped with light yellow, middle of the venter light yellow; mesonotum somewhat scabrous, and with a pair of gray pruinose subdorsal vittae, a broader gray stripe in front of each wing; abdomen polished. Legs yellow, the front tarsi brown. Halteres yellow. Wings grayish hyaline, the second, third and fourth veins nearly straight, apex of the second vein over twice as far from the first as from the tip of the third, hind cross-vein twice its length from the small. Length, 5 mm.

Colorado, Georgia and North Carolina. Six specimens. Type No. 12774, U. S. National Museum.

Ectecephala sulcifrons, new species.

Near *laticornis*, but differing in the sulcate frontal triangle, black vittae of the mesonotum, and the yellow front tarsi. Head yellow, an ocellar dot, a streak from each eye to the base of the antennae, the upper edge of the third antennal joint, except basally, and the palpi, black; frontal triangle reddish-yellow, prolonged to the anterior edge of the front, its sides almost straight, the apex blunt-pointed, a median sulcus extending from the lowest ocellus to the lower edge of the front; antennae as in *laticornis*; front projecting the horizontal diameter of the eyes in front of the latter. Thorax and scutellum yellow, tinged with flesh colour,

mesonotum opaque, gray pruinose, marked with three black vittæ, the lateral ones divided by a median line behind the transverse suture; pleura marked with about five black spots. Abdomen somewhat polished, the middle of each segment and a pair of vittæ on the venter, black. Legs yellow, the last tarsal joint black. Halteres yellow. Wings as in *laticornis*. Length, 5 mm.

Arkansas City and Kinsley, Kansas. Two specimens bred by G. I. Reeves and E. G. Kelly, of the grain-insect investigation of the U. S. Bureau of Entomology. Type No. 12775, U. S. National Museum.

THE LATE DR. BRODIE.

At a meeting of the Toronto Branch of the Entomological Society of Ontario, held on November 11th, the following resolution was adopted after several members had attested their appreciation of the service of their late President :

"That this Society desires to record its deep sorrow and keen sense of loss felt by every member in the death of the late President, Dr. William Brodie. The wonderful store of knowledge he had accumulated by years of active research and close communion with nature, was always open to every earnest seeker. He was willing at all times to help with inexhaustible patience, anyone seeking a key to nature's secrets. His time and the result of his wide experience were always at the disposal of the enquirer, and ignorance that must have seemed almost criminal in his eyes was always patiently enlightened. He attracted and inspired both old and young by rare endowments and attributes. He combined deep philosophic insight with careful accuracy of observation ; an open mind with strong opinions ; the wide knowledge of an omnivorous reader with unflagging enthusiasm and earnestness of purpose ; a broad appreciation of nature's charms through all the changing seasons, with a keen analytical spirit of research. He saw both the beauty and grandeur of the landscape and the marvel and mystery of a blade of grass. In practical work Dr. Brodie seemed to possess the rare quality of specializing in many lines. In entomology and especially in the field of parasitism and gall-production he added much to the world's knowledge. His entomological collections are a valuable heritage. He also led in many lines of investigation, in ornithology and other departments of zoology. In botany, too, he did much valuable work, both as collector and investigator. This resolution would be incomplete without a tribute to Dr. Brodie's full appreciation

of the world's best in art, in music and in literature, his kindly human sympathy and his earnest interest in the deeper problems of existence. This effort to express our appreciation will not seem fulsome to those to whom his worth has been revealed in close personal friendship and co-operative work. In expressing our own keen sense of a great loss, we desire also to extend our sympathy to those of his own household and the relatives who must still more deeply feel their heavy bereavement."

NOTES ON THE HABITS OF *DISOGMUS PUBESCENS*,
KEIFFER.

BY G. E. SANDERS, URBANA, ILL.

On June 3, 1909, at Aurora, Ill., in following the plow in a timothy field heavily infested with the larvæ of a Carabid, *Amara carinata*, two were found to contain parasites, and on June 7th two adult ♀ *Disogmus pubescens* were obtained from them.

When taken, the *Disogmus* were both freshly-formed chrysalids, wholly bare, and attached by the posterior end to the larvæ from which they had emerged. In both cases the *Disogmus* larva had developed singly within the host larva, with its head end toward the hinder part of the *Amara* larva. The *Disogmus* larva emerges from its host, breaking through the ventral segments near the posterior end, until only the tip of the abdomen remains attached. The chrysalid is formed with its ventral surface toward the ventral surface of the host larva, the two being joined at the posterior ends to form a V. When taken at 9 a.m., June 3rd, the two Chrysalids were perfectly white, excepting the eyes, which were brown. At 5 p.m., June 3rd, the ocelli had turned brown, and the thorax in both was beginning to show a slight brownish tinge. On June 5th the head and thorax in both were black, the abdomen still white. On June 6th the abdomen was reddened slightly. On June 7th both adults emerged.

Regarding the development of the host, *Amara*: the chrysalids were formed from May 10th to May 14th, and the first adult emerged May 28th. An examination of the field on June 14th showed many adults present; only one chrysalid was found on this date.

On October 15th, 1908, one ♀ *Disogmus pubescens* was taken burrowing three inches down in a cornfield at Urbana, Illinois. This indicates that the species is probably two-brooded.

As it is improbable that more information on the life-history of *Disogmus* will be obtained soon, and hitherto none of the hosts of this genus have been recorded, these notes are given as a matter of record.

NOTES ON TENTHREDINOIDEA, WITH DESCRIPTIONS OF
NEW SPECIES.

BY S. A. ROHWER, BOULDER, COLO.

PAPER VIII.—NEW SPECIES FROM CALIFORNIA.

Loderus niger, n. sp.

Male: Length, 7.5 mm. Anterior margin of the clypeus deeply emarginate, the lobes broad and obtuse; the labrum rounded at the apex, punctured; the front rugoso-granular; behind the ocelli the head is shining and punctured; the lateral ocellar furrows distinct to the lateral ocelli, but not extending beyond them; the supraorbital fovea large and shallow, deeper at the orbits. Antennæ rather stout, somewhat flattened, the third joint very little longer than the fourth. The mesonotum and the scutellum shining, rather sparsely punctured, the punctures on the anterior lobe more compact; mesopleuræ anteriorly rugoso-punctured, posteriorly finely punctured; pectus shining, with a few scattered punctures. The basal abscissa of the cubitus strongly bowed downward, otherwise the venation is normal; stigma broadest at the base, tapering to the apex. Abdomen shining. Colour black; in some specimens there is a piceous spot at the apex of the anterior femora beneath. The head, thorax and legs with white hair. Wings dusky, hyaline, iridescent; venation black.

Female: The female differs from the male in being slightly larger, in having the wings paler, and the stigma more rounded beneath. The antennæ are not so flattened; the sheath is stout, the upper posterior angle is sharp.

Type locality: Mountains near Claremont, California. Males and females collected by C. F. Baker.

This is very distinct from *Loderus albifrons* (Nort.), the only other described *Loderus* known to occur in North America, by the entirely black colour. In general appearance it is like the group *sericeus* of *Dolerus*.

Prototaxonus, n. gen.—Clypeus distinctly emarginate; antennal joints three and four subequal; ocellar basin evident; the last two joints of the maxillary palpi subequal; malar space narrow but present; the third cubital cell broader below than above, due to the oblique transverse third cubitus; the second abscissa longer than the free part of M_1 ; the cross nervure of the lanceolate cell (free part of 2nd A) slightly oblique; cell

$R_{1,1}$ of the hind wings appendiculate; two discal cells in the hind wing. Hind basitarsus shorter than the following joints united; the hind tibiae longer than the femora and trochanters; claws with a short inner tooth.

Type, *Prototaxonus typicus*, Roh.

The following genera of *Emphytinae* are closely related. They all have the hind basitarsus shorter than the following joints united, the first transverse cubitus is always present, the free part of M_4 is always shorter than the second abscissa of the cubitus, the cross-nervure of the lanceolate cell is straight or slightly oblique, the hind wing has two discal cells, and the lanceolate cell is sessile at the apex in the hind wing.

Tarsal claws simple (clypeus emarginate; cell $R_{1,2}$ of the hind wings longly appendiculate)..... *Cockerellonis*, MacG.

Tarsal claws with an inner tooth..... 1.

1. Clypeus emarginate; third transverse cubitus oblique..... *Prototaxonus*, Roh.

Clypeus truncate; third transverse cubitus straight..... 2.

2. Cell $R_{1,2}$ of the hind wings appendiculate; third cubital cell of the fore wings more than twice as long as the third transverse cubitus; apical and preceding joints of the maxillary palpi subequal; posterior tibiae not longer than the femora and trochanter..... *Epitaxonus*, MacG.

Cell $R_{1,2}$ of the hind wings not appendiculate; third cubital cell of the fore wings not twice as long as the third transverse cubitus; the apical joint of the maxillary palpi distinctly longer than the preceding; the posterior tibiae distinctly longer than the femora and trochanter..... *Hemitaxonus*, Ashm.

Prototaxonus typicus, n. sp.—Female: Length, 7 mm. Head subopaque; eyes slightly converging to the clypeus; clypeus deeply emarginate, the lobes broad; lateral ocellar furrows very broad; the ocellar basin not closed below, uniting with the middle fovea; supraclypeal fovea deep, merging into the antennal fovea above; the apical antennal joint shorter than the preceding one. Mesonotum and scutellum shining and polished; sides of the scutellum with some large punctures; the mesopleurae dulled by gray hairs. The transverse radial received in the extreme apex of the third cubital. The sternum broad slightly emarginate below, truncate, the upper angle very sharp; cerci robust, short, not

tapering. Colour black; clypeus, labrum, palpi, angles of the pronotum, tegulae, a narrow band on all the apical abdominal segments and the middle of the venter *yellowish or orange colour*. Legs black; tips of the coxae, trochanters, apical half of the femora and the bases of the tibiae *yellow*; the four anterior legs are brownish, not black. Wings hyaline, iridescent; venation dark brown.

Male: Length, 6 to 7 mm. The male differs from the female in having the legs below the bases of the coxae orange colour; the posterior tibiae at the apex and sometimes above are infuscated. The transverse radial of the male is quite often interstitial with the third transverse cubitus.

Type locality: Mountains near Claremont, California. One female and six males collected by C. F. Baker.

Strongylogaster tibialis, Cresson, from Nevada, may belong to the genus *Prototaxonus*. *P. typicus* differs from Cresson's description of *S. tibialis* in the yellow clypeus and labrum.

Parataxonus lenis, Roh.—*Taxonus lenis*, Roh., Jn. N. Y. Ent. Soc., XVI, June, 1908, p. 110.

On re-examining the type of this species I find it belongs to the genus *Parataxonus*, MacG.

Cryptocampus Bakeri, n. sp.—Female: Length, 4.75 to 6 mm. Head seen from the side broadest above the antennae, gradually narrowing to the occiput; seen from the front the occiput rounds up above the orbits. Clypeus rather deeply emarginate, lobes rather broad, obtuse at the apex. Supraclypeal fovea merging into the antennal foveae; middle carina strong; middle fovea deep, narrow, not closed above; the ocellar basin not completely inclosed, the lateral walls the strongest; lateral ocellar furrows broad, shallow; intraocellar fovea wanting; frontal crest not very strong, broken in the middle. The third and fourth antennal joints about equal, perhaps the third is a little the shorter; the apical joint about the same length as the preceding, straight above, very slightly rounded out beneath, the apex acute. Head not very closely or strongly punctured; scutellum shining, not nearly so closely punctured as the mesonotum. Venation of both wings normal; stigma broadest near the base, gradually tapering to the apex; claws deeply cleft, the inner tooth the shorter. Sheath straight above, gradually rounded from the rather sharp upper angle below; cerci slender, somewhat tapering, as long as

the sheath; the sheath and cerci are clothed with rather long hairs. Colour black and ferruginous; antennæ black, somewhat pallid beneath apically; a spot from the ocelli to the occiput, and the back of the head. black; thorax above, pectus, lower part of the pleuræ, "posterior plate of the epimeron"? (Marl. N. Am. Nematinae), a spot in the middle of all of the abdominal segments above, the apex of the sheath, *black*; the tips of the tarsi and tibiæ somewhat dusky. Wings hyaline, iridescent; veins brown or pale brown, basal half of the stigma pallid.

Male: Length, 4.75 mm. The sculpture and shape of the head is much like the female; the clypeus is not so deeply notched, there is a more or less distinct sulcus from the anterior ocellus to the middle fovea, the antennæ are longer and covered with short hair, and the colour is somewhat darker. The procidentia is prominent and truncate at the apex; the hypopygidium is long and narrowed toward the apex. Colour black; all the orbits, clypeus, middle carina, tips of the pronotum, tegulæ, venter of the abdomen, and legs below the base of the coxæ *reddish-yellow*; apex of the posterior tibiæ and their tarsi black; antennæ a little paler beneath, at the apex. Wings hyaline, iridescent; venation and stigma brown, extreme base of the stigma pale.

Gall: Length, 12 to 20 mm.; width, 5 to 6 mm.; height, 4 to 4.5 mm.; a lateral swelling on the twig, never very abrupt, generally gradually tapering off at each end; when dry, roughened longitudinally; always monothalamous; adult leaving the gall from an opening in the side; bark of the twig when dry reddish-brown; occurs on *Salix* sp.

Var. A.—Two females have the stigma pale brown, and most of the pleuræ black, and the head is coloured like the male.

Type locality: Claremont, California. Many males and females bred from galls, and a few specimens collected by C. F. Baker.

This species is near *bebbiana*, Roh., but it differs from that species as follows: Female: Occiput rounded above the eyes; middle fovea elongate; a spot on the pleuræ pale, and the apical antennal joint is more acute at the apex. Male: The occiput is more strongly rounded above the eyes; the middle fovea is deep elongate; the frontal crest is not nearly as prominent; the apical antennal joint is more obtuse at the apex; the procidentia is narrower, longer and more prominent. The gall is not as abrupt as the gall of *bebbiana*, and undoubtedly occurs on a different species of *Salix*.

FURTHER NOTES ON PACHYBRACHYS.

BY FRED. C. BOWDITCH, BROOKLINE, MASS.

Among the Mexican material of the late Mr. Jacoby is a specimen from Ventanas, Durango, labelled *P. Ventanensis*, Jac. I find no description under this name, and it seems to be the form described as *Durangoensis*, Jac. It comes very close to one of the forms I have called *Snowi*, but in the absence of further Mexican material I can only draw attention to it.

In the Snow collections is a ♀ specimen from the Santa Rita Mountains, Arizona, which I placed provisionally as *longulus*, Suff. There is no example of this species among my Mexican material, and further specimens are needed to fully determine its identity. The form is broad, long and cylindrical, flattened above and rather coarsely punctured; of the same form as *punctatissimus*, Jac., with narrow, wide thorax. It is the largest species in North America, measuring 6 mm. in length and 3 mm. in breadth.

In the second Jacoby collection under the name *oculatus*, Suff., is a single ♂ of the form named by me, *Texanus*, CAN. ENT., 1909, p. 316. What purported to be the type of *oculatus*, Suff., was lent to me by Prof. Taschenburg from the Halle Museum. It did not agree with the description of *oculatus*, and seemed to me to be a specimen of *pectoralis*, Mels., and I have seen nothing which appears to me to fit the description of *oculatus*. Specimens taken at Wellfleet, Massachusetts, by Messrs. Frost and Bolster, I was at first inclined to regard as the true *oculatus*, Suff., but finally put them with *pectoralis*, Mels. The Eastern Coast States is the locality given for *oculatus*, Suff.

The following forms seem to merit recognition :

P. notatus, nov. sp.—Large sized, stout, dull black and bright yellow, thorax with three prominent yellow spots on top, elytra fairly regularly striate, punctate. Length, $3\frac{1}{2}$ mm.

Head yellow, flat, with black vertex, connected with center line, which runs into a crescent mark which ends at the antennæ on either side, black marks thickly punctate, clypeal edge also black, sparingly whitish pubescent, especially in the angles of the eyes, which are distant; antennæ dark, lighter towards the base, reaching the hind coxa in ♂; thorax constricted in front and narrowed behind, yellow, with very narrow beading on front margin black, the surface covered by a broad black M, which occupies nearly the whole rear margin and leaves a lateral and anterior

border of yellow, the former being the widest; there is also a pear-shaped yellow spot placed obliquely and pointing to the scutel on either side of the disk at the rear, dilated end to the front and an anterior median spot, which joins the yellow margin, also a small yellow dot on each side; surface with sparse punctures, closer toward the anterior corners, the yellow margins, except as aforesaid, are about free from punctures, lateral edge very slightly subangulate in ♂; elytra parallel, slightly compressed behind the shoulders, yellow, with suture and margin narrowly black; the inside standard spots suffused longitudinally into an irregular black mark joining a transverse band on the convexity formed by the suffusion of the four rear spots, the external middle spot is not suffused, the humeral spot is also distinct, the punctuation is a little coarser than the thorax, largely confused, but the intervals from the third outwards on the rear half of the elytra are more or less distinctly indicated, though the costæ are everywhere flat, the third and fourth and the marginal and next to it are the most marked intervals, there is also a prominent smooth yellow sutural shield and another patch occupying three or four intervals and forming a transverse spot on the side just before the convexity; marginal stria barely sinuate behind the lobe, which is wide and smooth, with a fine row of marginal punctures; under side black, with silvery pubescence, prosternum semisulcate; legs yellow, with spots on thighs, and tibiæ and tarsi darker; hind thighs with a white spot on end, and front thighs with light spot on front.

One ♂, Santa Rita Mts., Ariz. Collected by the late Prof. Snow. In form, size and general appearance very similar to *inclusus*, Jac. Type in Snow collections.

P. trivittata, nov. sp.—Medium sized, yellow above, regularly punctate striate, with heavy black thoracic M and three elytral stripes not reaching the apex, the middle stripe sutural. Length, $2\frac{1}{2}$ –3 mm.

Form rather short and stocky, head yellow, with very heavy black frontal and vertex marks; antennæ black, slightly tinged with brown at the base, reaching about the middle of the abdomen in ♂, frontal face flat and thickly punctate, eyes very distant, especially in the ♀, thorax broader than long, narrowed towards the front, evenly and moderately punctured on the dark parts, sparsely elsewhere, colour light yellow, with heavy black M, sides broadly, roundly subangulate, a little in front of the middle, elytra of the same width as the thorax, yellow, regularly punctate striate, the third interval complete, like *balsas* and *pallidipennis*; each

elytron has the suture and a discoid l vitta black, the former connecting with the middle of the thoracic M and ending just over the convexity (the two elytra together showing a single sutural vitta of the same width as the discoidal), the latter begins back of the inflexed edge on the third and fourth intervals and runs back to the edge of the convexity, at which point it switches to the side, and, with a curve, connects with the posterior standard exterior spot, the middle and anterior standard exterior spots are also marked in black, the humeral the stronger, marginal stria lightly curved, with the lobe strongly developed and a thick row of marginal punctures, body beneath black, the last one or two segments and the pygidium picked out with yellow, legs black with spots on the femora and tibiæ, making yellow knees; the anterior coxæ are also yellow in the ♀, the anal fossa is broad and shallow.

This species belongs to the *othonus* group.

Twelve examples, Cuernavaca, P. de Ixtla, Mexico. Collected by Mr. Wickham. Type coll., Bowditch.

P. Carolinensis, nov. sp.—Of the size and general faciès of *bajulus*, Suff., only much more regularly punctate striate; colour dirty-yellow, with the standard spots more or less suffused. Length, 2-2½ mm.

Head yellow, with the usual dark, median and vertex spots, which are thickly punctured; the extent of the colour varies much, and specimens occur where the yellow is much reduced, front slightly convex, eyes distant in both sexes; antennæ yellowish or brown, reaching the middle of abdomen in ♂, much shorter in ♀; thorax broader than long, narrowed in front, subangulately rounded at the sides about the middle, colour yellow, with the M more or less distinctly indicated, but usually by partially disconnected patches, punctures rather fine and mostly confined to the dark areas, scutel narrowed at rear and black; elytra yellow, with almost regular striæ of rather coarse black punctures; the best developed examples show only a slight confusion of the punctures in the scutellar area, and a very slight break or slip back of the humerus, at or about the area of the middle exterior standard spot; these specimens also show a well-marked triangular shield; the standard spots are all more or less visible, and run together in ill-defined areas, and the suture and margin are narrowly black, the marginal stria is very lightly curved, with a well-developed lobe; body beneath black, with the sides of the abdomen and pygidium picked out with yellow; legs brown, yellow or whitish, with darker rings on the femora, knees and tibiæ; anal fossa shallow.

The species is less narrowed than *femoratus* O., and much more regularly striate.

Twenty-two examples, Southern Pines, N. C. Collected by Mr. A. H. Monee. Type coll., Bowditch.

P. Shasta, nov. sp.—Size rather large, colour testaceous, tinctured with reddish-brown, not infrequently with the standard spots on the elytra, which are coarsely punctate. Length, 3-3½ mm.

Head flat, testaceous, with dark impressed vertical line joining a dark spot on the vertex and also at bases of antennæ, which are testaceous at base, growing darker after the fourth joint and reaching about the middle of the body (♀), eyes distant, thorax testaceous, broader than long, moderately punctate, strongly, tubularly narrowed in front and with a well-marked rear depression; M indicated by brown clouds, which vary much in density, the ends of the arms being, as usual, in the ends of the transverse depression, lateral edge angulate and sinuate at rear; scutellum prominent and truncate, elytra testaceous, with diffuse usually brown punctures, which towards the rear and sides are arranged in rows, making regular but flat intervals, standard spots showing to a greater or less extent, in one example the rear spots are suffused into a rough band and join the middle interior spot, in another ♀ all the spots show except the middle ones, so that it appears as four black spots on the back, and in others the spots are only faintly indicated, marginal stria very feebly curved and strongly sinuate behind, lobe well developed, very feebly punctured, below usually dark, with the epimera, sides of abdomen and last segment and pygidium light. This last has dark spots on each side and middle, the fossa of ♀ is also dark, legs testaceous, with more or less clouds; some examples are much lighter coloured below. The form is broad, not narrowed behind, but constricted in front.

Most of the specimens I have seen were in the collection of Mons. Clavareau, of Brussels, and collected by Dr. Fenyès at Castle Crag, California. Type No. Calif. coll., Bowditch.

ENTOMOLOGICAL SOCIETY OF ONTARIO.

The Treasurer desires to call the attention of members, and subscribers to the CANADIAN ENTOMOLOGIST, to the fact that the annual dues of one dollar were payable last month. All those who have not yet sent in their subscriptions are kindly requested to do so at their earliest convenience. Remittances should be made by post-office or express orders, which only cost two cents, and not by bank cheques, which cannot be cashed for less than fifteen cents as a rule, and sometimes even more. Orders should be made payable to *The Entomological Society of Ontario, Guelph, Can.*

DESCRIPTIONS OF THREE NEW SPECIES OF EUPITHECIAE
FROM WESTERN AMERICA.

BY GEO. W. TAYLOR, NANAIMO, B. C.

Eupethecia Lagganata, n. sp.—Expanse, 22 mm.

Palpi short and stout. Head, thorax and fore wings dark gray, with a brownish tinge. Abdomen and hind wings paler, the first segment and the last two segments of the abdomen whitish.

Fore wings very long and narrow, pointed at apex, tornos rounded. The wings are crossed by numerous alternate pale and dark lines, the dark lines being emphasized on the costa, and the paler ones on the hind margin. There are about four of the pale lines between the base of the wing and the intradiscal line, two in the median space and three beyond the extradiscal line, in addition to the wavy submarginal.

The median area is limited outwardly by a dark shade, which follows an unusual course; it is directed inwardly from the costa to the subcostal vein, then curves outwardly to vein two, and then with a similar curve to inner margin, which it meets three fourths out from base; there is a long black dash on the median vein, and another on vein two.

The lines on the fore wing seem to be continued across the hind wing, but are only evident on its inner margin, except the fine wavy, white submarginal line, which can be traced completely across the wing. The central portion of the hind wing is quite without markings.

Beneath the fore wing is very lightly scaled; there are three dark spots on the costa, alternating with three pale spots, the central dark spot being exactly above the discal spot. There is a fourth dark spot on the costa, near the base, and a fifth near the apex. Submarginal space slightly darker, with the pale submarginal line faintly indicated.

Hind wing more heavily scaled, gray, crossed by about five brown lines complete across wing, the first and third extradiscal being heavy and diffuse; discal points brown, minute.

This species bears a slight superficial resemblance to the European *E. nanata*, but has much narrower wings, and a different arrangement of lines.

The type specimen, a male, is unique at present, and was captured by my good friend, Mr. F. H. Wolley Dod, above Agnes Lake, near Laggan, Alberta, at an altitude of 7,200 feet. It is dated 17 VIII, '07. The captor has very generously left it in my collection.

February, 1910

Eupithecia compactata, n. sp.—Expanse, 24 mm.

Palpi short and stout. Upper surface wholly dark gray.

Fore wing rather long and narrow; four or five wavy lines in the basal area; intradiscal dark and heavy on the costa, running out at a right angle to the costa as far as the cell, then in a fine wavy line to inner margin. Median space darker except for a pale cloud which precedes the linear black discal spot; a very faint median line includes the discal spot, and a second similar line, between it and the extradiscal, is parallel to the first.

The discal space is bounded outwardly by a double pale line, which makes a rather sharp angle opposite the discal, and runs thence in an almost straight line to the inner margin, being subparallel to the outer margin. Submarginal space the same shade as the median. It is bisected by a conspicuous wavy white line, which terminates in a large V on vein 2.

Hind wing same colour as fore wing, clear of markings, except traces of lines on the inner margin, and a very faint discal point. Marginal broken line on all wings. Fringes long, spotted.

Beneath, fore wing lightly scaled, smoky; lines on the upper side indicated by dark spots on the costa; submarginal line and discal spot faintly reflected.

Hind wing gray, with a faint discal point, and a basal and two extradiscal brown lines marked by dashes on the veins.

The under side of this species bears a close resemblance to that of *E. Lagganata*, described in this paper, but on the upper surfaces the two insects seem sufficiently distinct. The type is a single female taken at Windermere, Upper Columbia River, British Columbia, by Mr. F. H. Wolley Dod, on the 13 VII, '07, and generously given to me.

I have lately seen a specimen taken by Mr. C. H. Young at Euchulet, on the west coast of Vancouver Island (16 VII, '09), which looks rather like *E. compactata*, but I cannot be quite sure of its being conspecific.

Eupithecia Spaldingi, n. sp.—Expanse, 21 mm.

This is a rather obscurely marked species, but it is possible that if my type specimen was in better condition the markings would appear more definite.

The whole upper surface of the wings is gray, overlaid with scattered black scales.

All the margins of the wings are very straight, and the fore wings are narrow and pointed.

The basal area (of fore wing) is pale, no definite lines can be made out. The median band is darker than the rest of the wing, and its intra- and extradiscal bounds are almost parallel to each other. Each of these lines runs from the costa, at a sharp angle, to the median vein, then turning inwardly at right angles to its former course, runs in an almost straight line to vein 1, and thence curves inwardly to inner margin.

There is a white, wavy, submarginal line, rather nearer than usual to the margin of the wing, and accompanied on each side by a dark shade. There is a conspicuous black discal spot on the median band, and though no lines can be traced in the band itself, there are the beginnings of two such lines indicated on the costa.

The clear, conspicuous median band is characteristic of this species, and will enable it to be easily recognized.

Type, 1 female, Stockton, Utah, 2 IX, '03, taken by Mr. Thomas Spalding, after whom I name the species.

I owe the specimen to the kindness of Prof. H. F. Wickham.

A NEW DIPTEROUS PARASITE OF BATS.

BY T. D. A. COCKERELL, UNIVERSITY OF COLORADO.

At the Great Sphinx Mine, south of Crisman, Boulder County, Colorado, alt. 7,000 ft., on Nov. 1, 1909, Mr. John J. Blanchard obtained a bat of the species *Corynorhinus macrotis* (subsp. *pallescens*, Miller), which he kindly transmitted to the Museum of the University of Colorado. Upon it were two specimens of the curious Streblid genus *Trichobius*, male and female. I thought at first that they were *T. major*, Coquillett, which they resemble in their relatively large size, but comparison with Mr. C. T. Brues's excellent description and figures in Bull. Amer. Mus. Nat. Hist., XX, 1904, pp. 131-134, shows that they represent a new species.

Trichobius corynorhini, n. sp.

♀.—Length a very little over 3 mm.; wing $3\frac{1}{2}$; head, thorax and legs clear, bright ferruginous, with golden-ferruginous hair; anterior median line on thorax rather obscure, and transverse suture not marked by a black line; abdomen above purplish-plumbeous toward the base, and whitish dorsally about the middle; halteres white; claws black; wings creamy-white, with pale ferruginous veins. The important characters separating this from *T. major* are: First cross-vein distinctly nearer base than apex of wing; third (between fifth and sixth longitudinals) cross-vein

conspicuously oblique; eyes with eleven ommatidia, three in the middle; hair on outer margin of hind femora much longer, fully as long as the width of the broad femur; hair at sides of apex of abdomen quite long (though much shorter than in the male); thorax not so broad.

♂.—Similar to the female, except in the characters mentioned by Brues. The eyes, however, have 14 ommatidia, four being in the middle. The antennæ are pale yellowish, strongly contrasting with the deep reddish palpi. Head above beset with long bristles, which are not at all confined to a line, as in Brues's figure of *T. major*; bristle on end of palpus very long. The claws are unidentate, as in *T. major*; Townsend (Ent. News, 1891, p. 105) states that those of *T. Dugesii* are bidentate.

The insect has all the characters of *Trichobius*, as distinguished from *Strebla*.

A SYNTOMID MOTH IMPORTED WITH BANANAS.

BY T. D. A. COCKERELL, UNIVERSITY OF COLORADO.

In the CANADIAN ENTOMOLOGIST, 1904, p. 204, Mr. Cockle reported the occurrence of a specimen of *Ceramidia Butleri* (Möschl.), in British Columbia, imported with bananas. A couple of weeks ago a specimen of *Ceramidia* was found in a grocery store in Boulder, Colorado, also among bananas. In all probability the larvæ live on the banana, and pupate among the fruit. On looking up the literature of *Ceramidia*, especially Hampson's revision in the British Museum Cat. Lep. Phalænæ, Vol. I, 1898, I found that the Boulder insect was indeed very close to *C. Butleri*, but apparently distinct. I accordingly wrote to Dr. Dyar for particulars concerning Mr. Cockle's specimen, which is in the U. S. National Museum; in reply he sent me the desired information, and in addition notes on several other related forms represented in the Museum. Dr. Dyar expresses the opinion that these different insects are good species, and advises me to describe mine. It is probable that the question whether we have to do with one polymorphic species, or several allied but distinct ones, can only be settled by breeding; but, in any event, the several forms are readily distinguishable, and deserve to be named.

Ceramidia (Butleri, var.?) musicola, n. sp.

♂.—Expanse about 37 mm.; structure, including antennæ, venation, etc., as in *C. Butleri*, and with the first three ventral abdominal segments white, except the narrow hind margin of third and lateral hind margins of

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second; head, thorax and abdomen above strongly metallic, the head and thorax bluish, with the hair black, the abdomen yellowish-green, but bluish apically, the tuft dark steel-blue; patagia with a white spot; neck with an elongate crimson mark on each side; front with a large transversely oval white spot; orbits margined with white above and in front, broadly at sides of face; the large anterior coxæ broadly white in front; a large white spot on each side at base of abdomen; anterior wings above a sub-metallic blue-black, the basal and apical field not at all differently coloured; posterior wings with the upper half normally overlapped by the anterior wings, shining whitish; beneath, anterior wings are white where they overlap the posterior, and are otherwise distinctly more metallic than above.

Among bananas at Boulder, Colorado, doubtless imported from Central America.

A similar, perhaps identical, insect, from Honduras, is in the National Museum, as I learn from Dr. Dyar. The specific name is from *Musa*, the banana.

The type will be sent to U. S. National Museum.

The *C. Butleri* group may be tabulated thus:

Neck with crimson spots.....	1.
Neck without crimson spots.....	3.
1. Basal half of anterior wings shining green.....	<i>viridis</i> , Druce.
Basal half of anterior wings coloured like the rest.....	2.
2. Front with a large white spot.....	<i>musicola</i> , Ckll.
Front without a white spot (S. America).....	<i>Butleri</i> , Möschl.
3. Front with a white spot.....	British Columbia specimen.
Front without a white spot (Venezuela).....	<i>caurensis</i> , Klages.

Dr. Dyar reports that Mr. Cockle's specimen has the basal half of fore wings shining green, as Druce describes for *viridis*, but it has no red spots on the neck, while it has a white spot on the front. Thus it is near to *viridis*, but not the same.

The whole series affords a very good example of "Kaleidoscopic variation," with different combinations of the same unit characters. Whether or not these forms are fixed in nature, no doubt they could easily be obtained pure and constant by a breeder, following Mendelian methods.

HEMIPTERA NEW AND OLD.—No. 3.

BY G. W. KIRKALDY, HONOLULU, HAWAIIAN ISLANDS.

Fam. Cimicidæ.

SAGRINA VITTATA, Spinola (= macropterous). = *Atelides centrolineatus*, Dallas (= brachypterous). Spinola described the long-winged form of this interesting Dinidorine in 1850; two years later Dallas described the short-winged form as *Atelides centrolineatus*, unaware of Spinola's work. Since then, so little has been known of the species, that Stal wrote (1867, O. V. A. F., XXIV, 522), "hemelytris alisque abbreviatis (an semper?)." In the "Fauna of India," Rh., I, 288-9 (1902), Mr. Distant described and figured the long-winged form under Dallas's name (also querying Spinola's name), but omitted any mention of the other form. Pterygopolymorphism is so unusual in the Cimicidæ that a longer notice was merited.

Unfortunately, I do not possess specimens of the long-winged form, but as I have a pair of the short-winged form, from Upper Tong-kong (Rivière Claire), a few notes may be worth while.

These short-winged examples have a remarkable nymph-like appearance, particularly in the rather widely laminate lateral margins of the pronotum, although I suspect that these are not so thin as in the nymphs, and I do not know whether there is any difference in this between the two adult forms. My female agrees very well with Dallas's figure, except that in the latter the sutures of the tergites are not represented as sufficiently oblique laterally. The male is shorter in proportion, and the tegmina are a little longer, extending to the basal-most curve of the apical margin of the 4th tergite. The wings are exceedingly short, with greatly reduced venation. I hope to represent the male pygopher in a future communication.

MEGYMENUM DENTATUM, Boisduval. Papua, Fak-fak.

ASPONGOPUS VIDUATUS, var. *unicolor* (H. S.). Khartûm.

GONOPSIS PALLESCENS, Distant. S. India, Madura.

LYRAMORPHA SOROR, Breddin. Papua, Fak-fak.

EUROSTUS VALIDUS, Dallas. Tong-king. The parts mentioned by Dallas as black are dark green in the above (except the antennæ), and as violet are bright metallic green.

TAMOLIA RAMIFERA (Walker). Horváth writes (1900, Termész. Füzet, XXIII, 365), that his redescription of this species is taken from an

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immature ♀; I feel sure that Walker's original description was also from an immature specimen. The following seems to be the colouring of mature ones:

♂, ♀.—Above pitchy, with a bronzy gleam; a pale narrow line submarginally along the anterolateral margins of the pronotum. Tegmina piceous, the irregular cross-veins on the corium obscurely pale castaneous. Wings pale fuliginous. Tergites metallic greenish-violet, dorsopleurites indigo-blue, with a pale wedge across the middle of each segment (larger and clearer in the male than in the female). Beneath (with the legs, etc.), a sort of rather indefinite reddish-piceous, the sterna and abdominal spine mostly yellower. Antennæ pitchy black, apex of the last segment yellowish-brown. I have this from Papua, Fak-fak.

Fam. Coreidæ.

In my recent papers I have rightly substituted the family name "Myodochidæ" for the old "Lygæidæ," but at the same time I unfortunately transferred the latter to, and substituted it for, the "Coreidæ." *Coreus*, however, is anterior by a few pages to *Lygæus*, so that the name "Coreidæ" should be retained. Although several of my colleagues objected (on other grounds) to the change, no one pointed out where the real fault lay. I am very glad to be able, on the grounds of priority, to retain the well-known "Coreidæ," as the transference of the equally well-known name Lygæidæ was a great nuisance, although apparently necessitated. Now that name should pass away into the realms of synonymy.

Fam. Cercopidæ.

APHROPHORIAS, nom. nov., =|| *Lora*, Distant, 1908.

Fam. Tetigoniidæ.

MYSOLIS, Kirkaldy, 1904, =|| *Norsia*, Walker, 1869, = *Norsiana*, Distant, 1908. Mr. Distant has created an unnecessary new name.

IASSUS SINHALANUS, nom. nov., =|| *pulchella* (Kirby).

I. RAMA, nom. nov., =|| *elegans* (Distant).

TETIGONIA, Geoffroy, 1762.

In the "Fauna of India" (Rh. IV., 201, 1907), Mr. Distant regards as untenable my retention of the Geoffroyan name *Tetigonia*, and my rejection of Jacobi's *Tettigoniella*.

The thoroughness with which Mr. Distant has, with the assistance of Mr. Kirby, investigated this synonymy, is evidenced by his adoption of

the dates "1798-9" for Geoffroy's work, when I should have thought that the merest beginner would know that it was first published anonymously in 1762. It cannot be that Mr. Distant rejects the book on account of its anonymity, since he fully accepts the first volume of the Hope Catalogue of Hemiptera. But even if so, the matter is not complicated, as a re-issue was made in 1764 under Geoffroy's name, and a summary, with proper specific names, appeared in 1785. I must therefore insist on dealing with the original issue of 1762 (or if Mr. Distant prefers, with that of 1764), and not with the much later edition cited by Mr. Distant.

Under "*Cicada*" Geoffroy first of all describes 25 species, not one of them belonging to the Cicadidæ, in a modern sense. On p. 429 he observes that one could reserve for the big Cicadas the name of *Cicada*, and call the little ones *Tetigonia*, a name given to them by many authors, *Procigales* in French, as indeed Réaumur has called them. He then proceeds to give differential characters for the two. Again; on p. 412, he says that the Cicadas of his country were called by several authors *Procigales*, to distinguish them from the true Cicadas. He also describes two of the true sort.

Mr. Distant contends, first of all, that Geoffroy's *Tetigonia* was only a misprint for the Linnean *Tettigonia*, of the Orthoptera. Geoffroy never once alludes to the Linnean *Tettigonia*, and renders his own genus *Tetigonia* each of the two times he mentions it by name. It is spelt also this way in the editions of 1764 and 1785, and presumably in the later one. It is therefore no misprint, and it is ridiculous to suppose that Geoffroy, who had a much clearer idea of entomological taxonomy than Linneus had, could confuse the Hemipterous Cicadid with the Orthopterous Tettigoniid. In those days the rule of priority was as little respected as it is by Mr. Distant to-day, and Geoffroy probably disregarded Linneus's division *Tettigonia* of *Gryllus* (deeming, as was the case with the ancient Greeks, *Tetigonia* to be a Hemipterous name), as Fabricius did the division *Ranatræ* of Linneus, when he wanted to found a Heteropterous genus.

One of the most commonly accepted rules of Nomenclature is that two generic names are valid even if differing only by a single letter. Mr. Distant would accept, I suppose, such words as *Bala* and *Balla*; therefore, as Geoffroy does not mention Linneus, the modern author ought to accept *Tetigonia* and *Tettigonia*.

I cannot admit that the reference to Réaumur (a prelinnean author) can fix the type of *Tetigonia* for the species mentioned by him. The same

thing has been attempted for *Chermes*, to make it a Coccid genus, but, as I believe, invalidly.

With regard to *Cicadella*, I am unable now to refer again to Latreille's work of 1817. In a later edition, the "*Cicadæ ranatræ*" are given as a synonym, but not exclusively, as is evident from the context; the genus is divided into several subgenera, and the LAST one is called *Tettigonia*, being said to contain the *Cicadellas* proper. If, therefore, *Tettigonia* (or *Tettigonia*) is the typical subgenus of *Cicadella*, then *Cicadella* is a strict synonym of the earlier *Tettigonia*. Of course, if this information is not in the 1817 edition, then one of the "*Ranatræ*" of Linneus, 1767, must be taken, and I must abandon my present contention (as regards *Cicadella*).

Fam. Asiracidæ.

Delphax pictifrons, Stal, 1864, Stett. E. Z., XXV, 50, Mexico.—This has been omitted by Fowler in the *Biologia*. I do not know it.

BOOK NOTICE.

GENERA INSECTORUM COLEOPTERA ADEPHAGA, FAM. CARABIDÆ, SUBFAM. CICINDELINÆ. Von Dr. Walther Horn, Wytsman, Bruxelles, 1908.

"One hundred and fifty years have flown since the publication of Linné's tenth edition of the '*Systema Naturæ*,' in which the Swedish naturalist cites five species of the genus *Cicindela*. He calls them '*Tigrides veloces*,' and the name 'Tiger Beetles' has persisted until to-day, when about forty genera, with twelve hundred species and a few hundred subspecies, are known."

These, freely translated, are the introductory words of Dr. Horn's paper, and give some idea of the development of the knowledge of this group. Seldom do we meet with an entomological treatise in which the author displays such familiarity with the literature of his subject, together with knowledge of the specimens themselves, in cabinet and in nature. The amount of information conveyed is astonishing, and the work is really far more than its title indicates. It is arranged in two sections, a "General Part" devoted to a discussion of the problems encountered in a study of the group, and a "Special Part," containing tribal and generic synopses with systematic list of all the species, accompanied by bibliographic, synonymic and geographic references. In the space available it is possible only to note the general plan of the work and to cite some points of interest to American entomologists.

Dr. Horn believes that the *Cicindelinae* have been more thoroughly collected than almost any other group of beetles, and estimates that the number of species still unknown does not exceed twenty or twenty-five per cent. of those now described. The Palearctic region has long since been about exhausted, new species are scarcely to be expected from North America, while Mexico, Central America, western South America, South Africa, as well as most of the islands of the Pacific, Indian and Atlantic Oceans have nearly ceased to yield novelties. The majority of new things must come from China, India, the Philippines, Dutch Borneo, New Guinea, tropical Africa and Australia, Madagascar and Brazil. In this connection it must not be forgotten that the author's conception of a species does not coincide with that of some descriptive entomologists, and forms which appear to be more or less worthy of names will undoubtedly still come to hand in numbers.

The tiger beetles are regarded as forming a subfamily of Carabidae, under the name *Cicindelinae*—a reduction in rank, which seems undoubtedly warranted in view of the evidence presented. After a sketch of the history of their classification, the author presents the arrangement developed by his own researches, separating them into two great phyla, according to the structure of the metepisterna; these divide again into five tribes, with several minor groups, as follows:

- | | | | |
|-------------------------|---|--------------------|--------------------|
| A. Alakosternal phylum. | { | I. Ctenostomini. | |
| | { | II. Collyrini. | |
| | { | III. Cicindelini. | |
| | { | 1. Theratina. | 2. Prothymina. 3. |
| | { | Odontochilina. | 4. Cicindelina. 5. |
| | { | Dromicina. | |
| B. Platysternal phylum. | { | IV. Megacephalini. | |
| | { | 1. Megacephalina. | 2. Omina. 3. |
| | { | Platychilina. | |
| | { | V. Mantichorini. | |

Of these, only III and IV are represented in North America by the *Cicindelina*, *Megacephalina* and *Omina*—our genera being *Cicindela* (including *Dromochorus*), *Megacephala* (*Tetracha*), *Omus* and *Amblychila*.

A considerable portion of the volume is devoted to morphological discussions, illustrated by three well-executed plates. These abound in comparative notes, and are of great value in throwing light on the phylogeny of the groups, since the palæontological record is nearly blank. Chapters are given to the sternal structure, the coxal articulations, the abdomen, the elytral epipleuræ, the hind wings, the elytral markings (this last with over a hundred text figures, showing the development and modifications of the colour pattern), and the vestiture. From the study of the markings the conclusions are drawn that identity of pattern is by no means always indicative of close relationship, although related species have usually similar markings, and that longitudinal marks in the Cicindelinae are secondary rather than primary developments.

The chapter relating to geographical distribution and zoögeography is full of interesting details and conclusions. The number of genera and species increases as the equator is approached — this may be seen readily by reference to the illustrative plate. Besides a very considerable portion of the colder boreal and austral lands, a great part of the Pacific island area is without Cicindelinae. The genus *Cicindela* has the widest range, *Megacephala* (including *Tetracha*) coming next. Some of the species of both of the above genera have extremely wide range, others show remarkable cases of discontinuous distribution. Only two genera are Palæarctic, four Nearctic. The Neogæic (South American) region is very rich in generic types, eighteen being found there, of which two extend to the West Indies. The Ethiopian region is believed to be the original home of the ancestral Cicindelinae of both phyla, and contains representatives of most of the modern groups. The Oriental region yields ten genera, and the same number is known to inhabit the Notogæic region, *i.e.*, the Austro-Papuan-Polynesian district.

The phylogeny of the tribes of Cicindelinae and of the principal types of the genus *Cicindela* is worked out and illustrated by two plates. From a study of relationships, the author reaches the conclusion that the Cicindelinae form a branch of the family Carabidæ, coördinate with the Carabinae as a whole. Between the most primitive genuine Cicindelinae and the corresponding Carabinae on the one hand and their common Cicindelid-Carabid ancestor, a number of coördinate intermediate forms have been given off, two of which may be identified with the recent phyla of Cicindelinae.

That portion of the "Special Part" which has come from the printer is concerned with the Ctenostomini and the Collyrini. The former tribe

comprises two genera, *Pogonostoma*, with 32 species, all from Madagascar and the outlying islands, and *Ctenostoma*, with 45 species, from South and Central America, one extending into Mexico. The second tribe is divided between the genera *Tricondyla* (*Tricondyla*, s. str., and *Derocrania*), which contains 27 species, with numerous subspecies, and *Collyris* (subgenera *Archicollyris* and *Neocollyris*), listing 65 species. Both of these genera are Oriental. The remainder of the work is promised soon.—H. F. WICKHAM.

GEOMETRID NOTES—A NEW VARIETY.

BY L. W. SWETT, BOSTON, MASS.

Mesoleuca implicata, var. *Williamsi*, n. var.

Expanse, 21–24 mm. Palpi short and dark, front of head dark, with mark between antennæ, as in *implicata*, Gn.; thorax and abdomen dark olive-brown. Fore wings olive-brown, with no traces of light ash as in *implicata*, the narrow band enclosing distal dot very dark olive, border of wings dark olive-brown. Otherwise the course of lines and their number are the same as in *implicata*. Hind wings dark, with 7 or 8 dark smoky bands (not discernible in all specimens). Beneath two faint curved extradiscal lines and one broad marginal, with venular dots on fore wings. Hind wings with two broad extradiscal dark bands and heavy dots at base of intervenular dots of fringe.

This variety is evidently a second brood of *implicata*, and differs from the latter in the dark olive-brown fore wings with band enclosing discal dot of the same colour, where in *implicata* it is light ash, as is also the border of the wing, which is dark in *Williamsi*. The body of *Williamsi* is dark, and the dorsal spots more diffuse than in *implicata*, which has lighter hind wings and lacks the heavy dark wavy bands with dark fringe. Beneath the difference is less striking, except in the type, which is more heavily marked on the hind wings.

This is quite a striking variety, and I find nothing like it in Packard's series from Cal., Nev. and B. C. I take pleasure in naming it after Mr. F. X. Williams, from whom I received it.

San Francisco, Cal., type 1 ♀, Oct. 5, 1909; co-types 2 ♀'s, Oct. 5 and 10, 1909.

Cidaria multilineata, Pack. (Proc. Bost. Soc., N. H., 1870, May 4, p. 403), is a synonym of *implicata*, with specimens of which I have compared the type.

Mailed February 8th, 1910.