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A FIRST LIST OF ONTARIO ODONATA.

BY E. M. WALKER, B. A., M. B., TORONTO.

The following list of Odonata is mainly the result of four seasons' collecting in various parts of Ontario, but chiefly in three localities, viz. : Toronto; De Grassi Point, Lake Simcoe, and Algonquin Park.

Although most of the material was collected by the writer, the list has been considerably lengthened by the records of captures made by other collectors. Among these should be mentioned the collections of Dr. Wm. Brodie, in the Educational Dept., Toronto; many specimens taken in Algonquin Park by Prof. Macoun in 1900, and by Mr. Paul Hahn in 1903-4; a considerable number from the collection of the Biological Dept. of the University of Toronto, consisting chiefly of alcoholic specimens of nymphs and imagoes taken at the Biological Experiment Station at Go Home, Georgian Bay, and a few collected and presented to the Department by the late Mr. R. T. Anderson; and finally, a small collection from Thessalon, Algoma, belonging to Miss Rounthwaite, of Toronto.

The names have also been added of a few species previously known from Ontario, of which no specimens have been seen by the writer.

When the Odonatological fauna of Ontario is thoroughly known, it will doubtless prove to be considerably richer than is indicated by the present list, which does not pretend to completeness. It would, therefore, have been better, perhaps, to have delayed its publication for a few seasons until more material had been collected, if the writer had not been obliged to discontinue for an indefinite time the work necessary for that purpose. Our fauna should embrace at least 100 species, probably considerably more. The genera that should yield the greatest number of unrecorded species are *Somatochlora*, *Gomphus* and *Enallagma*.

Somatochlora is a boreal genus, and many species not yet known from Ontario will surely appear in the far north, *e. g.*, *S. albicinata* (Burm.), *Franklini* (Selys), *Hudsonica* (Selys), and *Walshii* (Scudd.). Of *Gomphus*, the material upon which this list is based is but scanty, and yet

includes ten species. There should be at least fifteen. *G. abbreviatus* Selys, *fraternus* (Say), *vastus* Walsh, *descriptus* Banks, *Ophiogomphus colubrinus* Selys, and *Lanthus parvulus* Selys, are all probably residents. The writer has never collected in a good Gomphine locality at the proper season. *Leucorhinia* should furnish one or two more species in the north, such as *L. Hudsonica* (Selys) and *proxima* Hagen, while *Argia* ought to be better represented in the south, *A. tibialis* (Ramb) and *sedula* (Hagen) being not unlikely to occur in the Upper Austral Zone along Lake Erie. Of other Zygopterous species, *Hetærina Americana* (F.), *Amphiagrion saucium* (Burm.), *Anomalagrion hastatum* (Say), and *Ischnura posita* (Hag.), are almost sure to turn up in the same zone, if not further north.

The writer acknowledges with gratitude the kind assistance of Drs. J. G. Needham and P. P. Calvert in the determination of many specimens.

Sub-order ZYGOPTERA.

Family CALOPTERYGIDÆ.

1. *Calopteryx maculata*, Beauv.—Hamilton, June; Toronto, June 22–July; Berlin, July–Aug., (W. J. Fraser); De Grassi Pt., Lake Simcoe, July 6–Aug.; Algonquin Park, July–Aug; Thessalon, Algoma.

An abundant species along the banks of woodland streams.

2. *Calopteryx æquabilis*, Say.—Berlin, July–Aug., abundant (W. J. Fraser); London; Algonquin Park, July 25, 1900, Aug. 31, 1902; Thessalon, Algoma; Michipicoten, L. Superior (Hagen, *C. Hudsonica*). The dark patch at the apex of the fore wings is broader and more sharply defined in the specimens from Algonquin Park than in those from Berlin. The only female I have seen is the single example from Thessalon, in which the wings are only just perceptibly deeper at apex than elsewhere.

Family AGRIONIDÆ.

Sub-family *Lestinæ*.

3. *Lestes congener*, Say.—Niagara Glen, Aug. 18, 1904; Algonquin Park, Aug. 14–29, 1902–'04, abundant.

4. *Lestes unguiculata*, Say.—Chatham, Aug. 10, 1901; Sarnia, Aug. 12, 1901; Berlin (W. J. Fraser); Walpole Id., River St. Clair, Aug. 13, 1901; Point Pelee, Aug. 8, 1901; Thessalon, Algoma; Toronto, July 6, 1904; De Grassi Pt., July 7, 1901. A common species.

5. *Lestes uncata*, Kirby. — Hamilton (Anderson, Biol. Dept., Toronto); Toronto, June 15–July 6; De Grassi Pt., Aug.; Algonquin Park, Aug. 13, 1903. A scarce species wherever I have taken it.

6. *Lestes disjuncta*, Selys.—Toronto, July 15–Aug., 1904, abundant along the banks of the Humber River and in neighbouring woods; Toronto Island, July 25, 1904, flying over the lagoons; Lake Simcoe, Aug., abundant along the margins of creeks, Algonquin Park, Aug. 13, 1903.

7. *Lestes rectangularis*, Say.—Chatham, Aug. 10, 1901; Niagara Glen, June 28, 1903; Toronto, June 24, 1904, Aug. 9, 1903; De Grassi Pt., July–Aug.; Algonquin Park, Aug. 11–29, 1903. A common but not abundant species.

8. *Lestes vigilax*.—Sarnia, Aug. 8, 1901; Grenadier Pond, Toronto, late June–Aug. A very local species, exceedingly abundant around Grenadier Pond. I have reared the flies from nymphs taken from the margins of the pond.

Sub-family *Agrioninæ*.

9. *Argia putrida*, Hagen.—Algonquin Park, July 15, 1900, one teneral (J. Macoun), Aug. 15–21, 1904 (P. Hahn). I found the exuviæ on a timber slide at Ragged Lake, Algonquin Park, Aug., 1902. This species will doubtless be found commonly along the shore of Lake Erie.

10. *Argia apicalis*, Say.—Chatham, Aug. 10, 1901; abundant along the banks of the Thames.

11. *Argia violacea*, Hag.—Algonquin Park, Aug. 17, 1903.

12. *Chromagrion conditum*, Charp—Berlin, Aug., numerous (W. J. Fraser).

13. *Nehalennia irene*, Hag.—Toronto, June 22–July, common, especially around Grenadier Pond; Rosebank, June, 1903; De Grassi Pt., July–Aug. 3, 1903.

14. *Amphiagrion saucium*, Burm.—Reported from Ontario by Calvert (Cat. Odon. Phil., 236, 1893).

15. *Enallagma Hageni*, Walsh.—Toronto, June 9–July; Rosebank, June; De Grassi Pt., July; Go Home, Georgian Bay, July 18, 1904; Algonquin Park, Aug. 17–28, 1904. Our commonest *Enallagma*, occurring in swarms around Grenadier and other ponds in June.

16. *Enallagma geminatum*, Kellicott.—Toronto, Grenadier Pond, July 11–14, 1904. Not common.

17. *Enallagma exsulans*, Hag.—Chatham, Aug. 10, 1901; De Grassi Pt., July 18, 1904; Algonquin Park, Aug. 24, 1902.

18. *Enallagma ebrium*, Hag.—Toronto, June 3–14, 1901, Aug., abundant; De Grassi Pt., July 3, 1904, common; Algonquin Park, Aug., 1904 (P. Hahn). Nearly as common as *E. Hageni*, except northward.

19. *Enallagma Calverti*, Morse.—Berlin, Aug. 31, 1904, 1 ♂ (W. J. Fraser); De Grassi Pt, July 9, 1901, 1 ♂.

20. *Enallagma carunculatum*, Morse.—Toronto, June 27–Aug., 1904, common; De Grassi Pt., July 19–Aug., common: Go Home, Georgian Bay, July 18, 1904.

I have bred this late-appearing species from nymphs taken in Grenadier Pond and in Lake Simcoe. It is the only Zygopterous dragonfly that breeds in the clear, wave-tossed waters of Lake Simcoe, although others occur in the shallow reedy places near the shore. The nymphs climb up the timbers of the wharf, and up reeds growing from a depth of several feet.

21. *Enallagma antennatum*, Say. — Berlin, Aug. (W. J. Fraser); Toronto, June 24–July 6. Abundant along the banks of the Don River, where few other species occur.

22. *Enallagma signatum*, Hag. — Toronto, July 5–14, 1904, in small numbers around Grenadier Pond.

23. *Agrion resolutum*, Hag.—Toronto, June 11, 1904; Rosebank, June, 1903. The Toronto specimens of this interesting boreal insect were taken at Grenadier Pond, in company with *E. Hageni*.

24. *Ischnura verticalis*, Say.—Point Pelee, Aug. 8, 1901; Chatham, Aug. 10, 1901; Sarnia, Aug. 12, 1901, Toronto, June 10–Aug, 1904; Lake Simcoe, July–Aug.; Algonquin Park, Aug. 8–29, 1903–'04. Our most abundant species of Agrionidæ. The orange female is much more numerous than the black one.

25. *Ischnura Ramburii*, Selys.—Reported from Ontario by Calvert (Cat. Odon. Phil., 240, 1893).

Sub-order ANISOPTERA.

Family ÆSCHNIDÆ.

Sub-family *Gomphinæ*.

26. *Ophiogomphus rupinsulensis*, Walsh. — Algonquin Park, Aug. 15–30, 1902–'03. Common over shallow rapids on the North Branch of the Muskoka River.

27. *Hagenius brevistylus*, Selys.—Toronto (Wm Brodie); De Grassi Pt., 1 exuvia, Aug.; Go Home, Georgian Bay, June 30, 1903, many examples transforming; Algonquin Park, Aug. 20–22, 1903, 3 ♂ ♂, all slightly worn, and a few exuviæ.

28. *Lanthus albistylus*, Selys. — Algonquin Park, Aug. 14, 1903. Locally common over rapids on the North Branch of the Muskoka River, but only 1 ♂ taken.

29. *Gomphus brevis*, Hag.—Algonquin Park, Aug. 20, 1903. A pair much worn, and two exuviæ.

30. *Gomphus exilis*, Selys.—Toronto (W. Brodie); De Grassi Pt., June 30–July 9, 1901–'04; Go Home, Georgian Bay, June 22, 1903, 1 ♂ with exuvia, newly emerged; Algonquin Park, Aug., exuviæ. Probably our commonest Gomphus.

31. *Gomphus borealis*, Needh.—A male of what seems to be this species is in the collection of Dr. Brodie, in the Educational Dept., Toronto. It is without a label, but was found in a box containing specimens of various orders of insects, apparently all from Ontario. There is a little yellow on the outer surface of the tibiæ, but the male appendages agree so closely with Needham's figures of *borealis* that there seems little doubt that it belongs here.

32. *Gomphus sordidus*, Hag.—Go Home, Georgian Bay, June ?, 1903; 1 ♂ with exuvia, freshly emerged. Dr. Calvert, who saw this specimen, writes me that it is "apparently *sordidus*." The abdomen of the nymph is proportionately somewhat broader than that of *G. descriptus*, as described by Needham, who says the nymphs of *sordidus* are "entirely similar to that species in habits and appearance" (Aquatic Insects in the Adirondacks, Bull. 47, N. Y. State Mus., p. 455).

33. *Gomphus crassus*, Hag.—Niagara Glen, July 4, 1903, 2 ♀♀. This is the most northern record for this species.

34. *Gomphus Scudderi*, Selys.—Algonquin Park, Aug. 17–30, 1902–'03. Common over gentle rapids on the North Branch of the Muskoka River.

35. *Gomphus plagiatus*, Selys.—Algonquin Park, Aug. 11, 1903, one exuvia from muddy shore of river.

36. *Gomphus spicatus*, Hagen.—Hamilton? (Anderson); Port Sidney, May 18, 1899 (W. Brodie). It has also been reported from Ontario by Hagen.

37. *Gomphus villosipes*, Selys.—Toronto, July 24, 1901, 1 ♂, found flying around a small pond.

38. *Gomphus furcifer*, Hagen.—Toronto, June 15–20, 1903–'04; De Grassi Point, July 15, 1901. Not infrequent in Toronto, where it breeds in Grenadier Pond.

39. *Dromogomphus spinosus*, Selys.—Toronto, Grenadier Pond, June 24, 1904; De Grassi Point, July–Sept. 17, 1901, common; Thessalon, Algoma.

At Lake Simcoe the nymphs crawl out upon the rocks or clay banks of the wave-beaten shore, where they transform. They never crawl more than three or four feet from the water's edge. The imagoes fly over the lake near the shore, and in openings in the woods within half a mile or so of it.

(To be continued.)

A NOTE ON THE EUCHŒCA COMPTARIA MUDDLE.

BY HARRISON G. DYAR, WASHINGTON, D. C.

I have carefully separated out my material by Mr. Pearsall's latest (CAN. ENT., xxxviii, 33, 1906) and find all the forms before me. I cannot agree that the arrangement is final. In the first place, in describing the genus *Nomenia*, Mr. Pearsall mentioned as type *12-lineata*, Pack., which he now transfers to *Euchœca*, and makes a new name, *unipecta*, Pears., for the type species. This strikes me as a contravention of the rules. An author can no more change his own names than those of another, nor his own determinations, when they are made as a restriction of a heterotypical species. Mr. Pearsall's first restriction of *12-lineata* to the Western form with unipectinate antennæ will hold; the form with simple antennæ latterly interpreted as *12-lineata* may be called *Pearsalli*. I have four specimens before me from Victoria, B. C. (E. M. Anderson); Seattle, Wash. (T. Kincaid); Huachuca Mts., Arizona (Dr. Barnes); and a fifth, doubtful, from Kaslo, B. C. (Dyar).

In the second place, Mr. Pearsall has neglected two names of Walker's, *condensata* and *inclinataria*, heretofore referred to the synonymy. The former I should say was *exhumata*, Pears., judging from the description; the latter not referable here at all, as Walker states the antennæ to be pectinated. My arrangement would be as follows:

NOMENIA, Pearsall.
duodecemlineata, Packard.
= *unipecta*, Pearsall.
var. secunda, Pearsall.
EUCHŒCA, Hübner.
condensata, Walker.
= *exhumata*, Pearsall.
Pearsalli, Dyar.
comptaria, Walker.
= *perlineata*, Packard.
= *salienta*, Pearsall.

ON ACIDALIA SUBALBARIA, PACKARD, AND SOME ALLIED FORMS.

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

1. In 1874 Dr. Packard[1] described and figured a Californian Geometer under the name *Acidalia subalbaria*. The type was one female, and the specimen was figured in the photographic plate accompanying the paper.

In his monograph[2] Dr. Packard repeats the description word for word, merely adding after the word antennæ, "which are well pectinated in the male" (for at this time he had both sexes of the species), and at the end of his account he says, "the male antennæ are well pectinated, an unusual exception to their ordinary form in this genus." A lithographed figure is given (Mon. plate x, p. 63) of the male specimen, but the markings are emphasized in a way which gives a wrong impression as to their distinctness. The photograph in the earlier paper, though from a very indifferent specimen, gives a much better idea of the species as it is known to me.

In 1895 Dr. Hulst[3] states, on the authority of the late Mr. Moffat, that the type of *Acidalia anticaria*, Walker, in the collection of the Entomological Society of Ontario "is probably the same as *A. subalbaria*, Pack." In his "Classification," and again in the Geometrid portion of Dyar's Catalogue, Dr. Hulst, apparently on this slender evidence, places the species in the genus *Eois* as a synonym of *anticaria*, Walker. But anyone reading Walker's description[4] of *anticaria* can see at a glance that he is writing of a true *Sterrhid*: "head black in front," "antennæ pubescent," "discal point black,"—these are all characters quite in keeping with an *Eois*, but not at all agreeing with Packard's *subalbaria*, which by Packard's own showing is not a *Sterrhid* at all, but a *Diastictis*.

I have in my cabinet a specimen quite typical of this form, received through the kindness of Prof. C. F Baker, and taken in Southern California.

2. A very similar species of *Diastictis* was described by Dr. Dyar, in his paper on the Lepidoptera of the Kootenai District,[5] as *Cymatophora Matilda*.

I have one of Dr. Dyar's co-types in my collection, and also a long series from various British Columbian localities, and from Verdi, Nevada.

1. Proc. Bost. Soc. Nat. Hist., XVI, p. 28, fig. 15.
2. Monograph Geom. Moths, p. 334.
3. Ent. News, VI, p. 72.
4. Cat. Lep. Het. Br. Mus., XXVI, p. 1593.
5. Proc. U. S. Nat. Mus., XXVII, p. 907.

This form is very closely allied to *subalbaria*, Packard, but in my opinion the two are quite distinct.

They are, however, according to Dr. Dyar,[6] confused in the Hulst collection, being there united under the name (not really applicable to either of them) *Eois anticaria*, Walker.

3. If it is admitted that *subalbaria*, Packard, belongs to the genus *Diastictis*, and I do not think there can be any doubt about the matter, then the specific name will clash with that of the *Diastictis subalbaria*, Hulst,[7] described from Colorado, and I therefore propose for that species the name *Diastictis Hulstiaria*. I have seen specimens of this species determined by Hulst himself from Manitoba, and I presume they correctly represent his species. I have similar specimens from Calgary, and I believe that the species listed by Dr. Dyar[8] from Kaslo in error, as *Deilinia variolaria*, is the same thing.

4. Dr. Hulst described still another white *Diastictis* in his last paper[9] as *Cymatophora virginalis*. The description is very short and inadequate, but it would seem to refer to a smaller insect, "expanse 22 mm.," and the few details given do not apply accurately to the specimens I have placed under *Hulstiaria*. At the same time I must admit that I have received specimens from the Catskill Mountains (Dr. Pearsall), which were said to have been identified by Hulst himself as *virginalis*, which I cannot separate from those I have spoken of above. It is probable, however, that the study of more abundant material, and a careful examination of Hulst's actual types, may demonstrate that *Hulstiaria* and *virginialis* are distinct, though very closely allied.

The species considered in this article should stand in our lists as follows:

Diastictis subalbaria, Pack., non Hulst, California.
" Matilda, Dyar, Col., B. C., Nevada.
" Hulstiaria, Taylor, Col., Manitoba, B. C.
= subalbaria, Hulst, non Pack.
" virginalis, Hulst, Atlantic States.

And the reference to *subalbaria*, Pack., under *Eois anticaria*, Walker, must be struck out.

6. Proc. Ent. Soc. Wash., Vol. VI, p. 224.
7. Trans. Amer. Ent. Soc., XXIII, p. 333.
8. Proc. U. S. Nat. Mus., XXVII, p. 905.
9. Jour. New York Ent. Soc., VIII, p. 218.

NEW COLEOPTERA FROM THE SOUTH-WEST.—II.

BY H. C. FALL, PASADENA, CALIFORNIA.

The new species in the writer's collection selected for description in the following pages are representatives of the genera Cymatodera and Hydnocera, of the Cleridæ, and have been now chosen in order that their publication may be as nearly contemporaneous as possible with the recent descriptions of new species by Mr. Schaeffer and Dr. Skinner, whose articles have aroused some present interest in this family.

Cymatodera delicatula, n. sp.—Very small, similar in most respects to *puncticollis*. Brown, antennæ and legs uniformly rufotestaceous, front of head, apical and basal margins of prothorax and apex of elytra gradually paler; elytra with a broad, antemedian yellowish transverse fascia, which is not at all narrowed at the suture. Antennæ stout, nearly half the length of the body, joints 2-4 subequal and smaller than those following, outer joints subcylindrical, gradually wider apically, but not at all triangular; last joint longer, obtusely pointed. Eyes very prominent, especially in the ♂, in which they are separated on the front by a distance scarcely greater than their own vertical diameter. Head and prothorax very minutely sparsely punctate, the latter much wider at apex than at base; basal constriction strong, apical constriction moderate, width at middle subequal to that at apex. Elytra at base nearly twice as wide as the base of the prothorax, humeri rectangular, sides slightly diverging posteriorly, striæ consisting of quite coarse perforate punctures, which become finer at apex; intervals as wide as the punctures near the suture, becoming narrower at sides; each with a row of fine distant punctures; pubescence fine, rather long, suberect, the alternate interspaces with widely-spaced, longer, somewhat stouter, erect hairs, which are most conspicuous on the third.

Length, 3.2–4.2 mm.

Male.—Fifth ventral with posterior margin scarcely visibly emarginate; the sixth broadly feebly arcuato-emarginate from side to side; last dorsal rounded and feebly notched.

Female.—As in *puncticollis*.

Described from a single pair sent me by Mr. Beyer, by whom they were taken at Santa Rosa, Lower California. This species is closely related to *puncticollis*, but appears to be distinct in its somewhat less coarsely punctate elytral striæ, broader, complete transverse fascia, colour

of legs, and less distinctly emarginate fifth and sixth ventrals in the male. The antennæ are obviously gradually incrassate outwardly, a form not mentioned in the description of *puncticollis*, nor indicated in Horn's figure. The original description of *puncticollis* by Bland differs in some respects from the later one by Horn. The elytra of the type being, as indicated by Bland, in great part pale, with an indistinct subbasal band and a broader, distinct one at apical third: a style of coloration which nearly agrees with the closely-allied *sirpata*, but not with *delicatula*. It is quite possible, however, that these variations may exist within specific limits.

Cymatodera decipiens, n. sp.—Allied to *puncticollis*, from which it differs most conspicuously by the larger size and fine series of elytral punctures, the interstriæ being from two to three times as wide as the punctures near the base, the latter nearly disappearing at about the middle of the elytra near the suture, but extending further at the sides. The antennæ are not or scarcely incrassate apically, the outer joints a little compressed and plainly subtriangular, when viewed on the compressed side, last joint longer and acutely pointed. Prothorax closely, rather coarsely but somewhat vaguely punctate. Elytral fascia incomplete, consisting of a somewhat irregular transverse antemedian spot, which reaches neither suture nor side margin. Colour piceous brown, legs and antennæ pale reddish brown; pubescence very fine, consisting of shorter, more or less inclined hairs, with sparser, longer, erect hairs intermixed.

Length, 6.25 mm.

Male.—Fifth ventral broadly, feebly arcuate, sixth broadly, slightly arcuately emarginate at middle; last dorsal not visible.

Female.—As in *puncticollis*.

Described from a single pair taken by the writer in the San Bernardino Mts., California.

A specimen of this species sent long ago to Dr. Horn was identified by him as *puncticollis*, but a careful study convinces me that it cannot possibly be that species. It is evidently allied to *uniformis*, Schaef, which, however, is a much more coarsely punctured and pubescent species, with immaculate elytra.

Cymotodera umbrina, n. sp.—Closely related in size, form and colour to *morosa* and *Belfragei*, with the latter of which it agrees more nearly in abdominal sexual characters. In *Belfragei* the prothorax is said to be very feebly punctured in posterior three-fourths. In the present species the prothorax is equally punctured throughout, and the elytral punctures are

finer than in *Belfragei*. The fifth ventral segment (♂) is deeply subparabolically emarginate; the sixth segment much longer than wide, slightly narrowed to apex, which is broadly, not very deeply arcuately emarginate, the lateral angles moderately acute, but not produced or incurved, their points bent downward; lateral carinæ very feebly arcuate, and only slightly convergent anteriorly, nearly reaching the base of the segment, the surface between them rather coarsely punctate and subcarinate throughout along the median line. Last dorsal notched at middle, the sides rounded; penultimate dorsal broadly, deeply triangularly emarginate. Female as in *Belfragei*.

Length, 11–13 mm.

The type is a male from Claremont, California, collected by Baker. With this I have placed a second male collected by Schwarz at Oracle, Arizona, and females from Pomona, Riverside, Echo Mt., and San Jacinto Mt., in Southern California, and Harqua Hala, in South-western Arizona.

The elytral band is almost exactly at the middle of the elytra; it is very narrow on the disk, widening a little at the margin, and is frequently obscure or visible only at sides. In *Belfragei* the sixth ventral is nearly square, a little wider toward the apex, the lateral carinæ shorter and more convergent.

Hydnocera plagifera, n. sp.—Very robust, black, slightly aeneous, and moderately shining; elytra each with a broad reddish-yellow stripe of uneven width extending from the base to apical two-fifths, touching the base and side margin, but not reaching the suture, the tips of the humeri dark. Pubescence moderately plentiful, erect and subrecumbent, white, mixed with black, and with a denser transverse fascia of white hairs covering the dilated posterior end of the pale stripe. Antennæ pale yellow; eyes moderately large; head densely, not coarsely, punctate. Prothorax distinctly wider than long, nearly as wide as the head, including the eyes, sides strongly dilated before the middle, straight and parallel in apical two-fifths; strongly impressed along the basal margin; disk evenly convex, median line smooth posteriorly, becoming evanescent in front, elsewhere closely but not coarsely punctate, the sculpture becoming somewhat rugulose laterally. Elytra covering the abdomen, plainly wider than the head, almost three-fifths as wide as long, punctuation coarse and rather dense; apices impressed before the margins, which are serrulate

and separately rounded. Beneath rather sparsely punctate and pubescent; legs black, the front tibiæ and all the tarsi pale.

Length, 5 mm.

Bishop (Owens Valley), California.

The type is a female kindly given me by Dr. Fenyes, in whose collection is a second example, which differs from the type in that the pale elytral spots involve the entire basal three-fifths of the elytra except the tips of the humeral umbones and a narrow sutural line. This was, when taken, supposed to be *robusta*, which occurs in the same region, but a comparison with Horn's description shows too many differences to permit its assignment to that species.

Hydnocera cyanitincta, n. sp.—Slender, eyes very prominent, colour above deep blue, body below and legs black, with greenish-blue reflections, the front tibiæ pale internally; pubescence sparse, whitish, with a very faint indication of a median transverse fascia. Head finely, sparsely punctate; prothorax sparsely, quite coarsely, but very vaguely so; the lateral foveæ strong; elytra coarsely, closely punctured. Elytra parallel, covering the abdomen, apices separately rounded, but not at all dehiscent.

Length, 4.8 mm.

New Mexico, Sacramento Mts. (Knaus).

Closely allied to *cyanescens*, from which it differs in a number of minor respects, which in the aggregate seem to warrant its separation. As compared with *cyanescens*, the sculpture is rather coarser and closer, prothorax is a little more transverse, the dilation more abrupt, the sides posteriorly convergent to base rather than parallel; the elytral apices and side margins more strongly serrate.

Hydnocera cribripennis, n. sp.—Form and size of *scabra*, dull black, rather plentifully pubescent with yellowish-gray subrecumbent confused hair, and sparser blackish and pale erect hairs. Elytra with a subbasal transverse pale fascia, which crosses the suture but does not reach the side margins, and a transverse, slightly post-median spot on each, which reaches neither suture nor margin; the extreme base is also narrowly pale on either side of the scutellum. Eyes large and strongly convex; head densely, rather finely punctate. Prothorax much narrower than the head, a little wider than long, sides strongly rounded anteriorly, apical constriction strong, sides sinuately narrowing behind, surface densely, not coarsely punctate, and slightly rugulose, the sculpture obscured somewhat by the pubescence. Elytra not covering the abdomen, one-fifth wider than the

head, much less than twice as long as wide, sides plainly convergent posteriorly, apices separately rounded and serrulate, surface very densely, coarsely punctate, becoming strongly cribrate toward the apex. The pubescence is somewhat condensed, and transversely inclined on the posterior pale spot. Legs rufotestaceous, the thighs all more or less infuscate.

Length, 3.5 mm.

Fedor, Texas. One male.

A specimen in the LeConte cabinet bears the manuscript name, *granipennis*, which I have changed to the more appropriate one here given. The sculpture of the elytra is rougher than in any other species known to me, but is nearly approached by *Knausii*, which, however, differs much in its coloration, more slender form, less densely punctured thorax and sparser vestiture.

Hydnocera affiliata, n. sp.—Similar in form and colour to *pallipennis*, to which it is very closely related, differing only as follows: Head and prothorax closely punctate and feebly shining (sparsely punctate and shining in *pallipennis*), elytral punctures a little closer, the apex always pale, and usually with a small antiapical black spot.

California (Pasadena and Pomona).

Hydnocera sobrina, n. sp.—Slender, shining, black, with faint aeneous tinge, front and middle legs pale, hind legs black, the knees and tarsi pale; pubescence sparse, erect, uniformly distributed, ochreo-cinereous. Head finely but distinctly, not closely punctate, eyes not very prominent; antennæ pale, the tip of the terminal joint darker. Prothorax fully as long as wide, anterior dilatation not very strong, much as in *verticalis*, apical constriction moderate, sides parallel behind, lateral foveæ feeble; surface rather sparsely and finely punctate, median line faintly elevated for a short distance behind the anterior constriction. Elytra parallel, much shorter than the abdomen, dehiscent at apex, the tips rounded and feebly serrate, punctuation moderately strong and close, but much finer than in *verticalis*.

Length, 4 mm.

Oak Creek Canon, Arizona, July (Snow).

This is a rather inconspicuous species, which is in general form related to *verticalis*, but seems quite distinct from any of our described species.

ANOTHER GEOMETRID TANGLE.

BY RICHARD F. PEARSALL, BROOKLYN, N. Y.

(Continued from page 71.)

Since the above investigation was begun, I have received, under date of Jan. 31, a letter from Mr. L. B. Prout, whose lively interest in solving these vexed problems is as great as my own, and much more unselfish. I can best show this by quoting it here, with apologies to him for so doing without permission.

"*Inequaliata*, Pack.—The British Museum possesses the example which purports (I suppose correctly) to be Packard's 'type' specimen. The labelling on it agrees with Packard's data, 'Long Island, N. Y. (H. K. Morrison),' and the Museum acquired it with Zeller's collection. It agrees with Packard's figure (Pl. IX, Fig. 20). It is a female example of the well-known European species, *Lobophora halterata*, Hufn., and as I believe no other American examples of that species are known, I can only conclude either:

"(1) That it was accidentally introduced to America by shipping or some unexplained agency, or

"(2) That some confusion as to its real origin occurred (*before* it was sent to Packard for figuring, for his figure confirms the specimen).

"In either event the name *inequaliata* must sink to *halterata*, and cannot stand for your pseudo *montanata* (Eastern), which, though fairly similar, is *abundantly distinct*.

"*Nivigerata*, Walk.—You are quite right. This (according to the two type specimens) is *exactly* the thing which you send me as *montanata*, Auctt., non Pack.—Packard's Eastern, non-typical *montanata*. . . . . I may add that Warren, in arranging the Brit. Mus. Geometrides thirteen years ago, had discovered the identity of *nivigerata* with the so called *montanata*, and had merged them together."

It is fortunate that the type of *inequaliata*, Pack., is in existence, for it solves definitely this part of the difficulty, and the name must be dropped from our lists. Our eastern *Lobophora*, as I have suspected, becomes *Lobophora nivigerata*, Walk., and it follows that the species now known as *Philopsia nivigerata*, Walk., is not that species, and has never been described. I herewith describe it under the name of

Philopsia canavestita, n. sp.—Expanse, 19–22 mm.

Wing texture and covering of scales very thin; fore wings large, produced at apex, hind wings small, narrow, somewhat extended. Palpi rough scaled, dark gray. Front, collar, thorax and abdomen above dark gray and white mixed, the front a little darker, tending to brownish. Wings soiled white, sprinkled thinly but evenly with dusky scales, these darkened along costal region of fore wings and when formed into bands, which sometimes are distinct and cross the wings, but more often fade out, or are entirely wanting, as in the case of the ♀ type. The male is marked thus: a narrow curved dark gray band close to base, a pale line of ground colour of equal width, then a broad gray band, widest at costa, and slightly curved toward base at inner margin. The discal space broad and paler, sometimes transversed within discal dot by a shadowy line. Extra-discal band, two-thirds out from base, darker, with an outward angle at costa, then straight across wing, darkened at veins, succeeded by a pale space of equal width. Subterminal space dusky, often traversed midway by a row of darker dots on veins; marginal line on both wings brownish, fine and distinct. Fringes dusky. Hind wings dusky white, without markings, a shade darker toward margin. Discal dots when present minute dark brown or black, often entirely lacking. Beneath soiled white, the extra-discal line is reproduced, and crosses half way from costa on fore wings, and the pale space succeeding it above is often sharply defined by a darkening of the wing subterminally, heavier at apex, fading out half way across. An apparent continuation of the extra-discal line across hind wings, curved, parallel to margin, is found in a row of diffuse dots on veins, sometimes wanting; otherwise without markings, discal dots faint. Body beneath and legs dirty white, sprinkled with dark gray and brown scales, heavily on front pair, the others lighter. Tarsi banded with dark brown. Abdomen beneath silvery white.

Types.—♂ and ♀. Coll. R. F. Pearsall, the ♂ from Doble, Cal., the ♀ from Walter's Station, Cal., in April.

Co-types.—Coll. Dr. Wm. Barnes, of Decatur, Ills., and of Dr. Jno. B. Smith, New Brunswick, N. J.

I am indebted to Dr. Jno. B. Smith for my types, and for other valuable material from Southern Calif., and to Dr. Barnes for examples from Palo Alto and Middle Calif. Two males, so marked, are smaller, a clearer gray, with lines more distinct than southern examples.

Talledega tabulata was described by Dr. Hulst from a male labelled Alert Id., Alaska. An examination proves it to possess a hair pencil on hin l tibia. This makes it a Lobophora, and it is the same, I think, with

western examples passing under that name. These I have through the kindness of Dr. Barnes, from Cartwright, Man.; Victoria, B. C.; and in my own collection from Winnipeg, Man. It varies but little from its eastern congener, yet, without a larger series, I would not venture to form at present an opinion as to its rank. I place it, therefore, in the following group, as arranged:

Lobophora inequaliata, Pack.	(European.)
Talledega montanata, Pack.	Talledega montanata, Pack. var. magnoliatoidata, Dyar. Lobophora nivigerata, Walk.
" tabulata, Hulst.	Lobophora tabulata, Hulst.
Philopsia nivigerata, Walk.	Philopsia canavestita, Pearsall.

THE BURROWS OF CICINDELA RUGIFRONS AND CICINDELA MODESTA.

BY WM. T. DAVIS. STATEN ISLAND, N. Y.

On the 24th of last September Mr. Ernest Shoemaker and I went insect-collecting along the edge of the meadow on the south side of Long Island, not far from the Brooklyn City line. We were searching particularly for *Cicindelas*, but, the day being rather cold, we did not see as many as we had expected.

While looking about on one of the dunes I noticed a *Cicindela rugifrons* disappear into a little hole. He saw me coming and retreated, for he had been looking out of his doorway. I dug the *Cicindela* out, and then looked about for other little holes of the same character, of which I found a number. They entered the earth at an angle of about 45 degrees, and were two or three inches deep. They had been made by the insects digging into the earth, and little piles of sand were at each doorway. I dug open a number of these burrows and found seven *Cicindelas*—some *rugifrons* and some *modesta*. Mr. Shoemaker also secured a number of specimens in the same way.

When we returned to the dune later in the day there were no *Cicindelas* flying, and the only specimens we saw were those we dug out of their burrows, always being guided thereto by the tell-tale little heaps of sand. The soil on this particular dune was more compact than is often the case, and the digging operations of the insects were in consequence easier to follow. *Modesta* and *rugifrons* live over winter as adults, and so, perforce, must be able to dig into the sand, only on previous occasions we had not found their little burrows, which in the instance mentioned above, seem to have been of the nature of temporary shelters.

NEW AMERICAN TINEINA.

BY AUGUST BUSCK, U. S. NAT. MUS., WASHINGTON, D. C.

The following seven species of *Tineina* were part of a large and well-preserved collection of *Microlepidoptera*, recently received for determination from *Mr. Henry Engel, Pittsburg, Pennsylvania*, who has presented the types, together with many other specimens of other species, to the U. S. National Museum.

Five of the following species have previously been collected around Washington, D. C., by the writer.

Anacampsis nonstrigella, new species.—Antennæ black, with silvery-white annulations. Labial palpi bright deep ochreous, tips of terminal joints slightly shaded with black. Eyes dark red. Face white, iridescent, gradually mixed with the darker colour of the vertex. Head and thorax dark olive brown, iridescent. Basal two-thirds of fore wings dark olive, apical part deep blackish brown, with a few golden-brown scales just before apex. Hind wings dark purplish fuscous, with dorsal cilia white. Abdomen above dark purplish brown, with each joint tipped with silvery-white, the entire body below shining straw yellow. Legs straw-coloured, with broad black bars on the exterior side.

Alar expanse, 15 mm.

Habitat: Oak Station, Pennsylvania, July. U. S. Nat. Mus. Type No. 9792.

This species is nearest to *Anacampsis tristrigella*, Walsingham, and very similar to it in size and colour, but is devoid of all the prominent white apical lines characteristic of that species.

Trichotaphe Washingtoniella, new species.—Antennæ serrate, deep blackish brown, without lighter annulations. Labial palpi with smoothly appressed thickening of the second joint, blackish brown, colour on the inner side of second joint and on the terminal joint slightly mixed with ochreous. Head and thorax dark purplish brown, face a shade lighter. Fore wings dark purplish brown; on the fold are two connected, round, velvety black blotches, the outer one extending up in the middle of the wing, and containing a few ochreous scales. At the end of the cell is a somewhat larger aggregation of ochreous scales, forming two small indistinct moon-shaped spots, separated and partly surrounded by velvety black scales. Just before apex is a transverse velvety black fascia, outwardly nearly straight and parallel with the edge of the wing, inwardly

sharply angulate, the point indistinctly connected by black scales with the second discal spot. At the base of the apical cilia is a velvety black line. Cilia concolorous with the wing. Hind wing light fuscous, darkest towards the tip. Abdomen and legs dark purplish fuscous, tips of each tarsal joint ochreous.

Alar expanse, 16 mm.

Habitat: District of Columbia; Pittsburg, Pennsylvania, June; St. Louis, Missouri, August. U. S. Nat. Mus. Type No. 9793.

The larva feeds in a narrow fold on the edge of the leaf of *Eupatoria*, sp., and pupates in a similar fold.

The species is nearest *T. juncidella*, Clemens, but larger, more broad-winged, and at once distinguished by the dark labial palpi. In this respect it resembles *T. Levisella*, Fyles, which is also quite near, but *Levisella* is a still larger species, with pointed wings, while the present has apex evenly rounded as in *juncidella*.

Trichotaphe trinotella, new species.—Antennæ dark purple, without colour-annulations. Labial palpi light ochreous. Face ochreous. Head and thorax dark brown. Fore wings dark brown, with three prominent light ochreous dots, one on the middle of the wing, another smaller one just below it on the fold, and the third and largest at the end of the cell. At the beginning of the costal cilia are a few ochreous scales. Hind wings dark fuscous, cilia a shade lighter. Abdomen dark bronzy fuscous above, under side fuscous, sprinkled with ochreous. Legs blackish externally, each joint of tarsi and the spurs tipped with ochreous.

Alar expanse, 15 mm.

Habitat: Pittsburg, Pennsylvania, May. U. S. Nat. Mus. Type No. 9794.

Quite close to *T. juncidella*, Clemens, and to *T. leuconotella*, Busck, but easily distinguished by the ornamentation.

Gelechia fondella, new species.—Antennæ dingy ochreous, with black annulations. Labial palpi whitish ochreous, sprinkled with black. Face, head and thorax whitish ochreous. Fore wings whitish ochreous, with each scale darker at the tip, and with a faint roseate tinge. Two large conspicuous black costal spots, one at basal third outwardly oblique, and the other at apical third inwardly oblique, both reaching the middle of the wing. Extreme apical part of wing dusted with black. Hind wings light ochreous fuscous. Legs whitish ochreous, with black bars and spots on the exterior side.

Alar expanse, 13–14 mm.

Habitat: Plummer's Island, Maryland; Pittsburg, Pennsylvania; June. U. S. Nat. Mus. Type No. 9795.

Nearest in general habitus and coloration to the group of *G. mediofuscella*, Clemens; *Pennsylvanica*, Dietz, etc., but quite distinct in design.

Mompha stellella, new species.—Antennæ unicoloured, dark brown. Labial palpi whitish ochreous, sprinkled with black scales, and with a black annulation just before the tip of terminal joint. Face silvery white. Head and thorax light ochreous. Fore wings light ochreous, mottled with brown and black scales, costal edge evenly mottled with black, and entire apical part of the wing sprinkled with sparse black scales, two oblique, ill-defined and indistinct shades of light brown stretch across the wing, one from the base, the other from the middle of costa. There are six tufts of raised ochreous scales in two longitudinal rows, one through the middle of the wing, the other below the fold. The central of the latter tufts, which is found just before the tornus, is the largest of them, and is terminated by and followed by intense black scales, the most conspicuous marking on the rather evenly mottled wing Abdomen ochreous, Legs ochreous, mottled with black.

Alar expanse, 11–12 mm.

Habitat: Pennsylvania, District of Columbia, August. U. S. Nat. Mus. Type No. 9796.

The larvæ feed in the base of the flowers of *Evening Primrose* (*Oenothera*, sp.). The insect has long been in the Museum collection, and was passed upon already in 1886 by *Lord Walsingham* as *Laverna*, n. sp.

It is nearest and quite similar to the other *Oenothera*-feeder, *Mompha brevivittella*, Clemens, but lacks the longitudinal black streaks on the fore wings, and is at once recognized by the black tornal patch.

Mompha Engelella, new species.—Antennæ dark purplish brown, with silvery-white tips. Labial palpi golden yellow, tip of terminal joint shaded with purple. Face, head and thorax dark purplish brown, iridescent. Basal part of fore wings concolorous with thorax, and limited outwardly by a narrow oblique fascia of bluish metallic scales, beginning just before the middle of costa, and reaching the dorsal edge at basal third. Apical fourth of the wing is of this same dark purple colour, and the intervening middle part of the wing is bright golden. On this

metallic golden part are four spots of raised scales, one large, black on the fold at the middle of the wing, another smaller one above it in the cell is white, edged with black, and at the end of the cell are two more or less confluent spots of iridescent bluish scales edged with black. Between the yellow central part of the wing and the dark apical part is a small triangular silvery-white spot. Hind wings dark purplish brown. Abdomen dark brown above, silvery white on the under side. Legs purplish brown, with the tips of the spurs and of the tarsal joints white.

Alar expanse, 9–10 mm.

Habitat : Pittsburg, Pennsylvania, May; District of Columbia, June. U. S. Nat. Mus. Type No. 9797.

It gives me pleasure to name this exquisite little insect in honour of *Mr. Henry Engel.*

The species belong to the group of small metallic *Mompha*, which contains *Schranckella*, Hübner, and *terminella*, Westwood, of Europe, and is, in fact, very nearly identical in coloration with the latter.

Rebel retains in his Cat. Eur. Lepid. the separate genus *Psacaphora* for these two species, but does not include the other metallic species as *Raschiella*, Zellar. The more logical way is to retain them all in *Mompha*, as does Meyrick in his Handbook British Lepid, though eventually this genus may profitably be divided into two groups, the one represented by these small metallic species with smooth palpi and legs, the other to include the dull-coloured species with more or less shaggy palpi and legs.

Epermenia imperialella, new species. — Antennæ ciliated, dark fuscous; basal joint reddish, with pecten. Labial palpi reddish ochreous, shaded with black exteriorly. Face, head and thorax ochreous. Fore wings light yellow, overlaid on costal and apical part with reddish ochreous. On the middle of the wing is an ill-defined broad oblique darker grayish ochreous fascia, widest at the costal edge, gradually narrowing to the dorsal edge, which it reaches at basal third; it is there continued into a dark ochreous dorsal scale tuft. The reddish coloration increases in intensity towards apex. Cilia just below apex short, then suddenly very long, giving the wing the appearance of being falcate. Cilia reddish ochreous, with a marginal black line below and around apex, and with a white space outside this line, just below apex. Hind wings dark bronzy fuscous; cilia ochreous. Abdomen ochreous. Legs reddish.

Alar expanse, 19 mm.

Habitat: *Pittsburg, Pennsylvania*, June U. S. Nat. Mus. Type No. 9798.

This is by far the largest and most conspicuous species of the genus known to me, totally unlike the other American species described at present, nearest to *E. Illigerella*, Hübner, of Europe, but larger and more striking than that species. It has a notable colour resemblance to *Gracilaria Murtfeldtella*, Busck.

THE TYPE OF THE GENUS COCCUS.

BY MRS. M. E. FERNALD, AMHERST, MASS.

In the CANADIAN ENTOMOLOGIST, Vol. xxxiv, page 232 (1902), I gave the reasons for adopting *hesperidum* as the type of *Coccus*, which adoption caused such radical changes in the classification of the *Coccidæ* that I am free to say I hesitated to make them in my Catalogue of the Coccidæ of the World, published in 1903. The main difficulty was to give a proper interpretation to the action of Geoffroy, in his Histoire Abrégée des Insectes, Vol. I (1762), where he removed a part of the Linnæan species from *Coccus*, and placed them in the genus *Chermes*, thus using this genus in a different sense from that of Linnæus, the original founder, and placing *adonidum*, *phalaridis* and his new species *ulmi* under *Coccus*. Of these three species only *phalaridis* was given by Linnæus under the genus *Coccus*, in his Systema Naturæ, ed. x (1758), and no one has ever been able to positively identify this insect. Linnæus himself was not able to determine whether it was a *Coccus*, an *Aphis* or a *Chermes*. Under these circumstances, it did not seem wise to make use of the restriction of Geoffroy, but I adopted the type established in the next oldest work known to me at that time, which was *hesperidum*, fixed as the type of *Coccus* by Latreille in his Hist. Nat. Crust. Ins., Vol. iii, page 267 (1802).

Mr. G. W. Kirkaldy, who has given us some exceedingly valuable Biographical and Nomenclatural Notes on the Hemiptera in "The Entomologist," Vol. xxxvii, p. 254 (1904), objects to the use of *hesperidum* as the type of *Coccus*, and states that he cannot find that the type of *Coccus* has ever been fixed, or that any species but the true Linnæan *cacti* is available.

I have now before me a copy of Sulzer's Die Kennzeichen der Insekten, published in 1761. In this work Sulzer gives, for those times, a

remarkably good account of the genus *Coccus*, and establishes *hesperidum* as the type, it being the only species named, giving coloured illustrations of this species on Plate xii, figs. 81, i,–o, with coloured figures of the upper and under side of the female, natural size and enlarged; the under side of a mature female, enlarged, showing the eggs; a male and female mating, enlarged, and a twig of an orange tree with the females on the leaves. I cannot find that any work appeared between 1758, when Linnæus published his genus *Coccus*, and 1761, when Sulzer established the type of *Coccus* as *hesperidum*, that would in any way affect the type of this genus. As this work of Sulzer antedates that of Geoffroy by one year, I think that *hesperidum*, Linn., must be regarded as the type of *Coccus*, according to Article 30, of the International Rules of Zoological Nomenclature (1905).

I am greatly obliged to Mr. Kirkaldy for calling my attention to errors and omissions in my Catalogue of the Coccidæ, and these will be noted in a Supplement which will be published later.

ENTOMOLOGICAL SOCIETY OF ONTARIO.

British Columbia Branch.

The Fifth Annual Meeting was held at the Queen's School, Vancouver, on Friday, January 19th, 1906.

Present: Messrs. Dashwood-Jones, Bush, Sherman, Harvey, Marrion, Towler, Draper, and Foster.

The minutes of the last meeting were read and passed, also the balance sheet, showing a balance of 40c. cash, and supplies valued at $15.10.

Messrs. J. Anderson (Victoria) and Fred Foster (Vancouver) were elected members of the Society.

It was suggested that the spring meeting should be held at Duncan's, if possible, on or about April 17th.

The retiring officers for 1905 were re-elected for the ensuing year, viz: President, Rev. G. W. Taylor; Vice-President, Mr. T. Wilson; Secretary-Treasurer, Mr. R. V. Harvey.

The Secretary announced that he had approached the Department of Agriculture with a view to obtaining assistance towards printing a small periodical giving an account of the proceedings and work of the Society, new records, lists of B. C. insects, and articles on systematic and economic entomology. He read a letter from Mr. Tatlow, promising definite assistance.

The meeting expressed entire approval of the scheme, and a resolution was passed, proposed by Mr. Dashwood-Jones, seconded by Mr. Sherman, "That the offer of Mr. Tatlow be accepted, with the thanks of the Society, and that a committee be appointed, consisting of the President and Secretary, to arrange for the publication of a pamphlet, in such form and at such times as they may think best, and they are hereby empowered to act in the matter."

Further suggestions were made, *e. g.*, that the paper be called the "Bulletin of the B. C. Entomological Society," and that space be given in each issue to articles of interest to the fruit-growers of the Province.

Mr. Dashwood-Jones showed some very interesting specimens of Lepidoptera from St. Leon Hot Springs, Kootenay Lake, identified by Dr. Fletcher, including *Lycæna lygdamus* (new to B. C.), *Basilarchia arthemis* (new to B. C.), *B. disippus* (rare), *Erebus odora* (rare), *Sthenopis quadriguttatus* (new to B. C.), *Catocala briseis, Phengommatœa Edwardsata*, and others.

Toronto Branch.

The Toronto Branch of the Entomological Society meets in the Provincial Museum on the 3rd Tuesday of each month. The last meeting was devoted to an exhibition of specimens, and proved most interesting.

Mr. Hahn showed a collection of very beautiful butterflies from India, arranged mostly from an artistic and decorative standpoint. Some from the Fiji Islands were donated to the Society.

Mr. Elliott showed a section of a tree-trunk which had been tunnelled by the larvæ of wood-boring beetles, genus Monohammus. The tunnels had subsequently been utilized as a nursery by *Megachile brevis*, a leaf-cutting bee belonging to the family Andrenidæ. This bee had constructed its nursery-cells of rose-leaves.

Mr. Elliott also showed a larva of a moth found in New Zealand, which had become a fungus. The larva, on going into the ground to pupate, is attacked by a parasitic fungus which takes root in the body, and sends a shoot about nine inches long above ground. When the whole thing is converted into a fungus the natives use it as a food.

A pupa-case of *Vanessa antiopa*, taken in the fall, was shown. A number of small parasites were emerging.

Dr. Brodie showed a number of cases belonging to the museum, containing specimens of Cicindelidæ, Cerambycidæ and Chrysomelidæ, including all species of these families found in the neighbourhood of Toronto.

Prof. Sherman, from Guelph, was present, and gave a short talk on the work being done at the Agricultural College. A general discussion followed on methods of preserving specimens, and the need of good, well-represented collections. ELSIE BLACKMORE, Secy.

GUELPH BRANCH.

The seventh regular meeting of the Guelph Branch was held in the Agricultural College on Wednesday evening, Feb. 7th, 1906, with 14 members and three visitors in attendance.

Prof. Sherman gave a very interesting talk on the Tiger Beetles (Cicindelidæ). He showed clearly by illustration how they are distinguished from closely-allied insects, such as the Ground Beetles, etc. He also described very minutely their habits and life-histories, and exhibited a large number of specimens collected from Ontario and foreign countries. Only 11 species have been recorded in Ontario.

Mr. T. J. Moore presented notes on a large green species of Cockroach. The specimen was found in a crate of oranges imported from California.

Mr. H. R. Macmillan made a very careful review of the current literature.

The eighth regular meeting was held in the College on Wednesday evening, Feb. 21st, 1906, with 11 members in attendance.

Mr. Hart discussed trap lanterns. He exhibited and illustrated several types of lanterns, and enumerated the various kinds of insects attracted by light. The experiments conducted at Cornell University and the Agricultural College, Guelph, were carefully reviewed.

Mr. T. D. Jarvis exhibited and described an apparatus he had made for catching small Arthropods; it is a modification of the one invented by Dr. Berlese, of Italy. It has given excellent results.

Mr. G. E. Sanders discussed beneficial parasitic insects, of which he has made some very careful observations, and he presented some interesting work at the meeting. TENNYSON D. JARVIS, Secretary.

NOTES ON CULEX SQUAMIGER, COQ., WITH DESCRIPTION OF A CLOSELY-ALLIED SPECIES.

BY JOHN A. GROSSBECK, NEW BRUNSWICK, N. J.

In a recent number of this journal* Mr. Quayle gives some notes on the habits of the Californian *Culex squamiger*, Coq., and compares these briefly with those of a species occurring in New Jersey which we have been calling *squamiger* (following a determination by Mr. Coquillett), and suggests the possibility of there being two forms. The identification of our species with the Californian one has been doubted by Prof. Smith and myself since we learned of the salt-water habit of the latter; but not until Mr. Quayle pointed out the difference in the length of tracheal gills of the larva was a close comparison of the species made. This I was able to do through the kindness of Mr. Quayle, who some time ago sent Prof. Smith, among other specimens, a male and female *squamiger*, and also several larvæ supposed to be of this species. The larvæ, it turns out, cannot be differentiated from *Culex Curriei*, which species I believe them to be. Should they, however, eventually prove to be the true *squamiger*, then some of the characters are greatly at variance with our species.

The adult New Jersey form may be characterized as follows:

Culex sylvicola, n. sp.—♀. Length, 6–7 mm. Head brown, occiput clothed with whitish scales and a patch of brown ones on each side of the median line contiguous to the eyes; antennæ brown, the basal joint and two following ones ochreous; proboscis and palpi blackish-brown, slightly sprinkled with white scales, the latter with the third joint rather long, the apical one minute, rounded, white scaled. The dorsum of the mesonotum is covered with cinereous scales, and a broad, median, dark brown vitta extends forward from the posterior margin, which becomes narrow anteriorly and golden-brown in colour; two other dark brown marks extend from the posterior margin not quite to the middle of the mesonotum, separated from the median vitta by a narrow line; scutellum cinereous, with brown bristles on the posterior margin; metanotum evenly brown; pleura brown, with dense, fluffy patches of whitish scales; halteres yellowish, tipped with brown and white. Abdomen blackish-brown above, with a few whitish scales intermixed; segments one to five have each a broad yellowish white band at the base, segments six and seven with an additional narrow apical band; beneath it is dirty white,

*CAN. ENT., Vol. XXXVIII, p. 27.

with a few brown scales ; genitalia brown. Legs dark brown, femora and tibiæ profusely sprinkled with whitish scales, the former yellowish on the posterior portion and at the knees ; claws uniserrated ; wings hyaline, the veins covered with broad brown and white scales, and also some narrow brown ones on the apical third, petiole of first submarginal cell almost two-thirds the length of this cell.

♂.—Palpi dark brown, the first joint whitish at the base, and with a yellow band in the centre ; bases of the two terminal joints also whitish in some specimens ; fan-like tufts brown, with yellow reflections. Abdomen with the bands restricted in the centre ; claws uniserrated ; petiole of first submarginal cell almost as long as this cell.

Genitalia : Clasp elongate, inner margin rounded apically ; subapical lobe present, prominent, projecting laterally, setose ; basal lobe well developed, setose, a long spine arising near it, which is curved at the tip ; clasp filament long, curved, two small setæ near the apex, with long apical spine. Harpe jointed, basal segment curved, swollen basally ; apical segment long, dilated centrally, tip curved. Harpago hood-shaped, tip bent laterally. Appendage of eighth segment with long setæ. (Fig. 11.)

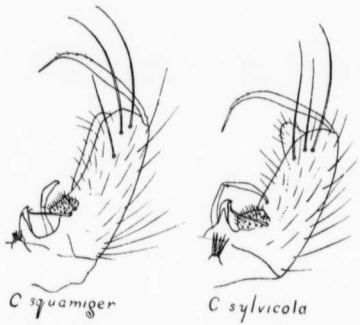

Fig. 11.—Genitalia of Culex squamiger and sylvicola.

Besides the great differences in the genitalia, *sylvicola* may be further distinguished from *squamiger* by the presence of the cinereous scales on the mesonotum ; by the proboscis being uniformly almost black instead of pale brown, and by the much darker colour of the femora and tibiæ.

Described from 21 males and 20 females in the New Jersey Experiment Station collection.

Habitat: Livingston Park (near New Brunswick), N. J., and Westville, N. J.

This species was first taken in New Jersey, near Paterson, in April, 1903, in the larval condition; but no adults were bred therefrom. In the following spring they were again met with in Livingston Park, and in the season of 1905 they were secured from this locality in some numbers. They were found full-grown as early as April 28th—indicating an egg hibernation—and the last were taken not later than May 17th, though frequent subsequent collections were made. No larvæ were ever taken in any but fresh water, woodland pools; and adults were never seen outside their immediate breeding grounds. After emergence they continue on the wing for a period of about three months, becoming more and more worn as the season advances.

An account of the life-history of this species as far as known, and a description of both larva and adult, is given by Prof. Smith in his "Report on Mosquitoes" (N. J. State Exper. Sta., 1903–'04), and also a description of the larva in Psyche, Vol. XII, p. 13.

A description of the genitalia of *C. squamiger* is here appended for comparison with *C. sylvicola* (Fig. 11): Clasp elongate, margins subparallel almost to apex, inner margin rounding abruptly toward apex; subapical lobe setose; basal lobe well developed, setose, a long spine recurved at the tip arising near it, another stout spine a short distance above this; clasp filament long, curved, four small setæ near the apex, with long apical spine. Harpe jointed, basal segment comparatively short, apical segment short, dilated centrally, tip slightly curved. Harpago hood-shaped, tip bent laterally. Appendage of eighth segment with short setæ.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

This institution, founded in 1856, celebrated its first jubilee by a dinner on Saturday evening, March 10th. About 200 persons were present, including a number of representatives of societies at a distance. The Entomological Society of Ontario was well represented by one of its ex-presidents, Prof. Lochhead, of Guelph, who conveyed the cordial greetings of this Society to the members of the Academy. In commemoration of the interesting event a handsome bronze medal has been prepared, having on the obverse a portrait of George Engelmann, the first president. The Curator desires to express his hearty thanks for the one presented to our Society.

MOSQUITO NOTES.—No. 4. (Continued.)

BY C. S. LUDLOW, M. SC.

Laboratory of the Office of the Surgeon-General, U. S. Army, Washington, D. C.

The "confusion worse confounded" in which the mosquitoes of America are at present enveloped may be illustrated by the two following instances :

In the August number, CANADIAN ENTOMOLOGIST (1904) I described a mosquito from Benecia, Cal , as *Grabhamia de Neidmannii*, and, some time afterward, received a note from Mr. Coquillett, stating he believed it to be his *Culex squamiger* (originally published as *Tæniorhynchus*). As the insect did not belong to *Culex*, as restricted by Theobald, and I had not seen Mr. Coquillett's description, I let the matter rest till I should have further information. Now, for some time, I have been practically convinced that Mr. Coquillett was correct, and that *Grabhamia de Neidmannii* must sink as a synonym of his *squamiger*, the genus of which seems, however, to be still undetermined, Mr. Coquillett now referring it to *Culex*, Dr. Dyar to *Grabhamia*, and Dr. Felt to *Culicida*.

In June, 1905, in this magazine I described another mosquito (from the Sierra Nevada Mts.) as *Tæniorhynchus Sierrensis*, the description being made from several very imperfect specimens. During the fall of 1905 some specimens in good condition were received, and to my astonishment I found that, partly from an error in transcribing my original notes, partly from the poor condition of the specimens, not only had a gross error in the description of the tarsi arisen, but that the scales of the scutellum, which are long, very broadly spatulate, and only slightly curved, with a few slender curved scales, apparently mostly at the base of the scutellum, carried it out of *Tæniorhynchus*. The description as to colours, etc , as now corrected, makes it more than probable that it is Coquillett's *varipalpus*, but if this be so, it is in any case *not* a *Culex*, nor a *Tæniorhynchus*, but probably lies near *Finlaya*.

The following is apparently a new mosquito, being one of the very few in the U. S. having light apical abdominal markings :

Culex Frickii, n. sp.—Female : Head covered with pale ochraceous, almost white scales, long curved ones, heavily intermingled with dark brown forked scales on the occiput and vertex, flat lateral scales, light around the eyes, with a few dark bristles projecting forward ; antennæ brown, verticels and pubescence brown, first joint with a few light scales, basal joint covered with "frost" and a few white scales ; palpi dark brown,

distal joint small; proboscis brown; clypeus brown, with "frost"; eyes dark brown.

Thorax brown; prothoracic lobes covered with pale ochraceous scales and dark brown bristles; mesonotum with narrow curved dark brown scales, a golden-brown in some lights, a few pale ochraceous ones hardly forming a line on the lateral margins and an arch of them surrounding the "bare space," two submedian bare lines from cephalic end nearly to "bare space" covered with "frost," so that they seem like two very fine but distinct white lines; scutellum brown, with pale ochraceous curved scales and large brown bristles; pleura covered with white "frost" and having a couple of large bunches of white, flat spatulate scales; metanotum brown.

Abdomen brown, covered with rather broad flat scales, tending to iridescence, narrow white apical bands, and white apical lateral spots continuous with the scaling of the venter, which is white; white apical hairs. On the last segment the apical band becomes much diminished on the median line, possibly sometimes broken so as to form two spots.

Legs as a whole brown; coxæ and trochanters light and nearly naked, but showing the white "frost"; femora light at base and on ventral aspect, a small light knee-spot minutely involving both sides of the joint; tibia brown, a minute apical light spot involving both sides of the joint, remainder of tarsi all brown; all ungues small, equal, and simple.

The colouring as a whole is dark, but the scales are very sensitive to the position of the light, and on the legs it is almost impossible to determine if there be a very narrow light line on the ventral aspect of the tibia or not, for in some lights it is not apparent, and in others it appears present. The mesothorax shows the same trait, in that the tips of the scales become golden-brown, and are thus very misleading.

Wings clear; scales brown, slender, covering the distal half of wing rather heavily; cells vary somewhat in the two wings, first submarginal about a third longer and nearly the same width as second posterior, the stem of the former about a fourth the length of its cell, of the latter a little more than half the cell's length; supernumerary and mid about the same length and meet, posterior cross-vein slightly shorter and three times its length distant. Halteres light, a few brown scales on the distal parts of stem.

Length, 4 mm. Habitat, Fort Snelling, Minn. Taken Oct. 1.

Collected and sent by Major E. B. Frick, Surg. U. S. Army, after whom it is named.

It lies very near *territans*, but differs in general colouring, in the "frosty" sub-median lines on the mesonotum, the light scales around the "bare space," light scales on the scutellum, the much better developed apical abdominal bands, white bases and venter of femora, and the minute spot at apex of tibia.

In the Entomological News, Nov., 1905, Prof. Glenn W. Herrick, Agricultural College, Miss., published some *notes on a *Megarhinus*, describing and figuring the larva, and making mention of some characteristics of the three adults which he reared from the larvæ. Prof. Herrick's specimens were referred to *M. Portoricensis*, Theob., but they differ from this species (1) in the length of a palpal joint, usually a stable feature, Theobald's having the penultimate as long as the ultimate, and Herrick's having the penultimate only half as long as the ultimate; (2) in the colour of the head, Theobald's being brown, and Herrick's specimens "bluish-green, (iridescent)"; (3) in the tarsal banding, Theobald's species having the penultimate joint of the hind legs "white, except a small dark *basal* spot," and the same joint in Herrick's specimens being "white, except a black ring at the *distal* ends." As these differences seem specific, I was about to give here a full description of the insect, and to propose that it should be named in honour of the discoverer, but since my MS. was sent in for publication I have learnt that Mr. Theobald is describing and naming it, and therefore I refrain from doing so.

ACKNOWLEDGMENTS.

The Curator begs to acknowledge with grateful thanks the gift to the Society's collections of 24 specimens, representing 11 species, of Lepidoptera by Mr. Henry S. Saunders, of Toronto.

Also a box of Coleoptera from Mr. Norman Criddle, of Aweme, Manitoba, containing 120 specimens, representing 64 species, many not previously recorded in Canada, and all new to our collections.

Hearty thanks are due also to Mr. Henry H. Lyman, of Montreal, for photographs of the late Messrs George J. Bowles and F. B. Caulfield, who were active and zealous members of the Montreal Branch in years gone by. These portraits were only procured by Mr. Lyman after considerable trouble and search. Further additions to the Society's albums will be very welcome.

* "Notes on Some Mississippi Mosquitoes."

CATALOGUE OF THE GENERA OF THE HEMIPTEROUS FAMILY APHIDÆ.—SUPPLEMENT.

BY G. W. KIRKALDY, HONOLULU.

My friend, Prof. T. D. A. Cockerell, has indicated some omissions in the above Catalogue, which I have verified. Those marked * are not recorded in the "Zoological Record," and I had not seen the works till Prof. Cockerell called my attention to them.

Genus 1.—*Macrosiphum.*

191. *Coweni*, Hunter, 1901, Bull. Iowa Agr. Sta., 60, p. 114.
[n. n. for ‖ *artemisiæ*, Cowen, No. 2.]

Gen. 10.—*Myzus.*

192. *fragæfolii*, Cockerell, 1901, CANAD. ENT., XXXIII, 101.
193. *Neomexicanus*, W. P. and T. D. A. Cockerell, l. c., 227.
194. *Pergandii*, Sanderson, l. c., 72, Pl. 3, fig. 10; text fig. 5.
*195. *porosus*, Sanderson, 1900, Twelfth Rep. Delaware Agr. Sta., pp. 205–6; fig. 10, p. 191.

Gen. 13.—*Aphis.*

*196. *brevis*, Sanderson, 1901, Thirteenth Rep. Delaware Agr. Sta., pp. 129, 157–158, figs. 26 and 27.
*197. *Fitchii*, Sanderson, l. c., pp. 128, 137–149, figs. 15–21.

Gen. 47.—*Byrsocrypta.*

198. *Coweni* (*P.*), Cockerell, 1905, CAN. ENT., XXXVII, 392.

I have also omitted a new var. of *Macrosiphum artemisiæ*, viz.:

199. *citrinum*, Schouteden, 1901, Ann. S. E. Belg., XLV, 117.

Prof. Cockerell writes that in his table in Psyche, 1903, p. 218, *Tychea lasii* and *pallidula* are transposed, though the detailed descriptions are correct.

N. B.—*Aphis alamedensis* (No. 53) is spelt *alemedensis* on p. 251 in the detailed description, and so spelt in the "Zoological Record"; in the table (p. 249) it is "Alamedensis." *Cryptosiphum nerii* (No. 108) is a synonym of *Myzus asclepiadis.*

Lachnus viridescens (described as var. of *piceicola*) is recorded incorrectly in the "Bericht der Entom., under *Chermes.*

ERRATA.—Page 47, line 13, for "these species" read "three species." Page 101, lines 24 and 28, for "*Eupithecia multiscripta*, Hulst," read "*Eupithecia multistrigata*, Hulst."

April, 1906.

A NEW ROACH FROM THE PHILIPPINES.

BY A. N. CAUDELL, WASHINGTON, D. C.

Salganea humeralis, new species.—Size medium. General colour black, the under surface of the legs and of the body, except the last abdominal segment, or subgenital plate, and the mouth, except the mandibles, and also the vertex, reddish. The base of the elytra in the anal field is also tinted with reddish. Antennæ dark, hairy. Wings and elytra mostly missing. Anterior femora unarmed. Pronotum very slightly notched anteriorly, the disk with the usual irregular V-shaped depression and unequal elevations, but not distinctly tuberculate, the entire surface punctate. Base of the elytra smooth in the anal field, the costal field densely and coarsely punctate. Abdomen punctured, finer below along the median line, the segments transversely sulcate anteriorly above, more profoundly so towards the sides of the last three ; seventh segment laterally irregularly crenulate, the latero-posterior angles divergent. Supra-anal plate rugulosely punctate, the posterior margin dully serrate ; subgenital plate marked as the supra-anal plate, posteriorly emarginate. Cerci short, triangular, hairy, reddish in colour.

Length, 30 mm. ; pronotum, 7·5 mm. ; width, pronotum, 11 mm. ; abdomen, 14 mm.

Type No. 9812, U.S.N.M.

One female, one nymph, received from C.S. Banks, of Manilla, P.I.; no definite locality given.

This species seems to be the most nearly allied to *Salganea rugulata* of Saussure. but is decidedly larger than that species. The organs of flight are much mutilated, as is so often the case with members of this genus, as well as *Panesthia*, and probably other related genera. The elytra and wings are apparently chewed off, and so uniformly as to appear like a short-winged form, if not carefully examined. Of the three species of *Salganea* and *Panesthia* examined by me, more than one half of the specimens are thus mutilated. I can assign no plausible cause for the phenomenon.

The nymph is reddish yellow, lighter below, except towards the tip of the abdomen. The punctures of the surface are not so deep nor distinct as in the adult.

PRACTICAL AND POPULAR ENTOMOLOGY.—No. 12.

Winter Retreats of Insects.

BY REV. THOMAS W. FYLES, LEVIS, QUEBEC.

Occasionally, after a mild day or two in winter, we see a newspaper paragraph headed "Remarkable Appearance of a Butterfly." From the tone of the article we usually judge that the writer had been lost in astonishment, at what he regarded as a strange phenomenon. This short paper will rob such appearances of their mystery.

Many insects pass the winter in the egg-stage, such as *Orgyia antiqua*, Linneus, and *Orgyia leucostigma*, Smith and Abbot. With such we have not now to deal. Others pass the dreary months in (1) the Larval, (2) in the Pupal, or (3) in the Imago stage of their existence.

(1) Of insects that pass the winter in the larval condition, those of the beautiful butterflies *Melitæa Phaeton*, Drury, and *Melitæa Harrisii*, Scudder, weave webs upon their food-plants, and dwell in companies. I have found the former on Turtle Head, *Chelone glabra*, in bottom-lands, in the township of Brome, and the latter on the White Aster, *Diplopappus umbellatus*, in the Fort Woods at Levis. The larvæ go into a torpid state after the third moult. They scatter and feed up in the spring.

Other larvæ pass the winter in solitary, sullen independence. A familiar instance of such is afforded by the bristly, black and red caterpillar of the Isabella Tiger Moth, *Isia Isabella*, Smith and Abbot, (Fig. 12). This is often found curled up hedge-hog fashion, among the chips in a neglected corner of the wood-shed; under the buckets piled in the sugar-shanty; or under loose planks in the hay-barn. It creeps into any convenient shelter.

In the spring the black larvæ of the Virgin Tiger Moth, *Apantesis virgo*, Linneus, may sometimes be seen crawling from a sidewalk, under the planking of which they had found a winter retreat.

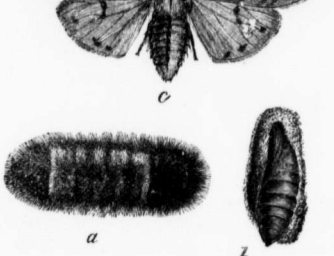

Fig 12.—Isia Isabella. *a*, caterpillar. *b*, chrysalis. *c*, moth.

April, 1906.

Piles of boards, loose bark, hollow trees, hay and straw stacked in the fields, afford comfortable quarters for hibernating larvæ.

In the first mild days of opening spring I have seen caterpillars of the American Ruby Tiger, *Phragmatobia fuliginosa*, Linneus, walking over the snow, to find bare spots in which Dandelion and Plantain begin to appear; and I have found, here and there in the woods, on early tufts of wild grass, those of the Purple Lapwing, *Ctenucha Virginica*, Charpentier, making up for their long fast.

(2) But a very large proportion of the insect tribes, on the approach of winter, undergo the pupal change.

(a) Some suspend themselves, and change to naked chrysalids.
(b) Others bury themselves in the earth.
(c) And others spin for themselves snug cocoons.

All of them search for suitable quarters before they undergo the important change.

(a) A ready example of this class is afforded by the caterpillar of the Cabbage Butterfly, *Pieris rapæ*, Linneus. The full-fed larva of the late brood of this species having found a fitting situation—*sometimes in a dwelling-house*,—proceeds to fasten itself at its hind end, by means of a silken attachment, to the surface on which it rests. It then deftly passes a thread from the middle of its back to its support, and then, turning to the other side, continues this, making a perfect loop. And so it braces itself immediately before the actual change to the chrysalis takes place.

One bright day, in the winter of 1904-5, I noticed a fresh specimen of the Cabbage Butterfly fluttering in a window of an upper chamber of my house. The steady warmth of the dwelling had hastened the development of the insect. I left it, but it probably escaped through a ventilator. If it did so, and happened to come before a newspaper scribe in search of an item, what an opportunity he would have had for an interesting paragraph!

(b) Many larvæ, on attaining full-growth, bury themselves in the soil, and there undergo the pupal change. The large Hawk Moth Caterpillars do this. Take, for instance, the beautiful caterpillar of *Sphinx kalmiæ*, Smith and Abbot, which often feeds on the Syringas and Lilacs in our gardens. It may be known by its blue, anal horn covered with black tubercles. This larva when full-fed, wriggles its way for some inches in

the earth, and then doubles and twists till it has formed a cyst, the wall of which is compacted by the pressure of the larva, and by moisture exuded from its body.

When house-plants are re-potted it sometimes happens that chrysalids of small moths are unwittingly potted also, and *taken into the house.*

I have two specimens of the beautiful little moth *Gluphisia trilineata*, Packard, which, at different times in the winter, issued from the soil around window-plants in my home.

(c) Many insects—among them the beautiful Saturnians—on the approach of winter, envelop themselves in wonderfully-constructed cocoons. The large, spindle-shaped cocoons of *Attacus Cecropia*, Linneus, may often be seen, high up, on twigs of apple, maple and other trees.

If you examine one of these cocoons, you will find that it consists of an outer case, stiff and compact, to shed moisture, and of an inner blanket-like wrapping, soft and warm. The way of exit is guarded from intrusion by convergent bristles.

I have some remarkable cocoons from Arizona. They are very compact and hard, gray in colour, and veined with dark brown. They have no soft blanket within—that, in a warmer climate, was unnecessary; but they have a wonderful prolongation of the upper part, curved over, so as to form a pent-house to the opening beneath, evidently to shed the rain and keep the inmate dry. The silken band that held the cocoon to the twig proceeds from the outer extremity of this prolongation. The convergent bristles, to keep out troublesome visitors, are attached regularly to the inner surface of the cocoon, and extend but a little way within. The magnificent Saturnian that came from these cocoons is, I understand, *Attacus splendidus*, De B.

I have before me a cocoon of a Limacodes, probably *Euclea querceti*, Herrich-Schaeffer, brought from Mirand, P.Q., by Miss M. G. Johnston, a member of the Quebec Branch. It resembles a brown bean held in place by a few hairs.

(3) A large number, both of Butterflies and Moths, spend the winter in the perfect state. The hibernating butterflies belong to the genera Vanessa and Grapta. The moths are Noctuids. Of these moths, numbers may be found in the sugar season, drowned in the sap that has accumulated in the buckets during the night.

A few years ago, on the night of February 2nd, Mr. James Barclay, of Levis, captured a fine specimen of *Ufeus satyricus*, Grote, as it was flying round the station buildings of the Intercolonial Railway at Chaudière Junction, P. Q.

Lonely barns, deserted houses, overhanging cliffs, hollow trees, evergreens, etc., afford shelter to such hibernating insects; and that any of the sleepers should be aroused and come forth, in an unusually mild time, is not more wonderful than that a squirrel, under similar circumstances, should show itself. According to the popular belief, the bear even comes forth on Candlemas Day to study the weather.

CORRESPONDENCE: A PROTEST.

SIR,—After all that has been written of the evil of having descriptions of new species scattered through journals of general natural history or transactions of societies not exclusively devoted to one branch of science, it is certainly disheartening to find in the March number of "The Ottawa Naturalist," a paper by the Rev. Geo. W. Taylor, describing a new species from Ottawa of the genus which for some ten years has been standing in our lists as *Tephroclystis*, Hubner, under the name of *Eupithecia Youngata*.

I can see very little difference between this and the description of butterflies by Mr. Wm. H. Edwards in "Field and Forest," which was so generally condemned by entomologists. Had we no Canadian journal devoted exclusively to entomology, it would, in my opinion, still be deplorable, but when we have such a journal as "THE CANADIAN ENTOMOLOGIST," it seems inexcusable, and I trust that, for the benefit of the science, you will republish the descriptive part of the paper in this journal.

HENRY H. LYMAN.

PROFESSOR JOHN B. SMITH, of Rutgers College, New Brunswick, New Jersey, is enjoying a three months' leave of absence in Europe. A postal card depicting the Bridges over the Arno revealed the fact that he was recently at Florence.

Mailed April 2nd, 1906.