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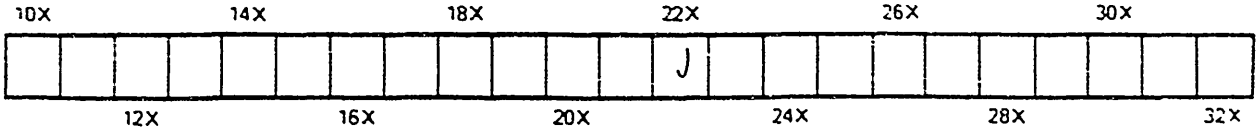

The Canadian Entomologist.

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SOME NEW LOCUSTIDÆ FROM INDIANA.

BY W. S. BLATCHLEY, TERRE HAUTE, INDIANA.

During the past four years the writer has been getting together a collection of *Locustidæ* from various parts of the State of Indiana, with a view of preparing a general descriptive paper of the species of that family found in the State. In working over the material thus gathered thirty-seven species are found to be represented, four of which are evidently new to science. Of the four, three belong to the genus *Orchelimum* and one to the genus *Conocephalus*. The former genus is represented in the collection by ten species and the latter by four. Below is given a description of each of the four species believed to be new, together with such notes concerning the distribution of each as I find in my field note-book.

CONOCEPHALUS, Thunberg.

Conocephalus palustris, nov. sp.

A small but comparatively heavy-bodied species, having the cone of the vertex devoid of black markings and without a basal tooth; ovipositor very short and broad; posterior femora armed beneath on both carinæ.

Cone of the vertex short and stout, the tip round, the deflexed front with a dull median carina. Pronotum short, broad, the posterior margin regularly rounded, the lateral carinæ well defined, the entire surface thickly and rather deeply punctate. Tegmina long and rather narrow, regularly rounded to the apex; of a more delicate texture than in either *C. ensiger*, Harris, or *C. robustus*, Scudder. Fore and middle femora with two short spines on the apical third of the lower outer carina. Hind legs short, the tibiæ but little more than half as long as the closed tegmina; the femora with plainly visible spines on both of the inferior carinæ, eight on the outer and six on the inner. Ovipositor a little shorter than the hind tibiæ, broadest at a point about two-thirds the distance from the base, thence tapering regularly to a sharp apex.

General colour a very bright grass green. Fastigium tipped with dull yellow, which extends half way down the sides. Labrum and apical segments of all the palpi a rose red tinged with violet. Tarsi somewhat infuscated. Antennæ and apical third of ovipositor reddish-brown.

Measurements.—Female—Length of body, 27 mm.; of fastigium in front of eye, 2.75 mm.; of pronotum, 7 mm.; of tegmina, 37 mm.; of hind femora, 20 mm.; of hind tibiæ, 19.5 mm.; of ovipositor, 19 mm.

This handsome species of *Conocephalus* belongs to the same group as *C. robustus* and *C. crepitans*, Scudder, but is smaller and of a more uniform and brighter green than either of those species, besides having shorter legs, ovipositor, etc. It is described from a single female taken October 24, from the fallen grasses on the margins of a large low-land pond in Vigo county. This pond is surrounded on all sides by heavy timber, and its margins have yielded a number of interesting Orthoptera found nowhere else in the county. Among them are *Leptysma marginicollis*, Serv., *Paroxya atlantica*, Scudder, *Anaxiphus pulicarius*, Sauss., *Phylloscirtes pulchellus*, Uhler, and *Xiphidium nigro-pleurum*, Bruner. The first four mentioned are insects of a southern range, and perhaps *C. palustris* will in time be found to be more common southward.

ORCHELIMUM, Serville.

Orchelimum indianense, nov. sp.

A slender-bodied insect, with a dark median streak down the face, and having the posterior femora unarmed beneath. The cone of the vertex is short, rather narrow, with a rounded apex. The tegmina narrow, tapering, a little shorter than the wings, and of a delicate, almost gauze-like, texture. Posterior femora slender, shorter than the closed tegmina. Anal cerci of male of medium size, longer than the subgenital plate, tapering to a dull point; the basal tooth short, with a broad base and a very sharp point. The ovipositor of female of less than average width and length, the apical half with a gentle upward curve.

Colour of dried specimens: Tegmina and wings a transparent whitish, tinged with green on the front or lower, longitudinal nerves; the cross nervules of the latter darker. Sides of pronotum and abdomen, and all the femora, light green; the tibiæ and tarsi of a brownish hue. Face yellowish-white, with a dark fuscous stripe, the width of the labrum, starting with the mouth and passing upward to the vertex, where it narrows to the width of that organ; then, broadening on the occiput, it passes back to the front border of the pronotum, where it divides into

two narrow streaks, which enclose a whitish area and extend a little beyond the posterior transverse suture, where they taper to an end. Subgenital plate of male yellow. Basal third of ovipositor dark brown, the remainder light reddish-brown.

Measurements.—Length of body, ♂, 17 mm.; ♀, 17.5 mm.; of pronotum, ♂ and ♀, 4 mm.; of tegmina, ♂, 20 mm.; ♀, 18 mm.; of hind femora, ♂, 14 mm.; ♀, 14 5 mm.; of ovipositor, 7.5 mm.

This graceful and prettily marked species was found to be quite common among the rank grasses and sedges growing about the margins of a tamarack swamp near Kewanna, Fulton county. It was first taken on August 26th and again on September 24th, when it appeared more plentiful than before. It is the smallest and most slender of the ten species of the genus so far known to occur in the State, and its markings are very distinct from those of any of the others.

Orchelimum campestre, nov. sp.

A species of less than medium size, with the wing-covers narrow and of almost equal width throughout, the posterior femora unarmed beneath, and the ovipositor short and narrow.

Cone of the vertex prominent, narrow, rounded at the apex; the sides of the frontal deflexed portion rapidly converging to form a very acute wedge. Wing-covers long, narrow, not widened in the middle as in *O. vulgare*, *concinnum*, etc., tapering slightly on the apical third to a rounded end; their length equalling that of the wings in the ♂, a little shorter in the ♀. Posterior femora with the basal half quite stout, the length less than that of the tegmina. Cerci of male slender, cylindrical, somewhat pointed, the apical half curved slightly outwards, the basal tooth short and weak. Ovipositor short, narrow, moderately upcurved, and tapering to a delicate point.

Colour.—Tegmina and wings almost uniform transparent olivaceous brown. The usual dark reddish-brown band upon the occiput and disk of pronotum is margined on the latter with two very narrow and darker brown stripes, which extend back to the middle of the posterior lobe of the pronotum. Face, and usually the hind femora, a dirty olive brown; the latter, when dry, with a blackish longitudinal band on the exterior face. In the female the only green on the body is on the lower part of the sides of the pronotum and on the anterior femora. The only male at hand has the posterior femora green, but otherwise is coloured like the females. Ovipositor light reddish-brown.

Measurements.—Length of body, ♂, 17.5 mm.; ♀, 19 mm.; of pronotum, ♂, 4.5 mm.; ♀, 5 mm.; of tegmina, ♂, 20.5 mm; ♀, 24.5 mm.; of antennæ, ♂, 46 mm.; of posterior femora, ♂, 17 mm.; ♀, 17.5 mm.; of ovipositor, 7 mm.

This dull coloured grasshopper has been found in small numbers in both Vigo and Fulton counties, in upland prairie meadows, where it frequents the tall grasses, usually in company with *Xiphidium strictum*, Scudder.

It is a smaller and more slender bodied insect than the common *O. vulgare*, Harris, and has a shorter and narrower pronotum and a much smaller ovipositor than that species.

Orchelimum Bruneri, nov. sp.

A species of about the same length, but less robust than *O. vulgare*, Harris, having the posterior femora armed beneath, and the ovipositor very broad, nearly straight and of more than average length.

Cone of the vertex narrow, moderately elevated, rounded at apex. Tegmina long and narrow, a little shorter than the wings. Posterior femora rather stout, the apex, when appressed, not quite reaching the tip of ovipositor; armed beneath on the apical half with three or four small spines. Cerci of male stout, acuminate, with the internal tooth prominent.

Ovipositor very similar to that of *O. gladiator*, Bruner, being very long and stout, nearly straight above, and with the under side of apical third sloping rapidly to the acute apex.

Colour of dried specimens.—With the exception of the ovipositor, which is a light reddish-brown, and the usual stripe on occiput and disk of pronotum, the whole body is a pale, transparent brownish-green, the green showing plainly only on the lower half of the side of pronotum and on the meso and metapleura. The reddish-brown dorsal stripe of occiput and pronotum is bordered laterally throughout its *entire* length with a very narrow one of much darker brown. When immersed in alcohol the reddish-brown stripe fades to a yellowish white, leaving the two lateral ones as prominent dark streaks, widest on the central portion of the frontal disk.

Measurements.—Length of body, ♂, 18 mm.; ♀, 20.5 mm.; of tegmina, ♂, 21 mm.; ♀, 25 mm.; of pronotum, ♂ and ♀, 4.75 mm.; of hind femora, ♂, 16.5 mm.; ♀, 18 mm.; of ovipositor, 10 mm. Described from 2 ♂s and 4 ♀s.

This species, the female of which is at once conspicuous by reason of the shape and size of its ovipositor, has been taken in small numbers only in Vigo Co., where it is found during August and September on the leaves and stems of a tall, broad-leaved knot-weed, *Polygonum amphibium*, L., which grows luxuriantly in the shallow waters about the margins of two or three large ponds in the Wabash River bottoms. Several other "green grasshoppers," notably among which are *Xiphidium attenuatum*, Scudder, and *Orchelimum nigripes*, Scudder, frequent this plant in immense numbers. Keeping company with them an occasional specimen of *O. Bruneri* is seen, but, being an active leaper, it often escapes amidst the dense foliage of the knot-weed before its capture can be effected. Its less robust body and longer armed posterior femora will readily distinguish this species from *O. gladiator*, the only other one which, to my knowledge, has an ovipositor shaped like that of *Bruneri*. The latter is named in honor of Prof. Lawrence Bruner, of Lincoln, Nebraska, one of the leading authorities on N. A. Orthoptera.

ON SOME BUTTERFLY LARVÆ NOT HITHERTO DESCRIBED.

BY HARRISON G. DYAR, BOSTON, MASS.

PHYCIODES CARLOTA, Reak.

Larva.—Head subcordate, apices slightly produced, mouth parts small; rough, tuberculate, hairy; colour black, a narrow white line above the mouth. Body robust, with short and thick conical densely-bristly spines, arranged thus: on joint 2 one short stigmatal and one substigmatal, besides tubercles on the cervical shield; on joints 3–4, subdorsal, lateral and subventral; on 5–11, dorsal (single), suprastigmatal, substigmatal, 2 subventral; on 12, two dorsal (in line), subdorsal, superstigmatal, substigmatal and subventral (small); on joint 13, two subdorsal (in line). Cervical shield, anal plate, feet outwardly and spiracles black; body brownish red, with a dorsal and subdorsal black shaded line, most distinct in the segmental incisures.

Pupa.—Straight on ventral side; thorax with no prominence; abdomen arched, with five rows of slight blunt points, which also occur on thorax at the angulations, but slighter. Colour grayish, dull brown mottlings on a white ground. Length, 14 mm.; width, 4.5 mm. Found on the ground feeding on an undetermined plant which was just starting, at Denver, Colorado, April 30, 1891.

THECLA GRUNUS, Boisd.

Larva.—Head testaceous, with a black shade on each side; width, 1.2 mm. Retracted beneath joint 2. Body flattened, tapering somewhat posteriorly but rounded, the segments arched. A subdorsal and subventral ridge, not very prominent. Dark or bluish-green, without white granulations, but having minute, brownish, piliferous dots, quite densely distributed. Obscure geminate dorsal, single subdorsal, stigmatal and subventral lines, pale whitish and broken, becoming later yellowish, and the subdorsal one distinct and almost continuous. The two subdorsal lines are 2.2 mm. apart. The pile on the body is longer and stiffer on the subventral ridge than elsewhere. A rounded, diamond-shaped, depressed, cervical shield situated about the centre of joint 2, on which the blackish, elevated, piliferous dots are smaller than elsewhere.

Chrysalis.—Suspended by the cremaster and a loop of silk. Short, thick, flat on the ventral side, rounded dorsally, with a very slight depression between the thorax and abdomen. Colour pale green, speckled with blackish (but faintly); a bright yellowish subdorsal line on the abdomen, faintly continued on the thorax, and a double dorsal row of yellowish dots on the abdomen.

Duration of this stage, fifteen days.

Food plant.—The young leaves of the live oak (*Quercus chrysolepis*, Liebm.). Larvæ from Yosemite, Cal.

NEW NORTH AMERICAN MICROLEPIDOPTERA.

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

Crambus albilineellus, n. sp.

Expanse of wings, 26 mm. Head, palpi, thorax and fore wings dull ochre-yellow. The palpi are darker on the outside, and the subcostal, median and veins 5 to 10 are white. A stripe of lead coloured scales extends from the base of the wing just above and parallel to vein 1 to the outer cross line, and a similar stripe occurs between this and the hind margin. Two lines cross the wing: The first is dark brown, and arising from a point a little before the middle of the costa forms an outward angle very near the costa and an inward angle on the subcostal vein, then a second outward angle is formed at the end of the median vein and from this point the line runs more or less distinctly across to the middle of the hind margin. The second line is dark brown but finer, dentate and edged on the outside with lead coloured scales, and runs from the costa before

the apex across to near the outer margin, thence across the wing nearly parallel with the outer margin. The space from the end of the cell to the apex is somewhat stained with brown. The terminal line is fine, black, and with a row of black dots in it. The fringe is concolourous with the adjacent part of the wing, but with slight metallic reflections. Hind wings fuscous, fringe lighter.

Described from one specimen taken in Southern California.

Crambus coloradellus, n. sp.

Expanse of wings, 22 mm. Head, palpi, thorax and fore wings, pale silvery straw colour; the palpi darker on the outside. A white stripe extends from the base of the wing through the cell to the outer margin, bifid beyond the cell. All the veins of the wing are more or less indicated by pale yellow, edged on each side with a more or less broken row of black scales. A pale yellow line crosses the wing at the end of the cell where it rounds outwardly and runs nearly straight and vertical to the hinder margin. The outer line is curved within the apex and runs straight to the hinder margin. Both of these lines are faint, and the outer one is edged on the outside with silvery scales. The terminal row of black dots is in a straight line, and does not follow the margin at the lower part where it rounds outwardly. Fringes silvery metallic. Hind wings white, slightly stained with pale fuscous on the apex.

Described from one example from Colorado.

Alucita fishii, n. sp.

Expanse of wings, 20 mm. Thorax and fore wings pure white, the latter with a few brown atoms scattered over the costal part of the wing, and more abundant before the fissure, where it almost defines itself as a triangular spot with a curved outer side reaching to the costa, and beyond which on the costa are two equidistant brown spots. Fringe pure white. Hind wings and their fringes pure white. Abdomen white, head wanting in the single specimen before me, which was taken in Nevada by the late Mr. H. K. Morrison.

I name this species for Mr. Charles Fish, of Brunswick, Me., who did such excellent work on our "feather wings" some years ago.

Alucita elliottii, n. sp.

Expanse of wings, from 23 to 25 mm. Head pale yellow (?). Thorax and fore wings pure white, the latter with a brown point before the cleft, an elongated brown spot on the costa over the base of the cleft, and a few brown atoms along the basal third of the fold. Hind wings and all the fringes pure white.

This insect was received from the late Mr. Elliott, who bred it at his home in New York, but on what plant I did not learn.

Alucita eupatorii, Fern.

In 1855, Dr. Asa Fitch, in his first report as Entomologist of New York, published the description of his *Pterophorus cretidactylus*. In 1874, Prof. P. C. Zeller, in his "Lepidoptera der Westkuste Amerika's," described what he supposed to be Fitch's *cretidactylus*, under the generic name *Œdematophorus*, and it was again referred to by Lord Walsingham in his "Pterophoridæ of California and Oregon," who sent specimens to Zeller for determination, and also kindly gave me specimens of this as well as of nearly all of the species he described.

Mr. Charles Fish took up the study of our Pterophoridæ and described several species in this journal, and later purchased the types of Dr. Fitch, when he discovered that the species that had been so well described by Prof. Zeller was not Fitch's species. Finally I purchased Mr. Fish's collection, including not only his own types but also those of Dr. Fitch. I was then able to verify the determination of Mr. Fish, and with him to discover that Lord Walsingham had redescribed the true *cretidactylus*, Fitch, under the name of *Œdematophorus occidentalis*. The *cretidactylus* of Zeller not being the true *cretidactylus* of Fitch, must have a new name, and as it has been bred from *Eupatorium purpureum* by Mr. Elliott, I have given it the specific name of *eupatorii*, as above.

Coriscium cuculipennellum, Hb.

I have received this species from Mr. M. V. Slingerland, of Cornell University, who bred it from ash at Ithaca, N.Y. This European species has not been observed in this country before, and is probably a recent importation. I am under obligations to Lord Walsingham, who compared it with the European species, and determined it specifically for me.

Mr. Slingerland also sent me what I believe to be a new species of *Carposina*, which he bred on currant. He wrote me as follows:—"The egg is laid on or within the berry, and the larva feeds upon the pulp, and sometimes the seeds, confining its work to a single berry. The fruit soon dropped, and the larva left the berry, went into the ground and there pupated. The adults appeared in the spring about the time the currants were turning red. There was only one brood during the season."

The specimens received from Mr. Slingerland were in very poor condition, and I have decided not to describe the species till better specimens are obtained.

The genus *Carposina* has been placed among the Tineids, but it should be placed near *Conchylis* among the Tortricids.

HINTS ON COLLECTING COLEOPTERA DURING THE WINTER.

BY A. FORD, ST. LEONARDS-ON-SEA, SUSSEX, ENGLAND.

During the winter the coleopterist in Britain finds a great deal to do in the way of collecting, as many species are to be met with at this season, which will probably not be found at any other period of the year. One of the principal methods of collecting during the winter is "tuft-cutting", and it is astonishing the number of beetles which pass through the winter in tufts of grass. Those growing in damp places in woods and on the borders of ponds and streams are generally the most productive. They should be cut off close to the roots, then shaken and pulled to pieces over a sheet of paper, which should be very carefully examined, otherwise many of the more minute species will be passed over. If the weather is too severe for this sort of work, the collector should provide himself with a strong canvas bag, into which the tufts can be shaken, and the contents can then be examined at home at his leisure. Moss is also very productive at this season. Vast numbers of beetles may be found hibernating in moss in sheltered situations. This should be examined in the same way as the tufts. Haystacks are also good hunting grounds for the coleopterist. The loose refuse underneath the stack is usually the best part to work. Piles of faggots and logs in woods generally repay the collector for a careful examination. Numbers of beetles are to be found at the roots of grass, especially on sandy banks, where the grass grows in patches. They are always found as close as possible to the roots, and many of them harmonize so well with the ground that it requires a very careful search to discover them. By carefully working a bank of this description one winter I obtained over one hundred species of Coleoptera, including several "rarities". I may add, the bank was only about thirty yards long by two broad. Of course, there are many species of wood-boring beetles to be found in the winter months, as also many others which occur in various species of fungi.

A diligent collector will doubtless add many species, and probably some "rarities" to his collection, if he takes the trouble to look for them during the winter months, and if the foregoing remarks prove of any service to those interested in Coleoptera, I shall be amply repaid for the trouble of writing them.

THE BUTTERFLIES OF GRAND RAPIDS, MICH.

BY ROBT. H. WOLCOTT.

Grand Rapids, Michigan, is situated in the western part of the State, thirty miles from Lake Michigan, in N. lat. 42° 58', in W. long. 85° 40', with an altitude of between 600 and 700 feet. The underlying formation, outcropping in the bed of the river, is the subcarboniferous limestone, and the soil is for the most part a sandy or gravelly loam. The surface of the surrounding country is rolling and diversified by numerous small lakes, with tamarack swamps and peat bogs scattered here and there. The timber is mainly hard wood, but now and then an aged, solitary, pine or a group of younger pines in an out-of-the-way nook reminds us of the fact that we are within the limits of the pine region, while much of the land formerly covered by pine is now occupied by a growth of low oak scrub. The flora is of a mixed character, the locality being just within the pine belt, and the Grand River valley also forming the northern limit of many southern species, such as the papaw, tulip-tree, honey locust, flowering dogwood, tupelo, etc. The mean annual temperature is about 47°, and the average annual rainfall about 36 inches, while the season lasts usually from the middle of April to the fore part of October. The fall of 1890, however, was an unusually late one, and many species were on the wing till the end of October, *Colias philodice* being seen even on the 6th (about a dozen) and on the 20th (one) of November.

The following list of species is the result of ten years' observation, and covers the immediate vicinity of Grand Rapids within a radius of about ten miles :—

1. *Danais archippus.*—Very common. Appearance as follows: The hibernating individuals, from the middle of May to late in June; of the first brood, the larvæ in June, the butterflies from early in July to August 15th; of the second brood, the larvæ late in July and early in August, the butterflies from the end of August to the middle of September; of the third brood, the larvæ in September, the butterflies in October and, after hibernation, again the next May. It is thus three-brooded, and if we disregard the time spent in hibernation, the life of each brood is from two to two and a-half months. It is a very strong flyer, and is often seen hovering about the tops of trees at a considerable distance from the ground, especially near sunset, when seeking a hiding place for the night.

2. *Euptoieta claudia.*—One specimen; Lamberton Lake, in July, 1887.

3. *Argynnis idalia.*—Rare. Taken at Lamberton Lake during the early part of July; is not as strong a flyer as are our other larger Argynnids.

4. *Argynnis cybele.*—Common. From the end of June to the middle of August, frequenting, with the other species of the genus, low, wet ground.

5. *Argynnis aphrodite.*—Common. Flies from about the first week in July to the end of August.

6. *Argynnis alcestis.*—Not rare, but less common than the preceding, from which it may be told in most cases, even on the wing, by its more ruddy colouring.

7. *Argynnis myrina.*—Common. Two broods during the season, the first flying from June 10th to the middle of July, the second from the early part of August through September. A worn specimen was taken in 1890 as late as the 8th of October. Prof. E. A. Strong, once of this place, now of Ypsilanti, Mich., is of the opinion that this species was formerly rather rare.

8. *Argynnis bellona.*—Common. Two-brooded, appearing from May 10th to June 15th, and from July 1st to August 15th.

9. *Melitæa phaeton.*—Common at several localities, from which, however, it never strays. One damp, boggy meadow, where it was formerly very abundant, has been recently drained and part of it cultivated, the result being the extinction of the species at that place. Here were taken all of the three specimens of the var. *superba*, of the capture of which I know. The species flies from the end of June to the latter part of July.

10. *Melitæa harrisii.*—Rare. Taken over low meadows from the middle of May to the middle of June.

11. *Phyciodes nycteis.*—Sometimes quite common. Two-brooded, appearing in June and again in August.

12. *Phyciodes carlota.*—One specimen, the date of which is lost, but taken, I think, early in June; a fresh example.

13. *Phyciodes tharos.*—Common. Two broods; the first form, *morpheus*, flying from June 10th to July 15th; the second, *marcia*, from the early part of August into September. A worn specimen was taken October 8th, 1890.

14. *Grapta interrogationis.* — Common most years, some quite abundant. Flies in early spring up to June 15th; the larvæ of the first brood appear about the end of June, and the butterflies are on the wing from July 10th to the end of the month; a second brood of larvæ is found about that time, and these give butterflies from the 10th to the end of August; the third brood flies late in fall and hibernates. The hibernating butterflies are mostly *fabricii*, while *umbrosa* is more abundant in the summer broods.

15. *Grapta comma* —Common. Flies from early spring to the first of June, again, the form *dryas*, from July 1st to August 15th, while the second and hibernating brood appears late in the fall.

16. *Grapta progne.*—Rather common. Early in spring, again in July and August, and a second brood late in the fall hibernating.

17. *Grapta j album.*—Not common, though much more so than formerly. Appears early in September, and flies throughout the fall and again in early spring. Our hardiest butterfly, appearing at any time in the winter that the weather is at all favourable. Under date of January 3rd, 1892, I have this note: "Coldest day of winter thus far, the thermometer registering, at 7 a.m., 11°, and though the sun shining brightly all day, the snow only melting in sheltered spots. At 4 p.m. took a *G. j-album* resting, wings erect, on the snow in the middle of the sidewalk of a well-travelled street. Was chilled, but soon revived in the house." All the Graptas, together with *Van. antiopa*, are common early in the spring around trees from which sap is flowing.

18. *Vanessa antiopa.*—Very common. Sometimes becoming a pest by defoliating young elms. Usually three-brooded, the hibernators flying from early spring to the end of May, the larvæ of the first brood appearing early in June, and the butterfiies from the 10th of the month to the 20th of July; the larvæ of the second brood are found in the fore part of July, the butterflies during August; of the third brood, the hibernating individuals, the larvæ in September, the butterflies from September 20th onward.

19. *Vanessa milbertii.*—Common; inclined to be local. Three broods, appearing as follows: The hibernating specimens from early in spring to June 15th; of the first brood, the larvæ during the latter part of May and early in June, the butterflies from the end of June to July 15th; the larvæ of the second brood in July, the butterflies during

August; the larvæ of the third or hibernating brood during the latter part of August, the first butterflies about September 20th. I have noticed in a few instances the construction of a web by colonies of young larvæ.

20. *Pyrameis atalanta.*—Common. Two-brooded. The hibernating individuals are seen from the end of April to the latter part of June; the larvæ of the first brood may be found in June, the butterflies from July 10th to August 15th; the larvæ of the second brood during August, the butterflies from the 15th of September.

21. *Pyrameis huntera.*—Common. Two-brooded, flying in the latter part of June and in July, and again in September and October, being then most abundant in clover fields. Hibernating specimens occur, no doubt, early in spring, but I have no record of observations at that time.

22. *Pyrameis cardui.*—Usually common, but some years quite infrequent. In 1884 was very abundant throughout the season, the thistles and burdocks being stripped, and the nettles, mallows, sunflowers and hollyhocks also attacked. It is usually two-brooded, flying from the latter part of May through June; again, from larvæ in June, in July and August; and again, the second brood of the year, from the second week in September onward.

23. *Limenitis ursula.*—Rather common, though formerly rare. Two-brooded, flying during June and early July and again in the latter part of August. It is very much attached to certain localities, and in one door yard for several years it has never failed to appear, at any time during its season, one having to wait but a few minutes to see one or more. It likes to fly along paths in woods and, like *disippus* and the species of *Pyrameis*, *Grapta* and *Vanessa*, has the bad taste to frequent heaps of decaying animal and vegetable refuse.

24. *Limenitis disippus.*—Common. Two-brooded. The first brood flies during June, the second from August 15th through September, one being seen on one occasion on the 8th of October. It frequents especially willow bushes lining the banks of streams.

25. *Apatura clyton.*—One specimen of the form *proserpina* taken by Mr. L. S. Livingston, a former local collector, a few miles east of the city, on the 15th of July, 1885. I am also informed by Prof. E. A. Strong that two or three were taken near the city some years ago.

26. *Neonympha canthus.*—Common during July, frequenting low grounds and swampy meadows.

27. *Neonympha eurytris.*—Common. In June in open woods.

28. *Neonympha mitchelli.*—July 1st, 1885, three years before the species was described, I found it rather common near South Grand Rapids in company with *canthus*, but had neither specimens nor authorities from which to pronounce upon its newness. Have found it quite common at the same locality, a bog some two acres in extent, every year since, from the 1st to the 15th of July. It is readily told on the wing by its dark colour, small size, and weak flight; but owing to its fragility and its habit of flitting low amongst grass and weeds, perfect specimens in any number are difficult to obtain.

29. *Satyrus alope.*—Formerly found here, as I learn from older collectors, but disappeared several years ago.

30. *Satyrus nephele.*—This form is now common in July at two or three localities—low, wet meadows—and specimens are found of the var. *olympus* and others approaching var. *nephele.*

31. *Libythea bachmani.*—One specimen taken in August, 1883, by Mr. C. S. Osborne, a local collector, and another by myself in 1887. August 21, 1885, Mr. L. S. Livingston found a nearly full-grown larva of this species beneath a hackberry tree at the same locality at which the butterflies were captured, and at which the *Apatura clyton* was taken.

32. *Calephelis borealis.*—Taken in July at two or three localities, but only at all common in two low, wet, grassy areas near Lamberton Lake, each less than an acre in extent.

33. *Thecla acadica.*—Common in July, frequenting especially the flowers of butterfly-weed and New Jersey tea.

34. *Thecla edwardsii.*—Rather common, in company with the next, late in June and early in July, on the leaves of low scrub oaks.

35. *Thecla calanus.*—Quite common, and like the preceding, has a curious habit when resting on a leaf of rubbing the upper surfaces of its wings together, giving the tails an upward and downward motion.

36. *Thecla strigosa.*—Rare. July, on the butterfly-weed and New Jersey tea.

37. *Thecla niphon (?)*—In my notes under the date of May 2, 1885, I have this observation: "A *Thecla (Niphon ?)* was seen but was unable to capture it." This could have been none of the other species named, and from the date and our being in a pine region, am inclined to think it this species.

38. *Thecla titus.*—Common. Appearing about the middle of July and flying a month or so, frequenting particularly the butterfly-weed.

39. *Chrysophanus thoe.*—Common, especially in tracts of blue flag from June 10th to the 1st of July, and from August 15th to the middle of September.

40. *Chrysophanus epixanthe.*—Very common at Lamberton Lake, flying over tracts of shrubby cinquefoil *(Potentilla fruticosa).* I have taken it from June 10th to September 19th, and it is common at all times between, though I think there are two broods in reality.

41. *Chrysophanus hypophlœas.*—Common. Flies from May 10th to June 15th, from July 15th to August 15th, and again from September 20th to October 9th, when I have seen worn specimens. It is thus apparently three-brooded, but I believe that of the larvæ from the summer brood some mature and give imagos in the fall, while others go over to spring, and that it is really two-brooded.

42. *Lycæna lygdamus.*—Rare. Late in April and early in May along muddy cow-paths. Very local.

43. *Lycæna pseudargiolus.*—Form *violacea* is not common, appearing in April and early May, while *neglecta* is a common form from June 10th to the latter part of August, and seems in some specimens to approach var. *pseudargiolus.*

44. *Lycæna comyntas.*—Common in May on willow blossoms. Again found from July 15th to August 15th, delighting in wet, muddy places in woods. In 1890, fresh specimens were taken again September 20th, but I believe these were disclosed from chrysalides which should have gone over till the next spring.

45. *Pieris protodice.*—Very common in fall from August 10th to the end of September, but the spring form, *vernalis,* is rather rare, appearing from the end of April to the middle of June.

46. *Pieris oleracea.*—Not common. Low ground; in May and again in July and August.

47. *Pieris rapæ.*—Very common. Several broods, appearing continually throughout the season. The earliest of my dates is April 7th, the latest October 13th. The species was here when I began collecting in 1883 and I have taken it ever since. Am unable to give the date of its first appearance.

48. *Meganostoma cæsonia.*—Formerly found here, I am told, but rare.

49. *Colias eurytheme.*—Once seen, July 20th, 1886.

50. *Colias philodice.*—Very common and producing about four broods in a season, its appearance some seasons being nearly continuous from the first of May to the end of October, and in 1890 seen November 20th. Occasionally in spring a form resembling *anthyale* is seen, expanding but 1.5 inches. Var. *alba* is more abundant in the late summer broods. A third variety occurs which I have nowhere found described, but which is distinct from any variety given in Smith's List, and seems to me to merit a varietal name.

Colias philodice, var. *luteitincta*, nov. var.—Differs from the normal *philodice* in the possession of an orange shade upon the primaries extending from the middle of the posterior margin to the median vein, shading off in all directions into the yellow ground colour, and occupying exactly the position of the orange patch in *Col. eurytheme*, var. *ariadne*. The secondaries also in most specimens show an orange flush in the central portion. I first met this form in company with *eurytheme* and *philodice* in August, 1885, at Batavia, Ills., and supposed the specimens to be hybrids. But have since taken it at different times at Grand Rapids, where *eurytheme* has been seen but once, and have collected in all about a dozen specimens, one of them a female. I find the colouring very constant and sufficiently marked to distinguish the form even when on the wing. Have recently seen a specimen in a collection at Lansing, Mich. Edwards figures an orange variety and suggests the possibility of its being a hybrid between the two species, *eurytheme* and *philodice;* it is not like this and appears much more likely to be, as suggested, a hybrid.

51. *Terias lisa.*—Rare. One specimen taken east of the Michigan Soldiers' Home, August 10, 1891.

52. *Papilio ajax.*—Formerly rare, but has been becoming constantly more common with the spread of the papaw, upon which it feeds, till now it is very common in the southern part of the country and quite so at Grand Rapids, especially in the vicinity of its food-plant. Vars. *telamonides* and *walshii* fly from the early part of May to the latter part of June, and *marcellus* from the end of July to the end of September.

53. *Papilio turnus.*—Common from the end of May to the early part of July, congregating about wet places in roads, etc. Var. *glaucus* is rare. Two specimens have been taken on the wing and one reared from a larva collected on cultivated cherry.

54. *Papilio cresphontes.*—Not uncommon in June.

55. *Papilio asterias.*—Rather common. Two-brooded, the first being on the wing from the end of May to the first of July, the second during August and fore part of September.

56. *Papilio troilus.*—Our most common *Papilio.* Two-brooded, flying from the middle of May to the end of June, and from the beginning of August to September. In one case a battered specimen was taken September 25th.

57. *Ancyloxypha numitor.*—Common. One brood in June and another in August. Flies in low, wet meadows.

58. *Thymelicus poweshiek.*—Common at Lamberton Lake in July. In flight and habits generally much like the preceding.

59. *Pamphila hobomok.*—Common. June. More abundant at certain localities, and, like all the species of *Pamphila*, seems to prefer low, swampy tracts and wet meadows. Several specimens of the var. *pocohontas* have been taken.

60. *Pamphila sassacus.*—Rather common in June in company with *mystic* and *peckius.*

61. *Pamphila leonardus.*—Rare. Flies from August 10th to the end of the month.

62. *Pamphila egeremet.*—Not common. July.

63. *Pamphila peckius.*—Very common. Apparently two-brooded, one brood appearing early in June, the other during the first week in August.

64. *Pamphila mystic.*—Common. From early June to the middle of July.

65. *Pamphila cernes.*—Very common. Two broods during a season, one flying from June 10th to July 15th, the other from August 15th to the end of September. In 1890, took a fresh female on October 4th. A female taken in July, 1892, differs from the normal form in an almost entire lack of fulvous in the cell.

66. *Pamphila manataaqua.*—One specimen, July 14th, 1892.

67. *Pamphila metacomet.*—Rather rare. Flies during the latter part of July.

68. *Pamphila bimacula.*—One female taken July 20th, 1892.

69. *Pamphila pontiac.*—Common in July. Have a male specimen in which the under surface of one secondary is suffused with brownish so as to completely obscure the normal pattern of the wing.

70. *Pamphila dion.*—Common in July, last year, at one locality in company with *pontiac*, and upon the wing much resembling that species.

The range is much wider than given in French, as I have specimens from Western New York.

71. *Pamphila delaware.*—Usually not very common, but last year was quite abundant at two or three localities. Flies in July.

72. *Nisoniades brizo.*—Not common. Appears early in May.

73. *Nisoniades icelus.*—Rather common from the end of May, through June, and once taken, a battered example, as late as July 14th.

74. *Nisoniades lucilius.*—Found, but not common, in June.

75. *Nisoniades persius.*—Not common. Flies about the end of May.

76. *Nisoniades juvenalis.*—Common in June. The species of *Nisoniades* seem to appear in spring about in this order: first *brizo*, then *icelus*, *persius* and *juvenalis*, and lastly *lucilius*. They all delight in recent clearings in the woods and in tracts of bushes, stumps and brush-heaps.

77. *Pholisora catullus.*—Common. Two-brooded, appearing in June and again in September, the second brood being especially common around door yards and waste places where grow different species of *Amarantus*, especially *A. albus*. The larvæ are also found on *Chenopodium album*.

78. *Eudamus pylades.*—Quite common. Seen in spring from the middle of May to the middle of June, preferring open woods.

79. *Eudamus tityrus.*—Common. From the end of May to the middle of July, but seems to prefer a solitary life and more than two or three are never seen at any one time.

From this list it appears that 79 species of butterflies have been taken at this locality; one or two remarks, perhaps, would be of value concerning certain ones. As to the Papilios, from information received from Prof. E. A. Strong, who began to collect at this place some thirty years ago, it appears that *troilus* has constantly grown more common, and *asterias* and *turnus* less so; *ajax* was once extremely rare, and the first *cresphontes* was not taken till some years after Mr. Strong came here, though he is unable to give me the exact date. *Pieris rapæ* has, of course, appeared in comparatively recent times, and as it has become more common, Mr. Strong thinks *protodice* has decreased in numbers, while *oleracea* is certainly much less common than it was ten years ago. *Sat. alope*, once taken, has disappeared and *nephele* become common, but not however at the same locality. *Arg. myrina*, *Grapta j-album* and *Lim. ursula* have also grown more common of recent years.

I desire in closing to call attention to one locality near this city which is, it seems to me, a remarkably productive one, and that is the vicinity of Lamberton Lake. Upon one day last summer, July 14th, I observed there 34 species, in a tract less than a mile in length :—*Dan. archippus*, *Arg. aphrodite*, *alcestis*, *myrina*, *bellona*, *Mel. phaeton*, *Phyc. nycteis* (worn), *tharos*, *Grapta comma* var. *dryas*, *progne*, *Van. antiopa*, *Lim. ursula*, *disippus* (worn), *Neon. canthus*, *eurytris*, *Sat. nephele*, *Cal. borealis*, *Thecla acadica*, *edwardsii*, *calanus*, *Chrys. hypophlœas*, *epixanthe*, *Pier. rapæ*, *Col. philodice*, *Pap. asterias* (one), *Thym. poweshiek*, *Pam. peckius*, *cernes*, *pontiac*, *egeremet*, *mystic*, *delaware*, *manataaqua*, and *Nis. icelus* (worn). A very long list, it seems to me, for one day in one locality.

TRYPHON FLAVIFRONS, N. S.

BY REV. THOMAS W. FYLES, F. L. S., SOUTH QUEBEC.

Antennæ, filiform, brown; number of joints, twenty-seven; scape, large, ovate, pale yellow beneath. Eyes naked, large and prominent, dark rosy brown. Clypeus, labrum, mandibles and palpi pale yellow. The lower portions of the epicranium are of the same colour. The occiput is black, smooth and glossy. Mesothorax highly convex, black, sparsely set with short, pale-brown, retrorse hairs. Scutellum elevated. Tegulæ yellow. The under parts of thorax amber-coloured, as are also the legs, with the exception of the tarsi and parts of the tibiæ of the hindmost pair, which are brown.

Wings hyaline. Costal and sub-costal nervures coalesce; stigma large; basal nervure much curved inwardly; the second transverse cubital nervure wanting; third submarginal cell large; second transverse cubital nervure short and straight; recurrent nerves straight and parallel; second discoidal cell rather small.

Abdomen long, flattened, sessile, black above, yellow beneath. Ovipositor black, short and straight, the case set with black bristles beneath.

Length of body, three-tenths of an inch, and of antennæ two-tenths. Expanse of wings, four-tenths. The fly makes its appearance in August.

Described from six specimens obtained from Nematus larvæ that had fed on a species of poplar (*P. nolesti*) imported from Russia, and that had gone into cocoon.

THE SONG OF THYREONOTUS.

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

Mr. Samuel H. Scudder, in the Report of the Ontario Entomological Society for 1892, gives an interesting account of the "Songs of Our Grasshoppers and Crickets," and kindly permits the stridulations of a number of Staten Island insects to be heard mid the general medley. There is, however, an additional songster to be added to this list, as appears from the following.

On the 26th of last June I heard in a moist pasture, on the north shore of the Island, a stridulation that was unknown to me. It much resembled that produced by *Orchelimum vulgare*, with the preliminary zip, zip, omitted. It was a continuous *z e e e*, with an occasional short *ik*, caused by the insect getting its wing-covers ready for action after a period of silence. It was too early for *Orchelimum vulgare* by about a week; at least I have never heard one on the Island before the fourth of July; so in the present instance I made careful search for the musician. In due time I discovered, in a tussock of rank swamp grass, the brown songster perched on a dead leaf, and receiving the evidently welcome rays from the afternoon sun. It was *Thyreonotus pachymerus*, and in the swampy field about me I heard others of its kind, so that this individual was only one of a considerable colony.

A failure to make proper use of his legs (the wings are abortive), resulted in the transfer of Thyreonotus from the tussock to a tin can. At home I made a bowery for him in a larger tin can covered with netting, into which was introduced a branch of the coriaceous leaved post oak, and when the leaves dried, there were innumerable nooks and crannies wherein to hide. Usually, however, the insect did not hide at all, but perched himself on one of the topmost leaves and there waved his antennæ after the manner of all long-horned Orthoptera. Starting with raspberries, he had the rest of the fruits in their season, including watermelon, of which he showed marked appreciation. If I offered him a raspberry, and then gradually drew it away, he would follow in the direction of the departing fruit and would finally eat it from my hand.

As the bowery was kept in my bed room, I had the full benefit of the song of its occupant, and was often awakened in the night by his sudden, alarm-like outburst of melody. He stridulated with unabated zeal to the first of August, when I noticed that his energies were lagging—he

seemed to be much less sprightly. Finally his song, instead of filling the room, was but a faint sound, and I was obliged to place my ear close to the tin can. This was nearing the end, which came either on the tenth or eleventh of September, I cannot say which, for the bowery was not disturbed until its occupant had been missing from the upper leaves for several days.

Once or twice during his captivity he took unnecessary alarm at my well-meant efforts to "fix" the bowery, and whacked his head most insanely against the tin can, being propelled thereto by his muscular hind legs. However, no harm seemed to result from these little fits of nervousness, and he evidently died quietly enough in the end.

I have observed in other kinds of grasshoppers the subsidence in the volume of song as they grew older, which evidently makes it unsafe to take the efforts of a single individual as the standard of the species, especially if the time is late in the fall.

NOTES ON LEUCANIA PSEUDARGYRIA, GUEN.

BY REV. THOMAS W. FYLES, F. L. S., SOUTH QUEBEC.

Full-grown larva.—Length, two inches. Colour greenish-brown above, greenish-grey beneath. Pale dorsal and side lines. Spiracles black. Head and scale on second segment light reddish-brown; jaws darker brown. This description agrees with that given by Mr. Caulfield in Vol. XIII. of the CANADIAN ENTOMOLOGIST, page 132.

The larvæ, like those of *Arzama obliquata*, feed in the stems of *Typha latifolia*. The two species may sometimes be found in the same plant. They are plentiful in the swampy ground at the foot of Mount Royal, Montreal. Both sometimes become the prey of the maggots of *Chætopsis ænea*, Wied.

Pupa.—Length, one inch and a-quarter. Colour light brick-red. Forepart rounded abruptly and terminating in a beak-like projection, resembles the head of a bird. Thoracic portion of case curves backward on either side to a point. Wing cases large.

My specimens underwent the pupal change amongst the accumulated frass in their tunnels; but doubtless the larvæ sometimes leave the food-plant and seek hibernacula elsewhere, as do those of *Arzama obliquata*. (See Mr. Caulfield's notes referred to above.)

TWO NEW CYNIPIDS FROM WASHINGTON STATE.

BY C. P. GILLETTE, FORT COLLINS, COLO.

In February of last year I received a box of galls from Mr. Trevor Kincaid, of Olympia, Washington, for identification. The galls were taken from *Rubus Nutkanus*, and the flies reared from them early in the following March prove to be a new species, which I take pleasure in dedicating to Mr. Kincaid.

Diastrophus kincaidii, n. sp.

Gall.—Either of the two galls in my possession measure almost exactly 1¼ inches in length by three-fifths of an inch in greatest diameter, and are upon twigs that do not exceed 2½ mm. in diameter. The galls are abrupt enlargements of the twigs, and they are literally filled with larval cells. The portion of the gall-subtance lying outside the cells is quite pithy, but the portion forming the septa between the cells is hard and woody. The surface of the gall is smooth, but is irregularly swollen or lumpy, much as in the gall of *D. nebulosus*.

Gall-fly.—Female. Black; legs, dark rufous; length, 2 to 2½ mm.

Head: face, coarsely striated; frontal carina, smooth and shining and but little elevated (it seems like a ridge made by two depressed lines, one on either side) vertex, genæ and occiput smooth and shining; ocelli, inconspicuous; face, sparsely set with very fine pubescence; mandibles, somewhat rufous at base; antennæ, 13-jointed and black in colour. Thorax: mesonotum, nude, polished; parapsidal grooves distinct; median groove also distinct, but extending only a short distance from scutellum; prothorax, striate; mesothoracic pleuræ, shining, finely aciculate over a portion of the surface; scutellum rugose, bifoveate. Abdomen, entirely black; petiole, fluted, second segment occupying one-half of the dorsum. Wings, 3 mm. long; hyaline; 1st and 2nd transverse nervures, quite black, but not very heavy; areolet, small.

The male differs from the female in being only one and three-fourths mm. long, having antennæ 14-jointed, and having the abdomen smaller.

Described from 25 females and 14 males bred from the galls.

Synergus garryana, n. sp.

Female. General colour rufous, with tips of mandibles, compound eyes, vertex between ocelli, occiput, lower half of mesopleuræ, metathorax, pedicel of abdomen and two blotches on second abdominal segment, one next the petiole and one just beyond the middle of the dorsum, black.

Head; face entirely yellowish-rufous, coarsely striated and sparsely set with short hairs; vertex rugose-punctate; antennæ 14-jointed, and in colour like the face, a little infuscate at the tip. Thorax above a little darker rufous than the face, transversely rugose; parapsidal grooves narrow and rather indistinct, but extending to the collar; no median groove; parallel lines extending back from the collar, short and rather indistinct, sparsely set with short recumbent hairs; scutellum coarsely rugose, the foveæ oblique and shining black at the bottom; mesothoracic pleuræ coarsely aciculate; in two specimens the lower half only is black, and in two others, a little smaller, the entire pleuræ are black. Abdomen: petiole coarsely striated; second segment very smooth and shining, and finely punctured on outer third. Legs, including coxæ, uniform light yellow, except the tarsi of the third pair and the tips of the last tarsus in the others, which are black. Wings hyaline, nervures light, areolet obsolete. Length, 2½ to 3 mm.

Male. The male differs from the female as follows: Length, 2¼ mm.; vertex above antennæ, except a narrow orbital line, black; antennæ, 15-jointed; thorax, entirely black; abdomen, black, except the tip of the second segment, which is yellowish, and the entire tibiæ of the pair of legs are blackish.

The above descriptions are made from four females and five males which issued from the galls between March 1st and 10th, 1893.

The galls from which this very pretty Synergus was reared resemble very closely those of *Holcaspis monticola*, Gill, MS., the description of which is already in the hands of the printer for publication. The galls were collected by Mr. Trevor Kincaid, of Olympia, Washington, from twigs of *Quercus garryana*.

WHICH SIDE OF THE TREE DOES PHLŒOTRIBUS LIMINARIS ATTACK?

BY F. M. WEBSTER.

Recently, while studying the habits of this beetle in the peach orchards of Catawba Island, on the south shore of Lake Erie, I was surprised to observe that the fall attack had invariably been made on the east or south-east side—which is here the land side of the trees—and old trees, where the bark of the trunks was very rough, were more seriously affected. On mentioning the fact of this apparent discrimination in point of attack to my friend Dr. D. S. Kellicott, he recalled that the same phenomenon occurred about Buffalo, New York.

Here in Ohio, in every case where the writer has observed it, the adults only have been found, wintering in burrows or chambers in the bark clearly excavated by themselves after becoming fully developed and not during larval stage.

On February 10, I took from a peach tree in Eastern Arkansas, adults, pupæ and what I presumed to be larvæ of this species, from all sides of the tree, which, by the way, was rather a young one with bark comparatively little roughened. This tree stood just above high water mark, on the eastern foot of Crawley's Ridge, which marks the western boundary of the swamp or overflowed country to the west of the Mississippi River. There was here, certainly, no partiality shown for any particular side of the tree. Are the beetles in Northern Ohio and Western New York driven to the discrimination previously noted by the lake winds, at the time they burrow into the bark in the fall, and has such selection in point of attack been observed elsewhere, except near and to the south of the Great Lakes?

CORRESPONDENCE.

TRYPETA, CLISIOCAMPA AND AMMALO.

The January and February numbers of the CANADIAN ENTOMOLOGIST just to hand suggest a few remarks. Prof. Townsend gives a most interesting account of the *Bigelovia* Trypetid, and although I had described the imago as well as the gall in Ent. Mo. Mag. (Dec., 1890, p. 324), most of what he writes is new. The eyes, as Prof. Townsend surmises, are green in life. The variety from Johnson's Basin seems to have the character of my var. *disrupta*. The hymenopterous parasite mentioned on page 52 may perhaps be a *Torymus*, identical with one I bred at West Cliff. I also bred from the galls a new *Eurytoma* (*E. bigeloviæ*, Ashm.) and a weevil, *Anthonomus canus*, besides the Cecid, which I described as *Cecidomyia bigeloviæ*. At West Cliff, Colo., a *Clisiocampa* is very common, which, according to Mr. Dyar, must be referred to *C. fragilis*, Stretch. I had always called it *californica*, following Dr. Packard's opinion. An account of this insect will be found in the 4th Rept. of the Colo. Biol. Assoc., where the distinctness of certain of the larvæ from *californica* is alluded to. *Populus* and *Salix* may be added to the list of food-plants. I also found larvæ on *Ribes aureum*. I found the eggs on willow branches in batches; colour pale greyish, shape elongate, eggshells iridescent within. *Ammophila robusta* is an enemy of the larva, but I did not notice any parasites. On page 27 Mr. Dyar refers to *Ammalo helops*. This gets nearer to the U. S. than Surinam, at all events, since Möschler in 1886 recorded it from Jamaica. With reference to the foot note on page 52, it is only fair to state that the trypetid nature of the *Bigelovia* galls was first discovered at the Department of Agriculture, Washington. This was before I had bred the imago.

Feb. 19, 1893. T. D. A. COCKERELL.

Mailed April 11th.