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The Canadian entomologist.

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Sir,—I desire, on behalf of the Entomological Society of Ontario, to acknowledge the receipt—through Mr. H. H. Lyman, of Montreal—of the specimens of *Nemeophila petrosa* and *plantaginis* from which the plate was made for illustrating Mr. Bean's paper in the April number of CAN. ENT.,—in excellent condition.

J. ALSTON MOFFAT, Curator.

DEGHUEE ALUMNI.

A dinner was given to Prof. Jos. Deghuée, of the old State Street School, Brooklyn, N. Y., on April 9th, by seventy graduates. Among these were Senator Luxow; F. W. Hinoïdes, Registrar; Rufus Zogbaum, Artist; Cashier William Halls; DeWitt Webb; John H. Walsh, and other prominent officials and merchants. The School is of interest as having turned out three students of American Entomology: Ed. L. Graef, who presided on this occasion; Fred Tepper, and A. Radcliffe Grote, whose names are known to readers of the CAN. ENT. Prof. Deghuée is a graduate of the University of Bonn, and for fifty years has been active as a teacher in Brooklyn. The following lines, by A. Radcliffe Grote, were sent by the author from Bremen, and were read during the evening by Mr. Albert Steiner:—

A moment pause! The air is stirred
From far across the main;
A scholar's waiting for the word,
Wants to be heard again.

Look round the board! Of all you taught,
If few attend to-day—
If any of us came to naught,
If others made their way.

All loved you. More can not be said,
O, teacher, wise and true!
The light that you upon us shed,
In love returns to you.

Fill for the absent ones a cup,
Whose hearts are yours always;
And fill the goblet brimming up—
A thousand healths—*Deghuée!*

Mailed August 2nd, 1895.

The Canadian Entomologist.

VOL. XXVII. LONDON, SEPTEMBER, 1895. No. 9.

NOTES ON COLLECTING BUTTERFLIES IN WESTERN COLORADO, WITH A PARTICULAR ACCOUNT OF CERTAIN PAPILIOS.

BY WM. H. EDWARDS, COALBURGH, WEST VA.

In Vol. XXV., p. 253, I gave some account of the dimorphism of *P. Bairdii*, mainly from the observations and experiments of Mr. David Bruce. From what he had seen at Glenwood Springs, Colorado, he had satisfied himself that not only *Bairdii* and *Oregonia* were one species, but that *P. Hollandii*, Edw., formed part of the same. Though the two first named differ in facies more decidedly than do *Turnus* and *Rutulus*, and *Rutulus* and either *Eurymedon* or *Dannus*. *Hollandii* looks on the upper side like *Bairdii*, but beneath, while in general like *Bairdii*, the yellow spots are larger, making the surface much gayer. But the notable difference is in the markings of the body; *Hollandii* having the yellow, black-striped body of *Oregonia* (as well as *Zolicaon* and *Machaon*), while *Bairdii* has the solid black body of *Asterias*, with similar rows of yellow dots. *Hollandii* therefore has the body of *Oregonia*, with the wings of *Bairdii*, the latter somewhat modified.

In 1892, Mr. Bruce obtained eggs by confining a *Bairdii* ♀ over the food plant, and out of two pupæ which alone survived a catastrophe at his home (Brockport, N. Y.) came a *Bairdii* imago the next spring in his hands, and a female *Oregonia* with me. Mrs. Peart had received a few of the larvæ out of that lot of eggs, and from these came one *Bairdii* and one *Oregonia*. I related these facts in the paper spoken of, and then said that two of the pupæ which Mrs. Peart had were still alive, and would give butterflies the second year, or in 1894. It turned out that one *Bairdii* ♀ did come from one of these pupæ, April 25th, 1894, but the other pupa had died.

In 1893, at the same place, Mr. Bruce sent me two eggs obtained from an *Oregonia* ♀ in confinement, from one of which resulted a *Bairdii* ♂ the same season, the other larva dying. And about two weeks later he sent me another lot of *Oregonia* eggs, from which I got four *Bairdii*: 2 ♂, 2 ♀, the same season, no pupæ hibernating.

Thorax one-half longer than broad, elytra much shorter than the abdomen. .11 in. *longicollis*, Ziegl.

Of the above, both *cyanescens* and *difficilis* are considered varieties of *humeralis*, though, owing to the difference in sculpture, one of them is placed in a different division of the table from the others. The genus needs careful revision in the light of more material than is at my command.

PHYLLOBENUS, Spin.

Contains a rather small species, *P. dislocatus*, Say (.11-.17 in.), of a black colour and elongate form, the last three joints of the antennæ compressed, sub-triangular. The elytra are very coarsely punctured in rows, and ordinarily ornamented with a curved sub-basal and undulate median band of yellow, and an apical spot of the same colour. Either the first or last may be absent or the median one alone remain.

ICHNEA, Lap.

Represented in Canada by *I. laticornis*, Say, about .24 in. long, black, linear, the head vittate with yellow, thorax margined with the same colour, elytra with striæ of large punctures, the apical ones confused.

CHARIESSA, Perty.

C. pilosa, Forst, is a beautiful velvety-black insect about .50 in. long, the thorax roseate with two broad black discal lines, usually confluent behind. The variety *onusta*, Say, (fig. 20) has these lines reduced or wanting, and the elytra margined with yellow.

ORTHOPLEURA, Spin.

O. damicornis, Fabr., is black, thickly punctured, pilose, the thorax reddish. It varies in length from .25 to .38 in. The antennæ have the usual broadly dilated, compressed club of this group.



FIG. 20

LARICOBIVS, Rosenh.

Of this genus, *L. Erichsoni*, found also in Europe, is the only Canadian species. It is a small brown insect about .10 in. long, with short black hairs, while the elytra are marked with rows of large quadrate punctures.

NECROBIA, Latr.

As the name indicates, the species are found about carrion, especially that which is in a dried state, and they form one of the most efficient scavengers on the Western plains. In colour they are blue, more or less polished, and sometimes marked with red. They easily separate thus:—

Thorax and base of elytra red (.21 in.) *ruficollis*, Fabr.

Thorax and elytra blue.

Legs reddish (.21-.25 in.) *rufipes*, Fabr.

Legs blue or blackish (.17-.21 in.) *violacea*, Linn.

Most of the papers treating of the North American Cleridæ are sadly out of date, and, in addition, very difficult or expensive to obtain. The list of titles following gives the chief of those that will aid the student:—

1841. Klug, J. C. F., Versuch einer systematischen Bestimmung und Auseinandersetzung der Gattungen und Arten der Clerii. Abh. d. Konigl. Akad. der Wissensch. zu Berlin, pp. 259-397, 2 pl.
1844. Spinola, M. Essai monographique sur les Clérîtes. Gênes, 2 vols., pp. 386 and 226, 47 pl.
1849. Leconte, J. L. Synopsis of the Coleopterous Insects of the group Cleridæ which inhabit the United States. Ann. N. Y. Lyc., V., pp. 9-35.
1876. Horn, Geo. H. Synopsis of the species of Cymatodera and Trichodes of the United States. Trans. Am. Ent. Soc., V., pp. 220-232.

MISCELLANEOUS NOTES ON COCCIDÆ.

BY T. D. A. COCKERELL, LAS CRUCES, NEW MEXICO.

(i.) *Lecanium*, sect. *Eulecanium*.

(1) *Lecanium caryæ*, Fitch, var. *canadense*, n. nov.

♀ scale smooth, shiny, red-brown, convex, malleate, but not or hardly plicate. Length 4, breadth 3, height 2 mm., varying to length 5, breadth 4, height 3 mm. (Some Maine specimens 6 mm. long.) Removed from the twigs, the scales leave an oval white mark. (Nappan scales are paler and more yellowish, also somewhat smaller. Posterior incision perhaps a little longer; scales also rather more tending to be plicate.)

♂ scale ordinary, rugulose.

♀ with 6-jointed antennæ, formula 326154; 3 considerably longer than the remaining joints put together; 1 with 2 hairs; 2 with 2 hairs at its end, one especially long; 3 with 2 hairs near its end; last joint with several hairs, one especially long. (Nappan antennæ practically the same, but 1 larger; 4 and 5 each show a hair; 6 hardly so long, formula 3 (126) 54. Maine antennæ show one long hair at end of 3, 2 with one very long hair; 2 a little longer than 4; 4 a very little longer than 5; 6 a little longer than 2; formula 36245.) Derm obscurely tessellated, with large gland-pits. (In Maine specimens gland-pits frequently in pairs.)

Femur not much longer than tibia. Tarsus hardly $\frac{1}{3}$ shorter than tibia; distinctly swollen at base. Claw rather stout, curved at its tip like a falcon's beak. Digitules of tarsus apparently wanting (deciduous?). Digitules of claw large and distinct, extending well beyond tip of claw, stem moderately stout, knob large and oval. A bristle on end of coxa, one on end of femur, and one on end of tibia. (Nappan scales show legs much the same, but femur proportionately longer, tarsus only a little swollen at base; tarsal digitules well-developed, long, ordinary; digitules of claw short, not extending to end of claw; claw stout, nearly straight, not hooked. Maine examples show coxa stout, broader at base than its length, with a hair at its tip; trochanter with a long hair; femur longer than tibia, tarsus about $\frac{1}{3}$ shorter than tibia; digitules all filiform.)

Eggs (Maine specimens) very pale pinkish.

Hab.: The types are from Stittsville, about 20 miles from Ottawa, on *Ulmus racemosa*, sent by Mr. Fletcher. Other specimens are from Nappan, Nova Scotia, on elm (Fletcher), and Orono, Maine, on elm (Harvey). Prof. F. L. Harvey states that it is very abundant at Orono; he has known it for eight years, and it is increasing. The branches are often almost covered with them.

The Stittsville examples are affected by a Coccinellid, and by an Encyrtid parasite, perhaps a *Chiloneurus*.

The species is quite different from the European *Lecanium ulmi*, and is doubtless a native of this country. It illustrates well the extreme difficulty of dealing with the American species of *Eulecanium*, which have, perhaps, not succeeded in reaching a condition of specific equilibrium since the new developments which doubtless followed the termination of the glacial epoch. It will be seen from the above that the characters given are quite variable, unless we are dealing with three species instead of one—a view which I cannot for a moment entertain. While thus convinced that all these elm forms are strictly one thing, I have a very lively conviction that *L. ribis*, Fitch, is different—a conviction which I feel sure would be shared by any one who had seen quantities of both—yet it is difficult to point out the precise nature of the difference, apart from the smaller size of *ribis*. Two species of Fitch, *L. cynosbati* and *L. caryæ*, have been redescribed by Signoret, who shows that they have 6-jointed antennæ like *ribis* and *canadense*. I have not seen authentic examples of either, but the description of *L. caryæ* agrees so nearly with our elm species that I place the latter under it as a variety.

(2) *Lecanium ribis*, Fitch.

This species may be known by its comparatively small size, and 6-jointed antennæ, with the third joint very long. There are two long hairs almost at the end of the third joint. The derm shows large gland-pits, often in pairs. The insect reminds one of *L. hemisphæricum*, but it is a true *Eulecanium*. It is not confined to *Ribes* by any means. Dr. Lintner sent me specimens found by Hon. G. W. Clinton, on *Ostrya* and *Carpinus*, in Albany Rural Cemetery, June, 1885. These were 3 mm. long, 2 broad, $2\frac{1}{4}$ high. Just lately, Prof. Webster has sent it plentifully, infesting mulberry in Southern Ohio. The specimens are a little larger than usual, but clearly *ribis*. This attack on mulberry—a tree hitherto very free from insects in this country—is apparently a serious matter, and will doubtless be fully investigated by Prof. Webster. The *L. mori*, Sign., found on mulberry in the Savoy (Europe), is quite different.

(3) *Lecanium Fitchii*, Signoret.

On wild blackberry, Medina County, Northern Ohio, sent by Prof. F. M. Webster. The specimens have 8-jointed antennæ. I think this is the most western locality in which the species has yet been found.

Lecanium quercitronis, Fitch.

Mr. V. H. Lowe sends this on ironwood, but omits to state when it was found. Hitherto it has only been known on oak. The antennæ are 7-jointed. The newly-hatched larva is very pale yellowish, with a pale gray dorsal band.*

Certain forms of *Lecanium* found on oak and rose at Manitou, Colorado (Gillette), and on rose at Santa Fé, N. M., have given me a lot of trouble, and even now I do not know what to call them. It was at first questioned whether the rose species might not be the European *L. rosarum*, introduced, but it now seems tolerably certain that such is not the case.† It was hoped that they could be classified by the antennæ, but the more specimens examined, the greater grew the confusion, owing to the variability observed. Mr. Joseph Bennett, when a student at the N. M. College, examined these forms and found the antennæ thus:—

*Compare the young of *L. Fitchii*. The lately-hatched young of species of *Lecanium* differ more or less in appearance. Thus, the living young of *L. armeniacum*, Craw, sent by Mr. Ehrhorn from Sta. Clara Co., California, are pale gray mottled with white, with a conspicuous white or yellowish-white dorsal longitudinal band. Miss Tyrell considers *armeniaceum* a variety of *pruinatum*, which probably is correct.

†It is also quite distinct from *L. pruinosum*, C. G., which Mr. Ehrhorn sends me on rose from Mountain View, California.

- (a) On oak, Manitou. . . Antennæ 8-jointed, formula 3 (24) 18 (567).
 (b) On rose, Santa Fé. . . " 8-jointed, " 38 (12) 45 (67).
 (c) On rose, Manitou. . . " 7-jointed, " 3 (24) (17) (56).

Later, I myself obtained the following results:—

- (b) On rose, Santa Fé. . . Antennæ 8-jointed, formula 4 (31) (28) (567).

Joint 4 was a very little longer than 3.

- (a) On oak, Manitou. . . Antennæ 7-jointed, formula (34) (21) 7 (56).

I asked Prof. Gillette for more abundant material of the Manitou forms, and he sent them in quantity, but even then I could reach no certain conclusions. It appears, at all events, that the antennæ, *never* 6-jointed as in *ribis* and *canadense*, may have either 7 or 8 joints in the same form. Further, that while the third joint is usually the longest (as in *quercitronis*), 4 may be equal to it or even a little longer. In every instance, 5, 6, 7 are the three shortest, but when there are only 7 joints, 7 will be longer than 5 or 6. The differences seen in the formula given are not so important as might appear, for the slightest change in the length of a joint may alter the formula where several joints are so nearly of one length.

In general appearance, these scales are much alike, and do not differ in any marked degree from *L. quercitronis*. In fact, unsatisfactory as I feel the conclusion to be, I see nothing for it but to call them all *L. quercitronis*, var., at least until further studies of the living insects in all stages can be made. The differences between these *quercitronis* forms and *Fitchii* will also have to be clearly made out. Here again, the antennæ will not assist us. I think *Fitchii* and *quercitronis* must surely be distinct; but to *think* so is not to prove it—and the variability already observed in these forms throws doubt on formerly-accepted marks of distinction. The statements of Mr. Douglas regarding willow and rose species in England are suggestive in this respect.

It is much to be hoped that some of the Eastern and Canadian entomologists will study the biology of these perplexing forms. It is only by such means that we can arrive at sound conclusions. When dried specimens are sent to me, I can point out how they differ, but am left often in doubt as to how far the differences are specific, and how far due to ordinary variability, or even to the direct influence of the environment.

At Las Cruces, one day, I found a small *Eulecanium* on an umbellifer—one specimen only. It looked different from anything I had

seen, and the finding of a *Eulecanium* on an herbaceous plant was contrary to all preconceived ideas! What was I to do?—call it a new species? Close by was a peach tree, on which were a few ordinary *L. persicæ*, and here of course was the explanation. But had I sent the umbellifer scale away to some entomologist, with no information about the adjacent *persicæ*, I really don't see how he could have guessed what it was—the thing was so starved and altered by its unwonted food!

All these remarks will naturally tend to produce the impression—doubtless correct—that we have too many nominal species of *Eulecanium* in the books. But if we must distinguish species with caution, so also must we lump them with caution. It is a stupid way out of the difficulty to chrow all those together that we cannot quite easily separate.

(5) *Lecanium robiniarum*, Douglas. In May, 1894, I bred a parasite from scales of this species found on locust in Las Cruces, N. M. Mr. Howard identifies it as *Blastothrix longipennis*, Howard, and states that it has previously been reared from several Lecaniines.

On osage-orange in Las Cruces, I find a scale just like *L. robiniarum*, but perhaps a little more shiny and more decidedly pruinose. But the eggs of the osage-orange form are always pure snow-white, while those of *L. robiniarum* are salmon-pink!

(ii.) *Lecanium*, other sections.

(6) *Lecanium perforatum*, Newstead. A flat species with 8-jointed antennæ, found on palms. Mr. Ehrhorn sent me specimens from a greenhouse in San Francisco. Miss Mary W. Tyrrell, of Oakland, sends me a very pretty enlarged photograph of this insect, which she regards as *L. tessellatum*, Signoret. While I cannot very well doubt that it is Newstead's *L. perforatum*, I must confess that I am not well-satisfied about its distinctness from *tessellatum*. It does not seem, however, to be the same as the Jamaican species on lignum-vitæ, which I had regarded as *tessellatum*, though the two things are very much alike. For the present, no more can be said, though it seems likely that the Jamaican insect will need a new name.

(7) *Lecanium oleæ* (Bern.). Prof. Toumey sends this on orange from Arizona; and Mr. Lataste found specimens in Chile, on *Yucca* in a garden. In both these cases it has of course been introduced.*

*In both cases the names of the exact localities were sent, but I regret that I am totally unable to decipher them. Will correspondents please write names of localities plainly?

(8) *Lecanium hemisphaericum*, Targ. On a house-fern belonging to Mrs. Fred. Lohman, in Las Cruces, N. M., I found this species and *Dactylopius longispinus*, Targ. These Coccids will not live out-of-doors in the climate of Las Cruces, so far as we know.

(9) *Lecanium insignicola*, Craw, emend. Mr. Ehrhorn sends me this, on *Pinus insignis*, from Golden Gate Park, San Francisco. The specimens belong to *Physokermes*, and we must write the species *Physokermes insignicola* (Craw).

(iii.) *Pulvinaria*, section of *P. camellicola*.

(10) *Pulvinaria camellicola*, Sign., *P. urbicola*, Ckll., *P. simulans*, Ckll. These species need some further elucidation. The second is only known on *Capsicum* in Jamaica; the third only in Trinidad. We are supposed to have *P. camellicola* in this country, but I have never seen any with 6-jointed antennæ, as described by Signoret. Here is a short description of our insect:—

♀ remains brownish after boiling in potash. Tarsal digitules distinct and well-formed. Digitules of claw extremely large and stout, very broad at ends. A very long hair on end of trochanter. Marginal spines numerous and long. Lateral (stigmatal) incisions each with three spines, brownish and stout, one large, the other two small. Antennæ 8-jointed: 3 longest; 2, 4 and 8 subequal and next longest; 5 shorter than 4; 6 and 7 equal and shortest; 2 with a very long hair at the end; 3 with a moderately long hair at end; 5 with two very long hairs at end; 7 with a long hair; 8 with many long hairs.

Hab.: Macon, Ga., Apr. 15, 1892, on *Euonymus*. (Div. Ent., No. 5029; received through Dr. Riley.)

Just lately, Prof. Townsend has found the same species in abundance at Brownsville, Texas. The antennæ are 8-jointed, as in the Macon ones, formula 32 (41) (58) 67. The name of the food plant is not known, but it is not camellia, nor capsicum.

Notwithstanding the external similarity (which counts for little in *Pulvinaria*), I do not see how we can reconcile the above with Signoret's account of *camellicola*, assuming the latter to be correct. In 1886 Douglas treated of *camellicola*, and perhaps threw new light on the matter, but I have not now access to his paper.

If we thus assume that our insect is not *camellicola*, is it *uroicola* or *simulans*? Unfortunately, we know these latter only from one locality each, and are not well-informed about their possible range of variation.

In the large digitules of the claw it resembles *simulans*; in the 8-jointed antennæ, *urbicola*. In the ovisac it rather resembles *simulans* than *urbicola*; in fact, its external appearance is practically the same. In *simulans* the fourth joint of the antenna is very short; in our insect it is much longer than 6 or 7, and somewhat longer than 5. This comes nearer to the condition of *urbicola*. All things considered, perhaps it would be best, for the present, to call our insect *P. simulans*, variety. *P. bigeloviae*, Ckll., is another species of the same group.

(iv.) *Asterolecanium*.

(11) *Asterolecanium pustulans* (Ckll.). On oleander from Honolulu; sent by Mr. Ehrhorn. Mr. Maskell has placed this as a synonym of *A. fimbriatum* = *Planchonia fimbriata*; but I have true (French) specimens of the latter, kindly sent by Mr. Howard, and it is a totally different thing. It is hardly necessary for me to say that I cannot in the least agree with Mr. Maskell's proposed synonymy of the species of *Planchonia* or *Asterolecanium*. As several of the rejected species are my own, I do not care to discuss the matter now, but will leave it to the judgment of other coccidologists who may have occasion to examine the several forms. In fact, Mr. Maskell himself (as I hear from him) is giving closer attention to the matter, and will, I doubt not, eventually revise his present classification.

(v.) *Dactylopius*, section without lateral tufts.

(12) *Dactylopius virgatus*, Ckll. This is a destructive species, hitherto only known from Jamaica. Prof. Townsend has just discovered it in numbers on a cactus and other plants at Brownsville, Texas. Fortunately, it is there preyed upon by a *Scymnus* larva and a Chalcidid, which Mr. Howard tells me will form a new genus of Bothriothoracini. In Trinidad, Mr. Urich has found a *Dactylopius* on *Croton*, which I cannot distinguish from *D. virgatus*, var. *farinosus*; although, curiously, it also seems identical with Mr. Newstead's *D. ceriferus*, found on *Croton* in India. If this is so, *ceriferus* falls as a synonym of *virgatus*. No more need be said now, as I believe the subject will hereafter be fully discussed by Messrs. Townsend and Urich.

(vi.) Various *Diaspinæ*.

(13) *Mytilaspis pomorum* (Bouché). In the mountains, at Mountain View, California, on *Cornus californicus*. Sent by Mr. Ehrhorn. The specimens show fewer glands in the groups than some from apple,

viz., caudolaterals, 9; cephalolaterals, 14; median, 8. Mr. Schaufuss sent me *M. pomorum* on *Cornus* from Saxony long ago.

(14) *Diaspis amygdali*, Tryon. (= *lanatus*). This evidently reached California from Japan. Mr. Ehrhorn sends me some on dwarf peach from Japan, in Japanese nursery at San José, California. Also a grayish form of the same on persimmon from Japan, found by Mr. Craw in his quarantine work. The latter form looks different from ordinary *amygdali*, but is clearly that species; it shows caudolateral groups of glands with 36 orifices, cephalolaterals, 43; median, 15. The grayish appearance is partly due to dirt. Mr. Ehrhorn says it also infests dwarf cherry.

(15) *Aulacaspis bromeliæ* (Kerner). On pineapple in conservatory at San José, California (Edw. M. Ehrhorn). The exuviae are nearly marginal.

(16) *Chionaspis assimilis*, Maskell. Sent by Mr. Ehrhorn. It was found by Mr. Craw on a tree from Australia, in the course of his quarantine work.

(17) *Chionaspis quercus*, Comst. On oaks at Dripping Spring, Organ Mts., N. M., 5,600 ft. (Ckll.). New to New Mexico.

(18) *Ischnaspis filiformis*, Dougl. Trinidad, West Indies. In extraordinary numbers on *Cycas revoluta*. (J. H. Hart.)

(vii.) *Aspidiotus*.

(19) *Aspidiotus juglans-regiæ*, Comst., Southern California, on prune. (Edw. M. Ehrhorn.) This species is quite generally distributed in Las Cruces and Mesilla, N. M., but here always white (var. *albus*). Two days ago I found it in Mesilla on apple, pear and apricot. Nowhere does it increase like *pernicius*, and it is a comparatively harmless species, though anything but desirable in an orchard.

(20) *Aspidiotus piricola*, Del Guercio. This species, lately described as new from Italy, has turned up on plum at San José, California, specimens having been sent by Mr. Ehrhorn. A mounted specimen is dated March 18, 1892, others 1894; so it has been in California for some time unrecognized. The following description, from Californian examples, is worth giving:—

♀ scale $1\frac{1}{2}$ mm. diam., flattened, circular, pale gray; with the exuviae covered normally by a thin film of secretion, and then hardly noticeable, but the film very easily rubbed off, when the shiny, orange-brown exuviae are conspicuously seen.

♀. Median lobes orange-brown, the others colourless. Median lobes large, prominent, well-developed, rounded at ends. The other lobes all very small and rudimentary; 2nd, 3rd, 4th and 5th pairs can be distinguished, becoming successively smaller; 2nd and 3rd very distinctly bifid. Small saccular incisions between the lobes. Five groups of ventral glands; all the groups rounded or oval, compact; median of 8, cephalolaterals, 13, caudolaterals, 8. Anal orifice circular, a little posterior to line of caudolateral groups, and a considerable distance from hind end.

A. ancylus differs by its dark scale, and the position of the anal orifice, &c. It is also clearly distinct from *Howardi*, *ostreiformis* and *juglans-regiæ*.

A. Howardi is still only known from Canon City; the Illinois specimens on cherry (W. G. Johnson), reported as such, prove on examination to be a slight variety of *A. ancylus*.

(21) *Aspidiotus ficus*, Ashm. On *Cocos nucifera* and *Oreodoxa regia*, Iacmel, Hayti, sent by Mr. F. Wolff. New to Hayti.

(22) *Aspidiotus destructor*, Sign. On cocoanut, San Juan, Porto Rico. Sent by Mr. J. D. Hall. New to Porto Rico, and the first Coccid record for that island! It shows the grouped glands well: caudolaterals, 6; cephalolaterals, 10; median, 1 only.

THE BOREAL AMERICAN SPECIES OF PAMPHILA.

BY DR. HENRY SKINNER, PHILADELPHIA, PA.

There seems to be some misapprehension in regard to the validity of our species of *Pamphila*, and inasmuch as I have been studying our Hesperidæ for some years past, I thought some remarks on the subject would not be inappropriate. We now have in this genus ninety-six species as they would appear in a list according to the generally accepted specific values. With the exception of about two groups, I consider the species remarkably well defined and constant, and if you once become thoroughly familiar with them, there is not the slightest difficulty in separating any of them at sight. The great difficulty has been to determine them from descriptions, as the word pictures are often inadequate, and almost impossible to comprehend, as the descriptions seem to fit a number of species that may not be even very closely related. Many of the figures have also been failures to a great extent; this is particularly true of the difficult Comma group, which is in most collections in a condition akin to certain of our species of *Argynnis*, *Melitæa* and *Colias*.