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NOTES ON CAPTURES OF LEPIDOPTERA.

BY E. FIRMSTONE HEATH, THE HERMITAGE, CARTWRIGHT, MANITOBA.

A constant succession of surprises has taken place during the year 1899, owing to the absence of species and even whole genera that I have taken in previous years in some abundance, their places being occupied by forms new to me. I thought that the list of Manitoba Lepidoptera by Mr. Hanham, now being published, would be fairly complete, considering the amount of material at his disposal; but my work of last summer, so far as I have identified the result, will add several species to the list, and I have yet a number of specimens, about which I am in doubt, to submit to Dr. J. B. Smith, who has very kindly undertaken the task of naming my new things.

A few *Tœniocampas* appeared at the catkins of the White poplar on and after April 26th, but not in anything like the numbers I have seen in other years. Besides a few *alia*, Gn., I netted one or two *subterminata*, Smith, and *Pachnobia salicarum*, Walk. I had, unfortunately, neglected to provide myself with some molasses and was unable to sugar any trees, and had to make flying shots at my game.

I took *Homoptera minerea*, Gn., on May 24th, at sugar for the first time, in two or three varieties and subsequently rather plentifully.

Acronycta illita, Smith, appeared on May 30th and subsequently. On June 2nd I took a few things at light, including *Smerinthus cerisyi*, and at sugar, *Prochærodes clemataria*, S. & A., of which I took one or two more on the next few nights following.

On June 6th I had a fair take at light of Sphingidæ—*albescens*, *excæcatus* and *cerisyi*.

About the 16th the genus *Acronycta* came out strongly, several species coming to sugar, and the genus continued to be well represented for several weeks, some new species being added to my collection, including *revellata*, Smith; *albarufa*, Grote; *leporina*, an Old World species which does not appear in Smith's list (1891); *hastulifera*, S. & A.; *noctivaga*, Grt.; *superans*, Gn.; *modica*, Walk., and *oblinita*, S. & A. *Thyatira scripta*, Gosse, also appeared rather freely.

On the 22nd I noticed a large Sphingid hovering over my sugared trees just at dusk, and netting it, I found it to be *Ampelophaga chærilus*, Cram. On subsequent nights I secured one or two more, but it is a most difficult insect to take, as it imbibes the sugar while on the wing, without settling, and darts away on the tree being approached. I have never taken this species at light, nor any other Sphingid at sugar.

On June 24th *Zale horrida*, Hbn., and *Hadena miseloides*, Gn., came to sugar, and a few days later *Diphthera fullax*, Hbn.

On July 2nd, among other things at sugar, I secured my first and only specimen of *Copablepharon subflavidens*, Grt.

The best catch I had at light was on the night of July 5th. In the earlier hours I took *Notodonta dimidiata*, H. & S.; *elegans*, Strk., and *stragula*, Grt.; a *Cerura*, several *Schizura*, *Schinia*, *Eubyia*; *Platypteryx arcuata*, Walk.; *Dasylophia anguina*, S. & A., and a few *Arctias* and *Plusias*. From 1 to 2 a. m., on the 6th, *Triptogon occidentalis*, Hy. Ed., was almost a nuisance. I believe if they had only charged together they would have broken my windows. I have to work outside, and defy the mosquitoes, with my lamp inside the glass. I notice that while the other Sphingids, *albescens*, *geminatus*, *cerisyi*, *excæcatus* and *myops*, appear from 10 to 11 p. m., *Triptogon* hardly ever shows up till after midnight. I did not take an example of *Cressonia juglandis*, S. & A., which is generally rather plentiful. The genus *Plusia* was very sparingly represented last season. I hardly took any, the most notable catch being a single *precatationis*, which is a decided rarity hereabouts. *Arctias* were not so abundant as usual, but I took several *virgo*, Linn., which hitherto had been represented by a single example in my cases.

About this date several beautiful specimens of *Alaria florida*, Gn., were bottled off the window.

The genus *Mamestra* was well represented at both light and sugar.

My catch included *mystica* and *incurva*, Smith; *Farnhami*, *Dimmocki*, *grandis*, *subjuncta* and *neoterica*, Smith. In regard to *incurva*, Dr. Smith tells me that the specimens in his collection come from New Mexico, but that he cannot see any difference between them and that I have sent. I have another specimen so named which was sent by Mr. Hanham to, I believe, Dr. Smith for identification, but my last example being fresher and brighter, I was not quite certain of it and sent it again. It would appear, therefore, that this species has an extraordinary range—from Manitoba to New Mexico—or that we have here a closely allied and almost indistinguishable species.

The *Catocalas* were pretty well represented. Though I did not make any addition of species to my collection, I took an "*Aspasia*," *Strek.*; the only one I saw. *Relicta* came out in various degrees of mourning: from "complimentary"—almost white, to the "deepest weeds"—nearly black. *Praeclara*, G. & R., was more plentiful than usual, so was *grynaea*, Cram; while *concumbens*, *parta* and *briseis* were in normal quantities; *unijuga* was less plentiful.

In the early days of August I took at sugar *Adita chionanthi*, S. & A., which is, I think, an addition to our Manitoban list, and also some of the small pale variety of *Hepialus argenteo-maculatus*, besides the ordinary form, of course on the wing.

The *Calocampas*, *Xylinas*, *Polia*, etc., occurred in about their usual numbers. I also took several *Hadena plutonia*, Sm., and, of course, our *allecto*, Sm.

Dr. Smith tells me that I have sent him a *Nonagria* of a species different to that mentioned in Mr. Hanham's list, being smaller and darker, and also a *Cosmia*, which he has received from the Yellowstone, and which, as yet, is not described and named. The genus *Hydroecia* was poorly represented. Several species are generally taken here pretty freely, including *obliqua*, Harv.; *rigida*, Grt., and *frigida*, Sm., and I have also taken *nelita*, Strk. I have been sending some lately to Mr. Hy. Bird, of Rye, N. Y., and I am pleased to find, on his authority, that what I supposed to be *rutila*, Gn., is really the new species *circumlucens*, Sm. I hope this coming season it may appear in like numbers to some previous years.

The last moth I saw at sugar of any value was on Oct. 10th, when I took a very good specimen of *Eupsephopæctes procinctus*, Grt. With the exception of one or two nights, things did not come at all freely to

lights—always excepting mosquitoes, which were terrible, and very often at sugar the moths were so wild that they would hardly allow me to get near enough the trees to net or bottle them, and as well as I could judge, by the faint light of my collecting lamp, one or two new species in single examples got away from me, and left me lamenting.

Butterflies of all genera were scarce during the year. Even the common prairie species were not so plentiful as usual. The *Blues* were in much smaller numbers. Hardly a *Grapta* came to my sugared trees. I saw very few *P. atalanta*, and not a single *Vanessa californica*, so different from 1898. Even *Antiopa* was scarce. I did not see a single *Pieris protodice*, and the *Pamphilas* belonging to the autumnal species were very scarce.

Throughout the summer, at intervals of a week or ten days, my sugared trees were visited by single specimens of *Scoliopteryx libatrix*, Linn., all freshly evolved from the pupa. With such a wide distribution, in point of time, and irregular appearance, it is a wonder that the species manages to reproduce itself in any number.

Ufeus plicatus, Grt., was not quite so numerous as usual. I have never seen it outside my house, either at light or at sugar, but I have had in some years two or three in one evening commit suicide in my lamps.

When the examination of my captures is completed I purpose sending a list of my novelties for insertion in the CAN. ENT., as supplementary to Mr. Hanham's catalogue.

SOME NEW NORTH AMERICAN SPIDERS.

BY NATHAN BANKS, EAST END, VA.

Sergiolus bicolor, n. sp.

Length, ♀, 8 mm. Cephalothorax and legs pale reddish-yellow, mandibles and sternum scarcely darker, basal half of abdomen pale gray, apical half and spinnerets jet black, the line separating the two slightly convex in front; venter pale gray except the apical two-fifths, which is black, but broadly indented by the gray in the middle. Cephalothorax rather slender, about one and three-fourths as long as broad, plainly longer than patella plus tibia IV., not much narrowed in front, no trace of a dorsal groove. Posterior eye-row plainly recurved, the P. M. E. round, about twice their diameter apart, and about as far from the scarcely larger P. S. E. Anterior eye-row much shorter than posterior, nearly straight, the A. M. E. slightly smaller than P. M. E., more than their diameter

apart, and rather nearer to the slightly larger A. S. E., several stiff black bristles in eye-region. Mandibles stout, hardly porrect, with many long, stiff, black bristles in front; palpi with many stout bristles, especially toward tip and on the under side; legs short and stout, metatarsus I. much shorter than tibia I., with but few hairs; three black spines above on femora I. and II., none below on tibia I., one pair at tip below on tibia II., two pairs below on metatarsi I. and II., one pair near base, other at tip; hind legs with more spines on tibiæ, one above near base. Sternum narrow, broadest in middle, pointed behind. The abdomen is about twice as long as broad, rather rounded at base and pointed at tip, slightly depressed, spinnerets prominent; epigynum small, in a reddish area, showing two circular cavities connate on the middle line, each opening behind into a dark cavity beneath the surface.

Covington, Louisiana; May. (Hugo Soltaw.)

Callilepis insularis, n. sp.

Black. Resembling *C. pluto*, Bks., but legs paler (rather yellowish-brown), the two rows of eyes closer together, the P. M. E. oval and not half their diameter apart, A. M. E. smaller and about their diameter apart, closer to the A. S. E.; sternum rather longer than broad, narrowed in front and pointed behind; abdomen depressed; no spines under tibia nor metatarsus I., many on hind pairs; epigynum very different from *C. pluto*; a cavity rather longer than broad, slightly indented on each posterior side, and divided by a septum, narrow at base and twice as broad near tip; the tip not quite reaching hind border of cavity; each side of the cavity at base is a dark line with the tip recurved toward the middle. Length 6.5 mm.

Two specimens from Guadeloupe Isle, off California; June, 1897. (Leland Stanford, Jr. Univ. Coll.)

Euryopsis 5-maculata, n. sp.

Length, ♀, 2.7 mm. Cephalothorax black, palpi black, sternum rather paler in the middle, mandibles yellowish, black on tips, legs pale yellowish, with black stripes on each side of anterior coxæ, and a black stripe on fore side of femora I., II., and III., and on apical part of IV., and on hind part of patellæ and tibiæ III. and IV.; abdomen black above and below, rather paler in middle of venter, and a pale spot on region of epigynum; above are five clear white spots: one on each anterior side, one each side near middle of length, and a median one at tip just above spinnerets, all subequal in size. Cephalothorax one and one-fourth times

as long as broad, sides rounded, head high, projecting over clypeus; eyes subequal, posterior eye-row recurved, P. M. E. one and one-half their diameter apart rather farther from the equal P. S. E., A. M. E. smaller, about twice their diameter apart and scarcely so far from the barely larger A. S. E., which latter are only slightly separated from the P. S. E., the A. M. E. are in the upper anterior margin of the elevated head; mandibles small, weak, slightly divergent; palpi large and hairy, last joint heavy; maxillæ including labium; sternum convex, broadest at middle, truncate between hind coxæ, legs of moderate length, IV. pair longest, no spines, but with many scattered stiff bristly hairs, one almost spinelike, erect near tip of patellæ; tibia III. scarcely longer than patella III.; abdomen nearly twice as long as broad, rounded at base, pointed behind, convex above, and with many scattered pale hairs. Two specimens of this very pretty and distinct species: one collected by Mr. Pratt in April, at Washington, D. C., is not quite adult; the other taken at Falls Church, Va., in June.

Coleosoma floridana, n. sp.; *C. blanda*, Keys., nec Cambr.

This is very evidently not Cambridge's species, which has a shorter cephalothorax, more prominent clypeus, differently marked abdomen, less constricted, and the palpus is different. Otherwise it is similar. Keyserling's description is very good. It would seem very strange for a spider to be described from Ceylon and then recorded from Florida without being known from any other tropical regions. One male was collected by Mrs. A. T. Slosson in Florida.

Argyrodes floridana, n. sp.

Length, 2.6 mm. Cephalothorax dark brown; mandibles pale at base, blackish towards tips; palpi black, except pale tips; sternum blackish; legs pale uniform whitish; abdomen blackish, jet black around spinnerets, paler above; cone pale. Cephalothorax of moderate length; eyes scarcely elevated; clypeus sloping; palpi enlarged; sternum convex; legs slender, of moderate length; abdomen very high at base, continuing nearly straight back and at tip with a prominent blunt-pointed cone behind, vertical to the spinnerets; abdomen one and one-half longer than broad, higher than broad.

One female from Punta Gorda, Florida. (Mrs. Slosson.) Readily known by shape of abdomen, dark coloured abdomen and pale legs.

Crustulina borealis, n. sp.

Length, ♂, 1.8 mm. Similar to *C. sticta*, but the abdomen wholly

black, the size smaller, and the femur of palpus less swollen at tip, the two projections of the tarsus are more equal than in *C. sticta*, the P. M. E. are about their diameter apart, the small conic elevations under femora I. and II. are not as large as in *C. sticta*.

Two males from Washington State, Olympia. (Trevor Kincaid.)

Our four species of this genus may be tabulated as follows:

- | | |
|--|--------------------|
| 1. Silvery spots on dorsum, cephalothorax reddish..... | <i>guttata</i> . |
| No silvery spots, cephalothorax nearly black..... | 2. |
| 2. Abdomen yellowish, metatarsi and tarsi dark..... | <i>luscipula</i> . |
| Abdomen darker, legs uniform pale. | 3. |
| 3. Abdomen reddish..... | <i>sticta</i> . |
| Abdomen black..... | <i>borealis</i> . |

Philodromus inaequipes, n. sp.

Length, ♀, 3 mm.; femur II. 1.5 mm. Cephalothorax pale yellowish, on sides more brownish, abdomen grayish white, near tip on each side is a short red-brown stripe legs and palpi pale, there is a black line on the posterior under-side of the coxæ, femora and tibiæ of legs I. and II., on both sides of leg III., and on the anterior under side of leg IV. The P. M. E. are nearer to the A. S. E. than to any other eyes. The sternum is very wide in front, and the hind coxæ widely separated. The legs are very long, especially the second pair. The abdomen is about one and one-half times as long as the cephalothorax; the sternum is very wide, and almost as wide in front as anywhere, hind coxæ separated by half their length; femur II. longer than the cephalothorax; legs very long; body and legs closely pilose. Washington, D. C. Separated from our other species by black lines on legs, broader sternum, and longer legs, especially the second pair.

Runcinia californica, n. sp.

Length, 5.5 mm.; tibia plus patella I., 4 mm. Cephalothorax dull yellowish, with an even straight brown stripe each side and a narrow median one reaching only to end of pars cephalica, all connected through the eye-region, but the ridge under the S. E. is white; clypeus with a brown spot each side connected to a stripe that runs down the outer side of each mandible and covers its tip; legs pale yellowish, leg I. with an oblique mark at tip of femur, an apical band on patella, basal and apical bands on tibia and a preapical band on metatarsus, brown; leg II. with the under side of femur brown, otherwise as leg I.; hind legs unmarked; sternum yellowish. Abdomen yellowish, with

a brown stripe on each anterior side, and a pair of brown stripes above, which are widely separated in the middle, but united at either end; these on the posterior sides throw off oblique marks running down the sides; venter pale, with a brown mark before spinnerets. Femur I. much longer than cephalothorax, which is about the length of tibia I.; eight pairs of spines under tibiæ I. and II., pairs under metatarsi I. and II. The M. E. form a quadrangle barely, if any, higher than broad. The epigynum shows a small cavity, truncate in front, broadly rounded behind, and divided by a septum.

Los Angeles, California. (Davidson.)

Epeira arizonensis, n. sp.

Length, 4.2 mm. Pale yellowish, nearly uniform, the abdomen more whitish yellow, no marks on the legs or anywhere else. The abdomen is nearly as broad at basal third as it is long; in the ♂, however, much narrower. The base is broadly rounded, and the angles rather prominent, but not humped. Seen from the side it is evenly rounded to the spinnerets. The epigynum has a rather broad and short finger, upturned at the tip, each side is an oval cavity uniting on the middle. The male tibiæ I. and II. have two pairs of long spines beneath and an apical short pair, the tip is not curved or thickened.

Arizona. (Townsend.)

Acrosoma maculata, n. sp.

Length, ♀, 5.2 mm. Cephalothorax uniform dark brown, about twice as long as broad, broadest in middle, about as broad in front as behind, a depressed furrow slightly before the middle; legs of moderate length; femur I. a little shorter than cephalothorax, legs yellowish, tibiæ, patellæ, and apical half of femora I. and II., dark brown, on hind legs a brown ring on tips of femora, patellæ, tibiæ, and metatarsi; abdomen about twice as long as broad, sides slightly convex, but hardly twice as broad in middle as at base; at basal third above is a small conical hump or spine each side; at apex are four conical spines, the superior pair semi-erect, not divergent, the inferior pair directly below superior pair, shorter, horizontal and scarcely divergent. Abdomen black, marked with yellow spots, a double spot each side at base, followed by four spots in a row on each side, the apical spot being larger and having an extension upon the outer side of the superior spines; between the sub-basal humps is a pair of yellow spots, and behind them a median one transverse, toward the apex is a pair between the third of the lateral row, and between the bases of the

superior spines is a yellow mark ; the sides have small yellow spots, and on the venter there is a curved row or stripe each side, which unite beyond the spinnerets ; sternum brown.

Arizona. (Townsend.) Easily distinguished from any of our other *Acrosomas*, but nearly allied to *A. mitrata*, Hentz.

Habrocestum signatum, n. sp.

♂.—Length, 4.5 mm. Cephalothorax brown, clothed with red hair on clypeus, gray on eye-region, on side margins, and on each side behind leaving a median nearly black stripe. Abdomen clothed with gray hair above, with a curved brown stripe each side uniting at apex, and near there connected by several faint dark chevrons ; near base is a median diamond-shaped dark brown mark, touching each stripe. Legs pale yellowish, a dark spot at tip of the patella, leg I. more reddish, the femora with several bunches of short black hair on unc. r side near tip, nearly fully the length under the patella and tibia, on latter broad and heavy, especially at base, where there are black scale-like hairs (no bunch above on tibia as in *H. hirsutum*) ; elsewhere the legs are clothed with long white hair. Patella III. not modified, but nearly as long as tibia III. Under side of body clothed with gray hair. The spider, when dry, has a general hoary appearance. The female which appears to belong to this species is 6 mm. long ; it has a dark cephalothorax clothed with gray and yellowish hair ; clypeus white with a white fringe on margin and over eyes ; legs pale yellowish, darker on outside of tibiæ and metatarsi ; dorsum of abdomen dark brown, a median pale irregular stripe on posterior half, and each side the pale runs up in an oblique manner ; venter pale. The palpus of male much on the style of *H. hirsutum*, but with the stylet not near as long and the projection from tibia more acute ; at base there is a stiff bristle-like projection or hair, which lies across the base of the bulb.

Los Angeles, Calif. (Davidson.)

Scius cinctipes, n. sp.

Length, 3.7 mm. Cephalothorax black, two large oblique red-brown spots behind the eye-region, nearly touching on the middle line, clothed above with white hairs, more yellowish in front ; mandibles yellowish brown ; legs yellowish, banded most distinctly from below with brown ; one on anterior femora, two on hind femora, one on patellæ, one on tibiæ, two on metatarsi, and one on hind margin of hind coxæ ; palpi also banded. Abdomen pale grayish, with many brown spots of irregular

shape, a median brown stripe, interrupted at posterior third, with two projections each side, the posterior one often connected to the side markings; on the posterior third the abdomen is mostly brown, with a few pale chevrons; sides brown, with rows of pale dots; venter pale, with brown spots and a brown central stripe; superior spinnerets brown, others pale; sternum pale, dark on sides. Cephalothorax low and flat, projecting over the mandibles, about one and one-fourth times as long as broad, broadest slightly behind dorsal eyes; eye-region a little broader behind than in front, one and three-fourths times as broad as long, occupying about two-fifths of the cephalothorax; M. E. very large and nearly touching; S. E. well separated from them and a little above, dorsal eyes equal to S. E., those of second row a trifle nearer to S. E.; legs short, femur I. very stout, IV. pair longest and most slender, metatarsus I. no longer than tarsus I., three pairs of spines under tibiæ I., one under metatarsus I., fore coxæ separated by width of lip; sternum pointed behind, about twice as long as broad. The epigynum shows a cavity twice as broad as long, evenly convex behind, biconcave in front, the sides pointed. Baton Rouge, Louisiana; May. (H. Soltaw.)

SOME NEW SPECIES OF GEOMETRIDÆ.

BY GEO. D. HULST, BROOKLYN, N. Y.

Tephroclystis plumbaria, n. sp.

Belongs to the *absinthiata* group, and is close to that species. Of a blackish fuscous colour, wings broad and rounded, lines faint, parallel with outer margin, evenly scalloped, the outer one most distinct and whitish. Costa with small black spots at beginning of the lines; discal spots on fore wings black, lengthened, on hind wings black points. Beneath lighter, smoother, the lines showing more evenly, more broadly and lighter. Dist. of Columbia, taken July 5th. Type number, in National Museum, 4701.

Tephroclystis Bolterii, n. sp.

Expands 21 mm. Palpi porrect long, heavy, dark fuscous; front dark fuscous; thorax fuscous gray; abdomen dark fuscous; fore wings narrow, pointed, light gray, somewhat fuscous, stained with a number of indeterminate wavy darker parallel cross lines, these showing more clearly at costa; discal spot black, lengthened, with black dash above on costal vein; three black dashes outside, beyond cell; median vein black lined and connecting with discal spot; an extra discal cross line of venular

black dashes, and indications of cross lines along inner margin ; discal spots faint ; beneath nearly colour above, fore wings with fuscous shadings along costa and on anterior half, the hind wings with corresponding shading on anterior margin.

Texas ; from Mr. A. Bolter.

Tephroclystis lachrymosa, n. sp.

Expands 24 mm. Palpi short, light ; these, with front, thorax, and abdomen, blackish fuscous ; wings broad, rounded, loosely scaled, dark sordid fuscous, very slightly broken into indeterminate lines ; two or three lines of short black dashes across fore wings, beyond cell, and a pretty clear submarginal white line parallel with the outer edge ; discal spots diffuse, black ; hind wings lighter basally ; discal spots faint, blackish ; beneath lighter fuscous, the colour above showing brokenly on costa and apex of fore wings, and outwardly on hind wings, there showing in rounded lines ; discal spots black.

Oregon.

Tephroclystis plenascripta, n. sp.

Palpi very short ; these, with front, thorax, and abdomen, light gray ; the abdomen much darker on the two anterior segments ; fore wings overlaid with black scales running into groups of parallel lines, those basally rounded, angulate, not very distinct, the middle ones with a sharp, strong angle at discal point, another inwardly at median vein, then outwardly at vein 2, and then wavy to inner margin ; outer space with lines subparallel with margin ; the veins black pointed, with two whitish lines, the inner smooth, broadish, the outer finer, subdentate ; discal spots distinct, black ; hind wings with darker scales outwardly and along inner margin, the lines showing on inner space ; discal spots faint ; beneath fuscous to light gray, the lines showing more broadly, especially on anterior half of fore wings.

Yellowstone Park, Wy., July 8-15. National Museum, type No. 4702.

Tephroclystis tenebrescens, n. sp.

Expands 28 mm. Much like preceding species, palpi longer and heavier, and the insect considerably larger ; colour more even fuscous gray, with a slightly brownish tint, with lines, except submarginal white line, less distinct, and only indicated by dark shadings on veins ; submarginal line quite distinct, whitish, evenly scalloped between the veins ; hind wings concolorous with fore wings, the lines indicated only by

shadings ; all discal spots present, black ; beneath fuscous gray, even, an extra discal cross line, rather broad, showing on hind wings ; discal spots present, black.

Texas.

Philereme nigrescens, n. sp.

Size and general form of *P. californiata*, Pack., but with fore wings of a clear even black gray, two cross lines of extra discal whitish venular dots, and a broken submarginal scalloped white line ; hind wings blackish gray outwardly, becoming lighter basally ; beneath even dark blue-gray, a broad, slightly lighter line extra discally on hind wings.

Oregon.

Hydriomena amorata, n. sp.

Size and lines very much as in *H. custodiata*, Guen. The fore wings, however, are more pointed, the hind wings somewhat wavy edged, the middle band of the fore wings with a reddish shading, becoming in some specimens bright reddish brown ; beneath very light, the cross band hardly showing except at costa, the apex shaded with reddish brown, the hind wing black, shaded outwardly with indistinct lines.

S. California.

Canocalpe canonymphata, n. sp.

Expands 25-28 mm. Front and antennæ fuscous brown, the thorax and abdomen lighter ; palpi short, rather stout, fuscous brown, blackish on end ; fore wings fuscous brown on anterior half, fuscous ochre on posterior half and basally, the colour of the costa broken by three spots of the posterior colour, the outer continued in a broad cross line with the posterior colour, enclosing a subquadrate darker space, the line or band apparently returning around the spot to costa. Apex dark, in triangular shape ; hind wings fuscous ochre, a shade darker basally on first third, showing the darker under side ; beneath fore wings marked as above, but darker, the broad outer line rectangularly bent at vein 4, the posterior angle being fuscous ochre, the costa being marked with reddish brown ; hind wings very much darker than above, with broad light coloured cross lines at middle, nearly white, with rectangular sinus outward below discal spot, which is large and whitish ; outer half mixed with reddish ; marginal space rather lighter.

Pasadena and Yosemite Valley, Cal. Very closely resembling in general appearance some forms of *Canonympha ochracea*, Edw.

Synalys pergracilis, n. sp.

Expands 29 mm. Fore wings rusty white, basal line black, sinuous, distinct, beginning about one-third length of wing out, running very obliquely to near base on inner margin; middle field dull white; discal spot pure white, oval; outer field brown, less so towards apex; outer line black, sharp, unevenly sinuous, very oblique; this is followed by a light, even, rather broad, and another submarginal light line, evenly and regularly scalloped; a row of marginal black points; hind wings corresponding with fore wings in lines and colour, the basal line very close to base, the outer black line beyond discal point; on both fore and hind wings the outer black line is edged with reddish outwardly; beneath light ochreous, the fore wings stained somewhat with fuscous.

South Florida.

Eois Crossii, n. sp.

Expands 16 mm. Head and thorax in front, yellow; thorax behind, and abdomen, reddish violet, the abdomen interlined with yellow; fore wings reddish violet, base and costa yellow, the basal part mixed with violet, the wings crossed with three faint irregular tremulous and angulate lines; hind wings reddish violet, with lines as in fore wings; beneath, reddish pink.

Florida; from Mr. Edward Winslow Cross, in whose honour I name this insect.

Eois purpurascens, n. sp.

Expands 15 mm. Fore and hind wings of a bright rust colour, the outer margins with a broad band, purple in colour, somewhat broader at apex; the wings are crossed by about three faint indeterminate cross lines of a deeper red or red-purple colour; the fore wings have the basal half of costa yellowish, the base being purple; thorax yellow; abdomen purple.

Cocoanut Grove, Fla. National Museum, type number 4699. The head and part of the abdomen of the type are gone, but the wings are fresh and clear, and the insect is a very distinct one.

Nemoria Dyarii, n. sp.

Expands about 16 mm. Front and collar orange red; thorax green, yellowish behind; abdomen yellowish, washed with violet red above; wings deep yellowish green, on anterior and outer margins edged with reddish violet, the costa and fringes being of this colour; the fore wings have indications of cross lines basal and outer, these faint, broken and

irregular; corresponding lines also indicated on hind wings; beneath, much lighter yellowish green, the edges of the wings reddish, the base of fore wings also washed with the same colour. Either from L. I., N. Y., or from Dist. Colum.; collection of Dr. H. G. Dyar, to whom I dedicate it. National Museum, type No. 4700.

Cymatophora evagaria, n. sp.

Expands 26-29 mm. Head, thorax, and abdomen light ochre, the abdomen more yellowish; fore wings light ochre washed with fuscous, this being heavier on the outer third; costa very much rounded, especially at apex, outer edge falcate; faint indications of cross lines, three in number, showing especially in fuscous at costa; hind wings light ochre, slightly fuscous washed; beneath as above, the markings more decided, and lines faintly showing on hind wings.

Wis., Minn., Ont. 1

Selidosema delicatum, n. sp.

Expands 38-40 mm. Palpi smoky; front and thorax light ochre or dull white, abdomen dull white with black scales intermingled; fore wings light ochre, with scattered black scales, these thickest basally, and outwardly forming two broad, uneven bands, the outer one with three sinuses outward; an indeterminate submarginal band parallel with margin; hind wings like fore wings, but lacking the basal band; the outer band on all wings has a violet tinge; beneath dull white, the markings above reproduced, but less distinctly.

In a female before me, the markings on the wings are somewhat more distinct and pronounced than in the ♂; the submarginal line is blackish, dentate, quite distinct; it is also considerably darker on the under side.

Wilson's Peak, Cal., Sept. 26; from Mr. Kemp.

Therina lugubrosa, n. sp.

With the lines and size of *T. fervidaria*, var. *somniaria*, Hulst., but of an even, dark, soft, smoky, fuscous colour, the middle field somewhat lighter, the lines scarcely darker than the ground colour, the inner inwardly and the outer outwardly edged with light ochre colour; beneath nearly the same colour, but more indistinct.

Rossland, Brit. Colum. I have a number of specimens which are quite uniform. It is quite likely, however, it may be ultimately found to be a variety of *T. fervidaria*, Hubn.

Therina leta, n. sp.

Expands 27 mm. Smaller than any other *Therina*, the colour very nearly the shade of *T. fiscellaria*, Walk.; inner line straight, the outer angled below costa; hind wings with line straight; fore wings even on outer margin; beneath lighter, unicolorous.

N. Mex.

Stenaspilates albidula, n. sp.

Expands 38-40 mm. Very much in lines like *S. Meskearia*, Pack., but ground colour nearly white, and other markings very much lighter, and the insect is considerably larger; the margins of the wings differ in being almost entirely even in outline.

Colo., N. Mexico. National Museum, type No. 4698.

Caberodes subochrearia, n. sp.

Expands 42 mm. Much as *C. confusaria*, Hubn., in ground colour, but with reddish brown cross lines, the basal evenly rounded, the outer angled at costa, then straight to inner margin, nearly joining the basal line there; a single line on hind wings, this being a continuation of the basal, not the outer line; beneath more reddish brown, the outer line present on fore wings, this being doubled at costa; the line of hind wings wanting; discal spots present above and below on all wings.

New Jersey; from Mr. Kemp. I have the female only, so the generic determination may not be correct.

NOTE ON GORTYNA EREPTA.

BY A. R. GROTE, A. M., HILDESHEIM, GERMANY.

This species was described from material collected by Prof. Snow in Douglas Co., Kansas, and the type is in Coll. British Museum. It is now suspected that *Gortyna erepta* may be the same species with *Hydraecia lunata*, and it is to be regretted that an opportunity of examining the type in British Museum Coll. has been passed over. The appearance of the reniform is characteristic in this genus. In *erepta* it is described as "small, a white half-moon in a blackish shade." In *lunata*, "narrow, white oblique lunule, margined by black scales." The reniform spot thus seems to be identically described in both cases. In *erepta* the lines are described as fuscous, simple. In *lunata* as single and whitish. I never saw a noctuid in which the lines were white or paler than the wing, but there is a following pale shade which sometimes persists when the dark line itself becomes obliterate. It seems as though this discrepancy

might be explained away. In the Revised Check List of 1890 the position given to *erepta* is about the same with that accorded elsewhere to *lunata*. In the Washington Catalogue it is doubted whether all the species referred to *Gortyna* or *Hydracia* really belong there; but this doubt is greatly dispelled by the recent revision of *Hydracia*, in important part, from Mr. Bird's material and correct determinations. The species are all referred to *Hydracia*, but the doubt is retained alone for the unidentified species *erepta*. But if now *erepta* were the same species with *lunata*, the doubt must ultimately disappear, while in being able to refer *erepta* as a synonym to *lunata*, a difficulty for the revisionist could be finally removed.

ANTHOCHARIS FLORA.

On page 283 of Holland's Butterfly Book, as to *Anthocharis Flora*, are written the words, "The plates give figures of the types." This is an error. No Eastern man ever saw the types. They are now, and always have been, in my cabinet, and never were out of my possession a moment, and, moreover, have never been copied or figured. At the time I published *Flora*, I sent a pair to Dr. Scudder, and another pair to Mr. W. H. Edwards, typical perhaps they might be called, and these latter are doubtless the ones copied by the Rev. Dr. Holland; but as *Flora* is quite constant as compared with some other members of the genus, the error may be of technical rather than serious importance.

W. G. WRIGHT, San Bernardino, Cal.

We beg to offer our hearty congratulations to MISS ELEANOR A. ORMEROD upon the distinguished honour that has been conferred upon her. In recognition of her eminent services in Economic Entomology, the University of Edinburgh has offered her the degree of LL. D. This distinction is the more remarkable inasmuch as it is the first time in its history that this University has bestowed a degree upon a woman. Certainly they could not have broken their ancient traditions in favour of a more deserving person. No one in Great Britain has done more useful and important work for the benefit of the whole community, and has laboured more unselfishly for the good of others, than our greatly esteemed friend Miss Ormerod.

ERRATUM.--Page 87 (March, 1900), 12th line from bottom, for *congrua* read *cunea*.

THE CICINDELIDÆ OF KANSAS.

BY WARREN KNAUS, McPHERSON, KANSAS.

One of the most popular families among the *Coleoptera* to the student and collector is that of the *Cicindelide*. Generally bright coloured and handsomely marked, quick to take flight and rapid runners, it requires some skill and considerable patience to become a successful hunter of the "tiger" beetle. Their capture is generally attended with considerable personal discomfort, as their favourite haunt is the muddy bank of a stream, the hot sand bar or dune, or the burning flat of a salt marsh, from which the noon-tide breezes on a July or August day seem to remind one of the temperature of the home of the evil-doer in the here-after. It is in the hottest part of the day, from 10 a. m. to 3 p. m., that most species of this family appear in the open.

The first collector of Kansas tiger beetles was undoubtedly that notable entomologist, Thomas Say, who crossed the plains of Kansas in 1822 or 1823. At the base of the Rocky Mountains he found a single specimen of the noblest "tiger" of them all, which he afterwards described as *Amblychila cylindriciformis*. For the past twenty-five years, or from 1873 or 1874, the homes of the Kansas tiger beetle have been despoiled by such noted collectors as Cooper, Williston, Snow, Brous, Popenoe, Dyche, Ashton, and others of lesser fame, not to speak of the eastern collectors who have ranged over the State along the lines of the principal railways.

In his paper on the "Habits of the American Cicindelidæ," Mr. H. F. Wickham, of Iowa City, Ia., refers to the Kansas collectors as follows: "Perhaps the tiger beetles of Kansas and the adjacent States have received more biographical attention than those of any other portion of the continent, and we find articles treating of their lives from the pens of Profs. Snow and Popenoe, Dr. Williston, Messrs. Cooper, Brous, Knaus, and Jones." My own collections in this family began in 1880, and each year has added to the knowledge of specific habits and haunts.

That Kansas, with her wooded streams, undulating plains, wide stretches of sand and bare saline deposits, is the favourite resort of the Cicindelidæ, is shown by the number of species and their varieties in the cabinets of Kansas collectors. In my own collection are thirty species and varieties, all from well-authenticated Kansas localities.

First on the list comes *Amblychila cylindriciformis*, Say, from the clay bluffs south-west of and near Wallace. This large and very desirable

species was first taken in this locality in the summer of 1876, by Dr. S. W. Williston and H. A. Brous, then members of a Yale College Geological Expedition. The following season several hundred specimens were taken by Prof. Snow and his party of the State University, and distributed to the entomological cabinets of America and Europe. This species has not since been taken very abundantly. I have visited this locality about July 1st for two or three seasons, and found about a dozen specimens. The best results in collecting can be had in the early part of a warm, still evening. By the light of a lantern they can be found walking near the base of or along the sides of clay banks. They are seldom seen before sunset in the evening or after sunrise in the morning. But few specimens of this species have been taken outside of Wallace and Gove Counties. Prof. F. W. Cragin, then of Washburn College, Topeka, Kansas, reported finding one dead specimen in the upper valley of the Medicine Lodge Creek, near Sun City, Barber County. From my observations in this locality, it is doubtful if additional specimens will ever be found there.

Tetracha virginica, Linn., is found in Eastern, South-eastern, Central and South-western Kansas. I have taken it during July in the southern part of Woodson County, and in the same month in Republic County; and in Rice, and Barber Counties in August, and in Saline County in July. It is found under stones in dried-up watercourses, in mud cracks, in sloughs and draws during the day, and in the early evening it can be found running over the ground, being crepuscular in its habits.

Cicindela Belfragei, Sallé, is found in the valley of the Smoky Hill River, near Salina, and in the Kansas Valley, near Manhattan. I first took it in a sod cornfield on first river bottom six miles south-east of Salina, about July 15th. I found the best time to collect was mid-afternoon. On coming near the insects they would break from cover and run rapidly, but could be easily taken by the hand. Later in the evening they could be found running along sandy roads near the river bank. The species is not at all common, a dozen specimens constituting a successful afternoon's work or catch. Prof. E. A. Popenoe has taken this species on bottom land near Manhattan, and it has also been taken near Lawrence.

C. cursitans, Lec., has been taken by Prof. Popenoe in the Republican Valley in Clay County. It is ant-like in size and is a difficult species to collect.

C. obsoleta, Say, occurs in South-west Kansas. I have a single specimen, taken August 12th, about twenty miles south-east of Coolidge.

Prof. Popenoe has taken it near Meade, Kansas, and Geo. F. Cooper records it near Sargent (Coolidge).

The green variety, *C. prasina*, Lec., is associated with *obsoleta*, both occurring sparingly.

C. scutellaris, Say, occurs on sandy ground and sand dunes from Manhattan to the western part of the State. I have taken it sparingly at Manhattan in June, but have found it most abundant in the range of sand hills near Medora, Reno County. It can be found from May the 1st to the middle of June. It is a handsome little species, flies quickly and affords good sport to effect its capture. It prefers scant vegetation to the bare sand, and can be found from 10 a. m. to 4 p. m.

The variety *Lecontei*, Hald., I have found associated with *scutellaris* on sand patches near Manhattan and in sand "blow-outs" on the Republican River, south of Superior, Nebraska. I also took two or three specimens among the sand hills near Medora. They are rather shy and are not common.

C. pulchra, Say, is reported by Prof. Williston as being exceedingly abundant in South-west Kansas, and also along the line of the Union Pacific Railway from Hayes to Wallace. I found one specimen near Coolidge on July 27th. It is the only one I saw in a day's collecting. Prof. Popenoe has taken it near Wallace in July, but in several seasons' collecting there I have never seen one alive; have, however, seen the remains of two or three dead specimens under cattle chips. I am inclined to think if it is abundant it is in the months of May or June, August or September.

C. sexguttata, Fab., is reported by Prof. Popenoe as being common in Eastern Kansas, frequenting sunny roads and paths in woodlands. I have never taken it in Eastern Kansas, and his reference is principally to the variety *violacea*, Fab., which is without spots and is generally green, although some specimens are a deep blue. It can hardly be said to be common, and is rather difficult to capture owing to its occurrence along wood roads and paths. I have taken it sparingly at Manhattan, and a friend at Onaga, north-east of Manhattan, takes from ten to fifty each season, from May to July. I have also taken a few specimens near Benedict in South-eastern Kansas in June. The present season my friend, J. R. Meade, of Wichita, sent me a beautiful specimen which he took July 7th in a willow thicket just south of the city. This is probably the south-western limit of this species in Kansas. A. W. Jones, of

Salina, has taken one specimen of *sexguttata* a few miles south-east of Salina, near the Smoky Hill River.

C. purpurea, Oliv., is found over Eastern and Central Kansas, along clay and red sandy roads. I have found it in South-east Kansas at Manhattan, Kansas, and near Salina; at the latter place in August and September along roadside cuts through a red sandstone soil. It is usually associated with its variety, *splendida*, and an occasional *Audubonii* and *graminea*. The black variety, *Audubonii*, Lec., is found but sparingly with the true species. In all my years of collecting I have found but a single specimen. That was taken in the latter part of August, about five miles north of Salina. Prof. Popenoe has a few specimens taken near Manhattan, and A. W. Jones has two or three taken south-west of Salina a few miles. The green variety, *C. graminea*, Schaupp, is apparently as infrequent in this State as *Audubonii*. I have taken but a single specimen that can be recognized as *graminea*. It is a male and was taken near Salina. A. W. Jones has also taken a few *graminea* in this locality. Persistent yearly collecting along the eastern outcrop of the Dakota sandstone formation in Central Kansas may in the future develop localities where these two varieties may be taken in comparative abundance.

The variety *splendida*, Hentz, I have found in Wilson, Saline and Reno Counties, and Popenoe has collected it in Riley and Shawnee Counties. I have taken it near Salina as early as February and as late as October. Localities are the same as for *purpurea*, and usually associated with the typical species, but more abundant. Have found a single specimen only in Reno County, on a dry sand dune, associated with *scutellaris*.

C. formosa, Say, occurs from Central Kansas westward in Arkansas Valley and northward in Republican River Valley. I have taken it in May west of Brockville and in Saline County, south of Superior, Nebraska, in the latter part of May and in the first of June, and in Reno County in May and the first of June. Its favourite breeding ground is in the scant grass and weeds near the edges of sand dunes and "blow-outs." It has to be approached with care and handled quickly, as it takes alarm easily and is a strong flier. In Saline County it was associated with *scutellaris*; near Superior with *scutellaris* and *Lecontei*, and near Medora with *scutellaris* and *venusta*. In this

locality the species occur in the proportion usually of three *scutellaris* to two *formosa* and one *venusta*.

C. venusta, Lec., usually considered a variety of *formosa*, is claimed to be a valid species by Mr. H. C. Fall, of Pasadena, California. Mr. Fall bases his conclusion on habits and secondary sexual characters, and is undoubtedly correct in his claim.

I have taken it for a number of years in the sand hills near Medora, associated with *scutellaris* and *formosa*, as noted above. It is found, however, much nearer the pools at the bottom of sand "blow-outs" than either of these species. I also took a single specimen of *venusta* on the clay bluffs south of the Smoky Hill River at Wallace, Kansas, in July.

C. fulgida, Say, is reported from Western Kansas, in the valley of the Smoky Hill River, but I have only taken it along the edges of the salt marsh three miles west of Kackley, in Republic County. The present season I found it in numbers on July 7th. The height of its season is probably from June 20th to July 10th. It is taken with *togata* and *circumpicta*, and flies more quickly, but does not run so rapidly as these species. The red markings of some of the specimens had become almost black.

C. vulgaris, Say, occurs over Eastern and Central Kansas. I find it in abundance in Reno County, associated sometimes with *formosa* and *scutellaris*, and at other times with *repanda* and *hirticollis*; usually found on higher and more sandy localities than *repanda*.

C. repanda, Dej., is found in all parts of the State, along mud banks and along the bottoms of dry pools.

The variety *rz-guttata*, Dej., is found over Eastern Kansas, but not so abundantly as *repanda* or *vulgaris*. I have taken it at Manhattan, near Osage City, on mud at bottom of coal strippings in June, and the present season I found a single specimen September 17th, under a stone on a shallow on the Verdigris River, near Benedict, Wilson County. A. W. Jones has also taken it near Salina.

C. hirticollis, Say, is reported at Lawrence and Topeka, by Prof. Popenoe as common on sand bars at Topeka. I have taken it August 16th, on sand bar in Arkansas River at Dodge City. The specimens were large and elytral markings wide. The present season I found it on May 27th, on wet bed of pools at bottom of sand "blow-outs," three miles south-west of Medora. It was found only in one locality, associated with *vulgaris* and *repanda*.

C. punctulata, Fab., is common all over the State, May, June, and July, and still later in the season. I find it each season at McPherson, at the electric lights; some of the specimens approaching the variety *micans* in colourings. The green and blue variety, *micans*, Fab., occurs in the valleys of the Smoky Hill and Arkansas Rivers, in West Kansas. I have collected it sparingly near Wallace and Coolidge. At Wallace it is found more frequently on the mud of dry pools and moist mud, associated with *punctulata*.

C. cuprascens, Lec., is found in Lawrence, Topeka, Hutchinson and Rooks Counties, on sand bars and on banks of streams, according to Prof. Popenoe. I have taken but a single specimen, on a salt marsh near Fredonia, Kansas, in June. Also taken occasionally at electric light at McPherson in June and July.

C. macra, Lec., I have taken at Great Spirit Springs, in Mitchell County, in July, and also on sand bar of Solomon River, near Kirwin, Kansas. It occurs at electric lights in Lawrence and Topeka, and I find a few each year in the electric lights in McPherson.

C. sperata, Lec. A variety of this species occurs on the wet mud near the water's edge of streams flowing through salt marshes. I took my first specimens in July, 1885, at the Great Spirit Springs. The past four seasons I have taken this variety in great abundance on the salt marsh near Kackley. During the hottest part of the day they fairly swarm over the hot, steaming mud, a single throw from the net often taking a half-dozen specimens. The variety taken in Kansas is different from that taken in Texas and New Mexico. The Kansas salt marshes probably mark its northern limit.

C. lepida, Dej., occurs sparingly throughout Kansas, from east to west, along the Arkansas River. Prof. Snow takes it at Lawrence at the arc lights, and it is taken in Topeka in the same way. It also occurs at Manhattan, and I found a single specimen August 16th on a sand bar near Dodge City.

C. circumpecta, Laf., I first met with in Kansas on a salt marsh near Fredonia in June. This saline deposit is in South-east Kansas, and marks the south-east limits of this species in the United States. I have since taken it in numbers on saline deposits in Cloud, Mitchell, Republic, Stafford and Kiowa Counties, from June to August. It is more common around the edges of saline deposits, where there is some vegetation for shelter. During the hottest parts of the day, and also on

cool days, this species will congregate under cow chips and other places of shelter. The colours vary, more commonly bronze, frequently green, and less frequently blue; the elytral markings are also variable.

C. togata, Laf., occurs with the above species in all localities except on the salt marshes in Kansas, near Fredonia. It continues a little later in the season than *circumpicta* and is more difficult to capture, and it is also more commonly found on the bare open saline soil. Both the above species have long legs, are swift runners and quick fliers; the flight of *circumpicta* being more sustained than that of *togata*. The *togatas* taken near Kackley, in Republic County, have recently been described by Dr. W. Horn, of Berlin, Germany, under the varietal name of *apicalis*.

The following is a translation of Dr. Walther Horn's description:

"*Cicindela togata*, Laf., var. *apicalis*, differs from the type by its greater size, more robust form, eyes less prominent, head and thorax very often much thicker; each apex of the elytra in the female much less rounded (the sutural spine a little retracted), in the male more acuminate; sculpture denser, the punctures sometimes here and there confluent; the markings brownish yellow and narrower. Length, $11\frac{1}{4}$ - $12\frac{1}{2}$ mm."

"This form (var. *apicalis*) of *C. togata* is specially remarkable from the striking shape of the apex of the wing-cases. The row of fossulæ along the suture is much less prominent. The sculpturing of the wing-cases is distinctly more dense, the punctures are sometimes to a considerable degree confluent (they remain always more distant from each other at the very base and at the apex). The differences in the width of the prothorax are specially great in the ♂ specimen."

"Though the specimens before me show no variation at all considerable in the shape of the apex of the wing-cases, I have, nevertheless, decided to describe them only as a race of *C. togata*, as this character is very little constant in the whole genus *Cicindela*. Twenty years ago my illustrious colleague, Dr. George Horn, tried to separate as species the three forms, *cuprascens*, *macra*, *puritana*, using much slighter variations of the same character. I cannot, however, agree in this view. The differences stated are most variable, as well as the sculpturing of the wing-cases, the pattern, etc. The lateral emargination before the apex of the ♀ of *C. puritana* is sometimes less sharp than in *C. macra*, and the latter has often its apex (♀) quite as much truncated. Besides, *C. cuprascens* is far less constant. Especially in the ♂, transitions are frequent. I can therefore hold *C. puritana*, Horn,

and *macra*, Lec., as being only varieties (races) of *C. cuprascens*."—(Entomologische Nachrichten, Berlin, Jahrgang xxiii. (1897), No. 2, Seite 17-20.)

Kansas has two remarkable collecting localities for Cicindelidæ: the salt flat near Kackley, and the sand hills south-west of Medora, in Reno County. At the former locality, from July 1st to the 15th, can be found *Tetracha virginica*, *Cicindela fulgida*, *punctulata*, *sperata* var., *circumpicta* and *togata*. At the latter locality, from May 1st to June 1st, occur *Cicindela scutellaris*, *Lecontei*, *splendida*, *formosa*, *venusta*, *vulgaris*, *repanda*, *hirticollis* and *punctulata*.

To the thirty species and varieties herein enumerated as occurring in Kansas, other species will from time to time be added, as collectors more thoroughly explore Western Kansas.

CYANIRIS PSEUDARGIOLUS, BOISDUVAL AND LECONTE.

BY H. J. ELWES, F. R. S., COLESBORNE, CHELTENHAM, ENGLAND.

Mr. Butler's proposal to alter the well-known and universally accepted name of this species to *C. ladon* is one against which I must enter my strongest protest. Whatever species Cramer's figure may have been intended to represent, it certainly, in my copy, is not in the least like *pseudargiolus*, and even if it were like it, it is impossible now to say what *C. ladon* was. I will go further and say that even if it were possible now to prove that *C. ladon* was the same as *pseudargiolus*, the attempt to enforce the strict rule of priority in such a case as this would be contrary to good sense, and detrimental to the uniformity of nomenclature to which we hope some day to attain. Entomologists as well as botanists are now beginning to realize the impossibility of adapting the old rules of nomenclature to cases like this; and though I have little fear that any one is likely to follow Mr. Butler, yet it is just as well to let American Entomologists know that his dictum carries no authority in Europe. *Pseudargiolus* is certainly a much more appropriate name than *ladon*, because it indicates the near affinity of the American species to *C. argiolus*, Linn.

We deeply regret to learn that the Rev. Dr. Fyles, South Quebec, President of the Entomological Society of Ontario, met with a very painful accident a few weeks ago. He slipped upon a snow-covered board, and falling dislocated his ankle and fractured the socket. He has been confined to his bed ever since. His numerous friends unite in sympathy for him and in the earnest hope that he may speedily recover his health and strength.

LIFE-HISTORY OF MARGARODES FLEGIA, CR.

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

This West Indian Pyralid occurred to me on the cemetery grounds in Key West, Florida. The larva was destructive to a large bush (*Thevetia nerifolia*), commonly planted there for ornament. The larva webs up a group of the narrow leaves into a tube, and eats the parenchyma from within, thus destroying much foliage and rendering the plants unsightly. The proper name of the species appears to be :

PAROTIS FLEGIA, Cram.

1775—*Phalœna-Pyralis flegia*, Cramer, Pap. exot. ii., 66 ; pl. 140, f. D.

1832—*Phalœna-Pyralis flegia*, Poey, Cent. Ins., Cuba.

1827—*Margaronia virginialis*, Hübn., Verz. bek. Schmett., 358.

1854—*Margarodes flegialis*, Guén., Delt & Pyral., 310.

1854—*Margarodes phantasmalis*, Guén., Delt & Pyral., 310.

1854—*Paradosis villosalis*, Zeller, Lep. Cafr., 58.

1859—*Margaronia flegialis*, Walker, Cat. Brit. Mus., xviii., 520.

1898—*Glyphodes flegia*, Hampson, Proc. Zool. Soc., London, 732.

Eggs.—Not observed, but probably laid in a mass, as the young larvæ are gregarious.

Stage I.—In a slight web on the back of a leaf, many together. Head about .3 mm., very pale brownish. Body translucent, green, the food showing green, the tubercles dusky, shining ; i. to v. present, no subprimaries ; on the thorax ia + ib, iia + iib, iv. single, anterior ; cervical shield with six setæ, prespiracular tubercle with two. There is a faint trace of an orange-coloured subdorsal line.

Stage II.—Head about .6 mm., pale brown. Body transparent green, with large black tubercles, the subprimary ones now present. Body slender, shining, the tracheal line visible and a trace of the broad orange subdorsal band, seen only with a lens near the extremities at first, later distinct but broken.

Stage III.—Head about .9 mm. Like the mature larva, pale blue, though looking of a dirty green from the food showing through the transparent skin.

Stage IV.—Head 1.4 mm. The same.

Stage V.—(Interpolated.) Head pale brownish, shining ; primary setæ present ; width 1.7 mm. Body subtranslucent pale blue, shining, a broad, deep orange stripe between tubercles ii. and iii., absent on joints 2

and 14, and broken into spots on joints 3 and 4. Tubercles very large, shining black; cervical shield divided into three warts on each side, the anterior bearing one seta, the posterior two, and the lower three; prespiracular tubercle with two setæ; subventral tubercle with one seta; on the other thoracic segments ia + ib, iia + iib, iii. separate, posterior, iv. + v., vi. with one seta; on the abdomen i. and ii. nearly in line antero-posteriorly, iv. + v. below the spiracle, iii. and vi. single haired, vii. a small wart with three hairs on the anterior side of the leg base. Thoracic feet black; abdominal ones slender, blue.

Stage VI.—Head pale brownish, orange tinted; width 2.15 mm. Otherwise no change.

Cocoon and pupa in a similar tube of leaves to that which the larva inhabits. Probably breeds continually. Imagoes emerged Feb. 6th.

OBITUARY.

On the 24th of February died Dr. O. Hofmann, a physician in the Bavarian State service, a well-known Lepidopterist and esteemed writer, in Regensburg, Bavaria. The deceased belonged to a family of entomologists. His brother, the late Dr. Ernest Hofmann, was the author of two illustrated volumes on the European Macrolepidoptera and their larvæ, which have already passed through three editions. Dr. O. Hofmann published a number of papers on the Tineides, and these results of his biological studies are held in great esteem. As a young man he came into contact with Herrich-Schaeffer, of whom he remained an admirer and could relate many anecdotes. Dr. Hofmann paid much attention to American publications. The observations of Dr. Dyar on the larval tubercles were familiar to him, and he had tried to test them on the European Pterophoridae, a group upon which he had published and with the transformations of which he was remarkably familiar. His death leaves a gap which is felt by earnest students in Europe. His last paper, on the Micropterygides, was read by him last autumn at the Munich meeting of the German Association, and is, I believe, not yet published. One of the kindest in the short list of my constant correspondents has passed away, whom I shall always miss, but whose future memory in the science may be always assured through his few but excellent contributions to our knowledge.

A. RADCLIFFE GROTE, Hildesheim, Germany.

NOTES ON A FEW BUTTERFLIES FROM THE YUKON.

Last April I received from Mr. Lachlan Gibb a small cardboard box containing a few specimens of Lepidoptera in a very fragmentary condition, which had been sent to him from Dawson, in the Yukon district.

The most interesting species in the collection is *Papilio Machaon*, var. *Aliaska*, Scud., of which there were three specimens.

The other species are :

Papilio Turnus, L., four specimens hardly differing from those found in this latitude, but perhaps a trifle smaller.

Pieris Napi, var. *Venosa*, Scud., three specimens.

Anthocharis Ausonides, Bdv., one specimen.

Argynnis Freija, Thunb., one specimen.

Argynnis Frigga, var. *Saga*, Kaden, one specimen.

The only moth in the collection was *Phragmatobia Rubricosa*, Harr., one specimen.

These are the only species which were determinable. The *Anthocharis* agreed with specimens received by me under the name of *Creusa*, but, to be sure, I sent it to Mr. Wm. Beutenmuller, who wrote to me that it was *Ausonides*.

HENRY H. LYMAN, Montreal.

HYDRÆCIA STRAMENTOSA, GUEN.

In response to Mr. Moffat's interesting paper, I would state, since my name is mentioned, that I recollect determining *H. stramentosa*, though rarely, and, I think, for Canadian collectors. The specimen in my collection, now in the British Museum, came, I believe, from Canada. I never remember receiving the species from the West, or regarding it as a specifically Western insect. All the specimens I ever saw of it (they were very few) were from the East. The name is, probably, in Canadian collections on my authority.

A. RADCLIFFE GROTE.

BOOK NOTICES.

THE ENTOMOLOGISTS' DIRECTORY.—This very useful publication has been prepared by Dr. Henry Skinner, Secretary of the American Entomological Society, Philadelphia. It contains an alphabetical list of over 1,200 names of persons interested in this department of natural science in the United States and Canada, and gives their addresses, departments of study, whether they have a collection or not, and are willing to exchange specimens; the names are also arranged geographically under the post-

office addresses in each State. This is followed by a list of Societies, Agricultural Colleges and Experiment Stations; an account of the Entomological organizations at Philadelphia, and a list of Entomological publications. Every one who wishes to exchange his duplicates for specimens from distant localities should obtain a copy of this Directory. It can be obtained from E. T. Cresson, Box 248, Philadelphia, Pa. (Price 50 cents.)

TYPES OF LEPIDOPTERA.—Dr. Herman Strecker has now published the third part of the supplement to his "Lepidoptera, Rhopaloceres and Heteroceres, indigenous and exotic." It contains a list of all the types of species that are contained in his extensive collection, with bibliographical and geographical references. No less than 425 species and varieties are included in the list, an immense number for a private collection, and descriptions are given of a number of new species. It is a matter of great importance to students to know where the types of described species may be seen; Dr. Strecker has therefore done a good work in publishing this list. In an interesting preface he gives some account of the principal sources from which he has built up his remarkable collection during the last fifty years and the difficulties under which he laboured in early days. These supplements may be obtained from the author, P. O. Box 311, Reading, Penna. (Price 25 cents each.)

MONTREAL BRANCH OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO.

The regular monthly meeting of the Montreal Branch of the Entomological Society of Ontario was held on Tuesday evening, at the residence of the President, Mr. A. F. Winn, 58 Bruce Avenue, Westmount. The chair was occupied by the President, and there was a good attendance of members. The Very Rev. Dean Carmichael and Mr. C. P. Newman were elected members. Mr. Henry H. Lyman, ex-President, in a brief speech, presented Mr. Winn, on behalf of the members, with a handsome mantel clock, with a suitably-engraved plate, as a wedding present, it being the first time in the history of the Branch that a President had been married during his occupancy of the chair.

Mr. Winn, who was taken by surprise, replied on behalf of himself and Mrs. Winn, thanking the members heartily for the present, which he valued very highly. Mr. Lyman then read a paper on Fall Web-worm Moths and allied species.

ERRATUM.—On page 100, sixth line from top, the word "six" has accidentally been omitted before "pairs under metatarsi I."