NOTES ON THE WINTER LEPIDOPTERA OF LAKE WORTH, FLORIDA.

By Harrison G. Dyar.

The strip of land between Lake Worth and the Atlantic Ocean, in Florida, was visited by me in January and February, 1890, and again in 1900. During this interval of ten years a railroad has been built and two large hotels erected in what, at the time of my first visit, was nearly primitive vegetation. The strip of land is about half a mile wide in the central part in the vicinity of Palm Beach, and is divided longitudinally by an area of swamp land into a "beach hammock" and "lake hammock." The former extends the length of the lake, but the latter only for the upper portion, disappearing below and ending in a chain of small islands. This limited area has three different regions: (1) the hammock land or forest, (2) the swamp, and (3) the beach region. The forest covers the crests of the two ridges parallel to the lake. The large trees are the mastic (*Sideroxylon pallidum*), gumbo-limbo (*Bursera gummifera*), palmetto (*Sabal palmetto*), rubbber trees (*Ficus aurea*, *pedunculata*, etc.), bay (*Nectandra willdenoviana*) and poison oak (*Rhus metopium*), with an undergrowth of *Forestiera porulosa*, *Randia aculeata*, *Ardisia pickeringia*, *Condalia ferrea*, *Coccoloba floridana*, *Amyris floridana*, etc., united by vines of *Pisonia aculeata*, *Chiococca racemosa*, Ipomæa spp. etc., all forming a dense and tangled mass of vegetation with no very large or tall trees.

The swamp is mainly filled with saw-grass (*Spartina juncea*) and a few other marsh plants. In the dryer parts are bushes of swamp cedar (*Iva frutescens*), and a few mangroves (*Rhizophora mangle*); but these latter are commoner along the shore of the lake where white mangrove (*Laguncularia racemosa*) and Spanish oak (*Conocarpus erecta*) also occur.

The beach region varies in width in different parts. It extends from the "beach hammock" to the sea. The dominant plant is the saw palmetto (*Serenoa serrulata*) with some bushes of *Myrica cerifera*, *Coccoloba uvifera*, *Persea carolinensis*, and dwarfed specimens of various of the hammock plants. The undergrowth is *Echites umbellata*, *Crotalaria pumila*, and others.

In all these regions the pine and live-oak, so conspicuous a feature of Florida in general, are usually absent. They appear in normal abundance, however, on the west shore of the lake, entirely replacing the subtropical plants.

The larger part of the original "lake hammock" has been destroyed to make room for houses, pastures and lawns, planted to grass (Cenchrus spp.) and concomitant northern weeds, "beautified" by cocoanut trees, oleanders and Hibiscus bushes. The

"beach hammock" is still mostly intact, and in this collecting may still be be done.

In the present remarks the west, or landward side of Lake Worth, will not be considered. There entirely different faunistic conditions prevail.

During the period between 1890 and 1900 the climate of Lake Worth, has perceptibly changed. Formerly cold weather was unknown, but within the last four years frequent cold spells have occurred. Perhaps, on this account, butterfly life was much less abundant as a whole than it was ten years previously.

The plants herein referred to were kindly named for me by Mr. F. Kinzel, a resident botanist. I am also indebted to Mrs. A. T. Slosson, who has spent several winters at Palm Beach, for a list of her captures.

Papilionidæ.

Papilio polyxenes Fab. Several examples in February, 1900. The food fland at Lake Worth is the Discopleura.

Papilio palamedes Dru. One seen in the beach hammock in February, 1900. Possibly a visitor from the west side of the lake.

Papilio cresphontes Cram. Seen late in February, 1900. Said to be common in summer; the larva on orange. The native food plant, however, is *Xanthoxylon pterota*, as I found an egg on that plant.

Nymphalidæ.

Danais plexippus L. A few worn examples were seen in 1900. No larvæ met with. Apparently the species does not feed on any of the Asclepiadaceæ native to the region.

Danais berenice Cr. Abundant in 1890, but rare in 1900. The larvæ were seen in the former year on a delicate vine. (*Vincetoxicum palustre.*)

Heliconia charitonia Linn. Abundant in 1890, and not perceptibly diminished in 1900. The curious white, black-spined larvæ, were occasionally seen on the *Passiflora pallida.*

Agraulis vanillæ Linn. Fairly common, about the same in both years. The dark red larvæ were occasionally seen on the same plant as the preceding.

Colænis julia Fab. A few examples seen on the wing. Mrs. Slosson has also captured it, but it is rare.

Phyciodes phaon Edw. Several specimens in both years, flying in grassy spots. The butterflies were of the so-called "winter form."

Pyrameis atalanta L. The commonest butterfly in 1900; not seen, that I recollect, in 1890. The food plants are *Parietaria*

debilis and *Boehmeria cylindriæ*, the former little plant being preferred. Both these plants occur in the cultivated land or along roads, and are not seen in the hammock. Clearly this butterfly has increased by the advent of cultivation.

Pyrameis huntera Fab. Several of the larvæ on *Gnaphalium purpureum* were sent me by Mr. Kinzel after I had left Palm Beach. I did not see any butterflies and the species is, perhaps, not to be counted in the winter fauna.

Junonia coenia Hübn. Common, often seen by dozens in 1890; only one seen in 1900. I did not find what plant this butterfly feeds on at Lake Worth, and do not know why they should have so nearly disappeared.

Anartia jatrophæ L. A few examples seen in 1900. The species is rather rare. An examination of all the plants of *Jatropha stimulosa* that were seen failed to show any trace of the larva.

Eunia monima Cr. One specimen seen in 1900 sitting on the trunks of trees in the beach hammock. The species is both shy and rare.

Neonympha sosybius Fab. A few specimens were seen flying in a shaded road through the beach hammock.

Libythea bachmanni Kirtl. A specimen was taken in 1890.

Lycænidæ.

Thecla cecrops Fab. One example was taken in 1900, several in 1890.

Thecla melinus Hübn. One example.

Lycæna ammon Luc. Abundant; the larvæ feed on certain leguminous plants.

Larva. Elliptical, flattened, the ends, especially posteriorly, obliquely depressed; dorsum arched, subventral fold distinct; subventral region contracted; incisures well marked, deep, the segments short. Green, minutely densely pubescent, the granules stellate with central brownish setæ and surrounding pale ones, the setæ very finely spiculate. Skin between minutely frosted. Coloration rather various; a white line along apex of subventral fold on joints 3 to 13, edged with diffuse reddish on both sides, consisting of reddish granules; a dorsal dark brownish red line, diffuse, widened on the posterior parts of the segments, widest on the thorax, consisting of brown granules on a sordid grayish ground. A broad prominence below the spiracle on joint 12 on the upper aspect of the subventral fold, with a central circular area containing an eversible, radiate gland. Head small, elongate, brownish, eyes black; withdrawn under joint 2. Another example was green, white granular, the dorsal vessel darker, the sides obliquely shaded in paler; a whitish subventral line on the fold. The cervical shield is an impressed triangular area, pointed before. An impressed bar in the dorsal incisure 11–12.

Egg. Cup-shaped, rounded below, flattened and a little hollowed above, with a central, rather large pit at the micropyle. Pale violaceous, very minutely reticulate. A series of strongly raised white lumps, somewhat crested, largest about the upper rim, smaller below, smallest on the flattened upper surface, connected by a series of raised white lines, six to eight radiating from each lump and passing up the bases of these prominences for a short distance, thus forming areas between the prominences. Diameter .5 mm.

Food plants: *Guilandina bonducella*, *Pithecolobium guadaloupense.*

Pieridæ.

Callidryas eubule Linn. Frequent in 1890, less common in 1900. I did not find the larvæ.

Callidryas agarithe Bd. Somewhat less common in 1900 than in 1899. Several examples were seen, however, flying on the warmer bright days. The larva feeds on the young tender leaves of *Pithecolobium guadaloupense.* (See Ent. News., xi, 618, 1900).

Callidryas statira Cram. Rare in 1890; not seen in 1900, I think. It would be necessary to net all the yellow Callidryas to be sure there were no *statira*, as they greatly resemble *eubule* on the wing.

Tachyris ilaire Godt. Very abundant in 1890; only a few examples in 1900, but these were fresh.

Pieris monuste Linn. Common in 1890, entirely absent in 1900. The food plant, Bursa, was growing commonly on waste land, but no trace of this larva in the latter year.*

Terias lisa Bd.-Lec. Several examples seen in 1900. I do not recall the species in 1890, though it was common then further north.

Hesperiidæ.

Pamphila accius Sm. and Abb. A few examples.

Pamphyla osyka Edw. Less common than the preceding.

Pholisora hayhurstii Edw. Very common in 1890; the larvæ on *Alternanthera flavescens* (see Ins. Life, iii, 389). Comparatively few examples in 1900, and no larvæ found.

Erycides batabano Lef. Larvæ not uncommon on the mangrove in 1890 a few imagines seen. None in 1900, but some signs of the larval houses on the leaves. (Larva described Can Ent. xxii, 211).

Megathymus yuccæ Bd.-Lec. Mrs. Slosson took two in 1900.

---

*In the following May, Mr. Kinzel sent me the larvæ feeding on *Cuppari cynophalophora.*

Sphingidæ.

Dilophonota ello Linn. Not uncommon in 1890 and fully as common in 1900. Larvæ on *Euphorbia heterophylla*. In 1890 I met with the brown form of the mature larva only; in 1900 with the green form only. Moth occasionally at light. (Larva, Ent. Amer., vi, 143).

Dilophonota obscura Fab. Rare; the larva feeds on certain of the twining Asclepiadaceæ and is colored remarkably like its food plants.

Stage IV. Head rounded, flattened and held out flat, vertex under joint 2; clypeus low and with the paraclypeal pieces shield-shaped; green, white granular; an upright whitish line from before the dark ocelli to the subdorsal line of the body; width 2.6 mm. Body long and slender, feet short, uniform; cylindrical, slightly narrower posteriorly, of normal shape for the genus. Horn long, directed obliquely backward. Whitish green with white granules, rounded, produced, tipped with pile, making the surface rough. A moderate white subdorsal line from joint 2 anteriorly to the horn, which it curves up to meet. Horn whitish green, pink at base where it touches the subdorsal line. Anal flap elliptical; anal leg plates long triangular, reaching far beyond the anal flap. Spiracles white with black central rectangle.

Stage V. Head round, elongate, the vertex under joint 2; clypeus half way to vertex, shield-shaped. Gray green, longitudinally striped with fine black dots, a white band from antennæ to vertex of lobe; width 4 mm. Body slender, normal, anal plate elongate and rounded, anal leg shields long triangular, the lower anterior corners rounded, extending well beyond the plate. Horn nearly absent, only a short, thick cone. Greenish gray, finely peppered black and white on a green ground; an obscure, broad flesh-colored whitish subdorsal band from joint 2 to the horn; a narrow, sharp, black dorsal line on joints 2 to 4, and gray-black segmentary dots on 5 to 11. Skin granules obscure. Feet neatly banded black, white gray-green, black, white, except the anal pair. Later this marking becomes obscure, but above it the bases of the feet are folded, the concealed part yellow, edged below by the upper black band and a bluish white space with black spots, above by a narrow black line. Thoracic feet pale, narrowly twice annulate with black. Horn-cone dull yellow, olivaceous black at the base and surrounded by a whitish ring. Spiracles brownish with a white dot above and below. With growth the larva becomes very like wood, a dull mottled brown.

The usual warning mark of the genus in the thoracic dorsal incisure is absent here, but the highly-colored bases of the abdominal feet serve the same purpose. A larva which I disturbed fell to the ground and rapidly closed and unclosed its feet, thus exposing the yellow bands.

Pupa under a net in the sand, brown, striped with black, much as in the other species.

Food plants *Philibertia viminalis* and the delicate vine above recorded as the food plant of *Danais berenice.* (*Vincetoxicum palustre.*)

Dilophonota edwardsii Butl. Rather less common in 1900 than in 1890, but no marked difference. The eggs are always abundant on the leaves of the *Carica papaya*, but a very large proportion are worthless. Only the green form of the larva seen in 1890; both forms in 1900. (Larva, Ent. Amer., VI, 141.)

Cautethia grotei Edw. Not uncommon in 1900; the larvæ on the *Chiococca racemosa.* They are of a decidedly Chærocampid appearance (Larva, Psyche VII, 385, Proc. U. S. N. M., XXIII, 255).

Enyo lugubris Linn. At flowers in 1890; not seen in 1900. I have not found the larva unless it be the species feeding on *Randia aculeata* which I bred from egg to stage III. This was green with red horn, the oblique lines white, only the first and last ones distinct. (Notes B 871.)

Pachylia ficus Linn. A specimen at light in 1890 and another in 1900, the larva not seen; probably it is only to be found in the summer.

Protoparce carolina Linn. Specimens were bred on tomato in 1890.

Amphonyx antœus Dru. Bred from larvæ on custard apple (*Anona laurifolia*) in 1900. (Proc. U. S. Nat. Mus., XXIII, 256.)

To this list Mrs. Slosson adds *Aellopos tantalus*, *Amphion nessus*, *Ampelophaga onotus*, *Protoparce cingulata* and *Dolba hylæus.*

Saturniidæ.

Telea polyphemus Cr. Mr. Kinzel picked up a young larva on the beach. The species belongs to the fauna of the west coast of Lake Worth.

Hyperchiria io, var. *lilith* Streck. This is the form of *io* occurring in South Florida. A male example came to light in 1900. No larvæ were seen at Palm Beach, though I have had them at Miami (from the pine barren region), in appearance exactly like normal *io.*

Syntomidæ.

Cosmosoma auge Linn. Not uncommon in both years. The delicate larvæ found on the *Mikania scandens.* (Larva, Psyche, VII, 414.)

Didasys belæ Grt. A moth was taken in February, 1900, but not by myself. The species is very rare in the winter season, and I was not successful in my efforts to find the larva.

Syntomeida epilais Walk. Rare in 1890; one seen in 1900, but Mr. P. C. Truman secured several examples. Larva on oleander, but the native food plant is *Echites umbellata*, as both Mrs. Slosson and Mr. Truman have taken the larva on this plant. (Larva, Ins. Life, II, 360; Journ. N. Y. Ent. Soc., IV, 72.)

Lymire edwardsii Grt. Not uncommon in 1890; rare in 1900. In one season, about 1895, I was told that these larvæ had so defoliated the "rubber trees" as to alarm the inhabitants; but they have not been common again. (Larva, Ins. Life, II, 361.)

Eucereon confine H.-S. Decidedly rare, the larvæ on *Philibertia viminalis* and *Vincetoxicum palustre*. (Larva, Proc. U. S. N. M., XXIII, 262.)

Eupseudosoma floridum Grt. Also a rare species. The handsome, brush-like larvæ were occasionally found on the species of Eugenia. (Larva, Proc. U. S. N. M., XXIII, 258.)

Arctiidæ.

Utetheisa bella Linn. The moths were not uncommon in 1900, flying over Crotalaria, near the ocean beach. I found the larvæ on this plant in 1890.

Callidota strigosa* Walk. A few larvæ occurred to me on the *Guettarda elliptica* and they proved to belong to this species; no moths were taken. The species is rare and the larvæ hard to find on account of their habit of hiding in the day time. (Larva, Proc. U. S. N. M., XXII, 268.)

Halisidota cinctipes Grt. Not found in either year, but several were bred in 1895 from larvæ feeding on *Coccoloba floridana*. (Larva, Psyche, VII, 450.)

Pygarctia abdominalis Grt. I have not taken this moth, but Mrs. Slosson says she has met with it not unfrequently at Palm Beach.

Ecpantheria scribonia Stoll. Common in 1890; a few seen in 1900. The big black larvæ with their red bands used to be a conspicuous feature. (Larva, Can. Ent., XXIII, 106.)

Spilosoma virginica Fab. At light, not common. Larva not seen.

Leucarctia acræa Dru. Bred in 1890 from larvæ feeding on common weeds.

To this list Mrs. Slosson adds *Euhalisidota longa* and *Arctia phyllira*.

Pericopidæ.

Composia fidelissima H. S. Not uncommon in both years in the beach region. Handsome larva on *Echites umbellata*, occa-

*New generic name for Theages Dyar (nec Walker), Can. Ent., XXIX, 217.

sionally also on the cultivated oleander. A mass of eggs was found also on the vine *Vincetoxicum scoparium*, but the larva is not usual on this plant. Larva, Journ. N. Y. Ent. Soc., IV, 70.

Agaristidæ.

Alypia wittfeldii Hy. Edw. Taken by Mrs. Slosson.

Noctuidæ.

Agrotis ypsilon Rott. Taken by Mrs. Slosson.

Peridroma incivis Guen. Common in the lawns; the larvæ bred both in 1890 and 1900. (See Can. Ent., XXVIII, 18, and Proc. U. S. Nat. Mus., XXIII, 273.)

Feltia malefida Sn. Taken by Mrs. Slosson.

Mamestra laudabilis Guen. Two specimens captured.

Oligia chalcedonia Hübn. Several examples at light.

Oligia nudicolora Guen. At light, about as common as the preceding.

Oligia trientiplaga Walk. A specimen at light. This is the same as *aduncula* Feld., and was kindly named for me from a Brazilian specimen by Sir G. F. Hampson.

Lussa nigroguttata Grt. One example at light.

Magusa dissidens Feld. Rather rare. This species is wrongly placed in our lists among the Quadrifids; it belongs near Prodenia as placed by Möschler. The following is its synonymy:

1872. *Magusa dissidens* Felder, Felder & Rogenhofer, Reise Novara pl. cviii, f. 50.

1874. *Stictoptera divaricata* Grote, 6th rept. Peab. Acad., 37.

1875. *Stictoptera divaricata* Harvey, Bull. Buff. Soc., ii, 281.

1886. *Laphygma angustipennis* Möschler, Beitr. Sch. Jamaica, 71, fig. 14.

1890. *Laphygma divida* Möschler, Lep. Fauna, Porto Rico, 124.

1893. *Magusa divaricata* Smith, Bull. 44, U. S. Nat. Mus., 329.

Larva. Head rounded, bilobed, apex under joint 2, paraclypeal pieces reaching the vertex: translucent green, including the ocelli, but the primary tubercles black; mouth, pale brown; width, 2.5 mm. Body, cylindrical, normal, joint 12 enlarged, the feet equal. Cervical shield transparent, green with black tubercles; anal flap similar, narrowly. Whitish green, finely lined with white or yellowish white; tubercles narrowly black in obscure pale rings. In a large blotch about tubercles ii, iii–iv and vi, the color is faintly stained with yellow, making the ground there yellowish green and the lines pale yellow. The lines are dorsal (strong) above tubercle i, below i (strong) over ii, below ii (strong), two above iii, the upper weak, over iii, below iii, over iv, below spiracle (strong); between these are some faint white mottlings and more distinct ones sub-

ventrally. A line along vi is distinct and almost continuous. Without a lens one sees a white subdorsal line bent up on the hump on joint 12 and a subventral one, a broad yellowish substigmatal line; these only distinctly, the others resolve themselves with a lens. Feet yellow green, claspers reddish. Setæ distinct, black; iv at the upper corner of the spiracle on joint 5, above the middle on joint 6, a trace below the middle on 7, at the upper corner on 8 to 10 even above the spiracle on the latter, half way to tubercle v on 11, below the lower corner on 12. Spiracles white, black rimmed. On joints 3 and 4 all the tubercles are well separated and normal. The larva turned pinkish and entered the ground.

Food plant *Condalia ferrea*, young leaves.

Euthisanotia timais Cram. Not common. The food plant was not determined. Eggs obtained from a ♀ at Nassau, B. W. I., appeared as follows:

Egg. Spheroidal, circular from the vertical aspect with about 28 ribs, rounded, not very sharp yet quite distinct and regular, running nearly to the vertex; each rib is separated by the width of two reticulations. These are uniform, fairly distinct and quadrangular, a nearly straight line running along the apex and hollow of each ridge of the same distinctness as the cross lines. Uniform light yellow. Diameter .8, height .7 mm.

Doryodes bistrialis Gey. This species inhabits the swamp region, the larva on the saw grass (*Spartina juncea*). The egg and first stage only were noted:

Egg. Very large in proportion to the moth; cylindrical centrally, as high as wide, the top rounded, the base less sharply so; about 30 low vertical ribs, not strongly marked and with a very slight wavy outline on the edge; no cross striæ, no reticulations. Dull cream color, not shining, later with irregular brownish freckles. Diameter and height each 1 mm.

Stage I. Head elliptical, narrowed above, vertex under joint 2; clypeus reaching one-third to vertex; luteous, the sutures darker; two faint broad longitudinal brown bands on each lobe, parallel to the body. Ocelli dark; labrum with central smoky line; width .6 mm. Body slender, uniform, a trace flattened, feet on joints 9, 10, and 13. Central part drawn out, the feet of joints 9 and 10 very close together, the anal pair long and divergent; thoracic feet large, colorless. No shields. Whitish, with fine lateral red lines and a dark slaty colored shade from joint 8 posteriorly to 11 anteriorly including the feet of joints 9 and 10. The lines are subdorsal (tubercles i and ii), lateral, stigmatal (iii–iv) and two broken subventral ones. Tubercles minute, black, normal, no subprimaries. Leg shields of joints 9 and 10 blackish with a T-shaped black mark below. Subventral fold broadly whitish. Cervical shield striped, but more luteous than the rest of the body. The gray shade is from within showing by transparency; after eating the larvæ became gray the whole length.

Leucania phragmitidicola Guen. An example at light which was submitted to Prof. J. B. Smith to make the determination certain.

Ingura burseræ n. sp. Purplish gray; a black band before collar; a faint reddish streak centrally and black scales behind; disk of thorax with scattered black and purplish scales; abdomen with dorsal whitish V-shaped marks on 5th to 7th segments, on the latter becoming an oblique subdorsal streak; anal segment with black scales above; segments 2 to 7 with a black bar posteriorly, curved forward on the side to the front edge of the segment forming a waved subdorsal line. Fore wings essentially as in *delineata*, but the subapical tooth of the t. p. line is less produced and more rounded and the apical black dashes relieved by a distinct white powdering. There are but two of these dashes, the upper, marginal one of *delineata* being here lost. Hind wing brownish, the veins and outer third shaded with black. Fringe pale, spotted with black. Expanse 27 mm.

Prof. Smith, on seeing a specimen, thought it "a very fresh, highly marked example of *delineata*"; but it differs from this by the abdominal markings which more nearly resemble those of *declinata* Grt. and by the white apical dusting.

Types ♂ (crippled) and ♀ in the National Museum, No. 5174.

The larva differs markedly from that of *delineata* (Can. Ent. XXXI, 27), by lacking the transverse dorsal bars and possessing a distinct subdorsal line (Proc. U. S. Nat. M., XXIII, 271). It is not uncommon on the gumbo-limbo (*Bursera gummifera*).

Gonodonta unica Neum. Rare; a few larvæ on the custard apple (*Anona laurifolia*), strikingly marked, somewhat as in the Agaristidæ (Proc. U. S. Nat. Mus. XXIII, 272).

Amolita fessa Grt. A specimen caught in 1890.

Capnodes puncivena Smith. Bred in 1900 from larvæ on Eugenia (Proc. U. S. Nat. Mus., XXIII, 274).

Anticarsia ferruginea Smith. The larva lives on the sea bean (*Canavalia obtusifolia*). Mrs. Slosson tells me that she has found it on this plant. I found one larva in 1890, but it was resting on another plant, and not knowing its food, I lost it. Later I bred the moth from this larva at Nassau, B. W. I.

Larva. *Stage V?* Head whitish, reticulate with purple and with a few large black dots; width 1.3 mm. Body slender, normal, setæ normal for Noctuidæ, vi of cervical shield, prespiracular of prothorax, iia and iib rudimentary; v of thorax and iv of abdomen smaller; setæ on leg plates very short. Two anterior pair of abdominal feet reduced, the anterior pair (joint 7) the most so. Dorsal and stigmatal lines orange blotched, edged narrowly with vinous brown; subdorsal and suprastigmatal lines white, likewise lined; space between dorsal and subdorsal lines whitish, between subdorsal and suprastigmatal lines shaded with purple; subventral space shaded with purple; tubercles v and vi black; feet pale. Dorsal tubercles white with black rings.

Stage VI. Head white with irregular black spots, the largest of them forming a transverse line above the clypeus; mouth black, setæ black; width 2.1 mm. Dorsal line pale orange, edged with purplish black; then bluish white centered with faint brownish streaks; subdorsal band pale ocherous edged like the dorsal one; then a pale lilac space; suprastigmatal band white, irregular, edged like the dorsal one, the lower edging interrupted; broad orange stigmatal band edged below with white and a purplish black line. Subventral space and legs dull whitish gray; venter white. Lines partly obsolete on cervical shield and anal plate. Feet spotted with black; setæ black. Larva an imperfect semilooper.

Stage VII. Head 2.8 mm., whitish, black spotted with faint purplish reticulations. Body brownish cream color, dorsal and subdorsal lines orange, doubly black edged, the color diluted before the edge; a faint shade between. Lateral (tubercle iii) and stigmatal lines in apposition, divided by a black line and black edged above, below white; a red dot above tubercle iv in the stigmatal band. Space between subdorsal and lateral bands as wide as either and dark brownish. Substigmatal band again adjacent, white, bright; subventer and venter dark olivaceous, uniform, slightly lined. Tubercles white with black ring and center; setæ distinct, dark, normal.

The larva is slender, joint 13 tapering. It rests quietly by day, feeding at night.

Eumestleta flammicincta Walk. (= *Thalpochares patula* Morr.) A specimen at light.

Remigia latipes Guen. Not uncommon in the artificial lawns, the larva feeding on the grass (Cenchrus). (Proc. U. S. Nat. Mus., XXIII, 276.)

Bleptina caradrinalis Guen. Two examples at light in 1900.

Palthis asopialis Guen. Rather common at light.

Bomolocha manalis Walk. A single specimen taken.

Mrs. Slosson adds to this list *Pyrophila trapogonius*, *Ingura pygmæa*, *Litoprosopus futilis*, *Acontia debilis* (determination not certain), *Litosia convalescens*, *Anticarsia gemmatilis* and *Antiblemma minorata.*

Geometridæ.

Racheospila saltusaria Hulst. Bred from larvæ on *Condalia ferrea* (*see* Psyche, IX, 118.) The larvæ were such perfect mimics of the numerous little green twigs than arise from the older brown branches of this tree that it was impracticable to look for them, as even if seen they would not be recognized. Those obtained were gotten by chance while looking for other things.

Synchlora excurvaria Pack. (= *Nemoria denticulata* Walk.) Bred in 1890 (*see* Ent. News, V, 62, 1894); also, an example at light in 1900.

Synchlora louisa Hulst. So named by Dr. Hulst. The specimen (♂), however, differ smarkedly from the type which is before me. The discal dots on the four wings are punctiform and black, not red; the costa of primaries is white on the edge, narrowly red behind this, and only broadly marked at the extreme base; not broadly red to apex, widened in and at end of cell; the margins of the wings are red only in a marginal line and on the fringe throughout, cut with white intravenular dashes, not with a distinct widening at veins 1c and 5 of fore wings and anal angle and apex of hind wings; the thorax and base of abdomen are green, the red stripe with enclosed white spots begins on the second segment, not broadly red from collar to penultimate abdominal segment. It may be called var. *hulstiana* (or *bon. sp.?*)

Larva. Head rounded, slightly retracted, luteous with dense white granules; width 8 mm. Body green with dense, secondary, pointed white granules; angular subventral projections on joints 5 to 9, bearing tubercles iv and v. Tubercle iv large, a long cone with many little spines to which various objects adhere. Tubercles i to iii small, v larger, vi and vii small. The large tubercles are iv of joint 6 to 9 and iii of joint 5, as is normal in the group. A faint broken white dorsal line and stripes posteriorly on the projections. One larva found on the flower head of *Lantana camara.*

Percnoptilota fluviata Hübn. Several examples at light.

Cœnocalpe parinotata Zell. At light like the preceding.

Senelys subquadrata Guen. Also at light, less frequent.

Gypsochroa hæsitata Guen. Not uncommon, the larvæ on *Pisonia aculeata* (see Psyche IX, 59, 1900). The eggs are laid on threads like those of *Eudule mendica.*

Cysteophora pervertipennis Hulst. Two specimens at light, one of which served as Dr. Hulst's type. The female resembles the male, but the antennæ are simple and the hind wings are without the pouches; the borders of both wings are heavily shaded with purplish, darker than in the male.

Emilitis floridata Hulst. Several examples at light.

Eois ossularia Hübn. Some examples at light.

Eois balistraria Hübn. Also at light with the preceding.

Eois suavata Hulst. A specimen in the beach hammock furnished eggs from which the life history was made out. (See Psyche IX, 106, 1900).

Eois eburneata Guen. Dr. Hulst remarks: "Very close to *eburneata* and I think that species;" but the specimen does not agree with another from Cocoanut Grove, Florida, labelled with this name by Dr. Hulst.

Wauchula rubrotincta Hulst. One example at light furnished Dr. Hulst's type of this new genus and species.

Leptomeria laretaria Hübn. (*Minutularia* Hulst), one example.

Diastictis abbreviata Walk. (*Floridata* Hulst), at light.

Mecoceras nitocris Cram. Larvæ on *Coccoloba floridana* (see Psyche IX, 69, 1900).

Nepheloleuca politia Cram. Taken at light, the larva not found.

Phrygionis argentata Dru. Dr. Hulst named the moth as *P. argentistriata* Streck., but I do not think that it differs from the Antillean form. If I am correct the following synoymy will obtain :

1773. *Geometer argentata* Drury, Ill. ex. ent., ii, 27, pl. xiv, f. 2.

1791. *Phalæna Geometer politata* Stoll. Suppl. Cramer's Pap. exot., pl. xxxi, f. 4.

1793. *Phalæna decorata* Fabricius, Ent. Syst. iii (2) 173.

1857. *Byssodes privignaria* Guenée Spec. gen. Lep., ix, 601.

1876. *Phrygionis argentistriata* Strecker, Proc. acad. nat. sci , Phil., 152.

1882. *Byssodes cerussata* Grote, Papilio, ii, 101.

1882. *Byssodes obrussata* Grote, Can. ent. xiv, 111, xv, 6.

1886. *Phrygionis argentistriata* Hulst, Ent. amer., ii 222.

1890. *Eulepidotus argentata* Möschler, Abhl. Senck. Ges. xiv, 246.

1892. *Byssodes privignaria* Druce, Biol. Cent.-Am. Lep. Het , ii, 98.

1896. *Phrygionis argenteostriata* Hulst, Trans. Am. ent. soc., xxiii, 384.

The larva occurred on the young leaves of *Ardisia pickeringia*, and the last three stages were observed.

Stage III. Head whitish with a straight brown stripe up the middle to vertex and one on each side across ocelli to lower angle of cheeks, the three meeting on the mouth; width .7 mm. Body rather thick, tapering a little at the ends, smooth, cylindrical, feet normal, incisures rather well marked; very obscure annulets. Whitish, food green, a brown, diffuse, dorsal and substigmatal stripe, joining those of the head, reaching the ends. Feet short, pale. Dorsal stripe darker spotted in the incisures. Setæ very fine and short, dark; tubercles obsolete.

Stage IV. Head whitish, faintly testaceous tinted, lateral stripe and attennæ red brown, vertical stripe absent on clypeus, bordering the median suture, paler red; jaws reddish; width 1.1 mm. Body translucent sordid bluish green from the food, joints 2 and 10 to 13 paler, whitish; a row of dorsal round black spots on the segments anteriorly, almost in the incisures of joints 6 to 9, represented by a round reddish shade on the thorax and joints 10 to 13. Subventral stripe broad, brownish red, diffuse, reaching from joint 2 to the anal foot on which it runs narrowly. Venter unspotted; skin smooth.

Stage V. Head round, slightly bilobed, clypeus less than half to vertex; yellowish green, mottled around the median suture with reddish; a dark red band from base of jaws over the black ocelli to occiput; width

1.6 mm. Body cylindrical, thick and smooth, normal. Green finely obscurely lined longitudinally with whitish green; a broad, diffuse subventral red shade. Dorsal round black spots on joints 6 to 8 anteriorly. Ends faintly tinted with reddish mottlings. Tubercles minute, setæ short, dark. Venter slightly whitish. The reddish suffusion at the ends increases with age, especially subventrally. The larva is exactly the color of the young Ardisia stem.

To this list Mrs. Slosson adds *Diastictis particolor* Hulst and *Palyas auriferaria* Hulst.

PYRALIDÆ.

Margaronia infimalis Guen. The larvæ were bred in 1890 on *Melothria grendula;* none seen in 1900. (Description, Journ. N. Y. Ent. Soc., March, 1901.)

Margaronia quadristigmalis Guen. The larvæ were not uncommon on the *Forestiera porulolsa*, slightly webbing the leaves together. (See also Howard and Lugger, Ins. Life, I, 22, 1888.) The egg shells were found on the backs of the leaves, elliptical, flat, with very slight thickness, 9 x 4 mm., finely roundedly reticulate. The earliest larvæ observed were mining in the leaves, the mine linear, wide but short, not over twice the length of the larva and with a hole for the ejection of the frass. Later they live between the leaves. The last four stages were observed with very little change. Head broad, outstretched, flatly, the lobes rounded, paraclypeal pieces reaching vertex; colorless, shaded with brown over the lobes; mouth brown, occelli black; width 1.5 mm. Cervical shield large, colorless. Segments slightly moniliform, the thorax narrower than the abdomen, joint 5 wider, joints 12 and 13 tapering a little, last half of joint 13 smaller. Anal feet outstretched, divergent; the others small, slender. Whitish and translucent, shining with a green tint; joints 12 and 13 faintly brownish reticulate to match the head. A small black dot on joints 3 and 4 on the front side of tubercle iib. Tubercles large, transparent; i and ii in line, iv and v united, normal. On thorax ia + ib, iia + iib, iv + v, the subventral ones smaller. The mature larva varies from translucent green to whitish with faint brown reticulations on the head.

Margaronia flegia Cram. Mr. Kinzel sent me moths and larvæ that he had found on a cultivated bush of Thervetia. The species is common at Key West. (See Can. Ent., XXXII, 117, 1900.)

Margaronia sibillalis Walk. This larva was rather destructive to the mulberry, though somewhat rare in the winter season; the mulberry trees having lost their leaves. The last three stages only were observed with widths of head .9, 1.2 and 1.7 mm., and no marked changes. (See Journ. N. Y. Ent. Soc., March, 1901.)

Sylepta anormalis Guen. The larva was not uncommon on the leaves of "morning glory" (*Ipomœa sp.*). At first it stitches the leaves together; finally it forms a rather characteristic tent on the upper side, partly folding a leaf together with a web above. (See Journ. N. Y. Ent. Soc., March, 1901.)

Sylepta fluctuosalis Led. Professor Fernald determined the moth for us with a query. The larvæ were very common as leaf rollers on the nettle (*Bœhmeria cylindrica*). They roll up a leaf, wrapping in around with the back side inward and tying it with bands of silk on the outside.

Head squarish below, mouth projecting, slightly bilobed, the apex under joint 2; clypeus high, the paraclypeal pieces reaching vertex; pale green, jaws black, visible through the transparent labrum; paraclypeal pieces smoky black; a heavy black-brown band on the lower angle of the cheeks from jaws to back of head; mottlings also on the vertices of lobes posteriorly; width 1.8 mm. Body moderately robust, not tapering; translucent whitish green, tracheæ white, distinct; dorsal vessel dark green. Cervical shield large, transparent, but with a broad black lateral margin that reaches round posteriorly opposite tubercle i of joint 3. Tubercles moderate, transparent; those of joint 3 faintly dusky bordered. Hair tubercle itself brownish; setæ pale, rather long. Tubercles i and ii nearly in line, iv and v united, normal; on thorax ia+ib, iia+iib, iv+v. Feet pale, normal. Spiracles whitish.

Sylepta gordialis Guen. The larva lives on the *Pisonia aculeata*, but is at times injurious to the cultivated Bougainvillia. (See Journ. N. Y. Ent. Soc., March, 1901.) The egg is laid on a leaf or stem toward the end of a branch. It is perfectly flat but somewhat thicker and more opaque than a Cochlidian egg. Elliptical, 1.0 × .8 mm. slightly shining, milky translucent; reticulations distinct, linear, irregularly pentagonal. Shell iridescent.

Several larval stages were observed but not in sequence. I have published a description of the mature form.

Dichogama amabilis Möschl. The larvæ of this pretty moth were found rarely in tight box-like abodes between leaves of *Capparis jamaicensis*. (See Journ. N. Y. Ent. Soc., March, 1901.) The last two stages only were observed.

Dichogama redtenbacheri Led. The larvæ were common occasionally on the *Capparis cynophallophora*, between closely united leaves. (Can. Ent., XXXII, 271, 1900.)

Dichogama bergii Möschl. The larvæ occurred with the last, but much rarer. (See Journ. N. Y. Ent. Soc., March, 1901.)

Evergestis dyaralis Fern. The larvæ appeared sporadically on the young leaves of the *Drypetis crocea*, in a loose, open, delicate web that disappears after the larvæ are gone. Not gregarious, though many occur on the same branch, owing to the scarcity of young leaves. Last two stages observed.

Head bilobed, colorless, clypeus reaching vertex; width .75 mm. Cervical shield transverse, sordid greenish. Body greenish with broad brown subdorsal stripe, partly enclosing tubercles i and iii and completely so tubercle ii, but not coloring the sordid, greenish rimmed tubercles. Anal plate sordid. Tubercles i to iii large. iv+v and vi small, pale, concolorous. Setæ moderate, pale. When filled with food the larvæ are sordid greenish, tubercles i to iii blackish, iv+v and vi less distinctly so. Traces of whitish edges to the subdorsal line.

Last stage. Head broad, round, bilobed, paraclypeal pieces reaching vertex; mouth large; greenish, faintly brownish on the vertex, tubercles pale but all strongly black ringed; vertex scarcely under joint 2; width 1.5 mm. Body somewhat flattened, uniform, tubercles i to iii large, on joint 13 somewhat angular and prominent; iv and v small, black, contiguous, iv dorsad; vi small, vii of three setæ on the leg base, the two lower ones pale. Pale green, a broad blackish subdorsal band, slightly broken by pale rings about the tubercles and intersegmental mottlings, the pair joining posteriorly on joint 13 and anteriorly by the large, blackish, scarcely bisected cervical shield. The subdorsal band nearly encloses tubercles i and iii, and does not quite touch a faint white bordering line above and below, the upper line crossing tubercle i, the lower stigmatal. Tubercles black, setæ moderate pale. Feet pale. On thorax tubercles ia+ib, iia+iib, iv+v; on abdomen the green dorsum is encroached on by tubercles i and ii of joint 12; elsewhere i is well dorsad to ii.

Epicorsia mellinalis Hübn. The neatly colored larva of this species occurred on the "fiddle wood" (*Citharexylum villosum*). I have described it elsewhere. (Jour. N. Y. Ent. Soc., March, 1901.)

Mecyna reversalis Guen. The pretty and striking larvæ occurred on the *Sophora tomentosa* in both years. At first glance I thought them to be *Utetheisa bella*. The larva has been described by Lintner. (11th rept. ins. N. Y., 142, 1896.)

Head bilobed, the lobes broad, full, paraclypeal pieces reaching vertex; antennæ half as long as the mandibles; shining black, labrum pale luteous; width 2.8 mm. Thoracic feet black, ringed with white; abdominal ones slender, green, the crochets in a circle, broadly broken outwardly. Body rather long, uniform, cylindrical; cervical shield and anal plate jet black, the former with central white line and subdorsal dash; the latter with a median irregular mark, lateral margin white. Body translucent sap green or dull orange green, the large tubercles white and black; i and ii are black, incised by a white spot above and below; iii is similar but the lower white spot includes the spiracle, and there is a white border before and a lobe to include tubercle iiia; iv+v is in a long white streak on the subventral fold which surrounds it; vi is in the upper part of a white patch; vii black at the edge but luteous about the three setæ. Thoracic tubercles

partly surrounded by white, the borders touching except vi which is remote and separated by a yellow and white streak on the subventral fold; ia+ib, iia+iib, iv+v. Anal feet with black bases. The larvæ live under a very delicate web on the back of a leaf, which is so fine that they appear to feed exposed. The leaves are not drawn together at all.

Desmia tages Cram. The larvæ are leaf rollers on the *Psychotria undata.* (See Journ. N. Y. Ent. Soc., March, 1901.) The leaf is rolled up in several turns fastened with stitches on the outside; the larva eats out all within, the frass being retained in an unsightly mass. The larva has a large cervical shield, blackish luteous, bisected; no anal plate. Body cylindrical, normal, the incisures moderate; transparent, colorless, the food dark blackish green, reddish in the thorax. Tubercles large, colorless, faintly blackish on thorax; ia+ib, iia+iib, iv+v; on abdomen iv+v nearly in line longitudinally, iv^{a} trace dorsad. Tracheæ and excretory tubules white; spiracles pale, testaceous rimmed; setæ long, pale.

These notes are on the penultimate stage; the last one has been described elsewhere.

Marasmia trapezalis Guen. A specimen at light was named by Prof. Fernald.

Marasmia floridalis Fern. A bred specimen furnished one of Prof. Fernald's types. The larvæ feed on the *Vincetoxicum palustre.* They eat a turned over leaf, seed pod or bud, and rest in an adherent case of web and whitish excrement which remains on the leaf. The last two stages observed.

Head slightly bilobed, full, rounded, clypeus high, the paraclypeal pieces reaching vertex; one distinct large seta (ii), the rest minute; pale luteous; width .6 mm. Body short and robust, the segments 3-annulate, the anterior annulet very small. Tubercles slightly elevated, moderate, colorless; on thorax ia+ib, iia+iib, iv+v. Hair tubercles brown. Green, a faint vinous dorsal line and transverse line on the posterior annulet of each segment. A broad, faint, whitish, substigmatal band. Shields concolorous.

Last stage. Head all green like the body; width .85 mm. As before, the lateral stripe very obscure. The larva is a hunched up little thing, smaller posteriorly. Later the lateral whitish stripe is sharp above at the spiracle, diffuse below; the vinous bands are brownish, obscure except towards the extremities. Still later the red coloration is gone, the larva is all green like a bit of the stem with the whitish lateral shaded band, sharp above.

Pyrausta costimaculalis Fern. Described from my bred specimens. The larvæ are so similar in structure and habits to the preceding that I supposed them to be congeneric till the moths were obtained. The larva lives on the *Psychotria undata.* It

cuts off at the middle and fastens to the petiole by silky web a small opening leaf at the end of a branch. It has the habit of eating out the buds.

Head rounded, ochraceous tinted, sordid; vertex under joint 2; width .8 mm. Body green, thorax shaded with vinous; a dull brown blotched dorsal stripe on joints 11 to 13, widening behind. Another much larger larva but with the head the same size had eaten the bud and mined some distance into the stem. Body robust, large for the head, thick centrally and tapering towards the ends. Anterior end, joints 2 to 5, heavily shaded with vinous, fainter posteriorly, with faint dorsal and lateral continuations. The extent of this mark is variable. Tubercles large, green, transparent, the hair tubercles brown; i and ii not quite in line, iv and v united; on thorax ia+ib, iia+iib, iv+v, normal. Segments folded posteriorly, obscurely 2-annulate. Feet normal, slender. Setæ rather long, brown, especially at the ends. Shields weakly cornified, greenish like the tubercles. No lateral stripe.

Pyrausta tyralis Guen. Several examples at light. Some are of a suffused form with the yellow lines on both wings suffused with vinous and almost obliterated.

Hellula undalis Fabr. Several specimens at light and flying in grassy places.

Terasia meticulosalis Guen. The larva bores in young stems of *Erythrina herbacea*, often destroying a majority of the flower clusters and rendering the plants unsightly. (See Jour. N. Y. Ent. Soc., March, 1901.)

Agathodes designalis Guen. On the same plant with the preceding, but not a borer; making a web among the flowers. (See Journ. N. Y. Ent. Soc., March, 1901.)

Nomophila noctuella Schiff. A specimen flying in the woods.

Lineodes integra Zell. Bred from larvæ on *Solanum radula* and *S. jasminifolium*. (Jour. N. Y. Ent. Soc., March, 1901.)

Lineodes contortalis Guen. Two specimens at light.

Lineodes triangulalis Möschl. Bred from larvæ on *Capsicum frutescens*. (See Journ. N. Y. Ent. Soc., March, 1901.)

Galasa rubidana Walk. At light.

Hydrocampa obliteralis Walk. Two specimens at light.

Hydrocampa allionealis Walk. Commonly at light.

Nymphula cannalis Quaint. Leaf rollers on *Canna flaccida*, common. The larva has been quite fully described by Quaintance (Fl. Agr. Exp. Sta., Bull. No. 45, page 71, 1898.) I add my notes:

Head small for the large body, bilobed, clypeus high, reaching nearly to vertex; pale luteous, mouth brownish, ocelli black; width 1.3 mm. Body cylindrical, tapering at both ends, incisures moderate, folded. Shields and tubercles transparent, faintly testaceous tinged at the ends. Body transparent, a little milky, food dark green. Cervical shield with black setæ and little brown punctures in a curved row each side of the middle;

anal plate like the tubercles, which are large, those of joints 3, 4, and 13 brown punctured. On thorax tubercles ia + ib, iia + iib, large, elongate longitudinally, iv + v; on abdomen i larger than ii, obliquely elongate, slightly dorsad; iv + v, iv slightly dorsad. Feet short, normal; tracheæ white; dorsal vessel dark.

Nymphœella maculalis Clem. A few specimens at light.

Thyridopyralis gallærandialis Dyar. Bred from galls in the old wood of the *Randia aculeata*. (See Journ. N. Y. Ent. Soc., March, 1901.)

Argyria nivalis Dru. One at light.

Crambus hastiferellus Walk. Also at light.

Crambus mutabilis Clem. At light, commoner.

Diatræa saccharalis Fab. Rather rare at light.

Chilo densellus Zell. Not uncommon at light.

Stericta incrustalis Hulst. Bred from larvæ on *Nectandra willdenoviana*. (See Proc. U. S. Natl. Museum, XXIII, 283, 1900.)

Benta floridella Hulst. The bred specimens furnished Dr. Hulst's type. The larvæ occurred commonly on the *Guilandina bonducella*, uniting the leaves in a fine loose web which holds frass and dead leaves, making an unsightly mass. Larvæ of all ages may be found in the web. They eat the leaves or partly mine the leaf stem, but live in a silken tube without much frass inside the web. Five stages were observed.

Head rounded, not bilobed, the upper edge below joint 2; paraclypeal pieces extending to level of tubercle i; dull whitish, heavily mottled with brown spots in groups, width 2.2 mm. Body dead-leaf brown. Dorsum rather broadly pale brown with a diffuse geminate red-brown stripe. Rest of body pale wood brown with brown spots; a broad, heavy, black subdorsal band enclosing tubercles i and ii in its upper edge; a lateral and a suprastigmatal (iii) dark brown line, the lateral not fully distinct from the subdorsal one. Feet short, crochets in a ring. Tubercles small, black; i and ii in line, iv and v approximate, but quite separate, v before and dorsad to iv. On thorax ia and ib, iia and iib, iv and v, approximate in pairs. Spiracles black ringed. Setæ long, brown. Skin densely transversely wrinkled, the segments otherwise 3-annulate, the anterior annulet small, and not reaching the dorsum. Thoracic feet brown. Cervical shield and anal plate both large and hard, but marked exactly like the body, the anal plate being entirely brown, peppered with darker, as the bands are obsolete on joint 12.

Salebria celtidella Hulst. One at light.

Honora dulciella Hulst. A captured specimen furnished Dr. Hulst's type.

Elasmopalpus lignosellus Zell. One example named by Dr. Hulst.

Sarasota plumigerella Hulst. Dr. Hulst's type was bred from a larva on *Laguncularia racemosa* in a soft web only in the young opening leaves, solitary.

Head rounded, clypeus high, apex under joint 2, held flat, mouth projecting; width 1.1 mm. Green mottled with brown, especially above. Body slender, cylindrical, scarcely tapering, no shields Dull green, opaque, mottled with brown, heaviest in a broad, obscurely double lateral band below tubercle ii and just covering iii; a narrow brown dorsal line edged by addorsal lines of the ground color. Subventrally the brown mottlings fade out; feet green. A black ring about tubercle ii on joint 3. Tubercles black, setæ long, pale brownish. Segments divided into two annulets by a narrow line with a third smaller one laterally. Tubercles i and ii in line, iv and v closely approximate but separate, v dorsad by its own diameter and a little smaller; on thorax ia and ib closely approximate ia small. Spiracles round, yellowish. Cervical shield perfectly concolorous, bearing six setæ, normal.

To this list Mrs. Slosson adds *Pilocrocis ramentalis* Led., *Agriphila perstrialis* Hbn., and *Melitara prodenialis* Walk.

Thyrididæ.

Hexeris enhydris Grote. This was taken by Mrs. Slosson.

Nolidæ.

Nola apera Druce (*involuta* Dyar). Bred specimens cannot be distinguished from the Californian species, except by a slightly darker, more bluish gray color. This is very surprising, as the larvæ had all the appearances of representing a distinct species, being found only on the *Laguncularia racemosa*, a plant growing only on the borders of the lake, partly in the water. The larvæ are at first leaf miners with a hole for the ejection of the frass. Later they cut channels in the thick leaves. At all times they hide persistently. This seems different from the willow feeding Californian species, yet neither larva nor moth differ to a specific degree. If the contrary opinion should obtain, however, I would propose to call the form *Nola lagunculariæ*.

Larva. Squarely flattened; four rows of warts, the lowest small; feet on joints 8 to 10, all normal for Nola. Head round, small, below joint 2, clypeus broadly triangular, rather high, whitish, nearly colorless, jaws brown, ocelli black; width, about .8 mm. Body reddish luteous, joints 3 and 4 somewhat broadly so on dorsum. A broad black subdorsal stripe, faint on joint 2, narrow on 3 and 4, wide on 5 to 12, where it ends, covering the two upper warts. In the incisure of joints 6 and 7 and 12 the pair nearly join. A narrow yellowish dorsal line of the ground color; a reddish circle on joints 3 and 4, somewhat broken. Sides reddish, but the hird wart (iv + v) yellow. Feet and venter whitish, nearly colorless.

Hairs short, dusky, long and pale from the third wart, only a few from the fourth which is colorless. Anal flap pale. Cervical shield scarcely cornified, brownish, bisected. The larvæ vary a good deal in coloration.

PTEROPHORIDÆ.

Pterophorus monodactylus Linn. The larvæ occurred rarely on the *Ipomœa hederacea*, feeding on the young leaves at the end of a shoot. Green, without marks, except a broken white dorsal line, and traces of a segmentally arcuate subdorsal band. Warts round, i and ii confluent, a single hair behind iv + v, no secondary hairs. Hairs whitish, stiff, some of those from i + ii blackish. Later a straight broad yellowish subdorsal band. *Last stage.* Dorsum narrowly blackish, especially at the base of warts i + ii, which are contiguous, not confluent. Rest of body yellowish green, the subdorsal and a lower waved subdorsal band faint. Spiracles black ringed. Hair stiff, blackish dorsally, pale laterally. Wart iiib more remote from iv + v than before and a little dorsad. Some dark hairs from wart iv + v.

Pterophorus sp. A very interesting stem borer occurred in *Iva frutescens*, but it could not be bred. Larvæ lived until May 28, on stems of the Iva kindly sent me by Mr. Kinzel from time to time, but no pupæ were obtained. (Notes, B 868.)

COCHLIDIIDÆ.

Sibine stimulea Clem. A few larvæ in both years, rarer in 1900. They feed on almost anything. The two larvæ seen in 1900 were on *Sebastiania lucida* and *Verbesina virginica*, respectively.

Euclea delphinii Guer. Not seen in either 1890 or 1900, but a few examples secured in an intervening year. (See Journ. N. Y. Ent. Soc.)

Alarodia slossoniæ Pack. A few empty cocoons on the mangrove in 1890. Rather common in 1900, mostly on the mangrove but some on *Myrsine floridana* and traces of the larvæ on one bush of *Ardisia pickeringia* and *Myrica cerifera*. The plant mentioned (Journ. N. Y. Ent. Soc., VI, 160) as "another plant not determined" proves to be *Hypelate paniculata*. No larvæ were seen on this tree at Palm Beach, though it occurs sparingly.

SESIIDÆ.

Sesia seminole Beut. A pair taken by Mr. P. C. Truman in 1900, and kindly presented to me, are now in the National Museum.

TORTRICIDÆ.

Cacœcia georgiana Walk. Prof. Fernald named the moth with a query. The larvæ were found webbing together the leaves

of the *Chiococca racemosa*, the abode webby, not fastened with stitches. Head rounded, paraclypeal pieces reaching vertex, a little flattened before; green, brownish shaded on the lobes; ocelli neatly black, mouth brown; width about 1 mm. Body moderately slender, segments obscurely 3-annulate, the anterior annulet small. Transparent bright green, no marks. Shields transparent; tubercles small, somewhat elevated, colorless, normal; on thorax ia+ib, iia+iib, iv+v. Spiracles small, whitish; feet pale, normal. Setæ moderate, white. Larva lively and runs backward easily.

Tortrix peritana Clem. Very common at light.

Tortrix ivana Fern. My specimen furnished Prof. Fernald's type. Bred from some *Iva imbricata* leaves by Mr. Busck that were sent him in connection with certain Tineids. We have no notes on the larva. (See remarks under *Gnorimoschema terracottella* following.)

Platynota rostrana Walk. The larva was not uncommon and living on a variety of plants. Bred from *Rivina humilis*, *Randia aculeata*, *Gnaphalium purpureum* and a larva (parasitized) was taken on *Myrsine floridana*. Last three stages observed.

Stage, head .65 mm wide. Head slightly below joint 2, bilobed, rounded, full, clypeus high; brown black, mouth brown. Cervical shield large, semicircular, luteous black, shading to brown on the anterior edge. First thoracic feet black except the basal joint, the rest black tipped. Body cylindrical, tapering a little posteriorly. Feet with crochets in an ellipse, short, normal. Whitish, translucent, a faint, broken, irregular, white addorsal and lateral line. Tubercles whitish, the hair tubercles black; spiracles black ringed; anal flap concolorus with body.

Stage, head .8 mm wide. Head rounded bilobed, mouth pointed, smooth, clypeus rather high, not depressed; shining black, epistoma pale. Cervical shield transverse, semicircular, shallowly notched behind, black. Feet of joint 2 black, the others pale. Body slender, translucent white, dorsal vascular line darker with some white pigment on each side; food dark, plainly showing. Tubercles rather large, pale with brown hair dots; iv+v, i dorsad to ii; segments 2-annulate dorsally; anal plate brown punctate. Prespiracular wart of joint 2 large and black, subventral wart blackish. On thorax ia+ib, iia+iib, iv+v. Feet normal, skin finely granular. Spiracles black ringed.

Last Stage. Head flattened, bilobed, vertex under joint 2, clypeus nearly reaching vertex; dark brown, shining, epistoma and basal joints of antennæ white; ocelli large, black; width 1.3 mm. Cervical shield large, covering the dorsum of joint 2, touching the prespiracular tubercle, slightly notched behind, with the tubercles of joint 2, luteous brown, shading to black centrally and behind. Body sordid olivaceous green, slender, a little flattened ventrally; segments 3-annulate, the first annulet small. Dorsal vessel dark by transparency. Tubercles moderate, white, contrasted with

the brown hair dots. Anal plate with tubercles and traces of brown punctures. Thoracic feet brown; abdominal ones small, normal, the crochets in a complete ellipse. Setæ moderate, pale. Spiracles black ringed. Tubercles as before, iv above v, united; vii of three setæ in a nearly straight line.

Lophoderus amatana Dyar. The larvæ were found tying together the leaves of *Anona laurifolia*. Head flattened, outstretched, paraclypeal pieces reaching vertex; shining pale green, faintly brown tinged, ocelli rather large, black; width 1.3 mm. Body segments 2-annulate dorsally, subventral fold moderate; all translucent dark green, but more or less, often mostly light yellow green from the fat, especially posteriorly in joints 6 to 12, the dorsal vessel dark green as are also joints 2 and 13. Shields and tubercles transparent, concolorous. Tubercles moderate, slightly elevated, iv+v, normal; on thorax ia+ib, iia+iib, iv+v. Setæ fine, rather long, brownish. Skin only slightly shining. Feet normal.

Eucosma lineana Fern. Described from my bred specimen. The larva occurred on *Anona laurifolia* mixed with the preceding species from which it only differed in being shaded with blackish except the tubercles and incisures.

Pædisca strenuana Walk. At light; determined by Prof. Fernald with a query.

Capua lentignosana Wals. At light and likewise determined with a query.

Conchylis bunteana Robs. Common at light.

Bactra lanceolana Hübn. Several at light.

Episimus augmentanus Zell. The larvæ occurred on *Rhus metopium*, webbing together the leaves. Head rounded, flat before, apex under joint 2, clypeus high; pale luteous, sordid, a blackish shade in clypeus and one about and extending upwards from ocelli; width 1.2 mm. Body sordid translucent yellowish, food green. Cervical shield large, shining, divided by a very narrow white line, luteous in the center of each half and posteriorally dorsally, the rims and a median patch shaded blackish; no anal plate. Body rather thick, hunched, a little flattened. Tubercles moderate, smoky, i larger than ii and dorsad to it, iv+v; on thorax ia+ib, iia+iib, normal. The tubercles are shining, radially corrugated about the edge. Skin dull; setæ white.

Epiblema ochraceana Fern. The moths were taken resting on the *Iva imbricata* very close to the sea; but the larvæ were not detected.

Cerorrhincta calidana Zell. Named by Prof. Fernald with a query. The larvæ were common on a species of Eugenia (*E. procera*?), uniting the leaves by webby silk and eating the parenchyma. Head rounded, the apex slightly below joint 2, clypeus

high; yellowish testaceous, mouth dark, ocelli black; antennæ rather long; width 1.2 mm. Body rather thick, the ends rounded, not tapering; segments obscurely 2-annulate, incisures folded. Tubercles large, elevated, colorless, iv+v in one tubercle, v small. Translucent, slightly olivaceous, not shining; food green, slightly obscured by the opacity of the skin. Setæ moderate, pale; feet normal. No marks.

Lepidoptycha maculana Fern. Described from my bred specimens. The larvæ feed on *Schœpfia arborescens*. The earliest larvæ mine the leaf, a linear crooked mine, often somewhat extensive, the frass pushed out the entrance hole on the under side of the leaf. The larvæ are colorless, the food green. Later larvæ unite overlapping leaves and finally turn over the end of a leaf and eat the inside, the leaves fastened with white silk.

Penultimate stage. Head pale testaceous, mouth broadly brown, eye black, a curved black line behind it on lower angle of cheek reaching round to near vertex and perfectly visible through the transparent cervical shield when the head is retracted; width .4 mm. Body cylindrical, rather thick, translucent whitish, food green. Segments obscurely annulate; tubercles colorless but rather distinct, small; iv + v.

Last stage. Head faintly brownish, sutures of clypeus brown and a line on posterior edge of lobes, blackish; width .6 mm. Cervical shield large, faintly testaceous, transparent. Body translucent, shaded with pale slate over the sides and dorsum of joints 10 and 11; ♂ glands brown ringed as if segmented. Anal plate transparent. Hair tubercles black. Tubercles iv + v. Spiracles black; tracheal line visible, food green. Setæ pale, moderate. Skin minutely dusky granular. The ♀ glands are broad white bands in joint 10. Male larvæ when ready to spin had the glands dark vinous; body waxy white, sordid tinted; food a narrow, dark, sinuous line.

Episemus argutanus Clem. The larvæ occurred on the *Euphorbia heterophylla* which is a common plant in waste places. They bend up a young leaf on the upper side and fasten it with white silky web at the edges, the under side of the leaf forming the outside of the abode so formed. The leaves so fastened become much distorted with growth and folded between the veins which are firmly held by the silk. The larva eats off the terminal end of its abode, keeping it closed with silk, and later forms a new one.

Larva. Head rather elongate, pale greenish brown, showing two black spots on the ocelli and a narrow line posteriorly on the lower angle of cheeks; mouth brown; finely dark lined on labium; width about .7 mm. Body moderate, tapering a little at the ends, not elongate; colorless, transparent, the blood faintly green, food dark green; cervical shield concolorous; anal plate faintly brown. Thoracic feet black, except at base; abdominal ones short, not colored. Tubercles faintly brownish, rather small, the central hair tubercle black; iv + v; iii on joint 12 situated almost

before the spiracle. Segments very obscurely 3-annulate; skin minutely spinulose.

The larvæ pupated in a folded leaf.

Epiblema perplexana Fern. Not uncommon at light; seven examples furnished Prof. Fernald's types.

Gelechiidæ.

[The following notes on the Tineid larvæ are seldom complete, as it was impossible to fully examine the slender material collected without destroying some larvæ, which would have endangered successful breeding. Mr. August Busck has determined all the species.]

Aristotelia ivæ Busck. My notes are as follows: They do not seem to agree with what Mr. Busck has published (Proc. U. S. Nat. Mus., XXIII, 226), but it is probable that my larvæ were immature. All the material was sent to Mr. Busck and I did not breed this species myself.

Larva. In a soft web among the terminal leaves of *Iva frutescens* resting in the web. Head rounded, held out flat, vertex scarcely under joint 2; green, brownish shaded over the apices of the lobes, ocelli black; width .6 mm. Body slightly flattened, subventral fold prominent, segments obscurely 2-annulate; green, venter entirely so, dorsal half thickly, faintly mottled with sordid, leaving subdorsal lateral and stigmatal dotted lines of the ground color. Tubercles small, dusky; setæ moderately long, i and ii in line, iv and v approximate but separated by the diameter of a tubercle or more, in line; vi on the green lower subventral fold. Legs very slender, small, normal. Cervical shield greenish, not cornified, brown marks before it; anal flap concolorous. Incisures distinct, slightly folded.

Aristotelia sp. Mr. Busck has so determined a single specimen that came to light; the species may be new, but the material is too scant.

Nealyda pisoniæ Busck. The mines of this species were not uncommon in the leaves of *Pisonia aculeata.* They are on the upper side of the leaf, starting at the midrib, gradually and irregularly widening to form a large trumpet-shaped blotch, the larval frass contained. The larva escapes by a hole. The head is small, flat, partly retracted. Body flat, segments moniliform, joints 2 and 3 large, 4 to 11 almost alike, then gradually smaller, tapering posteriorly. Translucent testaceous, edges of the segments darker, brownish; food green; no spots. Thoracic feet short, normal, projecting, colorless, the basal piece slightly infuscated. Abdominal ones on joints 7 to 10 long, slender, tapering from a slightly large base, the tips swollen and bearing a few

rudimentary crochets in a single row. No anal feet, their positions indicated by slight elevations.

Nealyda kinzelella Busck. The mines of this species were rarely found in the leaves of *Pisonia obtusata* where they tend to produce a red discoloration, often bordering the mine, especially when old. But very few living larvæ were found. Head flattened, pale brown; clypeus high, but not quite touching the vertical triangle; labrum and clypeal sutures dark brown. Body flat, joint 2 wide, 3 and 4 a little smaller, 5 to 11 about equal, 12 and 13 tapering. Segmental incisures well marked, the segments a little angularly widened laterally. Cervical shield large, bisected into two triangular halves, blackish purple with a few pale dots. Body whitish at the sides, with a broad diffuse purplish dorsal band, paired round white spots on joints 3 to 12, very small on 5 and 12, the others large. Later this marking fades and the body becomes all yellowish, only the cervical shield dark. Feet bent in arcs like *N. pisoniæ*, their number not observed, but probably as described by Busck for the preceding species, those of joint 13 lacking. The mine is on the upper surface of the thick leaf, but the larva emerged by a hole on the under side at maturity.

Aprocerema crotalariella Busck. The larvæ occurred on the *Crotalaria pumila* growing near the sea. Head rounded, flat, clypeus high, triangular, just touching the apical triangle; whitish, eyes black in a dusky band which runs along the lower angle of the lobe. Body short and thick, thickest centrally, the ends distinctly smaller; joint 2 small with large transparent cervical shield, a large black spot on the lateral angles and tiny pair on the posterior edge subdorsally. Anal plate dusky. Body white, translucent, food a narrow green line; ♂ glands in joint 9 very large, dark purple. A series of rounded patches of dark vinous on joints 3 to 13 anteriorly, subdorsally before tubercle i, stigmatally behind iii and spiracle, subventrally, small, behind iv+v. Tubercles small, brown-black; on thorax ia and ib separate, iia+iib, iv+v; on abdomen i dorsad to ii and rather approximate, iv+v. Feet short, normal; thoracic ones black except at base. Tubercle vi with a slight vinous patch, vii with a patch on one tubercle. Crochets of feet black on a circular planta, the ring broken without and within. On joints 3 and 4 the stigmatal vinous patch is before tubercle ii and covers also iv+v; on joints 11 and 12 the stigmatal and subventral patches are also united.

Aprocerema sp. A single collected specimen.

Gnorimoschema terracottella Busck. The larvæ were found feeding in the leaves of *Iva imbricata*, growing actually on the ocean beach. The following are my notes: Mining about in the thick fleshy leaves with a more or less distinct hole at the end of the mine, sometimes the leaves more or less webbed up or the

terminal leaves united. Head flattened, clypeus high but not reaching vertex, brownish luteous, the sutures of clypeus brown, mouth brown, eye black with a blackish line along the lower angle of cheeks; width .5 mm. Body cylindrical, plump, incisures distinct and a little folded; cervical shield large, incised at the posterior angles, shining brownish luteous. Body yellowish, moderately opaque, food faintly green. Segments not distinctly annulate, shining, subventral fold moderate, joints 12 and 13 tapering, anal plate scarcely cornified but setose. Tubercles minute, brownish, setæ pale and obscure except at the extremities. Tubercle i dorsad to ii; iii above and before the small, round, brown-rimmed spiracle; iv + v anteriorly on the subventral fold, one obliquely above and before the other; vi posteriorly on the lower subventral fold; vii of three setæ in a triangle on the anterior leg base. On joints 3 and 4, ia and ib separate, iia + iib, iv + v, vi single. Skin minutely granular. Feet small, normal, crochets of those of joints 7 to 10 in a complete circle, of 13 on the anterior half of the planta.

See remarks under *Tortrix ivana* the larvæ of which may resemble this.

Gelechia sp. Five captured examples, representing five different species, are so labelled by Mr. Busck.

Ypsolophus eupatoriella Chamb. (*dolabella* Zell.) Was collected at light.

Ypsolophus sp. An example at light.

Trichotaphe melantherella Busck. The handsome and very active larvæ of this species occurred on the *Melanthera deltoidea* growing in grassy places. The larva lives solitary in a leaf sewed up with white stitches, once folded, not rolled. It feeds through to the lower epidermis. At the slightest touch the larva rushes out part way from one end of the leaf shaking its head rapidly with the throacic feet extended in a fierce attitude, which is intensified by its bright colors. On further disturbance, the larva will spring to the ground very actively, even leaping when actually touched. The young larva has the head luteous, eye black. Body all whitish, food green, a faint orange shade on joints 3 to 6, darkest on joints 5 and 6. Setæ black, tubercles obsolete. In the last stage the mature colors are definitely assumed. Head elongate, smooth, the vertex under joint 2; clypeus moderate but the paraclypeal pieces reach vertex; antennæ rudimentary; brown, shaded with black on the vertex and posterior angles; mouth dark, ocelli pale on a black ground; width .7 mm. Body slender, flattened, moliliform, tapering posteriorly, joints 3 and 4 somewhat collared. Thoracic feet large, angularly jointed, black; abdominal ones small, normal, slender, stretched out laterally, the circle of crochets broken on the outer side narrowly. Cervical shield large, brownish, broadly black edged posteriorly later-

ally and with two patches before. Joints 2 to 6 deep vinous, a conspicuous lumpy white fold in the incisure of joints 2–3 and 3–4; joints 5 and 6 dorsally black banded, 6 the heaviest; tubercles black; joints 7 to 13 opaquely whitish, a curved black band across before tubercle i ending at tubercle vi; one across tubercle ii, ending stigmatally posteriorly; on joint 9 all united in a large sooty patch, on joints 10 to 13 somewhat confusedly mottled and becoming olivaceous laterally. Incisures olivaceous mottled, segments whitish. Anal plate dark olivaceous; venter pale; tubercles and stiff setæ black. Tubercle i dorsad to ii, iv and v approximate, in line longitudinally; vi distinct; vii of three tubercles in a curved row, not a triangle. On thorax ia and ib separate, ia anterior; iia + iib, iv + v; prespiracular tubercle of joint 2 elongate.

Trichotaphe condaliavorella Busck. The larvæ are leaf stitchers, living between leaves of *Condalia ferrea*. The naturally overlapping portions of two leaves are united by short stitches, the larva eats on both sides in little patches. The leaf turns yellowish and is usually moist from dew or rain and gathers lice after the larva has left it. When large, the larva unites two leaves by their edges.

Stage, head .3 mm. wide. Head rounded, slightly bilobed, free from joint 2, clypeus two-thirds to vertex; lobes full; luteous, mouth dark brown; ocelli forming a black patch. Body uniform, joint 13 slightly smaller; segments folded annulate, but not regularly nor distinctly; subventral fold distinct; incisures well marked. Cervical shield large, shining, nearly rectangular, the posterior corners a little rounded; anal plate not cornified. Feet normal, the abdominal ones slender but short, crochets in a single row, the circle narrowly broken without. Translucent whitish or yellowish, food green; feet pale. Tubercles minute, a slight shining ring about the hair tubercle; i dorsad to ii, iii superstigmatal, iv and v in line on subventral fold, remote, vi posterior on lower fold, vii on leg base anteriorly. On joints 3 and 4, ia and ib separate, iia+iib, iv+v; on prothorax the shield complete and the other tubercles normal.

Stage, head .6 mm. wide. Head flattened, clypeus reaching vertex, lobes full and bulging; brown-luteous, ocelli black. Body long, slender but uniform, flattened, segmental incisures not strong. Pale green, translucent, food dark green. Cervical shield greenish with black lateral rim; a large black dot on tubercle ii on joints 3 and 4; anal plate pointed, dusky margined posteriorly. Tubercles minute, black, iii of joint 12 larger; iv and v united, vi and vii normal. Setæ long black, those of the anal plate conspicuous.

Last stage. Head round, slightly bilobed, flat; reddish luteous, the labrum whitish, jaws black, eyes black centrally; width 1.2 mm. Body flattened, whitish green; a green, less opaque dorsal and subdorsal stripe, a black longitudinal dash laterally on joints 3 and 4. Anal plate pointed,

brownish, shaded with black at the rim. Feet normal and somewhat outstretched, tipped with smoky. Tubercles small, black, iii the largest, iv and v contiguous. On thorax ia and ib well separated, iia and iib contiguous in the black patch. The contiguous tubercles practically touch, but are not encircled in a common chitinous area. Setæ long, black, stiff. ♂ glands pale yellowish.

Anacampsis lagunculariella Busck. The larvæ are leaf tyers, occurring commonly on the "white mangrove" (*Laguncularia racemosa*) growing on the shores of the lake. The leaves are firmly united by threads.

Penultimate stage. Head black, shining, paler over the clypeus; mouth pale; width .8 mm. Cervical shield large, black, scarcely bisected; anal plate smaller, blackish luteous. Body sordid translucent, ochraceous tinted. Segments smooth, the incisures folded, feet normal, short. Tubercles small, blackish, iv+v, setæ long, pale. On joints 3 and 4, ia very small, separate from ib, iia+iib, iv+v; i and ii of abdomen nearly in line.

Last stage. Head rounded, clypeus high but not reaching vertex, epicraneal lobes extending to the back of the head without membraneous vertical triangle; primary setæ present, pale. Color as before but the body sordid white, translucent, not ochraceous; joint 2, except the cervical shield, vinous; tubercles of joint 2 dark. Thoracic feet black except the base and joints. Spiracles minute, brown ringed. Segments obscurely 3-annulate; subventral folds double. Tubercles colorless, the hair-tubercles brownish. ♂ glands in joint 9 large, brownish. Anal plate concolorous with body, with black punctures.

Anacampsis argyrothamniella Busck. The larva of this species was first observed on Anastasia Island, St. Augustine, Fla., near the ocean. Afterward I met with it at Palm Beach, also near the sea. It sews up the leaves of *Argyrothamnia blodgettii* on the upper side, uniting them by the edges and eats the inner portion. Last four larval stages observed with widths of head .4, .55, .8, and 1.1 mm.

Head shining black, the clypeus reaching vertex, paraclypeal pieces, apex of clypeus and labrum pale at maturity, in earlier stages head all black. Body cylindrical, the last segments much tapering, feet slender, normal. Slightly greenish white, streaked with white about the tubercles. Tubercles large, black; i dorsad to ii, iv + v, vii of three setæ in a distinct black tubercle; on thorax ia + ib, iia + iib, iv + v in line with iii, vi as large as the others. Anal plate pale, dusky on the lateral edges. Pupa obtect, the cases united, the tongue forming a slight angle below. Black, the cases shining; abdomen dull. Three movable incisures broadly and the joinings of the wing cases narrowly pale brown.

Glyphidocera floridanella Busck. This is an undescribed species taken at light which Mr. Busck intends to describe in a

forthcoming paper, "A Revision of North American Gelechiidæ." He has handed me the following, so that the species might be included here:

G. floridanella n. sp. Antennæ four-fifths of fore wing, light brown on the under side, dark fuscous on the upper, in ♂ slightly serrate and deeply notched on upper side of the joint next to the basal one, in ♀ serrate but without the notch. Labial palpi long, recurved, smooth, somewhat compressed laterally, sharpened in front, the third joint two-thirds as long as the second; dark bronzy fuscous. Maxillary palpi obsolete. Tongue stout, scaled. Head and thorax blackish fuscous, face a shade lighter. Fore wing with ground color light yellowish fuscous, thickly overlaid with dark blackish brown and with a purple sheen. The dark scales segregate into large, ill-defined patches, one occupying nearly the entire basal third of the wing and most prominent at dorsal basal third; another forming an obscure transverse band across the wing at the apical third, and a third occupying the apical portion of the wing. The intervals between these patches show the lighter ground color sprinkled with numerous single dark scales.

Venation: Eleven veins in fore wing, vein 8 absent, 7 to costa, 2 and 3 stalked. This seems a more natural explanation than the one given by Lord Walsingham in the description of the genus.

Hind wing dark gray, twice as broad as the fore wing, termen slightly sinuate.

Venation: Eight veins, 3 and 4 stalked, 6 and 7 stalked.

Legs shining yellowish fuscous, shaded with darker fuscous. Expanse 13.5 to 15 mm.

U. S. National Museum, type no. 5363. Described from two ♂♂ and one ♀.

This remarkable genus, described from the West Indies, has not hitherto been recorded from the continent. I have, however, observed with pleasure another species of it while examining Chambers' types in the Museum of Comparative Zoology, at Cambridge, Mass. It is his *Gelechia æquepulvella*. From the short indefinite description (Can. Ent. IV, 192, 1872), no one would suspect that Chambers had before him specimens of this characteristic genus. It is strange that he did not notice the peculiar antennal structure of the male. However, eleven specimens, labelled by Chambers and agreeing with his description exclude all doubt of the identity of the species. One of these specimens, a ♂, bears Walsingham's blue label No. 1006, referring to a notebook which I have seen through the kindness of Prof. C. H. Fernald, in which the specimen is identified as *G. æquepulvella* Chamb. The male genitalia in Chambers' species are very large and highly developed, as are also the same parts in the comparatively smaller *G. floridanella*. These structures may ultimately

be of assistance in distinguishing the similar species of this genus when it is practicable to examine them. I have met with two other species of this genus in single collected specimens.—August Busck.

ŒCOPHORIDÆ.

Depressaria amyrisella Busck. The larvæ were found on the very young leaves of the "torch-wood" (*Amyris floridana*), which, at the time of unfolding, are colored deep red. The larva spins up one of the leaflets neatly, folding it together on the upper side, united around the margin, with a rounded hole at the petiole which is made circular with silk. The larva goes out to feed on another leaf.

Head round, full in front, bilobed, almost cordate, narrowing below but the mouth broad; antennæ moderate, clypeus rather high, but the sutures obscure, not depressed; shining black, mouth brownish; setæ pale; width .6 mm. Body cylindrical, the segments folded 3-annulate, colorless, yellowish, the food green. Cervical shield weakly cornified, pale orange; thoracic feet rather large, pale. Tubercles minute, setæ small, dark. On thorax ia small, separate from ib, iia + iib, the former small, iv + v; on the abdomen iv and v closely approximate, in line, v small. No anal plate; feet short, normal, with tubercle vii on the anterior outward base. Abdominal tubercles with slight dusky areas about the hair dots. Later the larva was all shaded with red except the anterior edge of joint 2 and the anal feet. Pupa in a cocoon in the leaf, brown.

BLASTOBASIDÆ.

Blastobasis guilandinæ Busck. The larva bores in the young growing stems of the *Guilandina bonducella*, forming a burrow in the center of the wood, the frass collected in masses at a small hole at the end of the burrow, usually at the base of a leaf. My attention was first called to this larva by Mr. Kinzel.

Head rounded, bilobed, vertex under joint 2, held out flat; rather flat before, smooth, shining, light brown, a black line on the posterior angles of cheeks back from the ocelli; sutures of clypeus and jaws dark brown; paraclypeal pieces reaching vertex; width .8 mm. Body robust, slightly flattened, incisures slight; feet short, normal; cervical shield transparent, faintly luteous, divided by a paler dorsal line. Segments faintly 3-annulate dorsally; tubercles small colorless; i dorsad to ii, iv + v, vi present, normal, vii of three setæ in a wide triangle; on thorax ia and ib, iia and iib, iv and v approximate; setæ moderate, pale; spiracles round, black-rimmed. Skin minutely granular shagreened.

YPONOMEUTIDÆ.

Plutella maculipennis Curt. Several examples at light and some were raised by Mr. Busck from larvæ sent him, presumably

feeding on the "Shepherd's purse" (Bursa) which was growing in waste places.

Hemerophila dyari Busck. I have given my notes on this larva accompanying Mr. Busck's original description. (Journ. N. Y. Ent. Soc., VIII, 243, 1901.) It feeds on *Ficus* spp.

Atteva gemmata Grote (*floridana* Neum.). Larvæ in webs on *Simaruba glauca* in 1890; none seen in 1900, but the moths began to appear late in February. (Description in Journ. N. Y. Ent. Soc., V, 48.)

ELACHISTIDÆ.

Coleophora sp. Two examples of a curious case were found on Eugenia sp., corresponding to *C. octagonella* Wals., but no moths were bred. The case was long and pointed at one end, resembling a thorn, roundedly 10-sided, overlaid with elongated pieces of frass laid on regularly; at the open end a group of loose frass fastened in webby silk.

Homaledra heptathalama Busck. The larva occurred solitarily in peculiar nests on the leaves of the palmetto trees (*Sabal palmetto*). The nest consists of a thick felted mass in the angle of the leaf on the under side, composed of silk and comminuted frass (palmetto fibre) arranged in eight rounded chambers, slightly overlapping and connected, successively larger, the first about .5 mm., the last 8 to 10 mm. in diameter. At the end an irregular mass of loose fibre and the whole overspread by a loose, distant net of fine silk, covering also the area where the larva feeds. The pupa is formed in the last large chamber.

Head round, slightly bilobed, clypeus not reaching over half way to vertex, depressed at apex; free from joint 2; pale testaceous, jaws brown, ocelli small, black; width 1.6 mm. Body flattened a little ventrally, incisures well marked, of uniform width; segments smooth, subventral fold moderate; joints 2 to 4 rather folded. Cervical shield very slight, luteous, nearly membranous. Opaquely whitish, dotted with transparent specks. Tubercles minute, except iii, which is large and pale luteous. i dorsad to ii, iv + v. Joints 12 and 13 smaller, 13 strongly folded anteriorly; anal flap conical, membranous, concolorous. Dorsal vessel dark. Setæ fine, brownish; feet short, normal.

Homaledra sabalella Chambers. The larvæ occurred gregariously on the back of the leaf of the *Sabal palmetto*. They eat a wide irregular patch over the leaf, covered with a mat of loose web and comminuted frass, reaching down into a point of the leaf, which becomes dead, curled and filled with the small, webby cocoons. At maturity the larval head measures 1.0 mm. A little larva with the head .3 mm. wide had head and cervical shield jet black, the rest of joint 2 in front pale vinous. Skin transparent,

densely mottled with purple pigment, leaving a straight, pale dorsal line. Tubercles small, black; setæ long, pale, dusky. Feet normal, short; thoracic ones dusky. Tubercles a little elevated.

Antispila eugeniella Busck. The larvæ are leaf miners in Eugenia (probably *E. procera*). The mine starts in the substance of the leaf, rapidly widens to a blotch, and finally the larva cuts out a case, slightly constricted centrally. The larva is rather short and thick, not moniliform, colorless, the head retracted apically, dark; a dark spot behind it.

Cosmopteryx ipomœæ Busck. The larvæ are leaf miners in "morning glory" (Ipomœa sp.). The mine is an irregular series of blotches and lobes, usually elongate and several partly joined; taking all the parenchyma between the two epidermes, the skin strengthened by web, so that the surface is wrinkly. Frass partly ejected, held to the leaf by a close web.

Penultimate stage. Head flattened, rounded, quadrate, clypeus rounded above; greenish, brown on the margin, eye black, jaws brown; width .4 mm. Body flattened, subventral fold prominent; abdominal feet on joints 7 to 10 short, rather broad, all alike and equally remotely spaced, the crochets rather numerous in an ellipse; anal feet approximate, crochets in a line. Thoracic feet small, curved. Segments 2-annulate, the segmental incisures marked, both these and the annulet incisures less opaque than the body. A narrow longitudinal, lateral, transparent crease, interrupted by the incisures. Venter 3-annulate; subventral fold double on joints 5 to 11, not crossing the annulets; joints 12 and 13 tapering. Cervical shield large, flattened, semicircular, hard, but concolorous; anal plate as large as the segment but actually small. Translucent whitish, alimentary canal green; ♂ glands in joint 9 large, annulate, showing four segments. A group of setæ before the leg (vii), a tubercle with very minute, rudimentary setæ near center of lower subventral fold (vi), two setæ and tubercles close together in anterior part of upper subventral fold a little before spiracle (iv + v), the anterior one very small; spiracle round, iii above and before it, i and ii nearly obsolete, showing as slight scars. Seta iv is the only distinct hair; iii and v are present on thorax. Skin finely reticular shagreened.

Last stage. Head flat, mouth projecting, eye black, mouth brown; width .6 mm. Body and head whitish, a broad dorsal and lateral dark red band on joints 2 to 13 and a faint narrow one on the subventral fold in the center of the body. Otherwise as before. Cervical shield semicircular, the dorsal red stripe staining it posteriorly. Lateral stripe with minute pale dots. Setæ moderate, pale.

Spun a fine silken cocoon between leaves or in a folded leaf.
Cosmopteryx nigrapunctella Busck. A specimen at light.
Cosmopteryx lespediza Wals. Also collected at light.

Scelorthus pisoniella Busck. This little larva, living on the backs of the leaves of *Pisonia obtusata* has already been described (Journ. N. Y. Ent. Soc., VIII, 240, 1901).

Lamprolophus lithella Busck. The larva bores in the young stems of *Pisonia aculeata.* I have described it. (Journ. N. Y. Ent. Soc., VIII, 241, 1901.)

Cycloplasis panicifoliella Clemens. Dr. Clemens has described the mine. The larvæ occurred commonly on *Panicum divaricatum* in January, several together in the same leaf, the mines forming a lot of parallel lines directly towards the apex. When enlarged into blotches, frequently several are confluent and the larvæ in a common mine. At maturity the circular pieces of the epidermis, 3.2 mm. in diameter, are cut out, folded in the middle and used as cocoons.

Head very flat, the clypeus high, touching the vertical triangle; pale luteous, sutures and mouth brown, a black and a brownish ocellus; half retracted in joint 2. Body translucent, whitish, the dorsum very flat, the venter much more rounded; segments moderately moniliform; joints 2 and 3 large, 4 a little smaller, 5 to 13 about alike, 13 a little smaller, divided. No feet. A large, rounded, black shield on the venter of joint 2. Setæ obsolete; no tubercles.

Tineidæ.

Nepticula condaliafoliella Busck. The mine is formed on the upper side of the leaves of *Condalia ferrea.* Linear, gradually widening, starting from the margin, much convoluted and directed finally toward the center. The mine is short, compactly folded; the frass forms a central black line.

Larva green, moniliform, with band-shaped clypeus. Thoracic feet on joints 3 and 4, abdominal ones on 6 to 11; joint 13 bulbous truncate, small, no feet. A black patch within behind the head.

Nepticula myricafoliella Busck. The larvæ form mines on the upper side of the leaves of *Myrica cerifera.* The mine starts at the midrib or elsewhere on the leaf, gradually widening, usually contorted, but rarely quite straight.

Nepticula sp. A single specimen at light.

Leucoptera erythrinella Busck. The larvæ are leaf miners on the upper side of *Erythrina herbacea,* very common, frequently causing serious injury to the plants, many mines in nearly every leaf. The mine is narrow, but soon widening to a moderate blotch; finally visible below, the leaf being killed through. The larva escapes by a hole in the mine above. Somewhat flattened, the segments moniliform; joints 2 and 3 wide, 4 narrow, 5 to 10 a little wider and about equal, 11 and 12 successively smaller, 13 elongate, narrow. Colorless, greenish, the food dark

green. Head transparent, mouth brown; flattened, pointed, the clypeus band-shaped and reaching vertex, but narrowed a little above; ocelli present, blackish. No feet. Setæ present only laterally.

Leucoptera guettardella Busck. Mr. Busck has described the mine, on the under side of the leaves of *Guettarda elliptica*. The larva is flat, the head retracted, the mouth brownish; clypeus band-shaped, pointed above, divided from the broadly triangular vertex. Segments widened, flat, joint 2 wide, 3 less so, 4 small, 5 to 9 a little larger, 10 to 13 tapering. Colorless, food green, edges of segments darker. Thoracic feet small; abdominal ones on joints 7 to 10 and 13 small, without hooks. Tubercles absent, setæ obsolete. The larva turned dark vinous and left the mine to spin its cocoon.

Leucoptera n. sp. A single specimen at light.

Podiasa chiococella Busck. The larva forms in the leaves of *Chiococca racemosa* a long linear mine, only slightly widening, suddenly expanding to a large blotch that may cover part of the old mine. The larva is long, slender, and flattened with strongly moniliform segments. Head round, flat, about half as wide as joint 2; joint 2 transversely elliptical, projecting at the sides; 3 and 4 small; 5 to 10 larger and about equal, 11 to 13 tapering. On joint 2 a quadrate shield, excised at the sides, the posterior angles produced laterally like curved horns. A dorsal and a ventral round black patch on joints 3 to 13, those of joints 3 and 4 small, the rest corresponding with the size of the segment. No thoracic feet; abdominal feet on joints 7 to 10 short and stumpy, without hooks.

Before leaving the mine the larva is markedly transformed. (See Busck, Proc. U. S. Natl. Mus., XXIII, 241.) All dark vinous, shining except a large white spot on tubercle iii, the row of spots obscurely connected into a band by a shade that is distinct posteriorly. Head round, slaty black, clypeus reaching vertex, triangular, not much flattened; cervical shield broadly white. The lateral white spots on joints 3 and 4 contain tubercles iii, iv, and v, with iia and iib, which are approximate. On the abdomen tubercle i is dorsad to ii, iv, and v in line, rather remote and on the posterior part of the segment; vi distinct subventrally; vii on the leg. Setæ black, distinct. Thoracic feet short, pale. Abdominal ones on joints 7 to 10 and 13, but the anterior pair short, not functional in walking, so that the larva is a semilooper. It walks about freely seeking a place to spin its cocoon.

Coptodisca condaliæ Busck. This larva mines the leaves of the "break-axe" (*Condalia ferrea*), as described by Busck. It has the head small, flat, higher than wide, the epicraneal lobes rather full, touching centrally as if dividing the clypeus into a

highly triangular lower part and small triangular apical portion. Mouth slightly pointed; antennæ very small; ocelli not seen. Joints 2 and 3 wide, 4 smaller, 5 to 13 about equal, 14 broad, rounded, with a ventral plate notched at the end, the two lobes rounded and slightly upcurved. No thoracic feet, the venter of joints 2 to 4 flat, roughened, with paired circular areas representing the feet. Abdomen without feet, the subventral folds prominent; joints 7 to 10 with median elliptical white areas, 12 with a smaller paired but similar area and a longitudinally elliptical one on joint 13. Skin smooth, dull, pale leaden, brownish on thorax and ventral plate. Body flattened dorsally, finely shagreened; no shields. Dorsal tubercles obsolete, represented by obscure impressed areas; lateral hairs rather distinct, pale. The larva lives in the mine with the ventral surface uppermost.

Coptodisca sp. Mines very similar to the preceding on the upper side of the leaves of *Myrica cerifera*. The cases are cut out in the same way. Mr. Busck did not determine the insect specifically.

Bucculatrix ivella Busck. The larva at first mines the leaves of *Iva frutescens*, a linear, gradually widening mine with a black central stripe of frass except at the tip. The mine starts at the petiole and runs nearly to the tip of the leaf, slightly flexuous. The larva comes out at the end and spins a delicate, circular web with a central semicircular hole in it, in which it rests curled. Larva a little flattened, segments slightly moniliform, subequal, scarcely tapering. Pale yellow with a green tint, not shining. It sheds its skin in this web, leaves it and becomes free-feeding on the young leaves. Slender, somewhat moniliform, a little depressed at the ends. Whitish translucent, the food green; ♂ glands orange. Tubercles large, white, setæ black. Tubercle i dorsad to ii, iv and v very remote, iv dorsad, suggesting the Noctuid type excepting that it is very far posterior of the spiracle, vi on the lower subventral fold. On thorax ia and v absent; iia + iib. Cervical shield brown dotted, with black setæ. Head pale, mouth pointed, eye black, clypeus high. Spins a ribbed white cocoon on the stem or leaves of the plant.

Bedellia minor Busck. The larva mines in the leaves of the "morning glory" (Ipomœa sp.). The early mine is a slender irregularly sinuate line under the upper epidermis gradually widening to the end where the larva emerges to begin blotches elsewhere. The frass is contained as a long, dotted, central line. Later there is a slight open web on the back of the leaf, the larvæ feeding as miners but ejecting the frass by a hole. A large blotch is formed, nearly symmetrical, sometimes lobed.

Head broad, flat, half retracted in joint 2, shining greenish with a brown tint, mouth brown. Cervical shield quadrate, rugose, shining greenish.

Body slender, segments moniliform, joint 12 smaller, sharply noniliform, 13 small and slenderer. Thoracic feet large, pale; abdominal ones very small, slender, close together on joints 8, less so on joint 9, more separate on 10 and remote on 7; a longer pair on joint 13; crochets few in a circle. Setæ i moderate, ii minute, posterior, iii small, iv large, substigmatal, a little posterior; a tiny seta (v?) just above vi; vi large, somewhat anterior; vii small on base of leg; viii within. On thorax iii and v are present. Translucent whitish green, food dark green. Anal plate shield-like, rugose, blackish on the lateral edges. Dorsal vessel with whitish edges.

At maturity the larva is pale green, a dorsal, a broad geminate lateral and faint subventral dark red lines. Pupation in a delicate web remote from the leaf. The pupa resembles a seed, a point in front, cases nearly reaching the cremaster.

Metriochroa psychotriella Busck. The larva mines the leaves of the "wild coffee" (*Psychotria undata*) as described by Busck. Head rounded, prominent, the labium a broad, even band to base with small spinneret and palpi at tip; labrum moderate, clypeus a broad band extending to vertex and not narrowing; lobes full; antennæ colorless; no ocelli; a few rudimentary setæ; translucent yellowish. Body flattened moderately, round, tapering much behind, not so before; segments moniliform. Joint 2 wider than head, without shield; 3 still wider (setæ ia and ib fairly distinct on joints 3 and 4); joints 4 to 10 about equal, 11 to 13 tapering, the latter divided by a strong suture. No plates; no dorsal setæ on the abdomen. Skin finely granula, not annulate nor creased. Thoracic feet absent, represented by three pairs of smooth circular plates. Abdominal feet represented by narrow concave ellipses containing brown spicules on joints 6 to 10 and a terminal median patch on joint 13 posteriorly with a seta on either side. Color translucent whitish with a yellow tint. No setæ except on the thorax and joint 14.

Marmara guilandinella Busck. The larvæ mine the stems of *Guilandina bonducella* under the epidermis of the bark, a linear, widening, irregular, wavy and recurving mine, white at first with central dark line of frass; later turning brown.

Lithocolletis verbesinella Busck. The larvæ form mines on the under side of the leaves of *Verbesina virginica*, blotch-like, a little swollen and red above, membranous below, finally sewed up into longitudinal furrows. A white cocoon slung in the hollow of the mine. The larva has the head flattened, the vertex under joint 2, clypeus high and not narrowing much till above the middle, nearly touching the vertical triangle; mouth prominent, brown, ocelli black. Body whitish, no marks.

Lithocolletis sp. A single collected specimen.

Coriscium randiella Busck. The larvæ mine the leaves of

Randia aculeata on the upper side, the mine marginal or becoming marginal, yellow, forming a large blotch sometimes obscuring the early linear part of the mine. The epidermis becomes a little swollen and succulent, and towards maturity the larva eats out all or nearly all of these succulent cells, leaving the mine slightly bladdery with thin brown skin. The larva emerges and spins a white cocoon on an adjoining leaf.

Larva not strongly flattened, moderately moniliform, without marks. Head retracted, flat, clypeus triangular, reaching vertex, luteous, mouth brown. Joint 2 flattened above, transparent, no plates. Thoracic feet rather large and prominent; abdominal ones on joints 7 to 9 and 13. All light yellow, not shining.

Chilocampyla dyariella Busck. The larva forms curious mines in the leaves of *Eugenia buxifolia* and *E. procera* as remarked by Busck. The mine is really almost a gall, as it is formed in the young leaf which grows in a modified manner. The early mine is narrow, slightly wavy and uniform about .5 mm wide; it starts in the leaf and runs all about the margin on the under side, often nearly around the leaf. The epidermis is whitish but the leaf is unchanged by this part of the mine. At the end the larva proceeds to the middle of the leaf where it forms a large, bladder-like hollow that finally occupies nearly the whole of the leaf. The two surfaces are swoollen a little, gall-like, succulent, pale yellow or red. The space divides the midrib, half of it going with either surface of the flattened bladder. Finally the larva eats out more or less of the succulent cells and the frass accumulates in the hollow. The larva escapes by a hole.

Head rounded, not flat, apex under joint 2, clypeus nearly reaching vertex, unusually narrow; whitish, mouth broadly stained with brown; antennæ short; two large black spots on ocelli with a brown one between; setæ distinct, white. Body somewhat flat though the dorsum is rather well rounded. Entirely opaquish white without marks. Segments moniliform from dorsal view, a little irregularly creased, not annulate. Joint 2 large, the large shield concolorous; 13 small with moderate shield, faintly brownish tinted. Thoracic feet moderate, the anterior pair directed obliquely forward, the others lateral, 3-jointed, normal. Abdominal feet on joints 7 to 9 and 13, short and thick, without crochets. No feet on joint 10. Setæ white, some rather long, from very small tubercles. Tubercle iv has a large setæ, but the others are nearly indistinguishable.

Eucosmophora sideroxylonella Busck. The larvæ form mines on the upper side of the very young leaves of the *Sideroxylon pallidum*. Linear and slightly widening, finally forming a great blotch, the upper epidermis neatly split off. This soon becomes tight on the young growing leaf like a delicate membrane and curls the leaf, which is normal below. Membrane brown, longitudinally wrinkled, the leaf finally closing together. Then the larva eats the parenchyma to the lower epidermis.

Head rounded, apex under joint 2, a little flattened, clypeus highly triangular, narrow, just touching the vertical triangle, a little depressed; luteous, mouth brown, ocelli black. Body cylindrical, not tapering, incisures not deep, translucent, faintly yellowish. Thoracic feet short; abdominal ones sessile, on joints 7 to 9 and 13. Setæ pale, obscure; tubercles obsolete. On maturing the larvæ turn bright red and leave the mine to spin their cocoons.

Gracilaria burserella Busck. The larva lives on *Bursera gummifera*. At first it forms a mine starting next the midrib or large vein, broadly linear, finally widening into a subquadrate blotch bounded by the veins. The lower epidermis is thin; no sign of the mine above. Later the larva leaves this mine by a hole and folds over a part of the leaf near the petiole at the margin fastened with white webby stitches without. It lives concealed in this and eats out the epidermis and parenchyma. Forms a white cocoon on the back of the leaf.

Head bilobed, full, clypeus highly triangular, touching the small vertical triangle; shining, ocelli, black; mouth pointed; colorless. Body cylindrical, the feet large; abdominal ones on joints 7 to 9 and 13, large and distinct, none on joint 10. Segments equal, 12 and 13 a little smaller; segments with distinct incisures, 2-annulate. Whitish translucent, shields concolorous. Setæ rather long, pale; i dorsad to ii, iv and v in line quite remote, vi long, vii on leg base; on thorax ia + ib, iia + iib. Cervical shield large, semicircular; anal plate small.

Gracilaria sebastianiella Busck. The larva forms a mine on the back of a leaf of *Sebestiania lucida*, an irregular band-shaped mine with lobes in different directions, finally forming a large blotch with a long fold in the thin lower epidermis, sewed up with white silk. Below this the larva eats the thick upper side to the upper epidermis near one edge of the blotch.

Head round, the lobes full, clypeus triangular, high; brownish, ocelli black, mouth brown. Body nearly cylindrical, incisures well marked but not moniliform, not strongly tapering. Thoracic feet large, normal; abdominal ones strong and short, on joints 7 to 9 and 13. All colorless, whitish, food dark green, plainly showing. Setæ and tubercles obsolescent. Later the larva came out and folded up the whole end of a leaf into a neat triangular box and ate out the parenchyma. The box was held with bands of silk without and the edges sewed up; frass contained.

The larva comes out a small hole at the end and spins a cocoon in a similarly folded leaf, but a fresh one, with a hole at the corner for the emergence of the moth.

Gracilaria sp. A specimen at light.

Phyllocnistis intermediella Busck. The larva mines the leaves of *Sideroxylon pallidum* as described by Busck. Head

large, flat with projecting widened mouth. Body flat, the sides scalloped, joint 2 large, but not wider than the head, 3 equal, 4 small, 5 to 11 larger, 12 smaller, 13 long and narrow, tapering. Translucent, faintly greenish, food green; no marks; head colorless, the jaws brown.

Scardia sp. Many specimens at light.

Eucatagma amyrisella Busck. The larva lives in a web on *Amyris floridana*. I have given my notes on it with Mr. Busck's original description. (Journ. N Y. Ent. Soc., VIII, 247, 1901.)

Several other species of Tineids and one Geometrid were taken, but not in good enough condition to work up. Twelve larvæ, not referred to in the preceding part of this article, were noted, but not bred.

June 14, 1900.

The 153d regular meeting was held at the residence of Mr. Frank Benton, 1801 Harewood ave., N. W. President Gill in the chair, and Messrs. Caudell, Dyar, Ashmead, Morris, Vaughn, Chapin, Hay, Howard, Waite, Patten, Pollard, Benton, Heidemann, Kotinsky, Cook, and Currie, active members, and Prof. Trevor Kincaid, of Seattle, Wash., visitor, also present.

—Under the head of Short Notes and Exhibition of Specimens, Dr. Dyar showed a series of genitalia of Lepidoptera which had been admirably displayed by the work of a museum pest, Silvanus. Mr. Howard referred to a note which he had published in *Psyche*, Vol. IV, p. 132, in which he described similar work done by Trogoderma. Dr. Gill referred to the use of insects in preparing skeletons of mammals, and Mr. Kincaid said that in Alaska the work of Amphipod Crustacea was used in the same way.

—Mr. Caudell, apropos to Mr. Heidemann's statement that Capsids very seldom puncture the skin of human beings, exhibited a specimen of *Plagiognathus obscurus* Uhler, which had bitten him on the wrist.

—Dr. Dyar showed the second volume of Hampson's catalogue of the Lepidoptera Phalænæ, and referred to the fact that certain Nolas in India retained, in the larval state, the successive cast heads just as does the larva of *Harrisimemna trisignata* Walk. of the United States fauna. He also referred to the great enlargment of the lobe of the hind wings in the Lithosiid genus Bœnasa,