

Article VIII.—MICROLEPIDOPTERA FROM THE BLACK
MOUNTAIN REGION OF NORTH CAROLINA, WITH
DESCRIPTIONS OF NEW SPECIES.

BY W. D. KEARFOTT.

PLATE VIII.

The material forming the subject of this paper was collected in the Black Mountain region, Buncombe Co., North Carolina, by Mr. Wm. Beutenmüller, during the several expeditions he has made to this interesting region under the auspices of the late Dean Hoffman, afterwards continued by his son Mr. Samuel V. Hoffman.

Altogether more than 140 species of microlepidoptera have already been determined, which number will be increased when all of the material is worked up. A complete list will appear in Mr. Beutenmüller's report; in the following pages reference is only made to the species supposedly new to science and to such others as have been bred or on which comparative notes are thought necessary.

The opportunity has been taken to figure five species, nos. 6, 7, 14, 16, and 18, not very well known, and which have not been figured before in this country.

I am indebted to Mrs. Beutenmüller for the easily recognized drawings, reproduced on the plate, and also for many of the larvæ which she took much interest in collecting. I have also to acknowledge the help of Dr. Dyar in identifying several Phycits and the assistance of Mr. Busck with several of the Gelechids.

Cotypes of all of the new species are deposited in the Collections of the American Museum of Natural History, and in my collection.

***Pyrausta fissalis* Grote.**

Two specimens, one bred from larva on leaves of sassafras and one on goldenrod; received May 28 and June 1; in pupa June 8; issued June 21. Larva 28 to 30 mm. long, cylindrical, tapering very much to each end; grayish yellow, shining, tubercular plates large, shining, stained with brown around the edges. ia and ib joined in shape of figure 8. Head and P. T. shield pale brown. Pupated in slight web in crumpled leaves. Pupa. very dark brown.

***Pyrausta æglealis* Walker.**

One specimen, bred from larva on butternut, received June 15, issued July 16.

Larva shining, wet looking, semitransparent, pale yellow, brownish red dorsally on segments 3 to middle. Head small, triangular, pale brown, mottled with darker brown. P. T. shield same, with large dark brown patches on either side of dorsal line, on posterior edge, extending down to spiracles and forming a distinct collar. Dorsal tubercles on metathoracic segment on large brown plates. Lateral plates on segments 4, 5, and 6 also large and much darker than skin; other plates large but concolorous.

Folds leaf into large cell or cavity; frass not ejected, but compressed into a large moist mass.

***Pyrausta signatalis* Walker?**

One specimen, Valley, June 26. All other specimens I have seen of Walker's species are a uniform shade of pink. This specimen is heavily shaded with reddish brown, with a broad ciliate ochreous band; the white transverse lines are, however, exactly like typical examples.

***Acrobasis caryivorella* Ragonot.**

Four specimens bred from larvæ in cases between the leaves of alder; one received May 18 had already pupated; others received June 8, pupated a few days later. Moths issued June 22 to 29. Larva leathery, dark gray or greenish black. Head reddish-brown, P. T. shield ochreous brown, both head and shield very rough, their surface seeming to be covered with minute globules; on mesothoracic segment tubercle is on a large black and red chitinous plate. Larval case of grains of black frass and silk, serpentine in shape when of small diameter, but becoming straighter or cornucopia like when the larva is mature. Cocoon formed by spinning a rounded cover over the end of the case, or sometimes between two leaves. A large Hymenopterous parasite was bred from one larva.

***Acrobasis kearfottella* Dyar.**

One specimen, bred from larva in case between leaves of hickory, received May 28.

Larva with skin of leathery brown texture. Case of grayish white silk with an occasional grain of grass, somewhat flattened, its small diameter serpentine, enlarging into a chamber 20 mm. long by 6 mm. wide by 4 mm. thick. Pupa in cocoon spun in the large outer end of the case.

Salebria contatella Grote.

Two specimens bred from larvæ on locust, received May 28 and June 6. Moths issued July 4 and 7. Mature larva agrees with description by Packard, p. 361, Fifth Report of Entomological Commission; but just before pupating the green becomes dull red. Cocoon, flattened oval, spun among debris at bottom of breeding jar.

Platyptilia carolina sp. nov.

Plate VIII, Fig. 17.

Expanse 22 to 25 mm.

Head, palpi, thorax and fore wing clay yellow. The fore wing is minutely dotted with a darker shade and the costa from inner third to outer fourth is dusted with blackish scales. There is a dark brown dot below costa, about a third from base, and another on lower lobe just within and below inner end of cleft; on the apex of the second lobe is a similar spot. There is a preciliate line of blackish brown on the termens of each lobe; a paler line separates another but less dark line from the long scales of the cilia, which are pale purplish fuscous. The hind wing is the same color as the fore wing but with a faint pinkish tinge, with brownish lines before the cilia, and a tiny black dot near outer end of cilia of third lobe. The body is shaded with brown posteriorly and on the sides, with a few whitish scales in the lateral tufts. Legs bleached straw color, dusted with brown.

I have a darker specimen, where the ground color is more thickly powdered with brown, and all of the dark lines and spots are accentuated. This specimen shows a tiny brown dot at the base of the first lobe, just above the dot on the second lobe; the hind margin cilia are also mixed with black scales on the outer half. Three specimens, "Valley," May 27 to June 26.

Exartema hippocastanum sp. nov.

Plate VIII, Fig. 2.

Expanse 21 to 22 mm.

Head olivaceous brown in which are mixed blackish brown scales, face cream color. Palpi cream color, outside of tuft on second joint stained with blackish fuscous on inner half of upper edge and the lower outer end of tuft; apical joint black with a tiny whitish dot on extreme apex. Antennæ fuscous, paler within. Thorax pinkish brown in front, gray in the middle divided by a black line, behind which are pink scales tipped with white; the tuft is of long fuscous scales tipped with pink, and with several white scales inserted; patagia fuscous and pink with lateral scales white. Abdomen, first joint white, others fuscous on upper side, white on sides, ochreous white beneath, tuft ochreous.

Fore wing with the usual *Exartema* scroll-work. The inner fascia transversely

across wing at inner fourth on costa to inner third on dorsal margin, divided into two parts by a narrow broken line of brown, and each side is divided by a leaden metallic blue line; its inner edge is deeply excavated for more than half its length in the middle, the outer edge sends an oblique spur through middle of cell and is indented a quarter above dorsum. The outer fascia begins on costa a little beyond middle in the form of two outwardly oblique costal dashes, which run into a flattened ovate patch over end of cell, which sends out two spurs at right angles to each other, one to the anal angle and one to dorsum at about two-thirds from base; the latter sends a short spur obliquely upward at about the middle of its length, which almost meets the outer spur of the inner fascia. This outer fascia, like the inner, is divided by a narrow brown line and each side subdivided by leaden blue. From the costa beyond this fascia are three geminate streaks, the two inner coalescing below and sending a spur down to middle of wing at outer margin; between this spur and the margin is a vertical geminate line. The basal area, within the inner fascia, contains a roughly triangular pale patch of the same shade and construction as the fasciæ, separating this from inner fascia is the ground color. Cilia fuscous, with a black spot at apex, and two pink streaks below apex, and two pink streaks above anal angle. The dark ground color, between the fasciæ is velvety black but more or less heavily overlaid with ochreous red scales, in some specimen the overlying scales are rich indian red. The fasciæ and spots are pale shining pinkish white and fuscous, subdivided by shining leaden or steel blue. On the costa where these pale fasciæ and spots overlay it, the color is creamy white and there are six spots of this color. In the specimens of the indian red type, the thorax and head are several shades darker than described and frequently the white scales are missing.

Hind wing olivaceous brown, cilia white and patch above cell white; underside creamy white mottled with fuscous at apex and below costa. Underside of fore wing smoky fuscous with costal spots and spots in cilia repeated.

Six specimens, bred from larvæ feeding on buckeye, collected by Mrs. Beutenmüller, May 18.

My notes on the larvæ are uncertain, as two species were in the same box but it is likely the following may be applied to this species. "About 16 mm. long, very intense green, head and P. T. shield small and jet black, slightly tapering to either end. Rolls and crumples the ends of the leaves often involving more than one leaf."

***Exartema merrickanum* sp. nov.**

Plate VIII, Fig. 1.

Expanse 18 to 20 mm.

Head yellowish-gray. Palpi whitish yellow, with a blotch of fuscous on outer end of second joint, and a tiny dot of the same color at base, outside; apical joint black. Thorax ashy gray mixed with olivaceous scales, posterior ends of patagia and thoracic tuft white. Abdomen white on segment beneath thoracic tuft; other segments fuscous, shining; anal tuft ochreous-brown.

Fore wing grayish white and olivaceous gray, with a dark shade from base to middle of costa and a large triangular patch of indian red in apex, enclosing an oval

black spot. The usual *Exartema* scroll-work is almost obliterated in this species. There are three olivaceous patches, one on fold at inner fourth, one below fold just beyond middle, and the third before anal angle; beyond the third is a patch of whitish shining scales with reddish and brown strigulae, involving the anal angle and forming the inner boundary for the red apical triangle. There is a paler streak from inner fourth of dorsal margin to outer fourth of costa. The inner half of costa is dotted with cream and black; in the middle of costa is a quadrate spot of red and black scales; beyond this to apex the costal dashes are red and white, with a black dusting in the red; at the outer third the costal dashes send down leaden metallic lines which curve outward and run into the pale patch at anal angle, similar lines rise from the costal dots before apex, join together and run to middle of outer margin through the red patch and outside of the black spot. A small red and black spot on the middle of the wing at the end of cell. Cilia shining pink, with a nearly black patch at apex and three or four blackish scales between apex and anal angle.

Hind wing smoky brown, cilia white; underside gray white, with a streak of smoky brown below the cell and in the apex; cilia white. Underside of fore wing smoky brown, except along costa and termen which are creamy yellow.

Forty specimens: Black Mountains, N. Car., Valley, June 12; New Brighton, Pa., June 3 to Aug. 12, F. A. Merrick; Algonquin, Ill., July 8 to 13, Dr. Nason; Iowa City, Iowa, June 29, Prof. Wickham; Chicopee, Mass., F. Knab; Pittsburg, Pa., Henry Engel.

Nearest to *E. corylanum* Fern., but the latter is smaller and the prominent dark triangle in apex is absent.

***Exartema versicoloranum* Clem.**

One specimen, bred from larva on black oak, issued June 5. Ten other specimens captured in valley between June 2 to 26.

***Olethreutes nimbatana*, var. *montanana* var. nov.**

Plate VIII, Fig. 3.

One ♀ specimen, Mt. Graybeard, June 9. Larger and darker than *nimbatana*, the outer edge of the dark area nearly vertical, not curving inward as in *nimbatana*. The apex and extreme termen is much more heavily overlaid with dark scales and streaks.

Hind wing very dark smoky fuscous, cilia broadly paler. Expanse 20 mm.

***Eucosma obfusca* Riley.**

One specimen, Valley, June 11. I quite agree with Dr. Dyar in separating this from *E. scudderiana* Clem.

Epinotia ilicifoliana sp. nov.

Plate VIII, Figs. 8 and 9.

Expanse, ♂ and ♀, 13.5 to 15 mm.

Head dull gray, shaded with brown above eyes; palpi dark gray outside, lighter gray within; antennæ dull fuscous. Thorax dull gray, mixed with brown scales, with a purplish gleam, which is particularly strong on anterior and posterior ends of patagia. Abdomen silky fuscous above, faintly tinged with purple, below shining cinereous, darker on anal joints; legs shining cinereous, fore and middle tibiæ and tarsi annulated with brown.

Fore wing grayish cinereous, in a broad band from inner half of costa to dorsal margin, which is connected with large ocellic spot of the same shade. Dorsal patch to inner third on costa and half on dorsum, boundary line dentate; dull brown on dorsal half shading into cinereous brown above, and with a small grayish cinereous patch on dorsum. The costa is marked with about eleven purplish brown dots, between each a tiny dot of the same color, separated by shining gray; beyond the middle pale stripe these dots are large and conspicuous, the inner one (at middle of wing) being extended downward to end of cell, then joining a crescent shaped dash of the same color which sends a spur into the apex; above this crescent mark the costal spots are outlined below by yellow; the dark apical spot is the largest and is hook-shaped outwardly. Before the anal angle is a small triangular brownish spot, sometimes sending a yellowish line to the crescent above it. Ocellus not distinctly defined, but the gray ocellic region covers the outer third of wing below the crescent; it is slightly strigulated with vertical rows of brown scales, a curved one before the margin being most prominent. Cilia below the apical spot, dull fuscous outwardly, shining gray within.

Hind wing smoky brown, darker toward apex, cilia paler, preceded by a dark, then a light line. Underside of both wings brown with a faint grayish pubescence, costal spots of fore wing repeated.

Larva 12 mm. long, color dull yellow, green shining through in irregular blotches on dorsal and lateral regions. Head, prothoracic shield and thoracic legs black. A large polished black tubercle just in front of spiracle and a smaller one on base of leg, on joint 2. Anal shield green, not chitinous. Prothoracic shield divided by a paler dorsal line.

This species is quite variable, and ranges to a form in which the central gray fascia is almost obsolete, the dark area covering all of the costal and inner half of wing, the gray only appearing on the outer dorsal half, below the crescent to the boundary of the basal patch.

Bred from larvæ tying and crumpling the young leaves and terminal twigs of a species of *Ilex*, probably *verticillata* Linn., collected by Mrs. Beutenmüller on Mount Graybeard, No. Car., full grown May 20, in pupa May 27, and issued between June 10 and 20. Also bred by the writer from the same food-plant in Essex County Park, N. J., with about the same dates; found on one bush only, about six feet in diameter and the same height. About the middle of May for the past six years, this bush

is covered with the webs of these larvæ, as many as one hundred having been counted at one time, but a month later almost every vestige of their work had disappeared. I have only taken one specimen on the wing July 4.

Pupate in tight, dense cocoon spun in debris, or frequently in a small flap cut out of leaf and turned under. Breeding numbers K. 212, K. 465 and K. 543 placed temporarily under *Epinotia*; the structure does not fit with any of the Tortricid genera credited to North America.

Antennæ, ♂ and ♀, slightly dentate. Palpi with a flattened, triangular tuft of closely appressed scales on second joint, outer joint very short, obtuse, not hidden. Long scales in circles above eyes, coming together above forming a slight crest between eyes and a larger posterior one on head. Thorax smooth. No tufts of raised scales on fore wing, and no costal fold in ♂. Fore wing slightly arched at base of costa and near apex, nearly straight between; apex rounded, deeply indented beneath apex, at ends of veins v and vi. Termen below evenly rounded into dorsal margin. Venation: 1 from middle of cell, 3 separated from 4, and bent downward to inner third, then upward until it approximates 4 at termen; the spaces between 4 + 5, 5 + 6, and 6 + 7 about equal; 7 from within upper angle of cell, 7 and 8 stalked for half their length, 7 to termen and 8 to costa.

Hind wing, 3 and 4 stalked for about one third, 5 approximate; 6 and 7 closely approximated at base.

***Ancylis pulchellana* Clem.**

Plate VIII, Fig. 10.

One specimen, Valley, June 2. This species has always been in our lists under the genus *Proteopteryx*. The type is in the collection of the American Entomological Society, Philadelphia; it is very close to *A. laciniata* Zell. and *A. dubiana* Clem.

***Enarmonia eclipsana* Zell.**

Four specimens, summit of Mt. Graybeard, May 26, and Valley, June 3. This species was omitted by Fernald in his original Catalogue of North American Tortricids, 1882, and apparently for the same reason has been omitted from all subsequent lists, notwithstanding a very beautiful figure of the species is given by Zeller in Verh. zool.-bot. Ges. Wien. plate IX, Fig. 29, 1875.

***Hemimene nigromaculana* sp. nov.**

Plate VIII, Fig. 5.

Expanse 11 to 13 mm.

Head clay brown, crests above eyes olivaceous brown, under side of face whitish.

Palpi cream color, with outer half of tuft on second joint dull black; a small black dot at base of first joint, above. Antennæ fuscous, paler between joints. Thorax olivaceous, posterior end of patagia cream color. Abdomen olivaceous brown, anal tuft cream; legs creamy white, dusted with brown.

Fore wing:— Scales black at base, ochreous at tips, causing the ground color to appear as fine vertical strigulae of ochreous on a black ground. From the middle of the dorsal margin four white lines converge towards the upper end and terminate at middle of wing, slanting outwardly to end of cell; the two middle lines are the most distinct, the outer ones being somewhat broken and not quite reaching the apex of the cluster. Between these and base, on dorsal margin, are two shorter white lines, inwardly oblique ending at fold, they are somewhat angulated with a tendency to turn outward at the upper end. On the costa before the middle are two pairs of white dashes, resting on the costal fold, from the outer pair a shade of blue continues to the apex of the cluster of white lines. Beyond the middle another pair of white costal dashes gives rise to a metallic blue line which curves outward and inward before the termen to the anal angle, enclosing at the end of the cell a rounded ochreous yellow spot divided by three horizontal black lines. On the outer fourth of costa are three single white dashes, the middle one sending off a blue metallic line which ends beneath the apex on the termen; a few blue scales outline each of the other two dots. On the extreme outer margin are five velvety black dots, the two upper ones being separated by a white dash, the outer end of which overlaps the cilia. There are two white dots on the lower side of the ochreous patch at end of cell, with a spur from the long blue metallic line enclosing the outer one. The male costal fold is nearly half the length of the wing. Cilia shining fuscous preceded by a paler line.

Hind wing:— Smoky brown, paler towards base, cilia fuscous preceded by a paler shade; underside the same with a whitish shade over the cell. Underside of fore wing shining bronze brown, dotted with white along costa, and the cilia cut with a white dash below the apex.

Two specimens: "Valley," June 1.

***Lipoptycha albolineana* sp. nov.**

Plate VIII, Fig. 11.

Expanse 13.5 mm.

Head olivaceous brown, face and palpi light clay brown. Antennæ pale clay brown, darker between joints. Thorax dark gray; abdomen black above paler beneath, anal tuft clay brown; legs the same with tarsi powdered with blackish scales.

Fore wing:— Dingy brownish black, with several sordid white transverse lines. At inner third a geminate white line from costa to dorsum; just beyond middle a short oblique line goes to middle where it nearly joins a similar line from costa beyond; the two form a rough triangle enclosing a spot of ground color of the same shape, below the lower ends of these two lines is a vertical white line from dorsal margin, slightly outwardly oblique. On the outer fourth of costa are two shorter white lines, the outer one curving under the apex. From the anal angle a similar white line runs to lower end of cell. The black preciliate line is cut by four or five small whitish dashes.

Cilia gray, overlaid with smoky brown scales outwardly. Hind wing and under-side of both, dark smoky brown, cilia paler, and the white costal spots repeated on fore wing.

Two specimens, "Half-way-place," June 8.

***Archips rileyana* Grote.**

Many specimens, bred from larvæ, in communities, webbing together masses of the leaves of horse-chestnut. Received June 4; majority in pupa June 8; moths issued June 24 to 30. At least two hymenopterous parasites bred.

***Tortrix albicomana* Clem.**

Two specimens bred from larvæ received May 28, mixed with the larvæ of *Telphusa latifasciella* Cham. From huckleberry.

***Eulia juglandana* Fern.**

Five bred specimens. Two lots of larvæ received May 28 and June 8, on leaves of hickory; one larva on leaves of *Viburnum acerifolium* received June 15. The moths issued from the former June 18 to 23 and from the latter July 1.

The larvæ on both food plants were alike, 23 to 24 mm. long, cylindrical slightly tapering yellowish green, darker along dorsal line; head dirty yellow, marked with brown lines and dots on sides of lobes. P. T. and anal shields not chitinous.

Larvæ on hickory, live between two leaves, or between the two surfaces of one leaf folded over, using a considerable quantity of silk. Pupated in a fold of leaf in a rather dense, white silk cocoon.

***Phalonia ednana* sp. nov.**

Plate VIII, Fig. 13.

Expanse, ♂ and ♀, 13 to 14 mm.

Antennæ golden brown, dark brown at base, biciliated in male. Head grayish ochreous, darker above eyes and mixed with dark scales in front. Palpi grayish ochreous within, with a line of dark brown scales on upper edge, outwardly the latter color, outer joint short, obtuse, black except extreme apex which is yellow. Tuft on second joint rather narrow, long, projecting slightly forward in points above and below third joint, but not concealing it. Thorax smooth, with flattened, slight, posterior tuft; dark brown, the tips of the posterior scales and scales of patagia

ochreous. Abdomen gray, with a purplish hue on middle segment, anal tuft ochreous. Legs pale gray, annulated with dark brown.

Fore wing:—Cinereous or yellowish gray, with a blackish spot covering basal area and another on costa at middle. The gray ground color is stained with pale yellowish ochreous and faintly tinged with reddish brown on apical third and below costal spot. The basal spot is outwardly rounded extending to inner fourth at middle, slightly indicated at lower median vein, it and the costal spot are very dark brown, on which are superimposed a few reddish brown scales. The costal spot is about the same size as basal spot, about one fourth length of wing on costa, extends down to middle of wing. On the dorsum are six or seven brownish fuscous spots, a faint strigulae of fuscous ascends toward costa from each, those in the middle of the wing, running into the costal spot are most distinct, the middle one forming a prolongation of the lower apex of the spot and is edged with yellowish. In the apical part of wing is a long sinuate line, broadest at costa, extending down to below middle of wing and ending at termen, composed of fuscous and reddish brown scales. Cilia yellowish gray, interrupted by a few fuscous scales. Underside smoky brown, light cinereous on costa beneath the paler spaces of upper surface. Hind wing above dark gray, cilia a shade paler; beneath pale gray with brown vertical reticulations, cilia paler.

Described from about forty specimens from the following localities: Half-way place, Black Mountains, N. Car., June 29; Chinchilla, Pa., June 26 (A. E. Lister); Hazleton, Pa., July 12 to 28 (W. G. Dietz); Wyoming Co., Pa., 2300 elevation (Lister and Kearfott); Warren, Mass., July 12, (Kearfott); Center Harbor, N. H., No. 18.387 (H. G. Dyar); Ottawa, Can., July 10 (C. H. Young). Named in honor of Mrs. Edna L. Beutenmüller, who not only makes beautiful drawings of insects, but collected most of the larvæ, the notes of which appear in this paper.

In Wyoming Co., Pa., I found the species fairly abundant, flying close to the ground and usually alighting on twigs or the blackened stumps of a burnt over spruce forest; between the showers on a rainy day the majority of the specimens were found resting on these stumps. At Warren, Mass., they were found in a small woods of spruce and hardwood trees, flying close to the ground and usually alighting on twigs or on the ground.

The venation agrees with Meyrick's figure of *Phalonia*, excepting 3 and 4 of hind wings are connate, hence the species will later be transferred to a different genus.

***Phalonia hoffmanana* sp. nov.**

Plate VIII, Fig. 4.

Expanse 12 mm.

Head and thorax blackish brown mixed with paler brown scales. Palpi pale brown with a few darker brown scales on outside of second joint and on third joint. Antenna fuscous, paler at base. Abdomen blackish brown, anal tuft ochreous. Legs cream colored dusted with brown.

Fore wing:— Olive and dark brown, with patches and lines of iridescent pinkish ochreous, raised scales. The basal patch, which extends to middle of costa and inner fourth of dorsal margin, is pale pinkish brown or pinkish ochreous, with a small rectangular brown spot on the costa at inner fourth, containing two small black dots, there are four small black dots on costa on each side of this brown spot in the pale basal area. Below the costa the pale color is lightly dotted with darker brown. Beyond this area, and occupying the middle third of the wing, is a large triangular dark brown area narrow on costa but extending to anal angle on dorsal margin. It contains numerous vertical black strigulae and two small patches of pinkish ochreous scales on each side below the fold, and is margined on costa by black dots. Beyond it a narrow, angulated band of pinkish ochreous scales starts from costa at outer fourth and runs obliquely to anal angle; this line is interrupted on end of cell by a small patch of dark brown scales. Beyond this is a flattened lunate patch, extending from a little below costa to anal angle, of olivaceous brown, horizontally streaked with black. Between this and the apical margin is a larger lunate patch of rich brown, also lined with black; this involves the costa before the apex and extends down to middle of outer margin; the two lunate patches are separated by a broken line of iridescent scales, a line of the same outwardly defines the dark brown patch and is continued as an antimarginal line into the anal angle. The cilia is ochreous brown overlaid with fuscous and preceded by a broken line of black scales. All of the pinkish ochreous scales are shining, iridescent; those on the outer half of the wing are raised in clusters and lines. The most conspicuous tuft is in the middle of the wing at the end of the cell and another just before the anal angle below the fold.

Underside of fore wing, very dark blackish brown, with four whitish dots on outer half of costa; cilia ochreous brown, with three blackish patches and preceded by a blackish line inside of which is a narrow ochreous line.

Hind wing:— Rich smoky brown, cilia leaden metallic, shaded darker inwardly and preceded by a fine yellowish line. Underside blackish brown, with whitish vertical strigulae.

Four specimens, Mount Graybeard, May 2; Valley, June 3 to 12.

Named in honor of Dean Hoffman, whose interest and love of science has made possible the discovery of this and many other species.

***Phalonia obliquana* sp. nov.**

Plate VIII, Fig. 12.

Expanse 20 to 22 mm.

Head clay yellow, a shade darker on tufts behind the eyes. Palpi clay yellow, shaded with brown outwardly and with a white patch on the upper side of second segment. Thorax olivaceous yellow, patagia clay yellow and whitish at base. Abdomen and legs clay yellow, the latter speckled with brown, the dark color predominating on the first two pairs.

Fore wing:— Clay yellow, with rich cinnamon brown spots and lines. There is a large kidney shaped patch of brown in the middle of the wing, with the small end resting on the middle of the costa and the lower end, which is pointed, on the

middle of the wing, separated from the lower end by a line of shining whitish scales is a small oval shaped spot; these two spots form an oblique fascia from middle of costa towards the anal angle but do not reach below lower vein of cell; obliquely inwardly is a triangular brown spot on the dorsal margin, which is a continuation of the fascia but separated from the spots above by a streak of clay colored scales. There is a long streak of brown from base nearly to middle of wing, a shade of the same color from base along dorsal margin, and another shorter streak from base along costa. Between the middle and largest basal streak and the triangular dorsal patch is a diamond-shaped patch of brown, separated on both sides by shining white lines. There is a submarginal line of brown from anal angle to apex, unevenly indented on the outer side between the veins. Between this line and the middle fascia there is a patch of brown scales becoming paler towards costa, and on costa between outer fourth and apex is a small lunate spot enclosing a small dot of clay yellow. Another small dash of brown at end of vein eight. The pale spaces on upper fourth of wing on each side of middle fascia are shining whitish yellow scales, and on the costa are marked with three or four brown specks before and about half a dozen beyond the fascia. The lines separating the various brown spots and patches are usually of the shining whitish scales. Cilia clay yellow.

Hind wing shining cinereous, darker at apex and on outer ends of veins; cilia whitish except at apex, shaded with cinereous. Underside whitish, with a few scattered darker scales along the veins. Underside of fore wing coppery brown, clay yellow along costa and cilia.

Twelve specimens, Black Mountains, N. Car., "Valley"; Hastings, Fla.; Winnipeg, Manitoba, Hanham.

The Florida specimens are somewhat paler than the description; the dark brown being largely replaced by the ground color, but the outlines of the spots and fascia can be seen by the shining whitish boundary lines.

The apex of the fore wing is pointed, termen straight and oblique, all veins separate but three and four very close together at origin, seven to termen and its origin close to eight. Hind wing three and four rather widely separated, six and seven stalked.

***Telphusa latifasciella* Cham.**

Eight specimens, bred from larvæ on huckleberry, webbing and tying together the tender young leaves. Received May 28, issued June 10 to 21.

Larva 10 to 12 mm. long, slender, yellowish white, green on dorsal line; head and P. T. shield pale yellow.

***Gelechia unctulella* Zeller.**

Eleven specimens, bred from larvæ webbing together the leaves of common locust. Larvæ received May 28 and June 6, moths issued July 10 to 21.

Larva slender, tapering, pale green, with three darker stripes on each side, the width of the pale and dark stripes about equal. Head and P. T. shield dull yellow; anal shield not chitinous. Length $14\frac{1}{2}$ to 15 mm. Just before pupating the pale green becomes pinkish red and the darker stripes purplish red.

Pupa in a snug little cocoon between two or more leaves; shining chestnut brown, much broader across thorax than elsewhere, evenly tapering to anal end.

***Gelechia vernella* Murtf.**

Fifteen specimens, bred from larvæ on leaves of black oak; received May 24, issued June 10 to 15.

Larva slender, tapering, pale green, with three darker stripes of equal width on each side. Head, P. T. shield and thoracic feet jet black; a broad, dull brown band on posterior half of second thoracic segment, extending its entire circumference. Anal shield not chitinous. Length about 12 mm. The green color becomes reddish when mature. Pupa shining, pale brown, in a web between the leaves. Some of the larvæ were badly infested with a minute dipterous parasite.

***Depressaria pulvipennella* Clem.**

Two specimens, bred from larvæ webbing the young leaves of a species of *Eupatorium*; received June 13 and 25; moths issued July 9 and 15.

***Depressaria robiniella* Pack.**

Two specimens, bred from larvæ webbing the leaves of common locust; received June 6 and 16; moths issued July 1 and 4.

***Depressaria lythrella* Wlsm.**

Two bred specimens; larvæ received June 27, webbing the leaves of a low shrub (identity not known); moths issued July 20. Larva dull whitish green, no lines or stripes; pupating in debris in bottom of breeding jar in a slightly built cocoon.

In Walsingham's description of this species, he states that the larvæ are found in the leaves of *Lythreum alatum* (Illinois). These North Carolina specimens agree closely with Walsingham's description, except that they are a trifle larger,— 17 mm. instead of 15 mm.

Cecophora newmanella Clem.

Thirty-eight specimens, all flown, summit of Mt. Graybeard, May 26, and Valley May 28 to June 8. The variation in this long series is considerable, ranging from the form with prominent and well defined basal streaks to examples with the streaks almost obsolete, represented by a few ochreous scales only.

Antispila Hübner.*Synopsis of Species.*

With white apical spot	1.
No apical spot	2.
1, Outer joints of antennæ white	<i>hydrangiceella</i> Cham.
Not white	<i>ampelopsiella</i> Cham.
2, With no dorsal or costal spot	<i>eugeniella</i> Busck.
With dorsal and costal spots	3.
3 Costal spot extended into an angulated fascia	<i>major</i> Kearf.
Costal spot of moderate size	4.
4, Fascia and spots golden hued	5.
Fascia and spots silvery white	<i>viticordifoliella</i> Clem.
5, Fore wings reddish coppery on outer half	<i>cornifoliella</i> Cham.
Fore wings not coppery	6.
6, Fore wings purple brown, without greenish reflection	<i>isabella</i> Clem.
Fore wings dark brown with greenish reflection	<i>nysæfoliella</i> Clem.

Antispila major sp. nov.

Plate VIII, Fig. 15.

Alar expanse 9 mm.

Head, face, palpi, abdomen, and legs shining grayish bronze. Thorax shining bronze, not gray. Antennæ, basal and apical third brown, middle third silvery white.

Fore wing bronze brown, slightly shining. Spots and fascia pale golden, shining, the scales of the spots somewhat raised and occur as follows: Base broadly metallic, from costa to dorsum, outer edge inwardly curved. Fascia at inner third nearly straight, not wider on dorsal than costal margin, constricted at fold, and nearly separated into two spots of about equal size. Dorsal dash at outer third narrow, oblique outwardly to middle of wing, the metallic scales overspread the cilia, equalling in size and shape the spot on wing. Costal dash at apical fourth, obliquely inward to cell, thin angulated outward to anal angle, where it expands into a triangular blotch, roughly shaped like the letter S. Hind wings and cilia of both gray brown, not metallic.

Three specimens, Black Mountains, N. Car., "Valley," June 2, 8 and 10.

***Gracilaria sassafrasella* Cham.**

Four specimens, bred from larvæ forming the characteristic cones on the leaves of common sassafras. Received June 9, issued June 22 to 29.

Larva 7.5 mm. long, slender, lemon yellow, head light brown, only three pairs of abdominal legs, or four pairs including anal claspers. Pupates under yellow silk cocoon, spun in a wrinkle of a leaf or in the angle of a box.

***Epimartyria auricrinella* Wlsm?**

Two specimens, Valley, June 1. Too badly rubbed to be absolutely certain of specific identity; one specimen has an ochreous head with wing expanse and general color scheme of *auricrinella*; the head of the other is entirely denuded.

EXPLANATION OF PLATE VIII.

- Fig. 1. — *Exartema merrickanum* Kearfott.
 2. — *Exartema hippocastanum* Kearfott.
 3. — *Olethreutes nimbatana* var. *montanana* Kearfott.
 4. — *Phalonia hoffmanana* Kearfott.
 5. — *Hemimene nigromaculana* Kearfott.
 6. — *Exartema versicoloranum* Clemens.
 7. — *Thiodia signatana* Clemens.
 8. — *Epinotia ilicifoliana* Kearfott.
 9. — *Epinotia ilicifoliana* Kearfott.
 10. — *Ancylis pulchellana* Clemens.
 11. — *Lipoptycha albolineana* Kearfott.
 12. — *Phalonia obliquana* Kearfott.
 13. — *Phalonia ednana* Kearfott.
 14. — *Hemimene incarnana* Clemens.
 15. — *Antispila major* Kearfott.
 16. — *Platyptilia acanthodactyla* Hübner.
 17. — *Platyptilia carolina* Kearfott.
 18. — *Diasemia roseopennalis* Hulst.

