

Article XX.—DESCRIPTIVE CATALOGUE OF THE
NOCTUIDÆ FOUND WITHIN FIFTY
MILES OF NEW YORK CITY.

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PLATES XXXV-XXXVIII.

The present paper constitutes the fourth part of my work on the Lepidoptera found within a radius of fifty miles from New York City, and is Part I of the Noctuidæ.

It may be seen from the following pages that considerable work is yet to be done on the earlier stages of the Noctuidæ, and we hope that some specialist may be found to undertake this task.

In order to properly understand the terms used in this paper, it has been deemed advisable to insert the illustration appearing on page 230.

***Thyatira scripta* Gosse.**

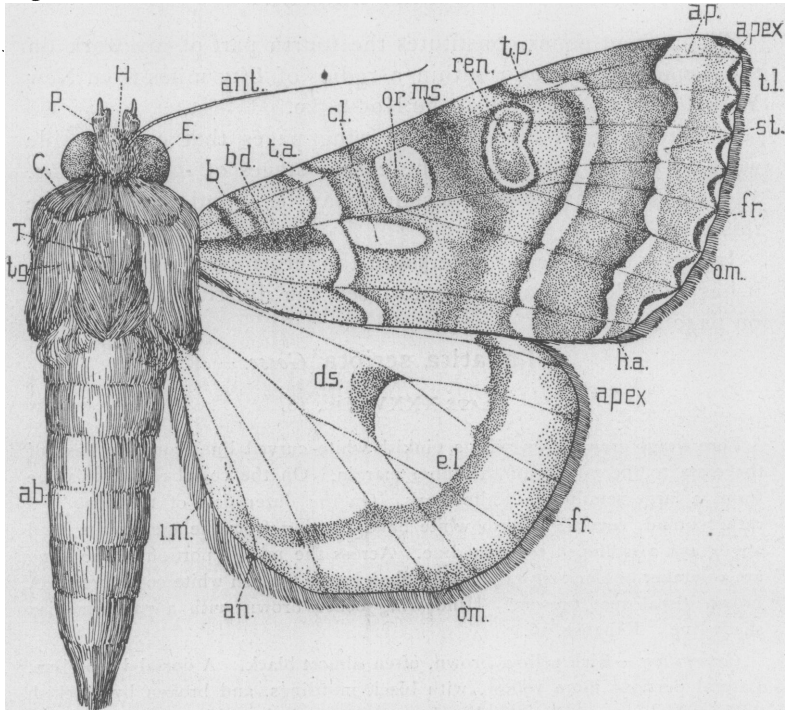
PLATE XXXV, FIG. 16.

Fore wings gray brown with a pinkish white curved line from the base of the costa to the middle of the inner margin. On the costal region this line forms a large semilunate white mark. On the outer part of the wing is a rather broad, curved, pinkish white band running from the apex to the hind angle, and a scolloped terminal line. Across the middle portion of the wing are a number of black zig-zag lines, broken by the pinkish white costal area. A brown discal spot present. Hind wing ochre brown with a paler median shade line. Expanse, 30.

Caterpillar.—Rich yellow brown, often almost black. A dorsal black line. Lateral portions more yellow, with black mottlings, and broken by blackish dashes which extend from the dorsal portions anteriorly and inferiorly, becoming pointed about the stigma, where they end. Dorsal part usually much darker than the rest of the body, though subject to considerable variation. In some individuals one, two, or three white spots are present above, placed somewhat anterior to the stigma on the fourth, fifth, or sixth segments; each spot has a central black dot. In some specimens just below the stigma of the third segment there is a white spot, and a smaller lateral spot on the first segment. The second and third segments are somewhat larger than the rest. Head prominent, mottled with yellow and dark brown. Underside dirty yellow. Body tapering posteriorly. Length, 30 mm.

Food-plants.—Raspberry and blackberry.

Not common in this vicinity, but more so northwards. When at rest the larva sits somewhat like a Notodontian, the anterior and posterior parts of the body being elevated, or bent so that the head rests upon the posterior segments. When not feeding it conceals itself in a case formed by curling down the edge of the leaf. Spins a very slight cocoon under leaves on the ground. The moth flies during June and July.



EXPLANATION OF FIGURE.

C.=Collar.
 tg.=Tegulae.
 T.=Thorax.
 ab.=Abdomen.
 H.=Head.
 P.=Palpi.
 E.=Eyes.
 ant.=Antenna.
 b.=Basal line.

bd.=Basal dash.
 ta.=Transverse anterior line.
 cl.=Claviform.
 or.=Orbicular.
 ms.=Median shade.
 ren.=Reniform.
 tp.=Transverse posterior line.
 ap.=Apical patch.
 apex=Apex.

tl.=Terminal lunules.
 st.=Subterminal line.
 fr.=Fringes.
 om.=Outer margin.
 ha.=Hind angle.
 ds.=Discal mark.
 el.=Exterior line.
 an.=Anal angle.
 im.=Inner margin.

***Thyatira rectangula* Ottolengui.**

PLATE XXXV, FIG. 18.

Similar to *T. scripta* in color and markings, but differs in having the basal

curved transverse line more oblique, angulated, or notched at the middle, and running to beyond the middle of the inner margin. Expanse, 30 mm.

Allied to *T. scripta*, but differs in having the transverse anterior line forming a distinct right angle at the middle.

***Euthyatira pudens* (Guen.).**

PLATE XXXV, FIG. II.

Fore wings gray with a large oblong mark at the base. This mark is white, washed with pink, with a brown spot near the end, outlined by black. On the costa is another prominent pink mark, crossed by the narrow transverse line. At the apex is a similarly colored patch and a small rounded one at the anal angle; the latter is brown outlined with pink and black. Across the middle of the wing is a narrow, sinuate line. Orbicular mark forming part of the mark on the costa; reniform mark small, pinkish and outlined by black. Hind wings dusky. Expanse, about 45 mm.

Very rare in this vicinity. It may be known at once by its stone gray color and conspicuous pink patches. Found during July.

***Pseudothyatira cymatophoroides* (Guen.).**

Fore wings pale grayish brown with a pinkish tinge; basal area pinkish red, with a black patch at the extreme base; across the basal third of the wing is a broad black band composed of three irregular lines. Across the apical third a double sublunate line, blackish with three black streaks at the costa and followed by a black patch at the anal angle; before the apex is a black patch, somewhat broken by pink streaks. Subterminal line lunate with a marginal row of black dots. Fringes pinkish ferruginous at anal angle. Orbicular small, round; reniform elongate, both pinkish. Hind wings fuscous. Expanse, 45 mm.

Var. *EXPULTRIX* (Guen.)—Plate XXXV, Fig. 8.—Like *P. cymatophoroides*, but lacks all the black markings. The transverse lines are present, but less distinct, and as a whole the ground color is darker.

Caterpillar.—Rich yellow brown, varying in shade, mottled by fine dark lines. A contrasting white spot just above the spiracles of the fourth segment, rounded and varying in size, sometimes altogether wanting. A fine continuous black dorsal line. Spiracles black brown, slender. Head protruding and darker than the body. Length, 42 mm.

Food-plant.—Oak.

A common species in this neighborhood, found from May until August, inclusive. The caterpillar lives in a case between

leaves and when at rest the body is bent, the head approaching the posterior segment. Spins a cocoon on the ground between leaves. Probably double-brooded.

***Leptina dormitans* Guen.**

PLATE XXXV, FIG. 7.

Fore wings smoky gray black, with a gray white shade beyond the middle of the median area, broad on the costa and gradually narrowing to the inner margin. Anterior line obscured by the ground color, black, angulate. Posterior line inwardly oblique and bent outwardly below the middle. Subterminal line whitish, more or less broken, dentate; a black shade on costa before the apex. Head and thorax gray. Discal spot small, round, white, with a black centre and ring. Hind wings smoky black, paler basally. Expanse, 28 mm.

Not common. The moth flies in June.

***Leptina doubledayi* Guen.**

Fore wings pale gray brown, median area palest. Lower half of base of wing with a silvery white circular area, upper part dark brown. Anterior line obsolete. Posterior line white inwardly, oblique, even. Subterminal line irregular, white, with a brown spot on the inner part at its lower course. Discal spot elongate, dark brown. Hind wings whiter, dusky outwardly. Expanse, 25 mm.

Not common. Flies in June.

***Leptina ophthalmica* Guen.**

Allied to *L. doubledayi*, but the transverse posterior line is incomplete. Expanse, 25 mm.

Not common. Flies in June.

***Panthea furcilla* (Pack.).**

PLATE XXXV, FIG. 5.

Fore wings very pale gray, more or less scaled with black, sometimes with a very slight rufous tinge. The transverse bands are black, heavy, quite even, except the terminal line. Basal line reaching the submedian vein. Transverse anterior line a little irregular and slightly oblique outwardly. Median line broad, even, and almost upright. Transverse posterior line a little oblique from the costa and at the middle with a broad, even incurvature to the

inner margin, the incurvature touching the preceding line. Subterminal line very irregular, sharply dentate, and with two deep incurves. This line is followed by a more or less evident white shade, and there is sometimes a broken, dusky terminal line. Hind wings whitish, smoky at base, and a vague exterior band. Expanse, 34-50 mm.

Caterpillar.—Head round, chestnut brown with conspicuous markings on the front of a lighter red. Body chestnut brown, mottled with irregular broken stripes. On each segment is an irregular band of bright chestnut; a whitish vascular line within a broken gray stripe; a better defined lateral stripe just above the spiracles, within which, on each segment from the third to the eighth inclusive, are four black depressed spots arranged in a right angle, the upper three in line, the largest of which rests on the crown of the segment, with two behind it and one before. The substigmatal fold is white on the anterior portion of each segment and red on the remainder. Rows of tubercles from which clusters of red hairs of unequal length proceed, which on the anterior segments incline to yellow; on the first, second, fourth, and eleventh segments each, are two long pencils of red hairs, darker at the tips. Legs red. Sometimes the body is black with the spots at sides, tufts and hairs white, and the head is shining black with two indistinct whitish frontal marks.

Food-plants.—White pine (*Pinus strobus*) and larch (*Larix americana*).

Rather rare in this vicinity. The moth appears in June and July, and the larva may be found in August and September. It rests extended on a twig with the head drawn down. Spins a double cocoon.

***Demas propinquilinea* (Gr.).**

Fore wings white or nearly so, scaled with brown and black, giving the moth a grayish appearance. Transverse lines blackish, but not prominent. Basal line slightly indicated. Anterior line broad, single, upright, or slightly inwardly oblique, with three outward curves. Median shade broad, diffuse, almost upright. Posterior line curving inwards at the middle, denticulate on the veins outwardly. Subterminal line denticulate on the veins, irregular, but parallel with the outer margin. A dusky terminal line is preceded by pale lunules, which are more or less distinct. A rounded discal spot brown-ringed, centered with white. Reniform very narrow, upright, somewhat brown-ringed. Hind wings smoky, paler at base with a vague discal lunule, darker in the female. Expanse, 34-37 mm.

Caterpillar.—Head shining red or blackish brown; clypeus pale. Body very variable in color, the ground color white with numerous transverse wrinkles of a more opaque white, a white band below the depressed spiracles, sometimes broken or absent. Black shadings usually begin at this band, bordering it above, spreading upward, especially in the incisures, till the body may be nearly all black. Hairs short, rather stiff, white or yellowish, those on the last two segments longer and extending over the end of the body. On each of the

fourth and eleventh segments, situated close together, one behind the other, are two short pencils of light yellowish red or black hairs, and one on each side of the second segments, black or red. Spiracles white. Length, 24 mm.

Food-plants.—Birch, walnut, maple, oak, beech, chestnut.

Rare in this vicinity. The moth comes forth during May, June, and July. The larva lives in a sort of case made by folding a leaf or drawing two leaves together and attaching them by their edges with silken threads.

Demas flavicornis Smith.

PLATE XXXV, FIG. 13.

Fore wings pale gray with the markings obscurely defined. Transverse anterior line almost upright with a strong outward tooth at the middle, meeting a similar one from the following dentate transverse line, and below these two teeth the wing is obscured with smoky brown. Subterminal line irregular, denticulate. Discal spot round, brown-ringed. Reniform spot elongate, indistinct, brown-outlined, resting on the transverse line. Hind wings dusky in male, whitish in the female. Expanse, 27–44 mm.

Not common. The caterpillar lives on beech between two leaves spun together. The moth appears in May and June.

Charadra deridens (Guen.).

PLATE XXXV, FIG. 3.

Fore wings white with gray and black powdering and ornamentation. Transverse anterior line black, single, bent on the costa and then almost upright to the inner margin, giving off an acute outward tooth at its middle to meet a similar indentation of the transverse posterior line. Transverse posterior line single, black, starting from a black blotch on the costa, denticulate on the veins. Median shade diffuse, brownish rather than black, a little bent on costa, then evenly oblique to the inner margin. Subterminal black, irregular, sometimes quite vague centrally. At the margin is a series of more or less distinct white lunules, beyond which the fringe is dusky. Discal spot round, black outlined, with black centre. Reniform elongate, narrow, with black centre. Hind wings smoky, paler at base. Expanse, 35–45 mm.

Caterpillar.—Head variously marked from shining black with a few straw-colored frontal spots to light straw color with black marks. Body white to blue, green or black to brown, with tufts of long, fine, silky white hair from distinct warts. A few black hairs grow from the stigmal wart on the first segment. Length, 40 mm.

Food-plants.—Oak, birch, elm.

Quite rare ; found during May, June, and July. The moth may be readily known by its gray white ground color and contrasting black lines on the fore wings. The caterpillar lives concealed in a case between two leaves. It spins a close outer cocoon of fine pinkish silk and a coarse inner cocoon of brown silk.

***Raphia frater* Gr.**

PLATE XXXV, FIG. 6.

Fore wings smoky gray, more or less shaded with black and sometimes also with ochreous. Across the basal third is an oblique outcurved black line running obliquely inward, and somewhat irregular ; another line across the outer third, which is strongly bent inward at the middle. Subterminal line irregular, slightly edged with whitish gray outwardly. Orbicular round, black ringed. Reniform rather large, black ringed and with a black centre. Between the lines the wings are more or less shaded over with black. Hind wings whitish, with a broken black line before the fringes, which are grayish. At the anal angle is a black patch. Expanse, 30-38 mm.

Caterpillar.—Head rather large, bluish green, with minute lateral black points. Body generally dark, somewhat bluish green, though subject to considerable variation in tint, and covered with scattered bright yellow points, about twenty to each segment. A dorsal hump on the second segment, surmounted by two short, blunt red prominences. On the dorsal area of the second, eighth, and eleventh segments is a transverse mottled red purple band, interrupted centrally and somewhat crescent-shaped, bordered posteriorly and externally with more or less clear yellow. On each of the first and second segments is a lateral red point. Legs and prolegs light green, anal pair tipped with red. Length, 40 mm.

Food-plants.—Poplar and willow.

The moth is found during May and June, and probably is double-brooded. The Caterpillar is stout, tapering somewhat posteriorly and ending abruptly. It usually rests on the midrib on the under side of a leaf. Spins a stout cocoon, usually on bark.

***Raphia abrupta* Gr.**

Fore wings gray ; the transverse anterior line forms an angle at the middle from which it sends a narrow black line to the posterior line. Above this, and between the two transverse lines the ground color is usually whitish gray. Orbicular and reniform marks as in *R. frater*. Hind wings gray. Expanse, 25-35 mm.

Resembles *R. frater*, but differs by the anterior line on the fore wings forming an angle at the middle as it bends inward, and by the pale whitish area between the two transverse lines. Found in June, and quite rare.

***Feralia jocosa* (Guen.).**

PLATE XXXV, FIG. 15.

Fore wings varying from pale green to light olive, and various shades of yellowish buff, with the markings more or less broken and the median space sometimes more or less covered with black scales. The transverse double lines, black with white centres, wavy, dentate or irregular. No subterminal line. Orbicular and reniform concolorous, of good size, with black and white annuli. At the hind angle a black patch. A row of small terminal intervenular black and white dots, opposite to the fringes which are broadly black-checked. Hind wings blackish. Head and thorax like the fore wings, marked with black. Expanse, 34 mm.

Caterpillar.—Head yellowish green. Body semi-transparent, varying from light to darker green, finely granulated, with dorsal and subdorsal chalky white stripes running from the first to last segment. Dorsal stripe nearly uniform on the thoracic segments, then widening in the middle of each segment and narrowing on the junctions. Subdorsal line somewhat similar. At the sides along the spiracles is a row of cream colored spots, broadly edged above with cherry red. At the base of legs a line of cream colored oblong spots. Length, 32-35 mm.

Food-plants.—Hemlock (*Tsuga canadensis*) and balsam-fir.

This pretty species may be found from the last of March to the end of April. The moths emerge from their pupæ about noon and ascend the trunks to develop their wings. They are easily found, owing to their bright colors, which contrast with the dark bark of the trees. They seem to prefer spending their lives high up amongst the foliage of the trees, so much resembling their own colors. The larva spins a soft cocoon made of earth and silk, in the ground, or forms a cocoon on the surface, covered by moss and dried hemlock leaves. The larvæ may be found fully grown late in May and early in June.

***Feralia major* Smith.**

A larger and broader winged species found in northern New York, and the District of Columbia. Possibly may also be found in this vicinity. It flies in April and May.

Momomophana comstocki (Gr.).

Fore wings light, bright green with the spots indistinctly margined, large, between which the cell is black. Anterior and basal lines black and white, incomplete. The space beyond the reniform and inferiorly on the median space to the submedian fold is black. Posterior lines indicated by black shades which commence on the costa near the apex, narrowing to the pale green terminal space, which lacks the usual terminal dots. Hind wings pale green, shaded with fuscous, with a vague band and discal spot. Head and thorax green. Expanse, 34 mm.

Recorded from New York (Ithaca) and Canada. Possibly may be found in this vicinity. It flies in May.

Moma fallax H.-S.

PLATE XXXV, FIG. 2.

Fore wings pale green, sometimes shaded with white. Along the costa is a series of about eight short black marks. From the base of the wing at the middle is an abbreviated black dash, followed by an irregular black mark. In the cell is a square black spot, and beyond, across the apical third, are two triangular black marks with a small spot between them; the upper mark is elongate, with a distinct tooth pointing inward, while the lower mark is more or less distinctly triangular. Fringes distinctly marked with black spots. Hind wings dusky, paler basally, with a series of black spots at the base of the fringes, which are white. Expanse, 27-33 mm.

Not common and easily known by its bright pale green fore wings with black marks. It is found in May and June, and again in July and August.

Apatela rubricoma (Guen.).

Fore wings somewhat luteous gray powdered with black atoms; the luteous tinge more or less prominent. Transverse anterior line not very distinct, blackish, outwardly oblique and irregularly dentate and lunate. Transverse posterior line strongly lunate within and dentate on the veins outwardly. A row of small dots on the outer margin; fringes cut with brown. Orbicular round, ringed with brown; reniform large and occasionally suffused by a dusky shade. There is a vague dusky shade or dash in the sub median interspace from the transverse posterior line outward. Hind wings whitish with a luteous tinge in the male, dusky in female. Expanse, 31-45 mm.

Caterpillar.—Head black, shining, clypeus brownish, suture pale. Body greenish white with a blackish dorsal band, pulverulent, obscurely geminate, often absent, or broken into spots from the fourth to the last segment, or

fourth to ninth segments inclusive, and the last segment. On each of the black spots, except the tenth and last, is a long pencil of yellow or black hairs. Over the body are also fine yellow hairs. Length, 40 mm.

Food-plant.—Hackberry (*Celtis*).

Found during May, June, and July; not common.

***Apatela americana* (Harris).**

PLATE XXXVI, FIG. 4.

Fore wings ashen gray, sometimes with a yellowish tinge. Transverse anterior line geminate, usually incomplete, sometimes hardly traceable; outwardly oblique and dentate. Transverse posterior line distinct, but not sharply defined, denticulate on the veins outwardly. In some examples there is a dark shade running from the costa to the reniform, which is large, and sometimes incomplete. Orbicular small, black-ringed. Fringes cut with smoky brown spots. In the submedian interspace, crossing the transverse posterior line, is a narrow black dash. Hind wings smoky brown or blackish. Fringes white. Expanse, 50–62 mm.

Caterpillar.—Head large, shining black, labrum pale. Body pale greenish white, with a series of geminate dorsal spots in the incisures of segments four to ten, and a large black patch on eleventh and twelfth segments. Along each side there are traces of two narrow black lines. Warts small with bunches of long white or pale yellow hairs. On each of the fourth and sixth segments are two long black pencils and a similar one on the eleventh segment. Under-side and thoracic feet black. Length, 70 mm.

Food-plants.—Maple, linden, poplar, willow, birch, chestnut, oak, elm, alder, hickory, ash, sycamore, beech, etc.

This is the largest and one of the most common species. It makes its appearance in June and July, and the larva may be found in August and September. It spins a double cocoon; the outer web is thin and consists of silk and larval hairs; the inner cocoon is thick and is composed of silk and chips of wood interwoven. The cocoon is formed on a piece of wood, and consists half of the cocoon and half of the cavity in the wood formed by the removal of the chips to construct the cocoon.

***Apatela hastulifera* (A. & S.).**

Fore wings light gray, powdered with darker gray. Transverse anterior line oblique, wavy. Transverse posterior line dentate outwardly on the veins. A row of terminal black dots, orbicular and reniform spots present, and a black dash on the submedian interspace crossing the posterior line. Hind wings

white with a yellowish tinge in the male, and a terminal row of small black spots; wings smoky in the female. Expanse, 42-50 mm.

Caterpillar.—Head shining black. Body along each side densely covered with rusty brown hairs of even length, dorsal region from the fourth to last segment densely covered with black and white hairs, giving it a gray appearance. On each of the fourth, sixth, and eleventh segments is a concolorous tuft, slightly exceeding the other hairs on the back. Body black above and below. Spiracles white. At the extremities are a few longer hairs. Length, 40 mm.

Food-plant.—Alder (*Alnus*).

The moth appears during the latter part of May and in June. It somewhat resembles *A. americana* and *A. dactylina*, the latter more than the former. It differs from *americana* by its paler ground color, smaller size, single posterior line, and white hind wings in the male. From *dactylina* it differs by the presence of yellowish shading on the hind wings of the male.

Apatela dactylina Gr.

Fore wings light gray with darker gray powdering. Transverse anterior line variably evident, geminate, evenly oblique outwardly and moderately out-curved between the veins. In many cases a mark below the cell is all that is present. Transverse posterior line lunate, black, more or less dentate outwardly on the veins, almost parallel with the outer margin to a little below the middle where it sharply bends inward. A series of black terminal dots present. Median shade dusky, indistinct and clouding the reniform mark. Orbicular small, round, and dark-ringed. Secondaries white in the male, smoky in the female. Expanse, 42-50 mm.

Caterpillar.—Head black, line above labrum white. Body black, densely covered with long light yellow hairs along the sides, shading into flesh brown on the back. The fourth, sixth, and eleventh segments each have a long black pencil, twice as long as the other hairs. Beneath the spiracles is an irregular yellowish band, concolorous with the lateral hairs. Spiracles white. Length, 50 mm.

Food-plants.—Birch, willow, alder.

Not common; found during May and June. The caterpillar constructs a cocoon similar to that of *A. americana*.

Apatela populi (Riley).

Fore wings white, with very fine black powderings that are quite evenly distributed, and with all the markings broken. Basal line marked by a black costal spot, usually by an angulated mark below the median cell, and sometimes by a black spot at about the middle of the inner margin. Median shade indi-

cated by a quite prominent black spot on the costa. The transverse posterior line is most nearly complete, but not continuous, and only partly distinct. When least marked there is only a black spot or two opposite the cell and a black lunule opposite the hind angle. A short black basal streak present. Opposite the cell and hind angle, there are usually indications of a short black streak from the transverse line. A series of black terminal dots, beyond which the fringes are cut with black. Orbicular absent or very faintly indicated. Reniform vaguely defined as a blackish, lunate mark. Hind wings white, with black terminal dots. Expanse, 33-47 mm.

Caterpillar.—Head shining black, as are also the thoracic feet and cervical shield. Body sordid white covered with long yellow hairs. On each of the fourth, fifth, sixth, seventh, eighth, and eleventh segments is a long black pencil, those on the fourth and eleventh more persistent. On the second and third segments the body is brown dorsally. Underside shaded with brownish. Leg plates partly black. Length, 50 mm.

Food-plant.—Poplar.

Quite rare in this vicinity and seldom taken by collectors. It is found in May and June. Allied to *A. lepusculina*, but paler and lacks the orbicular spot; the basal streak is also much shorter. Said to be double brooded.

Apatela lepusculina (Guen.).

PLATE XXXVI, FIG. 2.

Fore wings white, uniformly powdered with black, giving the insect a grayish appearance. Transverse anterior line more or less distinct and complete. Median line usually indicated by a black mark on the costa and very rarely crossing the wing. Posterior line usually complete, dentate on the veins. Basal streak connected with the anterior line at the middle. Posterior line crossed by a black dagger-like mark opposite the hind angle. Orbicular small, black-ringed. Reniform more or less distinct. A series of terminal black dots present, cutting the fringes beyond. Hind wings white, with a terminal dark line or dots. Expanse, 37-50 mm.

Not common; it has been recorded from Long Island, but is undoubtedly also found elsewhere in this vicinity.

Apatela innotata (Guen.).

Fore wings dirty white. Transverse anterior line indicated by a black spot on the costa, or very indistinctly running across the wing. Transverse posterior line well marked, continuous, or broken, not dentate. On the costa at the middle is a black spot, indicating the median shade. Orbicular wanting in most specimens. Reniform varies from a distinct black crescent mark to a vague dusky lunule. Hind wings dirty white. Expanse, 35-47 mm.

Caterpillar.—Head, hind part pitchy-brown, front dirty white, with the mandibles pitchy. Body above, dull grayish brown, with a series of four shining black piliferous spots on each segment on the dorsal region from the second to the last segment, and two rows of yellow spots along each side with another row of black spots between. Underside dull grayish. Legs and feet concolorous. Body also sparsely covered with sordid white hairs. Length, 25 mm.

Food-plant.—Hickory (probably).

Not common. Found in June, July, and August. Spins a rude cocoon.

Apatela betulæ (Riley).

PLATE XXXVI, FIG. 6.

Fore wings pale ocher yellow shading into luteous. Anterior line very feebly marked, so as to be hardly visible, oblique outwardly. Transverse posterior line pale whitish, outwardly shaded with rusty brown. It is irregular, distinctly toothed on veins three and four, then curves inward and forms another outward tooth a little above the inner margin. Orbicular very small, ill-defined, dusky, or absent. Reniform sublunate, darker than the ground color. No terminal dots or basal streak. Hind wings pale luteous. Expanse, 35-39 mm.

Caterpillar.—Head pale brown, thickly mottled with black spots on the cheeks; tops of lobes orange. Body dull olive brown, with minute black skin thorns on a greenish ground. A faint, pale dorsal line present. Warts small, few-haired. Two rows of dorsal warts, black, other warts greenish; all pale on joint twelve. Length, 30 mm.

Food-plant.—Birch (*Betula nigra*).

Very rare in this vicinity and probably two-brooded. The moth appears in June, July, and in August at Washington, D.C. The larva when at rest is stretched on the thick branches of the tree and is fond of hiding in dark recesses. It forms a slight cocoon, either among leaves or in old wood on the ground or tree.

Apatela morula (G. & R.).

Fore wings pale ashen gray with a yellowish tinge, with the markings in most instances distinct. Transverse anterior line brownish yellow, outwardly oblique, quite strongly toothed on the subcostal and more or less distinctly bent on the veins. This line has a tendency to become quite faint or entirely wanting below the middle. About the middle of the wing is a rather defined yellow or brown line, oblique to the reniform, and occasionally there is a shading which extends almost to the inner margin. Transverse posterior line distinct,
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narrow brown, or black, preceded by paler and followed by a darker brownish or ochereous shading. The line is rather even, most sharply toothed on veins three and four, below which it makes a deep incurvation. An indistinct but traceable subterminal, irregular pale line is also present. Fringes cut with brown or black. At the base of the wing is a distinct black dash. There is a dark dash opposite the cell, extending to the outer margin. Another black dash opposite the anal angle extends from the margin through the posterior line. Thorax with the disk distinctly ochereous. Hind wings smoky, darker in the female. Expanse, 40-50 mm.

Caterpillar.—Head large, suture deep, black, shagreened, apices of lobes tipped with red, with a central, arrow-shaped light brown mark and several lateral whitish streaks. Body light olive gray, a lozenge-shaped dorsal enlargement on the fourth, seventh, and eleventh segments, darker than the body and edged with black. A dorsal black or gray band contracted between each segment, and containing a white central line. Lateral region irregularly shaded with gray. A lateral brown band, defined by blackish marks stigmatically. Warts rather small, with few to several hairs, those on the sides whitish. Legs greenish. Thoracic feet black. Underside dirty greenish. Length, 50 mm.

Food-plants.—Elm, linden, apple.

Found during June and July; not common. May be known by its large size, pale color, and yellowish shadings on the fore wings. In general appearance it resembles *A. occidentalis*, but is considerably larger. The larva spins a tough cocoon on or under bark.

***Apatela occidentalis* (G. & R.).**

Fore wings pale ashen gray, sometimes with a faint yellowish shading. Anterior transverse line outwardly oblique geminate, black on the costa, becoming] broken and less defined towards the inner margin. Transverse posterior line dentate on the veins outwardly, curved inwardly at the middle. A distinct black, dagger-like dash a little above the angle, running inward across the posterior line and a black basal dash to the anterior line. On the costa between the lines are also a few black marks. Orbicular and reniform present. Hind wings smoky in the female, paler in the male. Expanse, 35-42 mm.

Caterpillar.—Head large, slightly bilobed, flat in front; blackish mahogany red, darker below; clypeus black, sutures purplish. Body purplish or flesh-color. Eleventh segment enlarged dorsally in a rounded quadrate elevation which is uniformly black. Dorsally a broad blackish band, marked with a series of black patches on the fourth to tenth segments, each throwing out a lateral spur which curves around the second row of warts, and containing the first row of pale warts, and two red spots situated in the dorsal line. Sometimes the spots are connected into a single hourglass-shaped spot. Warts slight, consisting of an aggregation of three to ten piliferous tubercles with a slightly

enlarged common base. Hairs thin, long, reddish. A faint lateral black line is also present. The lilac color of the body shades into blackish subventrally. Length, 25 mm.

Food-plants.—Apple, plum, beech, birch, elm.

Very common everywhere from May to September; double-brooded. The moth is allied to *A. morula*, but is considerably smaller, and lacks the yellow patch on the thorax. The caterpillar spins a thin cocoon in the earth when ready to pupate.

Apatela lobeliæ (*Guen.*).

PLATE XXXVI, FIG. 14.

Fore wings light gray with blackish powdering. Anterior line geminate, distinct. Basal line indicated on the costal half. Posterior line whitish inwardly and black outwardly, lunate, dentate outwardly. There are also traces of a pale subterminal line. Fringes cut with black. A median shade slightly indicated or absent. At the base is a rather broad black streak; a black dash above the anal angle, and another dash opposite the cell from the posterior line outward, but not touching the margin. Orbicular and reniform connected below by a prominent black dash. Hind wings smoky in the female, paler in the male. Expanse, 45-60 mm.

Caterpillar.—Head black, with two red spots on top and a grayish white transverse band above the clypeus, which is gray; mouth parts black. Body slaty gray, a greenish white dorsal and subdorsal line, and diffuse lateral and substigmatal patches. Eleventh segment elevated, the top gray with four quite large piliferous spots. Warts whitish, each bearing a black hair. Sides of body quite thickly covered with white hairs. Spiracles white, ringed with black. Underside greenish white. Length, 35 mm.

Food-plant.—Oak.

May be readily known by its large size and prominent black dashes. Found in May and June and again in July and August and probably is double-brooded.

Apatela furcifera (*Guen.*).

Fore wings dark ash gray, quite heavily powdered, and with a somewhat smoky suffusion; markings fairly well defined. Basal line geminate, extending to the basal black dash which is broad and thick. Anterior line geminate, outwardly oblique and quite even. Median shade feeble. Transverse posterior line geminate, the inner line smoky and not well marked, the outer line black, lunate, the intervening space paler than the ground color. A series of terminal black dots, cutting the fringes. There is a dagger mark opposite the cell

which but rarely touches the posterior transverse line. A similar mark in the submedian interspace usually crosses the transverse posterior line, and is much heavier than the other. Orbicular and reniform connected by a black line below. Hind wings smoky white in the male, darker in the female. Expanse, 37-45 mm.

Caterpillar.—Head shining black, bilobed, with a red patch at the apex of each lobe. Body dull black, warts pale brown, except the first row, with central hairs and a crown of reddish hairs. A dorsal bright red stripe from the second to the eleventh segments, narrowly edged with velvety black, broken at the incisures. Eleventh segment somewhat elevated. Feet pale. Length, 35 mm.

Food-plants.—Different kinds of wild cherry.

Allied to *A. lobelia*, but darker and distinctly smaller, and the markings are somewhat less prominent. After the last moult the larva hides at the base of the tree when not feeding. When younger it is green with a red dorsal band and lives on a web on the upper side of a leaf. The moth is found in June and July.

***Apatela hasta* (Guen.).**

Allied to *A. furcifera*, which it closely resembles, but the ground color is a much cleaner gray and the fore wings are rather peculiarly mottled with smoky shadings. The markings contrast more in *furcifera*, and the hind wings in both sexes are much paler than in the preceding species. In the male they are almost white; in the female they are not so dark as in the male of *furcifera*. Expanse, 37-45 mm.

Not common. Found from May until about the middle of July.

***Apatela lætifera* (Smith).**

Fore wings creamy white, more or less powdered with black scales, and the markings fairly evident. Transverse anterior line geminate, oblique, more or less broken. Median shade, black-marked on the costa and sometimes traceable as a brown shade, parallel with the posterior line. Transverse posterior line narrow, black, more or less lunate, preceded by a white shade and followed by a blackish or smoky shading. A terminal line of black dots, and the fringes are cut with black beyond. There is a distinct black basal dash, one above the anal angle, and another opposite the cell crossing the posterior line. Orbicular oval, black-ringed; reniform quite small, well defined outwardly, and sometimes entirely complete. Sometimes a black line connects these spots below. Hind wings smoky in both sexes, paler in the male with a yellowish tinge. Expanse, 37-40 mm.

May be known by the creamy white primaries, somewhat like

A. occidentalis or *A. morula*, but paler with a more silky lustre than either. It may also be confused with *A. furcifera*. The moth is found in June and July.

***Apatela vinnula* (Gr.).**

PLATE XXXVI, FIG. 7.

Fore wings milky white, more or less shaded with greenish or luteous. Basal line geminate, marked on the costa with greenish or black. Transverse anterior line geminate, bluntly toothed on the veins, green, black or gray, or partly of each color. A distinct median shade is present, greenish, or the part between the costa and the reniform mark may be black. Transverse posterior line geminate, the outer line narrowly black, the inner greenish, with the space between usually white. The line curves around the cell, then incurves at the middle. Subterminal space greenish, whitish terminally, where there is a line of small black dots. At base of wing a distinct black dash, which is more or less broken, and a black mark or dash below the incurve on the posterior line. Orbicular and reniform marks completely defined in either black or green. Hind wings dirty white in the male, dark in the female. Expanse, 26-32 mm.

Caterpillar.—Head bilobed, rounded, green, with a pulverulent brown patch on the upper part of the face. Body green, a narrow subdorsal band, bent upwards on segments four and eleven. Faint dorsal and substigmatal lines. Prominent tubercles, brownish. Warts with a central seta and crown of short hairs, dark on warts I-III, pale on IV-V. Body higher than wide, thorax thicker than the head. Length, 24 mm.

Food-plant.—Elm.

Easily recognizable by the white ground color with well-defined green shadings and markings. It varies considerably in the amount of contrast between the ground color and the markings. Double-brooded, May to August.

***Apatela fragilis* (Guen.).**

PLATE XXXVI, FIG. 16.

Fore wings white, overlaid by smoky brown shades. Transverse anterior line dentate, geminate, black; space between white. Median shade blackish, not well defined and irregular, broken by the reniform mark. Transverse posterior line geminate, blackish, space between white. It is dentate on the veins outwardly, beyond which the wing is smoky brown black, relieved by an irregular, white subterminal line. Basal dash suffused by the ground color. Orbicular round, black-ringed, with a white center. Reniform mark, kidney-shaped, black-ringed, with a smoky disc. Hind wing white in both sexes. Expanse, 30-33 mm.

Caterpillar.—Head slightly bilobed, green with a reddish brown shade on the vertex of each lobe. Body green, elevated on the third to sixth segments when at rest. Eleventh segment somewhat enlarged dorsally; a narrow yellowish white subdorsal line along the second row of warts. First row of warts in a purple brown area. Hairs on first three rows of warts black, the rest pale. Spiracles dark brown, small. The dorsal shading may be more extensive, suggesting the filling in of the dorsal space.

Food-plants.—Birch, mountain ash, apple.

Not common in this vicinity; found during June and July.

Apatela lithospila (Gr.).

PLATE XXXVI, FIG. 17.

Fore wings very dark bluish gray with dusky longitudinal streaks, the spaces between grayish. An irregular broken transverse posterior line present; also a narrow black basal dash and traces of a similar dash above the anal angle to the posterior line. Orbicular and reniform marks hardly traceable. Hind wings with a yellowish tinge, dusky outwardly. Expanse, 33–37 mm.

Caterpillar.—Head green, narrowly sordid brown on the apices of each lobe. The color shades down the angles in mottled spots on a yellow ground. Body bright green, darkest dorsally, with a dull pink stripe, triangularly formed on the six anterior segments, then widening very much till the whole dorsum is covered on the seventh, eighth, and ninth segments, then narrowing again to the anal extremity. The middle and broad part of this mark is darker than the anterior and posterior parts. Body covered with rather long hairs, which spring from small pinkish warts. Underside dull green. Length, 35 mm.

Food-plants.—Hickory, oak, chestnut.

Found during May, June, and July, and is probably double-brooded. It may be known by its dark colors, with darker longitudinal streaks on the fore wings, and by the almost total absence of the transverse lines.

Apatela funeralis (G. & R.).

Fore wings varying from chalky white to quite dark gray. Basal line black, marked on the costa only. Transverse anterior line usually single, marked by an oblique dash on the costa, sometimes traceable as a geminate brown line to the black basal streak. Median shade marked by a black blotch on the costa. Transverse posterior line white, squarely bent outward over the cell and incurved below the middle, partly geminate, outer line black not lunated. Beyond this line the wing is almost uniformly gray with traces of a pale irregular subterminal line. Fringes cut with black. At the base there is a long black

streak which runs to nearly the posterior line, in some cases touching it. Below this line the wing is black or dark smoky. Above the anal angle from the outer margin is a black streak, running across the posterior line so as to connect with the basal streak. Orbicular and reniform marks present. Hind wings white, with traces of an outer smoky line, and the veins somewhat dusky. In the female the hind wings are white at the base and blackish outwardly. Expanse, 31-38 mm.

Caterpillar.—Head large, black, shagreened. Body dull sooty black with a transverse elliptical slightly raised creamy white patch on each of the first to the last segments. The patches on the second, third, eleventh, and twelfth segments are a little smaller than the rest, and those on the fourth and eleventh have a central, transverse, depressed, narrow black line. Warts with black hairs. First and second rows of warts white; third to sixth rows black, all single haired except the sixth, which bears two or three hairs. Hairs short, black, two on each side of the cervical shield. Segments four to nine, eleven, and twelve have long black spatulate hairs. Length, 38 mm.

Food-plants.—Elm, apple, hickory, birch.

Quite rare in this neighborhood. It is a variable species, but the chalky white ground color with jet-black markings will readily serve to distinguish it from all other species.

Apatela tritona (Hüb.).

PLATE XXXVI, FIG. I.

Fore wings slaty bluish gray, with the transverse anterior line very feebly indicated. Posterior line distinct, black outside and preceded by a pale shade, dentate on the veins, curved inwardly below the middle. At the base is a narrow black dash, and another prominent black dash extends inwardly from just above the anal angle, crossing the posterior line, where there is a diffuse smoky brown shade. Orbicular small; reniform feeble. A pale grayish sub-terminal shade is also present. Thorax slaty gray. Hind wings smoky, with an ochereous tinge, paler basally.

Caterpillar.—Head rosy pink, becoming darker at the sides and merging into shining light brown, mottled with darker spots on top. Body yellowish green with a purplish brown dorsal stripe, furcate and black on the first segment. The stripe widens a little on the fourth segment, is absent on the fifth, and begins again on the sixth, but after extending halfway across the segment it splits into two lighter dull purple stripes, which diverge slightly, then run parallel, grow darker, and approach each other, meeting on the eleventh segment, thus enclosing an elliptical area; the stripe becomes more purple in color and extends over the anal plate. Warts slightly raised, most of them crowned with a short, dark blunt bristle, and surrounded with a few long hairs. Spiracles small, black. Underside with white pubescence. Length, 27 mm.

Food-plants.—Cranberry, azalea, deerberry.

Not common. It may be known by the almost uniform slaty blue gray fore wings, with the prominent basal streak and dagger mark near the anal angle. Found during May, June, and July.

Apatela radcliffei Harv.

Fore wings uniform, pale bluish ash gray with the markings neatly defined. Basal line running to the black dash. Anterior transverse line oblique, geminate, rather even, inner line blackish, the outer smoky. Transverse posterior line black outside, the inner faintly visible, with the shade between light gray. Basal dash distinct. The dagger-like mark above the anal angle, distinct and crossing the posterior line. Orbicular large, round; reniform kidney-shaped, both partly black-ringed. Hind wings white in male, dusky outwardly; in the female dusky. Expanse, 35-40 mm.

Caterpillar.—Head black, upper part red. Body black, with three lines along each side and one on the dorsum, all yellow; the subventral one twice as broad as the others. All the lines run from the cervical shield to the anal hump. The warts bear thin white hairs. Length, 33 mm.

Food-plants.—Wild cherry and sugar plum.

The moth is found during May and June, and again in August. The larva mimic the larva of *Datana*, by its stripes and in elevating both ends of the body when disturbed. Rare in this vicinity.

Apatela falcula Gr.

Fore wings uniform dark leaden gray shaded with rusty brown at the base below the black dash and outside the posterior line. Transverse anterior line geminate, oblique, almost even, inner line black, outer one somewhat darker than the ground color. Transverse posterior line black outside with two rather prominent teeth on veins three and four, incurved below that point, with a tooth before it reaches the inner margin. A faint subterminal, pale shade present. Orbicular and reniform marks not distinct. Basal dash prominent, with a short spur below at about the middle. A prominent black dash above the anal angle, but it does not cross the posterior line. Median and basal lines indicated on costa by dark streaks. Hind wings whitish at base, dusky outwardly. Expanse, 35 mm.

Caterpillar.—Head brownish in front, pale greenish on the sides. Body dark brown, mottled with pale greenish; a dark dorsal line, on each side of which are two short warts, more distinct on the anterior part of the body; the four warts on top of the eleventh segment are larger and placed closer together than those on the segments before it. From each of these warts arise one or two short hairs. Underside greenish white. Length, 30 mm.

Food-plant.—Hazel.

Quite rare in this vicinity. It is recognizable by the dark blue gray fore wings, with prominent basal streak, and by the reddish brown shades in the basal area beneath the streak and beyond the transverse posterior line.

***Apatela grisea* (Walk.).**

Fore wings ashen gray, a little mottled with brown, giving it a somewhat marbled appearance. Basal line brown, marked on the costa only. Transverse anterior line geminate, quite evenly oblique outwardly; the outer line brown, more or less obsolete, the inner line blackish, also more or less obsolete. Median shade indicated by a smoky streak from the costa, extending obliquely between the two spots. Transverse posterior line black, preceded by a slightly paler and followed by a brownish shade. It is bent outwardly over the cell, strongly toothed on veins three and four and less so on vein one. An indistinct, irregular, pale terminal line. A series of smoky dots at the base of the fringes, beyond which these are cut with black. A distinct black basal streak which is forked from the lower side near the middle. The black dash opposite the hind angle extends through the posterior line and is well marked. Orbicular round, pale, and outlined by smoky scales. Reniform kidney-shaped, the center shaded with brown. Hind wings dirty white in the male, in the female smoky towards the outer margin. Expanse, 30-35 mm.

Caterpillar.—Head dull chestnut brown with some darker markings. Body wholly yellowish green, with a slight brownish tint, or sometimes pale brownish with a flesh-colored tint. On the seventh and eighth segments is a broad brown triangular patch, the mark being continued, slightly reduced in size, to the anal segment. Each segment bears brownish tubercles with short spiny hairs. There is a faint subdorsal brownish line, broken up into patches. Spiracles brown with redder brown patches above and below them. When at rest the third, fourth, fifth, and sixth segments are very much elevated into a hump. Length, 32 mm.

Food-plants.—Elm, apple, birch, willow, viburnum.

Found during June and July, but not common.

***Apatela connecta* (Gr.).**

Fore wings gray, mottled with ochereous and black. The markings are more or less traceable, but all of them are obscured by a black shade which extends from the base through the centre of the wing and reaches the outer margin above the hind angle. This shade also includes the black basal streak and outer black dash above the hind angle. The transverse posterior line is very strongly incurved below the middle. Sometimes the entire wing is almost uniform gray with the black shade and the markings very much obscured. Hind wings whitish or smoky. Expanse, 30-35 mm.

Caterpillar.—Flesh-colored, with the dorsum bluish and margined on each side with deep yellow. Dorsal trapezoidal spots with a pale bluish annulation. Under the lens the body is covered with extremely fine elevated speckles, especially the dorsum. First segment with two elbowed lines, diverging in front. Dorsal warts with black hairs, the rest long and light. Underside immaculate. Head and spiracles black. Sometimes the larva is dark green with a broad subdorsal sulphur yellow line. Head with a red stripe at each upper side, reaching from the vertex and pointing downward.

Food-plant.—Willow.

Quite rare in this vicinity. It appears in June, July, and August, and is easily recognizable by the black shade through the fore wing from the base to the outer margin. The caterpillar eats into wood, where it constructs a cocoon.

***Apatela brumosa* (Guen.).**

Fore wing very dark, powdery, ash gray with vestiture somewhat elevated; mottled with smoky brown, which obscures the ordinary markings. Basal transverse line brown, geminate, complete. Anterior line brown, geminate, tending to become indistinct below the middle, outwardly oblique. Median shade brown, best marked on the costa, the latter part of the course very largely obscured, and sometimes wanting. Posterior line geminate, the inner line only a little marked, the outer one lunulate and denticulate on the veins outwardly, intervening space pale. Subterminal line pale, irregular, broken, and diffuse. Terminal space crossed between the veins by black streaks, opposite which the fringes are cut with blackish. A brown shading below the median vein from the base to the anterior line, but no distinct basal streak. A similar shading opposite the cell and another opposite the anal angle, taking the place of the ordinary streaks. Between the anterior and median lines is a black streak above the internal vein. Orbicular and reniform spots black-ringed. Hind wings yellowish white in the male, smoky yellow in the female. Expanse, 32–40 mm.

Caterpillar.—Head bilobed, pale, with brown mottled spots on the face. Body olive green, paler subventrally. A broad yellowish white dorsal band, somewhat tinted with pinkish, broken on the fourth, seventh, eighth, and eleventh segments by a large brown spot. A similar fainter mark on the second and tenth segments. Warts on top small, with a few hairs, those on the sides small, flattened, and diffuse, with pale hairs. Body higher than wide, fourth, fifth, and eleventh segments enlarged and humped up in position of rest. Length, 43 mm.

Food-plant.—Witch-hazel.

Not common. Found during May, June, and in August. The species is recognizable by the very mottled fore wings and equally smoky hind wings.

***Apatela superans* (Guen.).**

PLATE XXXVI, FIG. 12

Fore wings pale whitish gray, heavily shaded with brown or black. The dark shades extend from the base of the wings below the middle to the outer margin, and from the costa between the orbicular and reniform marks, joining the longitudinal shade; another shade extends from the outer transverse line to the outer margin opposite the cell. Transverse lines geminate, brown or black, obscured by the black shades, but traceable. Orbicular and reniform marks large, black-ringed, and also partly obscured by the black shade. Subterminal lines white and broken. At the base of the wing on the inner margin is a pale yellow patch. Hind wings smoky in both sexes. Expanse, 40-45 mm.

Caterpillar.—Head brown at apices of the lobes, shading into pinkish below, mottled with black spots, especially on the front angles and in a triangular patch on the ocelli; sides and labrum nearly white. Body soft, green, with a brownish black dorsal space, bordered by a narrow yellow line on the subdorsum. The dark shade is narrowed on the junctions of the fourth to tenth segments and a little at the twelfth segment, continued narrowly to the end of the body. Eleventh segment angularly elevated, pointed. Spiracles white, ringed with black. Claspers and feet pinkish. Warts low, black on the back, pale at sides, with only a few hairs. Length, 30 mm.

Food-plants.—Plum, cherry, apple, birch, mountain ash.

May be known by the large size, the broad wings with dark brown or black shadings and yellow patch at base of fore wings. The moth comes forth during June, July, and August. The larva when mature enters the earth and spins a tough cocoon.

***Apatela spinigera* (Guen.).**

Fore wings very pale ashen gray, sometimes with a slight ochreous tinge. Markings distinct and well outlined. Basal geminate, reaching the black basal dash. Transverse anterior line geminate, brown or black, outwardly oblique and slightly irregular. Transverse posterior line geminate, inner portion faintly visible; outer line narrow, black, dentate on the veins; intervening space whitish. The line is squarely bent over the cell and deeply incurved below the middle. Subterminal line irregular, pale. At the base of the fringes is a row of small black dots. Basal dash narrow, extending to the inner transverse line. Opposite the cell there is a fine, narrow, black streak to the transverse posterior line, sometimes barely visible. Above the angle is a black dash, crossing the posterior line. Orbicular and reniform marks large, distinct, and black-ringed or partly so. Hind wings smoky, somewhat paler in the male. Expanse, 37-45 mm.

This species is closely allied to *A. pruni*, and may be known

by the very neat black dashes and the general distinctness of the markings. Not common. May, June, and August.

***Apatela pruni* (Harris).**

PLATE XXXVI, FIG. 10.

Fore wing very pale whitish gray, with the marking more or less distinct. Transverse anterior line geminate, smoky black, sometimes obsolete below the basal streak. Transverse posterior line geminate, dentate outwardly. The black basal dash runs through the anterior line and is shaded with black beneath. The black dash above the hind angle is also shaded with black above. The streak opposite the cell indistinct or wanting. Orbicular and reniform marks not well defined and more or less outlined by black. Subterminal line irregular, whitish. On the thorax behind the collar is an ochereous yellow spot. Hind wings whitish in the male, smoky in the female. Expanse, 35-43 mm.

Caterpillar.—Head rosy red, sides whitish, with three rows of black spots. Body bright green, the lateral tubercles scarcely discoloring the sides, slightly yellowish green. A dorsal dark reddish purple stripe nearly as wide as the head, on the anterior part of the first joint, about half as wide on the second, narrow on the third to sixth, expanding in two ellipses on the seventh and eighth, the rest of the way narrow. From the first segment to back of the tubercles on the second the stripe is bordered on each side with clear white, colored a little with green on the seventh and eighth and with a faint greenish central line.

Brown form.—Head with clypeus green, the lobes mottled with black and red on a white ground, the lines broken with patches of dots. Body clear, velvety greenish brown. Dorsal band vinous brown, conspicuously edged on joints one and two with white; very narrow and passing above the first row of tubercles, then broadened on joints seven and eight, mottled with salmon color, last segment vinous. First row of tubercles on segments two to six are produced, red, also four on the last segment. Hairs black; a central hair and crown of small ones around it. Spiracles white, ringed with black. Length, 30 mm.

Food-plants.—Apple, mountain ash, cherry, plum, wild cherry.

Common everywhere in this vicinity from the latter part of May until about the middle of August. The larva in forming its cocoon bores partly in soft wood.

***Apatela afflicta* (Gr.).**

PLATE XXXVI, FIG. 15.

Fore wings very densely overlaid with brown black scales so as to obscure all the markings. The transverse lines are fragmentary and indicated by being

deeper black. Subterminal line quite distinct, zigzag, white. Fringes sometimes alternately white and black. Orbicular round, rather large, contrasting, whitish with black center. Reniform mark obscured by the ground color. Hind wings pearly white, dark at the margins and the veins more or less black outwardly. Expanse, 35-43 mm.

Caterpillar.—Head broad, brown with purple reticulations and whitish dots over the face of the lobes. Body nearly uniform reddish brown, a dusky black dorsal stripe, and a faint reddish lateral one. Tubercles very small, orange, each provided with a single hair. Setæ short and fine, except the subdorsal ones on segments four to seven, which are long, black, and slender with club-shaped tips. In some individuals these club-shaped hairs are present on the fourth to eighth and eleventh segments; or second, fourth to ninth and eleventh, or on the second to ninth and eleventh segments. Sometimes the head is yellow brown, lighter externally. Body light yellow brown, tinged with green, darker on top. A white stigmatal line and a distinct black dorsal stripe. The form of the larva is stout, flattened posteriorly.

Food-plants.—Oak, walnut.

This species may be easily recognized by its black fore wings with contrasting pearly white hind wings. It is found in May, June, July, and August. The caterpillar rests with the head touching the posterior end of the body, selecting a withered or discolored leaf on which it is well concealed. The cocoon is tough, composed of silk and bits of wood, partly formed by the substance on which it is made. Not common.

***Apatela albarufa* Gr.**

Fore wings lead gray, with a slight reddish tinge in some examples. Transverse anterior line geminate, bent obliquely inward to the middle and then obliquely outward. Median shade very indistinct or only marked on the costa. Transverse posterior line squarely bent over the cell. Subterminal shade light gray. Terminal row of dots small, black. Basal dash extends to the anterior line, where it curves a little upward, forming an oval space at base. Dash above angle black, more or less distinct. Orbicular round, pale, with a darker center. Reniform well defined with a rusty brown center. Hind wing white in the male, smoky in the female. Expanse, 30-37 mm.

Quite rare in this vicinity, appearing in May, June, and July. It may be known by the incurved anterior line, upcurved basal streak, and the red brown reniform mark.

***Apatela ovata* (Gr.).**

Fore wings light ashen gray, more or less tinted with yellowish. Transverse

anterior line geminate, drawn in at the middle so as to meet the black basal dash. Median shade more or less evident. Transverse posterior line geminate, black, or smoky, the inner less distinct, and the space between pale. The line is bent over the cell and well drawn in at the middle. Subterminal shade whitish, more or less distinct. The basal dash forms an oval costal space. Dash above the hind angle, from the subterminal line, crossing the posterior line. Opposite the cell, beyond the posterior line, is also a small black dash, sometimes absent. Orbicular round, paler than ground color, black-ringed. Reniform large with ochreous center. Hind wings smoky in both sexes. Expanse, 30-40 mm.

Caterpillar.—Head dull purplish red, pale whitish over the clypeus, lower part and central suture and upper two-thirds mottled with spots, composed of groups of little whitish dots in clusters. Body yellowish green or brown, underside pale whitish centrally. Warts yellow, single-haired. Along the back are two rows of large, round, pale yellow spots from the second to the eleventh segments inclusive. Along the sides are two similar rows of smaller spots. Spiracles white with black borders. Length, 30 mm.

Food-plants.—Oak, witch-hazel, beech, chestnut.

Allied to *A. albarufa*, but light gray instead of lead gray, with the markings very much the same as in *albarufa*, but less defined. It is common in this vicinity, though not abundant. It flies from May to July. The caterpillar when at rest lies curled on a leaf. It varies from light yellowish green to reddish brown, and its characteristic feature is the double row of milk-white spots on the back. It spins a cocoon composed of bits of wood and grains of earth on or near the surface of the ground.

***Apatela modica* (Walk.).**

PLATE XXXVI, FIG. 3.

Fore wings very pale gray, somewhat shaded with yellowish. The transverse markings are quite indistinct and broken. Transverse anterior line geminate, outwardly oblique, and very slightly drawn inward at the middle. Median shade marked on the costa. Transverse posterior line geminate, both of almost the same color, smoky, but the outer is sometimes a little darker; it is curved over the cell and bent inward at the middle. Subterminal line whitish, irregular. At the margin is a series of pale small lunules, and a row of very small black dots. Basal streak obsolete or scarcely visible, as is also the dash above the angle. Orbicular round, indistinct, pale, and sometimes marked with ochreous. Reniform filled with ochreous in the centre. Hind wings smoky in both sexes. Expanse, 30-35 mm.

Caterpillar.—Head large, light brown, mottled and reticulated with brown;

a blackish band from each lobe above, parallel to median suture meeting a brown V-shaped mark which borders the clypeus, and a heavy brown mottling over the eye, passing backward. Body smooth, cylindrical, eleventh segment slightly enlarged, shaded with blackish. A broad subdorsal shade, broken at the incisures and defined above by whitish, reaches from the first to the eleventh segments, where the shade curves sharply in the incisure of the eleventh and twelfth and forms a black mark on the dorsum of the last segment and anal plate. On the dorsum is a faint, mottled, geminate line, rather sharply defined on the tenth and eleventh segments in a shaded V mark. Rest of body somewhat mottled. Warts very small.

Food-plant.—Oak.

Resembles *A. ovata*, but much paler with the lines less distinct and broken. It is also smaller, and the transverse anterior line not or very slightly drawn in at the middle. The basal black dash, which is so prominent in *ovata*, is in this species almost absent. Not common during June and July.

***Apatela clarescens* (Guen.).**

PLATE XXXVI, FIG. 9.

Fore wings of an even ash gray, with all the markings quite prominent. Transverse anterior line geminate, blackish, almost evenly oblique, a little curved between the veins in some specimens. The intervening space like the ground color, but toward the middle of its course becomes filled with smoky black. Median shade marked on the costa, sometimes running faintly across the wing. Transverse posterior line with the outer line black, the inner one smoky or faintly visible, intervening space whitish. Subterminal line whitish, crenulate, and followed by a terminal row of pale lunules. Fringes cut with smoky. Basal dash, as a rule, not reaching the anterior line. Above the hind angle is a black dash, which is more or less distinct. Orbicular round, whitish with a gray center and black-ringed. Reniform filled with gray, white and ochreous. Hind wing smoky in both sexes. Expanse, 30–40 mm.

Not common in this vicinity, and appears from the latter part of May until early in July. It is closely allied to *A. hamamelis*, but is of a uniform gray and not shaded over with black. The dagger mark is always present, while it is absent in *hamamelis*, and the anterior line is never completely filled with black as is the rule in *hamamelis*. The caterpillar is unknown.

***Apatela hamamelis* (Guen.).**

Fore wings dull ashen gray more or less heavily overlaid with black. Transverse anterior line geminate, black, outwardly oblique and sometimes lunate

between the veins; intervening space usually filled with smoky black. Median shade usually marked on the costa. Transverse posterior line geminate, the inner line less distinct than the outer one, which is rather strongly dentate. Subterminal line irregular, whitish, more or less evident. A terminal row of white lunules, each containing a black dot. Basal space more or less filled with black, containing the black dash, which is not very well defined. Orbicular and reniform marks both present. Hind wings smoky in both sexes. Expanse, 30-38 mm.

Caterpillar.—Head round, flat in front, concolorous with the body which varies from pale straw yellow to yellowish red. A row of connected triangular dark brown spots on the back, and obscure shades and spots of pale brown along the sides. Underside bluish green. Warts and hairs white. Spiracles black. Length, 25 mm.

Food-plants.—Oak, chestnut, birch.

Very common, and variable in color. The outer black dash on the fore wings, above the hind angle, is always wanting. Sometimes the fore wings are gray or with a more or less black basal area, and with a dark terminal area, or they are almost entirely overlaid with black-brown scales so as to almost obscure the black lines. Found during May, June, and July. The larva when not feeding rests with its head turned to the side of the body.

***Apatela increta* (Morr.).**

Allied to *A. hamamelis*, but the wings are narrower. The fore wings are considerably darker, with the markings distinct, and usually with a pale median space; the whole wing is more or less suffused with olivaceous green, giving it a different color from the plain dark gray *hamamelis*. It is also smaller. Hind wings smoky in both sexes. Expanse, 27-32 mm.

Very rare; possibly found in this vicinity.

***Apatela retardata* (Walk.).**

PLATE XXXVI, FIG. 13.

Fore wings whitish gray, with the basal and outer area shaded with smoky brown. Transverse anterior line geminate, oblique, a little curved, and irregularly lunate. Median shade indistinct, smoky. Transverse posterior lines outwardly dentate. Basal line indicated on the costa. Orbicular and reniform not contrasting, as pale as the ground color, and brown-ringed. A terminal row of small black dots. At the base is an ill-defined black dash to the anterior line, in some examples very obsolete. Hind wings white to smoky, darker in the female. Expanse, 27-30 mm.

Caterpillar.—Head whitish, mottled with pale brown; a row of darker dots close to the sutures of clypeus and median suture. Dorsum to spiracles shaded with purplish and containing transverse bands. Lateral region, underside and feet yellowish waxen white. Dorsal region with fine vinous red bands, the first cut dorsally and not reaching as far down the sides as the others; second broken by the first wart and formed into a pair of rounded spots; third broken by the second wart; fourth narrow, faint dorsally; fifth in the incisure and as long as the first. Warts i, ii, and iii, each in a less degree, short, erect, smooth cylinders, bearing a crown of stiff black hairs. Warts iv–vi small with a few soft whitish hairs.

Food-plant.—Maple.

This is one of the smallest species. The median space is the palest part of the wing, the basal and terminal parts being shaded with smoky brown. It is found during June, July, and August and is not uncommon.

Apatela luteicoma (G. & R.).

PLATE XXXVI, FIG. 5.

Fore wings powdery ash gray with the markings not very prominent. Transverse anterior line geminate, lunate, outwardly oblique. Median shade extends obliquely to the reniform mark, then makes an acute angle and extends to the inner margin; sometimes the median shade is scarcely visible. Transverse posterior line geminate, lunate, with sharp dentations outwardly, intervening space white. Subterminal line more or less distinct gray or white; when well marked it is very dentate. A terminal row of black dots. No basal dash and outer streaks present. Orbicular round or oval, black-ringed; reniform large, dusky, and black-ringed. Hind wings dusky, somewhat darker in the female. Expanse, 38–50 mm.

Caterpillar.—Head shining black with a few whitish hairs. Body mottled with black and white. Dorsum with a narrow yellow central line, which runs through a series of velvety black patches. Subdorsal and lateral lines yellow or red. From the dorsal portion of four segments, and placed transversely, project four very thick, smoky black tufts of fine hairs, and externally to these is a small clear white tuft of similar hairs. From the dorsal portion of the eleventh segment, which is elevated, project two long tufts of similar black hairs, and externally to these are placed two white tufts, one on each side, as on the fourth segment. On the fifth segment are six white tufts, placed transversely on the dorsal surface. On the third segment are four similar tufts, and also one on each side subdorsally on the eighth and ninth segments. On the second segment are four tufts. All the tufts have a few longer black hairs. On the sixth to tenth segments are four reddish tubercles with short whitish and black hairs. Anal segment with two tufts. The remaining tufts are composed of

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long whitish hairs, those on the anterior segments projecting over the head. Length, 35 mm.

Food-plants.—Apple, cherry, walnut, oak, linden, ash, birch, willow, poplar, elm.

A rather large species with narrow fore wings. It is almost uniform powdery gray, with the markings distinctly traceable but not prominent. Found from the latter part of April to July, but not common.

Apatela sperata (Gr.).

Fore wings almost uniform powdery gray with all the markings obscurely defined. Basal line marked on the costa only. Anterior line geminate, curved between the veins. Median shade distinct in most specimens. Posterior line lunulate, outer one dark, inner one vague. Subterminal line pale sinuate. Orbicular black; reniform large and obscured by the median shade. Hind wings white in the male, dusky outwardly in the female. Expanse, 30–35 mm.

Caterpillar.—Head shining red brown, side pieces of clypeus yellow. Body pinkish or creamy brown, more or less mottled with blackish shades, especially on the broken dorsal band. Beneath the spiracles is a red band, sometimes scarcely defined. Warts with bristly hairs, light red, brighter on the fourth segment. A few long hairs at the extremities, and tufts of short, fine, feathery whitish hairs from warts i, ii, and iii on the fifth to eleventh segments, more or less abundant. Length, 26–28 mm.

Food-plants.—Alder, poplar.

A rather common species and easily known by the pale dirty gray fore wings with all the markings obscured except the ordinary spots, which stand out in relief. Found during May and June, and again in August.

Apatela noctivaga (Gr.).

PLATE XXXVI, FIG. 8.

Fore wings white, thickly mottled with deep black, giving a marbled appearance. The transverse lines are geminate and include white spaces. Subterminal line white, broken. Fringes white, cut with black. Orbicular small, black-ringed, and usually filled with black. Reniform obscured by the black shading. Hind wings smoky. Thorax white and black. Expanse, 33–37 mm.

Caterpillar.—Head brown black. Body dull black with a broad, diffuse, red band below the spiracles and a faint spot and two red spots on the dorsum on the tenth segment. Tubercles large and rough, jet black, bearing thick tufts of short bristly hairs. Length, 30 mm.

Food-plant.—Poplar.

This species is easily recognized by the strong contrast between the white ground color and black markings, which gives it a striking appearance. It is not uncommon in this vicinity, and is found from about the middle of May until August. The caterpillar spins a cocoon between leaves on the ground.

***Apatela impressa* (Walk.).**

Fore wings ashen gray, more or less powdered with black. Basal and anterior transverse lines geminate, black. Median shade black, distinct, forming an angle on the reniform mark. Posterior line rather strongly dentate outwardly, with a black shade where it curves inward. From the base to the posterior lines is a rather distinct black shading. Subterminal line whitish, broken, and hardly distinct. Orbicular round, small, black-ringed, usually with a black dot in the centre. Reniform large, black-ringed, and obscured by the median shade. Hind wings dirty whitish in the male, smoky in the female. Expanse, 30-37 mm.

Caterpillar.—Head black. Body velvety black, with a broad, diffuse, faint reddish band below the spiracles. Warts pale, somewhat whitish on the central segments, hairs short, in small bunches. On the second to fifth and eleventh and twelfth segments the hairs are somewhat spiny and light reddish brown, elsewhere soft and pale yellowish. Length, 38 mm.

Food-plants.—Plum, blackberry, currant, hazel, willow, etc.

Allied to *A. sperata*, but differs from this species by having the fore wings heavily shaded with black and by the black shade from the base to the posterior line. The markings are also more pronounced, and as a whole the wings are not so uniformly colored. Found in May, June, and July. Possibly two-brooded.

***Apatela distans* Gr..**

Resembles *A. impressa*, but the apices of the fore wings are more pointed, and the markings, on the whole, are less distinct, more suffused by black scales, and there is a blackish longitudinal shading which extends from the base below the middle of the wing to the outer margin without a break. Expanse, 36 mm.

Caterpillar.—Head shining black. Body black, paler at the incisures, and a yellowish band below the spiracles. Hairs short, in small bunches from the warts, the dorsal space appearing somewhat broadly black from the absence of hairs. Hairs pale yellow, soft, a few bristly ones from tubercle i and some black ones on the fifth and eleventh segments. Length, 36 mm.

Food-plants.—Poplar, willow, birch, alder.

Allied to, and often confounded with *A. impressa*.

***Apatela xyliniformis* (Guen.).**

PLATE XXXVI, FIG. 11.

Fore wings ashen gray, more or less powdered with black. Basal line in most cases wanting, or obscurely marked on the costa. Anterior line very indistinct and rarely complete, often only marked on the costa by an oblique dash. Median shade marked on the costa by an oblique dash and very rarely traceable across the wing. Posterior line strongly dentate outwardly and followed by a brownish shade. Above the anal angle there is a distinct black streak from the margin and through the posterior line. No basal dash or shade. Orbicular small, reniform larger, both well defined but not contrasting. Hind wings white in the male, dusky in the female. Expanse, 35-45 mm.

Caterpillar.—Head black with a pale V-shaped mark and labrum, or dull reddish shaded with brown, the V mark yellowish. Body varying from blackish to gray, finely strigose and peppered, and dorsal darker shade broken into segmentary furcate patches. Below the spiracles is a broad, diffuse red band, most distinct in the paler forms. Warts nearly in line transversely, iv nearly obsolete, yellowish. A more or less distinct yellowish patch covers warts i and ii on the fifth and eleventh segments. Hairs stiff and spiny, sharp pointed, with a few long, slender black ones at the extremities. The spines are pale with black tip, a few black. In the darker forms the spines on the second to fourth segments are deep red at the base. From warts i to iii on the fifth to ninth segments are small tufts of dense, fluffy, barbed, conspicuous white hairs. Length, 35 mm.

Food-plants.—Birch, blackberry.

Somewhat variable in size, ground color, and markings. Usually only the posterior line on the fore wings is distinct, and it often sends shoots from the dentations to the outer margin, giving a somewhat streaked appearance. Found in May and June, and late in July and August. Rather common.

***Apatela oblinita* (A. & S.).**

Fore wings very pale gray, or almost white, with the markings more or less distinct and strigate, and not contrasting. Anterior and posterior lines zigzag or dentate. Outer part of the wing usually with dark streaks to the margin. Orbicular and reniform spots hardly traceable. Hind wings white in both sexes, with a row of black dots at the outer margin, also present on the fore wings. Expanse, 40-50 mm.

Caterpillar.—Head jet black, shining. Body velvety black with a series of very large, conspicuous patches, or rather a broken band, along each side. Along the subdorsum on each side are small spots in form of a patch, but

sometimes the incisures on the second and third, and third and fourth segments are in form of a transverse band. Warts black, with short pale bristle-like hairs. Spiracles white. Sometimes the warts are red and the subdorsal spots form a continuous mottled stripe. Length, 40-50 mm.

Food-plants.—Willow, alder, buttonbush, strawberry, raspberry, *Polygonum*, and various other plants.

This is one of the most common species found in this vicinity. It may be known by its pale color, strigate markings, and narrow wings. It is found from May to August and is double-brooded. The caterpillar spins an elongate, tough cocoon, usually on the under side of boards, fence rails, and stones or amongst leaves.

Arsilonche albovenosa (Goeze).

PLATE XXXV, FIG. 14.

Fore wings white, and more or less heavily marked with fawn brown streaks between the veins, giving the insect a very characteristic appearance. Hind wings and body white. Expanse, 34-45 mm.

Caterpillar.—Head black, with an inverted V mark on the face, two white stripes on top, and mottled with white at the sides. Body black, two yellow lines on each side of the back and one on each side below the spiracles. The body is also mottled with confluent striæ, but less so on the dorsum. Warts orange with light and dark bristles; along the extreme sides a row of orange spots. Underside pale whitish. Length, 40-45 mm.

Food-plants.—Willow, smartweed (*Polygonum*), grass, etc.

Rather common locally during certain years. The moth appears in May and June and again in August. Double-brooded. The caterpillar constructs an elongate cocoon, similar to that of *A. oblinita*.

Harrisimemna trisignata (Walk.).

PLATE XXXV, FIG. 1.

Fore wings white, with a number of black, transverse, scolloped lines, and a fine blackish shading across the middle; near the base below the costa is a chocolate brown round patch and a similar and somewhat larger one near the apex, and another near the hind angle. Thorax chocolate brown; tufts on the abdomen of the same color. Hind wings white in the male, with a narrow broken outer margin; gray in the female, with the fringes white, and a row of outer spots at the base. Expanse, 30-35 mm.

Caterpillar.—Head black, shining, with a reddish shade in the sutures. Body compressed, higher than wide, feet, especially the abdominal legs, very long. Fourth, fifth, and sixth segments arched and strongly humped, as is also the eleventh segment. Tubercles large, chitinous on the humped parts, elsewhere small, reduced to setæ, all with rather long white hairs. Cervical shield attached to the head by a firm membrane. Color black, shading into reddish brown on the anterior side on the hump and on the eleventh segment and thoracic feet. Sides of segments six–nine streaked and washed with whitish flesh-color, joining over the back centrally. Length, 40 mm.

Food-plants.—Lilac, huckleberry, winterberry (*Ilex verticillata*).

Quite rare in this vicinity and found late in May, June, and July. It may be readily known by the three chocolate-colored round patches on the fore wings. The caterpillar has a frosty appearance, and lives solitary. It bores into soft wood to form its pupa.

Microcœlia diptheroides Guen.

PLATE XXXV, FIG. 12.

Fore wings pale green, with irregular black transverse lines filled with white. On the costa at the middle is a triangular black patch, more or less connected with the mark in the cell, giving the two a square appearance. Fringes prominently cut by black. Hind wings pale smoky. Expanse, about 33 mm.

Var. OBLITERATA Gr.—Plate XXXV, Fig. 17.—In this variety all the black lines on the fore wings are obliterated, leaving the white intervening spaces faintly present. The black mark on costa and very small mark near the base present.

The moth flies during June, July, and August. It is quite common, the variety more so than the type form.

Bryophila lepidula (Gr.).

PLATE XXXV, FIG. 4.

Fore wings pale green at base, and black from the costa to the transverse, scolloped anterior line, which is black and white. Middle part of wing brown and black. Orbicular and reniform marks large, green, outlined by white and black. Transverse posterior line partly white and black, strongly streaked outwardly and marked by black dots on the veins. Outer part of wing partly brown and green, subterminal line irregular. Hind wings dusky. Expanse, 30–34 mm.

Quite rare in this vicinity, and found during June, July, and August.

Bryophila teratophora H.-S.

Fore wings gray brown with two white costal marks, the first opposite the reniform spot, and the second forming part of the subterminal line, which is indistinct. Transverse lines black. Orbicular obsolete. Reniform white, very large, marked with brown, opposite a white dot on the inner margin. Hind wings gray. Expanse, 30 mm.

Rare in this vicinity. June and July.

Chytonix palliatricula (Gn.).

PLATE XXXV, FIG. 10.

Fore wings light and dark brown. Basal line distinct, black. Anterior line black, outwardly oblique, straight or a little curved. Posterior line curved around the cell, thence oblique to the inner margin. Subterminal line pale brown, irregular. From anterior to the posterior line, beneath the middle, is a black longitudinal line, ending in a white spot. Beneath this line the wing is dark brown, and light brown above, or white. Orbicular and reniform marks large, pale brown, or white, partly outlined with black. There is also a trace of a median dark shade on the costa between the two spots. Hind wing fuscous. Expanse, 28-34 mm.

Found in May and June and again in July and August. It is not common and may be known by the brown color and the black streak connecting the posterior and anterior lines on the fore wing.

Chytonix sensilis Gr.

Fore wings brownish fuscous, with a reddish stain over the subterminal line. Spots somewhat paler; the reniform medially constricted, enclosing a black shade, separated into an upper and lower spot. Transverse lines black, rather wide apart. Transverse posterior line curved around the reniform, thence downward and outwardly oblique, with a slight indentation opposite the cell, thence it runs inwardly to the inner margin. Attached to it is a small white spot. Subterminal line uneven, with an outward tooth at the middle. Hind wings fuscous. Expanse, 31 mm.

Quite rare in this vicinity. It is allied to *C. palliatricula*, but the transverse posterior line is not so rounded opposite the cell, the anterior line not so oblique, waved, with a submedian indentation. The lines do not appear so widely apart in *sensilis* as in *palliatricula*.

***Polygrammate hebraicum* Hüb.**

PLATE XXXV, FIG. 9.

Fore wings chalky white with the transverse black lines more or less broken. Orbicular reduced to a small black dot; reniform mark open on upper part. Hind wings pale smoky. Expanse, 25 mm.

A small species, recognizable by the white fore wings with black markings. June and July.

***Cerma cora* Hüb.**

Fore wings grayish fuscous, basal and median spaces white with a black, wavy line across the latter. Transverse anterior and posterior lines black, wavy; the former almost erect, the latter curved around the reniform. Orbicular white, black-outlined. Reniform large, black-outlined, and with a central black mark. Fringes black and white. Hind wings blackish, fringes interrupted with white. Expanse, 25 mm.

Very rare in this vicinity.

***Rhynchagrotis rufipectus* (Morr.).**

PLATE XXXVII, FIG. 14.

Fore wings gray brown, with a reddish brown tinge in some specimens. Transverse lines more or less distinct, the posterior line followed by a row of small black dots. Orbicular and reniform large, same as the ground color with a darker outline. Head and collar deep velvety brown. Hind wings pale dirty whitish brown. Expanse, 33-37 mm.

Rare in this neighborhood. Found during June, July, and August.

***Rhynchagrotis anchocelioides* (Guen.).**

Fore wings vary from drab or clay yellow to dark red brown, with the markings usually indistinct in the pale form. Fringes usually clay yellow. Orbicular and reniform outlined with pale ochereous, center darker. Hind wings varying from dirty pale whitish brown to blackish, with the fringes more or less clay yellow. Expanse, 31-37 mm.

Var. *BRUNNEIPENNIS* Gr.—Fore wings and thorax red brown. Transverse lines present. Orbicular and reniform outlined by pale yellow.

Not common. Taken during July, August, and September. An exceedingly variable species as regards the color of the fore wings.

Rhynchagrotis placida (Gr.).

Fore wings dark grayish fuscous, sometimes with a brown tinge, smooth, with the transverse lines geminate and indistinctly visible, somewhat darker than the ground color. Subterminal line with a dark blackish spot at the costa. A terminal row of minute blackish dots. Orbicular invisible or indicated by an outline very slightly darker than the ground color. Reniform distinct, blackish. Hind wings concolorous, fuscous, with the fringes white at the tip. Expanse, 32-34 mm.

Rare in this vicinity, but rather common in the Western States. It is found during July and August, and may be distinguished from *R. anchocelioides*, to which it is closely allied, by the smooth fore wings and white fringes of the hind wings.

Rhynchagrotis alternata (Gr.).

Fore wings clay brown heavily irrorate with black. Transverse lines more or less distinct, geminate, usually broken, blackish. Terminal part considerably paler than the rest of the wing, almost whitish, irrorate with black. Fringes dark with a yellow line at the base. Orbicular and reniform darker than the ground color, pale, outlined and somewhat shaded with ferruginous in the center. Hind wings fuscous to blackish, fringes paler, usually clay yellow at base. Abdomen tipped with clay yellow, inclining to roseate in the female. Expanse, 35-38 mm.

A well-marked species, readily known by the pale terminal part of the fore wing. It is common in this vicinity, though not abundant. July, August, and September.

Rhynchagrotis brunneicollis (Gr.).

Fore wings reddish gray, slightly irrorate with black, and more extensively with ferruginous scales. Transverse lines dark brown, distinct, interrupted; basal line blackish, nearly straight; transverse anterior line sometimes indistinct, crenulate, forming three even curves; transverse posterior line crenulate, forming black dots on the veins; subterminal line narrow, pale, and indistinct, with a dark costal shade. Spots large, concolorous with the wing, defined by ferruginous rings. Reniform broad, excavated outwardly. Terminal space somewhat darker. A faint narrow ferruginous median shade. Head and collar deep brown; thorax like the wings. Hind wings broad, pale grayish testaceous. Expanse, 35-40 mm.

Not common. The moth is on the wing from June to September.

Adelphagrotis prasina (Fabr.).

PLATE XXXVII, FIG. 8.

Fore wings umber brown, more or less densely covered with mossy green shades, giving the insect a very characteristic appearance. In strongly shaded specimens the green, when observed under a lens, forms three broad streaks from the base to the outer margin, and one from the reniform spot, with dashes of the same color between these streaks at the outer part of the wing. All the lines are geminate. Basal line black, partly filled with clear white, as is also the oblique scolloped anterior line. Posterior line lunulate obscured by a distinct white patch at the costa. Subterminal line dentate, irregular, the teeth pointing inwardly. Margin with a row of small lunate black spots. Orbicular and reniform very large, black-outlined. Head and thorax tinged with mossy green. Hind wings fuscous; fringes pale with a greenish tinge. Expanse, 45-50 mm.

Caterpillar.—Head ash gray with two brown spots. Greenish or blue green with a row of spade-shaped patches along the back, broken on the middle by a pale line. On each of these patches are two white dots. Along the sides is a row of black patches and a reddish line along the legs. Spiracles white. Length, 45 mm.

Food-plants.—Blackberry, raspberry, huckleberry.

A large mossy green species, with a large white patch beyond the reniform. The larva may be found in autumn and early in spring. The moth flies in July and August, and is not uncommon. Also found in Europe.

Platagrotis pressa (Gr.).

PLATE XXXVII, FIG. 3.

Fore wings dusky gray, shaded with pale green, with the transverse lines geminate, black, and filled with dirty white. Subterminal line with more or less distinct black dashes pointed inwardly. Reniform and orbicular large and black-ringed. Claviform large with the upper edge black. Terminal line narrow, black, and dentate. Hind wings pale, with a pale fuscous median shade and outer margin. Expanse, 34-40 mm.

Easily recognized by the prominent markings, and the pale green shades on the fore wings. Not common.

Platagrotis condita (Guen.).

Fore wings whitish gray, with large stigmata and bright brown, contrasting subterminal space. A black basal dash and a second above it on the cell,

before the orbicular, which is near the anterior line ; above it, on the costa, are two black lines, rather wide apart, with included space white. Below, the anterior line is twice waved to the inner margin. Basal space whitish ; basal line indicated. Sub-basal space dark gray. Spots concolorous, black-ringed. Orbicular ovate. Reniform moderately excavate. Claviform incomplete. Posterior line narrow, geminate, regularly and slightly scolloped, with a deep incision opposite the cell. Terminal space narrow, gray, with a dentate black line. Hind wings pale gray fuscous ; fringes pale touched with blackish at extremities of veins, and a black terminal line. Thorax gray, dark on the tegulæ. Expanse, 39-42 mm.

Rare and easily known by the large, pale spots on the fore wings. The caterpillar is white with blackish markings, and spins a cocoon not unlike that of *Cerura*. The moth flies in April and May.

Eueretagrotis sigmoides (Guen.).

PLATE XXXVII, FIG. 16.

Fore wings of a rich brown with the costa broadly pale brown to the posterior transverse line. Cell before and between the ordinary spots black. Transverse anterior line dentate, obliterated by the black and light shades. Transverse posterior line geminate, lunulate, filled with light brown. Subterminal line similar. Orbicular small, round. Reniform large. Thorax velvety brown in front. Hind wings fuscous. Expanse, 35-40 mm.

Not rare in this vicinity. It flies in June and July.

Eueretagrotis perattenta (Gr.).

Similar to *E. sigmoides* in ornamentation, but it is a smaller species, and lacks the creamy shading over the costa of the fore wings, which are rosy brown. Expanse, 32-36 mm.

Not common ; flies during June and July.

Eueretagrotis attenta (Gr.).

Fore wings rosy brown with pulverulent lighter shades, especially over the costal region. At the base is a black streak extending to the transverse anterior line. Head and thorax concolorous with the wings. Hind wings pale, with a very narrow dark terminal line. Transverse lines the same as in *E. perattenta*. Expanse, 34-36 mm.

This species very much resembles *E. perattenta*, but lacks the black color in the cell. It is also much paler. Flies in June and July.

***Semiophora opacifrons* (Gr.).**

Fore wings gray, often with a reddish tint; cell between the spots more or less black; transverse lines simple, black. Basal line evident. Transverse anterior line nearly even, slightly oblique outwardly. Transverse posterior line strongly crenate, parallel with the outer margin. Subterminal line often obsolete, sometimes indicated by a slightly darker shade. Spots moderate, concolorous, not complete, marked by the blackish cell. Hind wings fuscous, paler towards the base, with a distinct discal lunule. Thorax gray, with the front blackish brown. Expanse, 35 mm.

A distinct broad-winged species, with the cell blackish, the transverse posterior line distinctly crenate, and the apices rectangular. Very rare in this vicinity.

***Semiophora elimata* (Gr.).**

PLATE XXXVII, FIG. 18.

Fore wings ashen gray, thinly powdered with brown scales, the markings more or less distinct, but sometimes almost obsolete. Transverse anterior line curved around to the orbicular, then with an inward curve, thence with two outward sinuations to the base. Transverse posterior line very strongly curved from the costa to below the middle, then curved inward, crenulate. Subterminal line in form of a brown shade. Cell sometimes filled with brown before and behind the orbicular. Spots distinct. Hind wings pale fuscous. Expanse, 38-45 mm.

A variable species with the markings sometimes almost obliterated. It is not common in this vicinity. Flies early in spring and in September.

***Semiophora tenebrifera* (Walk.).**

Fore wings dark and deep red brown, brighter outwardly and at the base below the median vein. The transverse lines are almost obscured by the ground color. Spots gray, contrasting. Orbicular rather large, spherical. Reniform also large, inclosing a black stain. Subterminal line quite distinct, being indicated by a line of powdery gray. Before the margin is a fine gray, wavy line, which appears as interspaced points. Fringe light brown. Hind wings soiled with fuscous, fringes pale ruddy. Thorax like the fore wings; collar above with indistinct pale edging; head rufous, tip of palpi pale. Expanse, 32-34 mm.

A variable species, often irrorate with gray. The wings are narrower than in *S. elimata*, and the apex more obtuse. The moth flies in May and June.

***Pachnobia manifesta* (Morr.).**

Fore wings red to rusty brown, more or less irrorate with black scales. The transverse lines are single and well defined. Transverse anterior line in the male vertical, thrice waved between the veins; in the female more even and oblique. Transverse posterior line almost parallel with the outer margin. Subterminal line forming the beginning of a slightly paler terminal shade, its course sinuate. Claviform obsolete. Orbicular punctiform, ill-defined. Reniform ovate or somewhat lunate. Hind wings fuscous. Head and thorax concolorous. Expanse, 31-34 mm.

Rare in this vicinity. Flies in May and again in August.

***Pachnobia monochromatea* (Morr.).**

Fore wings rusty red brown, sprinkled with black atoms. Transverse lines simple, broad, nearly equal, approximate and evenly curved outwardly. Subterminal line, reniform, and orbicular obsolete. Hind wings paler, reddish fuscous. Head and thorax concolorous. Expanse, 31 mm.

An easily recognized species. The markings are simple and the median lines are parallel. Very rare in this vicinity.

***Pachnobia fishii* (Gr.).**

Fore wings reddish purple. Transverse lines not prominent. Anterior line slightly oblique, almost even. Posterior line curved around the reniform, then bent inwardly. Median shade present but very faint. Subterminal line pale, scaled with black and forming a black mark on the costa. A terminal row of black dots. Fringes reddish. Orbicular round, pale-outlined. Reniform filled with pale scales, dusky at the lower part. Claviform absent. Hind wings fuscous with a reddish tinge. Fringes uniform reddish. Head and thorax reddish. Expanse, 33 mm.

Very rare in this neighborhood. Flies in April and May.

***Agrotis badinodis* Gr.**

PLATE XXXVII, FIG. 5.

Fore wings broad, red or violet brown, basal and transverse anterior lines darker, narrow, with a distinct dark brown spot on the latter above the middle and touching the orbicular. Transverse posterior line slightly curved outwardly, dark brown, pale outside. Orbicular and reniform large, pale-outlined, with a dark shade between them; this shade runs narrowly across the wing. Beyond the posterior line is a dark brown shade, especially toward the costa. Hind wing fuscous or powdered with reddish and with a distinct dark discal mark. Head and thorax concolorous; collar deep velvety brown. Expanse, 35-39 mm.

A rather common species, easily known by the broad forewings with the apex pointed. Flies from July to October.

Agrotis violaris G. & R.

Fore wings pale lilac gray, sparsely scaled with black; median space darker on outer half. Anterior line evenly oblique, geminate, the inner line vague. Posterior line evenly bent around the reniform, thence oblique to the inner margin. Subterminal line not distinct. Basal line absent. Orbicular concolorous, not distinct. Reniform large, dark ringed, filled with gray black, inner annulus pale. Hind wings smoky gray or dusky, fringes white. Head and thorax pale lilac gray. Expanse, 40 mm.

Very scarce in this neighborhood, occurring in September and October. Easily known by the pale lilac gray fore wings with even transverse lines.

Agrotis ypsilon (Rott.).

PLATE XXXVII, FIG. 12.

Fore wings deep purple brown, more or less suffused by pale luteous shades. Sometimes dark to the transverse posterior line, with the subterminal shade ochereous or along the costal region. Anterior transverse line geminate, curved between the veins. Transverse posterior line almost straight, punctiform. Subterminal line strongly dentate inwardly, the two dentations opposite the cell black. Claviform black-outlined. Orbicular rather small, rounded or elongate, black-outlined. Reniform larger, kidney-shaped, outwardly marked by a short black dash. Hind wings dusky or whitish, with the veins dark and with a decided pearly lustre. Thorax violet gray black; collar dark brown. Expanse, 37-53 mm.

Caterpillar.—Head brown, mouth parts black. Body thick and broad, light to dark brown with a pale dorsal line and three pale lines along the sides, the one on the subdorsum more distinct. Each segment with eight shining black piliferous spots and two paler ones at the sides. Underside greenish gray. Neck and anal plates light brown. Length, 35 mm.

Food-plants.—Corn, potato, tobacco, cabbage, plantago, and other low plants.

This is one of the most common species and is found throughout the United States and Canada, and from Mexico southward to Uruguay; also in Europe, India, China, Australia and Africa. It is, in fact, a cosmopolitan species. The larvæ usually live on young plants and have a most emphatic and pernicious cutting habit. They often cut off plants that are six inches in height, generally at an inch above the ground. The moth flies from June to October.

***Agrotis geniculata* G. & R.**

Fore wings varying from gray to deep smoky brown. Basal and anterior transverse lines geminate, scalloped, and dentate with the spaces between pale. Posterior transverse line geminate, scalloped, variable in its course, but usually curved outwardly. Subterminal line pale and narrow. Ordinary spots usually pale, with the intervening space in the cell black. Across the wing sometimes a dark median shade, especially in the gray forms. Hind wings varying from gray to smoky brown; fringes tipped with white. Expanse, 28-34 mm.

A very variable species. In pale individuals the subterminal area is usually the darkest. The transverse lines are always filled with pale gray, in light and dark specimens, which renders them conspicuous. The moth is not common; it flies in August and September, and possibly also early in the season.

***Peridroma occulta* (Linn.).**

Fore wings ash gray, more or less powdered with smoky brown. Transverse anterior line geminate, lunate, and usually filled with gray. Transverse posterior line geminate, bent over the cell, thence obliquely inward to the hind margin, dentate outwardly, lunate inwardly. Subterminal line irregular and sending black dashes inwardly, those opposite the cell usually touching the preceding line. Margin with a row of black dots. Orbicular large, dark-outlined, and as a rule filled with light gray and completely closed above. Reniform very large, kidney-shaped. Claviform black-outlined, sometimes followed by a black dash. Basal transverse line evident. Head and thorax like the fore wings in color. Hind wings usually grayish brown with the fringes clear white. Expanse, 50-62 mm.

Caterpillar.—Head brown. Body gray brown with a large black patch on each segment, divided in the middle by a pale dorsal line. On each patch are four white spots. A white subdorsal line touches the black patches. At the side is a white line, above which are black patches, each with two white spots. Spiracles black. Anterior part of last segment with a yellow patch. Length, 60 mm.

Food-plants.—Various kinds of low plants.

A very large species, easily recognized by its gray color, with prominent markings on the fore wings. Superficially it somewhat resembles *Apatela americana*. It is not common and flies in June, July, and August. It is widely distributed, being found in Europe, Greenland, Lapland, Labrador, Canada, and northern United States from the Atlantic to the Pacific. In Lapland, Greenland, and Labrador, the species is said to be paler and smaller.

Peridroma astricta (*Morr.*).

Fore wings red brown, basal and terminal spaces darker. Transverse lines geminate, not very distinct. Basal line scarcely visible. Transverse anterior line evenly and slightly oblique. Transverse posterior line evenly curved over the cell, thence parallel with the outer margin. Subterminal line irregularly dentate, marked by contrast between the subterminal and terminal spaces, the former being darkest, the latter nearer to the ground color. Claviform indefinitely outlined, of good size. Orbicular oblique, oblong; reniform upright, slightly constricted at middle. These spots are large, more grayish than the ground color, and narrowly outlined in black. Hind wings dull smoky brown. Thorax very dark brown. Abdomen same color as the hind wings. Expanse, 50-54 mm.

Very rare in this vicinity, but more common in the Northern States. It may be readily known by its large size and brown color.

Peridroma saucia (*Hüb.*).

PLATE XXXVII, FIG. 7.

Fore wings varying from yellowish brown to dull purplish brown, more or less suffused with black, so as to obscure the markings. Basal and transverse anterior lines geminate, upright, lunate, the former sometimes partly or entirely wanting. Transverse posterior line scarcely distinct, single or double and slightly curved over the cell. Subterminal line indefinite, marked only by a somewhat darker shade, or absent. Orbicular spot round; reniform mark large and kidney-shaped. Hind wings iridescent, smoky brown outwardly; veins marked with brown. Expanse, 40-50 mm.

Caterpillar.—Head light gray, mottled. Body varying from light to dark gray, finely mottled with light brown and very dark brown and black. Eleventh segment with a triangular black or dark brown mark. On the dorsum of each segment, back of the middle, is a more or less bright yellow point, usually brightest on the third, fourth, and fifth. In some individuals these marks are not visible on the posterior part of the body. In the subdorsal region is a series of elongate black or brown spots, in length nearly one half the width of the segment; each beginning on the anterior part of the segment. The space between the dorsal, subdorsal regions, and sides mottled with dark brown, the sides a little paler. Below the spiracles is a yellow or flesh-colored stripe, in the lighter specimens broken into elongate spots. Piliferous spots, each with a short hair, not prominent. Underside grayish, speckled. Length, 30-42 mm.

Food-plants.—Different kinds of low plants, especially in gardens.

Very common everywhere from the latter part of June until November; probably two-brooded. The moth is subject to

considerable variation, from ochereous and black to purple brown or grayish brown. The caterpillar enters the ground to pupate. A very widely distributed species, found also in Europe.

Peridroma incivis (Guen.).

Fore wings varying from ashen gray to a somewhat reddish gray, irrorate with black scales, terminal part of wing reddish and containing the somewhat paler subterminal line. Transverse posterior line curved and indicated by small black dots; other lines not or scarcely traceable. Orbicular spot round, same as the ground color, or absent. Reniform mark distinct, large, black, annulate with white and ferruginous. Hind wings white, semi-transparent, with a pearly lustre, dusky at the margins. Thorax pale, collar deep velvety brown. Expanse, 32-38 mm.

Not common in this vicinity, but quite so in the Southern States. Found from July to October.

Noctua baja Fabr.

Fore wings varying from gray brown to red brown. Transverse lines a little darker than the ground color. Transverse anterior line slightly bent outward. Transverse posterior line evenly bent, with a row of small black dots outside. Subterminal line distinct. Before the apex, a little below the costa, are two black spots, placed close together. Orbicular and reniform evident but not intense in color; the latter marked with black in the lower part. Hind wings fuscous. Expanse, 36-40 mm.

Caterpillar.—Head yellowish red with a curved black line on each side. Body yellowish brown with three fine yellowish lines along the back from the fourth to the end of the eleventh segment, behind which is a white transverse line; on the back of each segment are two black dashes, most prominent toward the last segment. Sides reddish with black irrorations and a reddish gray line below the spiracles. Length, 40 mm.

Food-plants.—Many kinds of low plants.

A very common species, found also in Europe. Flies in July, August, and September.

Noctua normaniana (Gr.).

PLATE XXXVII, FIG. 1.

Fore wings rather pale clay-brown gray. Cell, except the spots, deep brown. Basal line present, anterior line slightly oblique, almost straight, very little sinuate. Transverse posterior line geminate, upright and bent over the cell, [October, 1901.] 18

sometimes with a row of small black dots beyond. Subterminal pale, slightly bent, with black spot on costa. Terminal edge of wing usually reddish brown with a row of blackish lunules at the edge. Median shade present. Orbicular spot pale, oblique, open above. Reniform mark narrow, sublunate, usually incomplete above. Hind wings fuscous. Expanse, 35-40 mm.

A rather common species, found from July until late in September.

Noctua bicarnea Guen.

Fore wings slaty black, with a conspicuous flesh-colored patch at the upper part at the base and another patch of the same color on the costa at the beginning of the posterior transverse line. This line is quite ill-defined and is regularly curved outwardly. Basal line black, not running across the wing. Transverse anterior line geminate, partly of the color of the flesh-colored basal patch; it becomes indistinct below the middle. Subterminal line pale, punctiform, with a small blackish mark on the costa. Cell deep black. Orbicular oblong, slaty black, indistinctly outlined with a flesh-colored ring; reniform mark narrow, more or less complete, and ringed with black and flesh-color. Thorax pale brown; collar fleshy or slaty brown. Hind wings fuscous. Expanse, 37-40 mm.

Very common everywhere from July until October. It may be readily known by its slaty black fore wings with flesh-colored patches.

Noctua c-nigrum Linn.

Fore wings slaty gray or varying from a light to rather bright fleshy brown with the basal and terminal area slaty gray. Cell black; costa between the anterior and posterior lines dirty white, brown or carneau. Basal line single, black, ending in a blackish shade. Anterior line geminate, oblique. Posterior line often very indistinct and consisting of small lunules. Subterminal line barely visible, often punctiform, with a distinct black mark on the costa. Orbicular mark open above, V-shaped and forming a part of the pale costa. Reniform mark large, outlined with black and partly filled with reddish brown; collar and head pale gray brown. Hind wings smoky, paler toward the base. Expanse, 40-44 mm.

Caterpillar.—Head small, shining, with two black streaks in front. Body dull brown, with faint indications of black markings along the back. Upon each of the tenth, eleventh and last segments are two oblique, velvety black streaks. Spiracles white, below which is a rugged line of pale fawn color. Underside pale testaceous. Length, 35 mm.

Food-plants.—Lettuce, cabbage, and other low plants.

Very abundant everywhere, from May until late in the fall.

It is double-brooded and the larva hibernates. Also found in Europe.

Noctua phyllophora (Gr.).

Fore wings rather bright red brown with darker shade in some individuals. Basal and anterior transverse lines present, geminate and darker than the ground color. Posterior line somewhat lunate, outer one punctiform. Subterminal line irregular, usually preceded by a darker shade. Orbicular round, outlined with red brown and centered with the ground color; reniform mark similarly colored. Hind wings smoky. Expanse, 37-40 mm.

Readily known by its red brown color and distinct markings and darker shades of red in some individuals. Common everywhere but not abundant. The moth is on the wing from May until late in the season. The larva hibernates.

Noctua jucunda (Walk.).

Fore wings pale red brown, varying to yellowish red. The colors are more or less mottled, never entirely even. Basal line distinct, blackish. Anterior line vertical, sometimes not traceable. Posterior line geminate, punctiform and sinuate. Subterminal line distinct, pale and sinuate. Costal patch, before the apex, distinct, red brown. A dusky median shade, most distinct between the spots. Claviform indicated, not completely outlined. Orbicular round, concolorous, pale outlined. Reniform kidney-shaped, usually paler, and more or less suffused with dusky yellowish at the lower part. Hind wing pale yellowish fuscous. Thorax concolorous with fore wings. Expanse, 31-34 mm.

Quite rare and possibly found in this vicinity.

Noctua plecta Linn.

PLATE XXXVIII, FIG. 14.

Fore wings bright carmine or lake to deep red brown. Costa from base to the apical third of the wing broadly yellowish or dirty white. A black shade from the base to the end of the cell. Transverse lines absent, sometimes an indication of the transverse posterior line; subterminal line indicated by a light shade. Orbicular small, round, with a small dark center. Reniform mark lunate. Hind wings white. Expanse, 29 mm.

Caterpillar.—Head brown with white dots and two whitish streaks. Body varying from light to dark yellowish gray, or reddish brown, with four black dots on each segment, placed between three dorsal lines; these are dotted with whitish. A white transverse line on the anterior part of last segment. Sides with a reddish line along the spiracles, whitish above and yellowish gray beneath. Underside green gray. Length, 30 mm.

Food-plants.—Chickory, lettuce, celery, and many other low plants.

A small species easily known by the red fore wings, with contrasting pale costa. Also found in Europe. It flies from May to October and is rather common in this vicinity.

Noctua fennica *Tausch.*

Dark blackish brown, inner margin sometimes more or less reddish yellow. Transverse lines more or less distinct. Basal line evident. Anterior line even, inwardly oblique, and somewhat curved. Posterior line crenulate, somewhat sinuate, almost parallel with the outer margin. Subterminal line pale, more or less punctiform, irregularly sinuate, preceded by black sagittate dashes, the two opposite the cell longest. Across the median space is a darker shade. Claviform very narrow, short. Orbicular usually small, sometimes punctiform, oblique, ovate, or oblong. Reniform large, kidney-shaped, shaded at each end with dusky. Hind wings whitish, dark outwardly. Expanse, 40-50 mm.

Caterpillar.—Head dark yellowish brown with a black stripe down the front. Body black, with two yellow stripes on each side, the upper one composed of streaks and dots; the lower one, near the under side, forms two crinkled lines, which approach each other on the anterior segments and diverge posteriorly. Cervical shield shining black. Spiracles surrounded with black. Underside brownish black. Legs and feet pale brown. Length, 30-35 mm.

Food-plants.—Clover and other low plants.

This species is recorded from New York and is possibly found in this vicinity. It flies in May and June.

Noctua collaris (*G. & R.*).

PLATE XXXVII, FIG. 20.

Fore wings gray brown, sometimes with a purplish tinge. Transverse lines, even, pale gray, the outer one evenly curved and followed by a dark shade. Cell black. Orbicular round. Reniform usually kidney-shaped, both pale ringed. Thorax of the color of the wings. Head and collar deep velvety brown. Hind wings fuscous. Expanse, about 29 mm.

Rather scarce in this neighborhood. Found during July, August, and September.

Noctua haruspica (*Gr.*).

Fore wings almost uniform smoky brown, terminal part somewhat darker. Transverse lines single, usually distinct, blackish. Anterior line scalloped, oblique. Posterior line strongly dentate outwardly. Subterminal line very faint, hardly visible. Orbicular and reniform spots large, outlined by black. Hind wings fuscous. Expanse, about 44 mm.

A very large, broad-winged and plainly colored species, with the markings distinct but not prominent. Found everywhere, but not abundant. July to September.

Noctua clandestina Harr.

Fore wings dark smoky brown, sometimes a little darker outwardly. Transverse lines usually very indistinct; anterior line scalloped; posterior line dentate. Orbicular black-outlined, ovate, longitudinal and usually connected with the reniform by a narrow spur. Reniform only partly outlined by black. Hind wings pale, darker outwardly. Expanse, 40-42 mm.

Caterpillar. — Head black with a white line in front resembling an inverted Y, and sides white. Body ash gray, inclining on the back to dirty yellow, finely speckled with black and brown dots. Along the dorsum a fine line of a lighter color, shaded on each side, at the junctions of the segments, with a darker color. Subdorsal line light sulphur yellow, with a band of dirty brownish yellow below. Along the spiracles is a wavy line of a dark shade with flesh-colored markings beneath it. Along each side of the back is a row of oblique black velvety marks. Underside greenish gray. Thoracic feet brown. Length, 35 mm.

Food-plants. — Cabbage, celery, plantago, and many other kinds of low garden plants.

A uniform smoky brown gray species with rather narrow fore wings and with the markings often very indistinct. Common everywhere from May until October. Double-brooded.

Noctua lubricans Guen.

Fore wings bluish gray, more or less shaded with dark red and outwardly dark red or blackish. Transverse lines varying to the same extent. Basal line evident; anterior line scalloped, single; posterior line evenly curved outwardly. A distinct median red shade, nearest the posterior line. Orbicular wanting. Reniform obsolete, indicated by two black marks or dots. Hind wings pearly white; collar with a velvety brown band in front. Expanse, 34 mm.

Not common. It very much resembles *Agrotis incivis* in color, but is redder, with the orbicular absent and the reniform only indicated by two black dots. It flies from May until late in the fall.

Feltia subgothica (How.).

PLATE XXXVII, FIG. 9.

Fore wings dark gray or smoky, costa broadly pale grayish; inner margin, subterminal space, and median vein broadly grayish or whitish. Basal

line distinct on costa, outwardly oblique, then inwardly oblique from the median vein, which breaks the line at the middle. Anterior line straight, broken by the pale shades. Orbicular open V-shaped, and connected with the pale costal area. Reniform elongate, with a yellowish center. Outer pale shade crossed by the veins. Fringes pale. Claviform mark very long, black-outlined. Hind wings whitish, dark outwardly in the male, fuscous and a little paler basally in the female. Expanse, 31-37 mm.

Caterpillar.—Head shining black, sometimes speckled with white; front with a white line like an inverted Y. Body white or ash gray, inclining to yellowish. A whitish dorsal line edged on each side with a dark one. Three lateral dark, broader stripes, the lower one separated by two pale ones. Sometimes an indistinct whitish stripe under the lower one. Cervical shield with white stripes. Underside dull white. Legs varied with smoky brown. Length, 32 mm.

Food-plants.—Corn, lettuce, celery, beans, peas, grasses, etc.

Very common everywhere from early until late in the season. It is usually found in grassy places. It may be known at once by the broad and prominent pale longitudinal streaks, by the pale spots, and by the white hind wings.

***Feltia jaculifera* (Guen.).**

Allied to *subgothica* in general appearance, but the color of the fore wings is more uniform and the contrast less distinct. The subterminal is not crossed by the pale dashes on the veins, but these terminate abruptly on the posterior transverse line. Over the wings there is a strong reddish tint, and the hind wings are dusky or paler at the base. Expanse, 30-40 mm.

Caterpillar.—Marked similarly to *A. subgothica*, with the colors darker and less pronounced, the longitudinal lines less conspicuous, and the dorsum of a more decided pale buff color. Length, 30 mm.

Food-plants.—All kinds of garden plants, grasses, etc.

A common species. Found from June until late in the fall.

***Feltia herilis* (Gr.).**

Very much like the preceding species but usually darker, the costa and orbicular often entirely concolorous. Hind wings almost uniformly blackish. Expanse, 37-40 mm.

Possibly nothing more than a variety of *F. jaculifera*. The markings are the same, but *herilis* is larger and somewhat more robust. Common from June until October.

***Feltia gladiaria* (Morr.).**

Fore wings blackish fuscous, often paler, most evidently so below the middle. Transverse lines indistinct; anterior line geminate, lunate; posterior line even, lunate; subterminal line even, pale, preceded by a pale dash along the median vein. Claviform pale-ringed, elongate; orbicular very small; reniform very large, usually not entirely closed below, but entered by the pale dash along the median vein. Sometimes the spots are connected. Hind wings dirty fuscous or smoky. Expanse, 30-32 mm.

Not common. Somewhat resembles *F. subgothica* in general appearance, but is considerably darker. Usually found in September on goldenrod during the day.

***Feltia venerabilis* (Walk.).**

Fore wings smoky brown along the costal region, rest of the wing light brown, with the veins usually darker in the lighter specimens. Transverse lines obsolete. Claviform elongate, black-outlined. Reniform large, black-outlined, and filled with the costal dark shade. Orbicular sometimes not traceable, but when present narrow, elongate, black-outlined, and often connected with the reniform by a narrow neck-like process. Thorax grayish fuscous; collar blackish. Hind wings fuscous. Expanse, 32-38 mm.

Not common and usually found in September on flowers during the day. Easily recognizable by the light and dark fore wings, and the absence of the transverse lines.

***Feltia volubilis* (Harv.).**

Four wings varying from light gray brown to reddish or black brown; costal region always darker. Transverse anterior line inwardly oblique to the submedian vein, then with an outward notch. Posterior line more or less distinct, crenulate, evenly curved outwardly. Subterminal line hardly traceable, pale and irregularly dentate. Claviform black-outlined, connected with a black dash from the base of the wing. Orbicular small, more or less ovate; reniform larger, kidney-shape; both are black outlined, the latter with a black dash outwardly. Hind wings varying from whitish to fuscous. Expanse, 32-38 mm.

Not common in this neighborhood. It flies in May and June, and again in September and October.

The pale form has been described as *Agrotis volubilis*, and the dark one as *A. stigmata*.

Feltia annexa (Tr.).

PLATE XXXVII, FIG. 10.

Fore wings clay yellow, with a dark patch on the costa before the apex, and sometimes the lower basal half dark, or the wings are deep purplish black with the costa and outer margin clay-yellow. Transverse lines not distinct, marked by darker points. Transverse anterior line sometimes distinct, geminate, and strongly angulated. Subterminal line pale, strongly dentate. Ordinary spots small, connected by a black dash. Claviform elongate, black-outlined. Hind wings clear white, with a pearly lustre. Expanse, 35-44 mm.

Caterpillar.—Head dark gray, with indistinct pale brownish markings. The triangular frontal piece bordered each side by a dark brownish stripe which continues in an obtuse angle on the vertex, and is crossed by a few transverse lines. A brown stripe below the eye. Body dark gray to almost black, with a slight purplish tinge on the dorsum, and densely covered with very minute blackish granules. Dorsal line very indistinct, and bordered each side by a dusky shade. Subdorsal dark gray, not very distinct. Space below the subdorsal line paler than the dorsum with indistinct dusky marks. On the back two more or less distinct, narrow dusky lines run from the anterior margin of each segment, in an oblique direction to the last piliferous spot. Spiracular line whitish bordered above by an interrupted blackish line. Piliferous spots dusky. Spiracles black. Length, 38 mm.

Food-plants.—Cabbage, corn, dandelion, grass, clover, plantain, cotton, and many other plants.

Not common in this vicinity, but abundant in the Southern States. It flies in June and again in August, September, and October. Probably double-brooded.

Feltia malefida (Guen.).

Fore wings pale clay yellow with the costa and a mark on the outer margin smoky black. Sometimes the wings are purplish black with the markings indistinctly visible. Transverse lines irregular and usually not distinct. Anterior line geminate, angulate. Posterior line single, crenulate, with an outward curve. Subterminal line pale, strongly dentate, very near the outer margin. Claviform large and filled with black. Orbicular elongate, bottle-shaped, outlined and centred with black. Reniform large and filled with black. Hind wings pearly white. Expanse, 40-45 mm.

Caterpillar.—Head rather small, yellowish brown, or with larger and smaller dark spots, or marked in front with two brownish oblique stripes. Body pale gray with a greasy aspect. Dorsal line scarcely visible. A more or less distinct, rather broad, dull yellowish subdorsal line, illy defined above, but bordered below by a line scarcely darker than the ground color, but well defined

below by a faint narrow pale line. A dusky line along the spiracles and a faint, irregular shade above it. Spiracles large, black, shining. Piliferous spots brown, shining. Cervical shield mottled with brown and a pale median line. First to third segments wrinkled transversely. Underside paler than upper. Length, 35 mm.

Food-plants.—Grass, clover, and different kinds of weeds.

Flies during August and September. Rare in this vicinity, but common in the Southern States.

***Porosagrotis vetusta* (Walk.).**

PLATE XXXVII, FIG. 4.

Fore wings very pale ashen gray, slightly powdered with dark atoms. Transverse lines absent; the posterior line indicated by a row of small black spots. Outer margin with a row of small black dots. Orbicular usually absent; reniform indefinite, blackish. Head, thorax, and abdomen concolorous. Hind wings white. Expanse, 35-40 mm.

Not common. Easily known by its pale gray fore wings, with hardly any markings, and by the white hind wings. Flies in August and September, and may be found on goldenrod during the day.

***Porosagrotis mimallonis* (Gr.).**

Fore wings bright red brown, or purplish brown, with the transverse lines not distinct. Anterior line upright, angulate. Posterior line with an outward curve. Orbicular round, dusky, with a few yellow scales. Reniform large, dusky, more or less defined. Subterminal usually very obsolete. Hind wings white or marked with fuscous outwardly. Head and thorax like the fore wings. Expanse, 35-45.

Very rare in this vicinity, but more common in the Western States.

***Porosagrotis tripars* (Walk.).**

Fore wings pale mouse gray. Anterior line faint, single, and marked with black dots on the veins. Posterior line single, blackish, almost upright, marked by black dots on the veins, followed by pale points. Subterminal line not conspicuous. A black terminal broken line. Claviform wanting. Orbicular very small, in form of a ring or dot. Reniform upright, narrow, pale yellowish bordered with black outwardly. Hind wings pale, shaded with fuscous, and with a terminal broken black line. Thorax shaded with brown. Expanse, 30 mm.

Recorded from New York and possibly found in this neighborhood.

Carneades perpolita (*Morr.*).

Fore wings deep shining brown black with the transverse lines obsolete. Reniform and orbicular concolorous, outlined by black. Hind wings smoky brown, somewhat paler at the base. Head and thorax concolorous. Expanse, 34-37 mm.

Not common. Readily known by its dark color and obsolete markings.

Carneades fumalis (*Gr.*).

Fore wings dark slate gray, with simple, darker transverse lines, usually distinct. Anterior line strongly curved between the veins. Posterior line curved outwardly, strongly dentate. Claviform wanting. Orbicular absent or indicated by a small black spot. Reniform indistinct, dusky, lunate. Hind wings grayish fuscous. Expanse, 30-40 mm.

In general appearance resembles *A. bostoniensis* from which it may be readily separated by the single transverse lines. Rare in this vicinity, but more common northward. Flies in July and August.

Carneades velleripennis (*Gr.*).

Fore wings smoky black, with the markings indistinct or obsolete. Orbicular and reniform large, outlined with black. Hind wings white. Head and thorax like the fore wings. Expanse, 35-38 mm.

Not common. Easily known by the black fore wings and white hind wings. Flies during August and September.

Carneades scandens (*Riley*).

Fore wings pale ashen gray or tinged more or less with reddish or yellow. Transverse line marked by black spots on the costa, or obsolete. Subterminal line prominent, pale, lunulate, preceded by a dusky shade, varying from fuscous to ochreous or red brown. Orbicular small or absent, round, outlined with black or red brown. Reniform more or less distinct, outlined by blackish or reddish, usually with a dusky shade at the lower part. Hind wings whitish with a double outward dusky shade and a dusky discal spot. Head and thorax varying from gray to reddish. Expanse, 29-37 mm.

Caterpillar.—Head tawny, variable in depth of shade, with two spots in front and two eye-spots each side. Body very light yellowish gray, variegated with dirty bluish green in the shape of different sized patches, which are distinctly seen under the lens to be separated by fine lines of the ground color. A well-defined dorsal line and less distinct subdorsal and stigmal lines; another line still less distinct below the spiracles. Dorsal line frequently with a white line

along the middle. Piliferous spots black, those at the sides lighter. Spiracles black. Cervical shield tawny with a small black spot on each side. Anal plate tawny speckled with black. Length, 35 mm.

Food-plants.—Apple, grape, peach, cherry, etc.

Not common in this vicinity. It is subject to considerable variation, from a pale ashen gray to clay yellow or reddish ground color on the fore wings. The moth appears in May and June.

***Carneades detera* (Walk.).**

PLATE XXXVII, FIG. 13.

Fore wings ashen gray to ochreous, with the markings paler; costa in the more deeply colored specimens gray. Transverse lines more or less distinct, geminate. Anterior line angulated between the veins. Posterior line parallel with the outer margin. Subterminal line pale, sometimes with black points inwardly. The area between the posterior and subterminal lines usually pale. Orbicular pale, rounded. Reniform pale, rather large. Claviform ill-defined. Hind wings dusky, fringes white. Expanse, 27–32 mm.

Caterpillar.—Head pale brown, shining, mouth parts pitchy black. Body sordid white, semi-translucent, with three equidistant chalky white stripes along each side, and one along the back. Spiracles black. Cervical shield dirty white. Underside wholly sordid white, semi-translucent. Legs concolorous. Length, 36 mm.

Food-plants.—Maritime grasses.

A pale gray species, common in sandy places, especially near the seashore. Found during the day on goldenrod. It flies in September.

***Carneades bostoniensis* (Gr.).**

PLATE XXXVII, FIG. 6.

Fore wings dark lead gray, with the transverse line usually obsolete, but when present, darker, distinctly geminate. A curved median shade. Orbicular and reniform hardly visible. Hind wings of the male white, of the female fuscous. Expanse, 37–43 mm.

Easily recognized by the almost uniform gray fore wings with the markings obsolete. Not common. Flies during September and October.

Carneades messoria (*Harr.*).

Dark gray with a luteous tint, especially in the lighter forms. Transverse lines prominent, geminate, and spots distinct, black. Basal line present. Anterior line oblique, curved between the veins. Posterior line obsoletely geminate in some specimens, crenulate, slightly curved. A dusky median shade. Subterminal line narrow, pale, or almost obscured by the ground color. Orbicular round or oval, black-outlined. Reniform large, black-outlined. Claviform more or less distinct, short. Hind wings of male whitish with darker outer margin, usually wholly fuscous in the female. Expanse, 31-42 mm.

Caterpillar.—Head dirty ash gray, with two darker marks, thick and almost joining at the top, becoming thinner below and diverging toward the palpi. Body dirty ash gray, with lighter and darker shadings. Dorsum pale, inclining to flesh-color, with a darker line along the middle. The sides, particularly along the subdorsal line, are of a darker shade. Piliferous spots and spiracles black. Underside dull ash gray, greenish anteriorly and inclining to yellow under the anal segment. Length, 32 mm.

Food-plants.—All kinds of fruit trees, especially the buds.

Common from June until late in September. The markings are usually prominent and give the species a characteristic appearance.

Carneades insula (*Walk.*).

Fore wings varying from carneous gray to bright rust red brown; terminal space always darker. Cell between the spots black or dark brown. Lines geminate, variably distinct. A short, more or less distinct, black basal streak. Orbicular large, round, black-outlined, annulate with yellow scales. Reniform large, kidney-shaped, annulate with yellow. Subterminal line narrow, irregular, sometimes quite indistinct. Hind wings dusky to fuscous. Head and thorax concolorous with the fore wings. Expanse, 31-35 mm.

Not common in this neighborhood, but more abundant north and west. A variable species in color and markings. The ordinary spots are always large and distinct, contrasting with the dark filling of the cell. The western form, *verticalis*, is much paler, with the hind wings whitish. Found from June until September.

Carneades tessellata (*Harr.*).

PLATE XXXVII, FIG. 2.

Fore wings dark gray to red brown, finely powdered with black. Transverse

lines as in *C. insignita*, but less distinct and finer. Subterminal line yellowish, usually distinct. Spots powdered with gray or yellowish. Hind wings fuscous. Expanse, 31-35 mm.

Caterpillar.—Head shining black, inverted V mark white and continuous across the black cervical shield. Body dirty ash gray, sometimes slightly tinged with yellowish. On the back is a white line between two dark ones. On each side are three dark lines separated by two pale ones, the lower one broadest with often a whitish line below the lower dark one. Underside dull white. Length, 30 mm.

Food-plants.—Corn, lettuce, celery, spinach, and other garden plants and weeds.

Very closely allied to *C. insula*, but the cell in *C. tessellata* is less distinctly black. Possibly only a variety of *C. insula*. Found from June until September.

Carneades albipennis (Gr.).

Fore wings reddish fuscous to deep brown, with the lines nearly as in *C. insula*. Posterior line usually obsolete. Anterior line geminate, blackish. Spots large, concolorous with the wings, and black-outlined. Hind wings white in the male, fuscous in the female. Expanse, 31-35 mm.

Not common. Resembles *C. insignata*, but the fore wings are brighter brown with the markings much the same, while in the male the hind wings are white.

Carneades ochrogaster (Guen.).

Fore wings bright clay yellow suffused with reddish to rusty brown. In pale individuals the more brown or reddish terminal space is fuscous, costa pale or reddish. A black basal dash. Cell dark brown black, defining the spots. Orbicular round, concolorous, open on top. Reniform outlined by clay yellow or black. Basal and anterior lines geminate, sometimes obsolete. Posterior line single, almost dentate, somewhat extended outwardly on the veins. Subterminal line single, pale, irregular, preceded by two dark shades. Margin with a row of black dots. Hind wings fuscous. Expanse, 37-40 mm.

Rare in this vicinity but more common northward. Found in July and August. Easily known by its bright and contrasting colors.

Carneades obeliscoides (Guen.).

Fore wings broad, light purplish brown, median space darker; costa to the posterior line whitish or gray. Transverse lines distinct; anterior line geminate, not crossing the costa. Posterior line oblique, slightly crenulate, single.

Subterminal line irregular, pale. A black basal dash. Claviform large, black-outlined, surmounted by a pale streak. Orbicular round, pale. Reniform very large, pale, with black outline. Hind wings whitish to fuscous, often paler towards the base. Expanse, 31-38 mm.

Rare in this vicinity. Flies during July and August. May be recognized by its broad wings, pale large spots, whitish costa and bright colors.

***Carneades redimicula* (Morr.).**

Fore wings gray, terminal and median space darker. Cell and basal dash deep black. Anterior line geminate, outwardly oblique, with three curves. Posterior line distinct but not prominent, curved around the cell, thence inwardly oblique. Subterminal line marked by the difference in shade of the subterminal and terminal shades. Claviform black. Orbicular light gray, large, black-outlined. Reniform gray, large. Hind wings fuscous, sometimes paler basally. Expanse, 30-34 mm.

A small species, easily recognized by its contrasting gray fore wings, black cell, and basal dash. The spots are large, light gray, and predominating. It is not rare, flying during July and August.

***Anytus privatus* (Walk.).**

PLATE XXXVIII, FIG. 3.

Fore wings ashen gray, clouded with fuscous. Transverse lines geminate, included space whitish. Basal half line present. Anterior line outwardly oblique, angulated. Posterior line dentate, rounded above, thence inwardly oblique, with an outward tooth above the inner margin. Both these lines are connected below the middle by a black line. Subterminal line composed of an irregular, distinct, blackish shade. Orbicular rounded, concolorous. Reniform a little larger. A terminal row of black lunate dots. Median space more or less shaded with smoky brown. Hind wings dirty white, a little dusky outwardly, and a terminal black line. Head and thorax gray, mixed with fuscous. Expanse, 35-40 mm.

Common, but not abundant. The moth flies during July, August, and in September.

***Psaphidia resumens* Walk..**

Fore wings ash gray, varying to dark, smoky, or almost black gray in pale specimens, with a greenish wash. Lines incomplete, usually well marked. A black basal dash, looped beyond the anterior line, and filled with white; below

the basal dash, powdered with white. Posterior line acutely projected outwardly below the costa, inwardly oblique, forming an acute angle above the inner margin and almost touching the claviform. Beyond this line the wing is usually white, with the subterminal line indistinct. A black dash above the hind angle. A row of terminal black dots. Orbicular large, round, white, touching the white in the claviform. Reniform large, pale whitish with a brown lunule. Hind wings dirty whitish brown, a small discal spot and median line fuscous. Thorax blackish, mixed with white. Expanse, 35-40 mm.

Rather rare, and flies in April. Allied to *P. grotei*, but not so dark; the reniform is better defined and less contrasting, and the subterminal area is whiter.

***Psaphidia thaxteriana* (Gr.).**

Allied to *P. resumens*, but smaller, with the wings more pointed. In color more uniformly fuscous to the subterminal line, with the subterminal space grayish white. The black dash opposite the angle absent. The ordinary spots ill-defined, whitish. Reniform inwardly margined with black, smaller than in *resumens*. Orbicular rounded, black-edged. Claviform small, concolorous, black-edged, and separated from the orbicular. A fine black basal ray; no shading across the median space, opposite the claviform. Lines resembling those of *resumens* distinctly marked with black. Hind wings smaller, pale fuscous, with traces of a double line on the veins and a faint terminal line, not broken with points. Thorax hoary gray, tegulæ black-lined. Expanse, 35 mm.

Caterpillar.—Head luteous brown, dotted with white, a black patch on each side of the clypeus with a brown shade on the angle of the lobe, and extending upward on the posterior edge of the lobe, widening above to suggest an elliptical pale enclosure on the side. Body vinous brown, tinted slightly with green. A series of large subdorsal, creamy white patches on segments two to fourteen, and covering the sides of the cervical shield and the whole of the anal plate. Tubercles and spiracles white.

Food-plant.—White oak.

Very rare in this neighborhood. The moth appears in April and early in May. The larva may be found in June. Pupates in the earth.

***Psaphidia grotei* (Morr.).**

PLATE XXXVII, FIG. II.

Fore wings blackish or dark smoky gray, with mossy green shadings unequally distributed over the surface. Anterior line geminate, black, outwardly oblique, irregular, variably distinct. A curved black basal dash looped beyond the anterior line to form a broad claviform. Over this streak and in the

claviform some times more or less white. Posterior line geminate, black, faintly distinct, widely outcurved over the reniform, then deeply indrawn, touching the reniform below, reaching the inner margin opposite the space between the ordinary spots. A blackish shade between the spots, reaching the inner margin about the middle. Beyond this shade a white blotch extends along the inner margin, becoming bluish and prominent beyond the posterior line. Subterminal line broken, irregular, mossy green or yellowish, with a deep sinus on vein two, below which it is prominent and crossed by a black dash. Veins more or less marked with black. A broken terminal line, marked by blue powdering around the veins. Orbicular round, concolorous, with a white central dot and a whitish annulus. Reniform large, diffuse, usually white, contrasting. Hind wings white, marked with black on the veins and over the outer margin beyond a broken median line. Head and thorax blackish or deep brown, the latter white powdered on the patapa. A little white tuft at base of antennæ. Expanse, 38-41 mm.

Varies considerably in intensity of color. The mossy green tint is often very distinct. The transverse lines are not usually traceable, and the large indefinite reniform is always contrasting. Flies in April and early in May. Quite rare in this vicinity.

Eutolpe rolandi Gr.

Fore wings dark ash gray, sometimes almost blackish, with the markings indistinct. Anterior line geminate, outwardly oblique. Posterior line bent inwardly below the middle. Subterminal line irregular, wavy, usually composed of a series of blackish dots, sometimes nearly connected, not distinct. Claviform not traceable. Orbicular round, concolorous. Reniform large, upright, slightly constricted in the middle, concolorous, imperfectly ringed with light and dark. A terminal row of blackish dots. Hind wings dirty white, dusky outwardly. Thorax gray with a metallic tuft posteriorly. Expanse, 31-37 mm.

Easily recognized by the rather narrow gray fore wings with the markings quite obsolete. The moth flies in April and May. Very rare.

Eutolpe depilis (Gr.).

Fore wings smooth, dark gray. Anterior line fine, black, projected opposite the claviform, which is tinged with yellowish. Claviform moderate, somewhat rounded and incompletely black-ringed. Posterior line fine, irregular, waved. Subterminal line with flecking of yellow outside. Orbicular spherical, gray, with a paler ring edging the faint annulus within. Reniform similar, large, constricted in the middle. Hind wings whitish, with gray edging and fringes. Head and thorax gray, the latter without a metallic tuft. Expanse, 35-40 mm.

Recorded from New York and possibly found in this vicinity.

***Mamestra nimbosa* (Guen.).**

Fore wings whitish, more or less powdered with blackish scales. Transverse lines black, geminate. Anterior line lunulate between the veins. Posterior line very strongly dentate outwardly on the veins, lunulate inwardly between the veins. Subterminal line strongly dentate, usually with black dashes inwardly. Margin with a row of black spots. Spots very large, pale, and black-ringed. Thorax whitish or gray with a black line in front; patagiæ margined with black. Hind wings fuscous, with a pale median shade. Fringes whitish. Expanse, 48-58 mm.

A very large, pale, whitish or grayish species with distinct markings. Not common. The moth appears in June, July, and August.

***Mamestra imbrifera* (Guen.).**

Fore wings dusky gray, with brown scales, the lines and spots distinct. Anterior line lunulate, outwardly oblique. Posterior line lunulate, slightly incurved. Subterminal line almost even, marked by blackish brown shades. Spots very large, dusky, outlined in black. Claviform brownish, very large, loop-like. Hind wings dusky, with a narrow, paler median line; fringes dirty whitish. Thorax mottled with brown. Expanse, 45-52 mm.

Allied to *M. nimbosa*, but considerably darker. The claviform is much larger, the subterminal line more even, and the antennæ of the male have the pectinations much longer. Common, but not abundant in this vicinity. It is on the wing from about the middle of June until about the middle of August.

***Mamestra purpurissata* (Gr.).**

PLATE XXXVIII, FIG. 17.

Fore wings pale purplish gray, tinged with blackish along the costal region and reddish on the discal space. Transverse lines faintly indicated. Subterminal line distinct, irregular, somewhat dentate, forming a rather prominent notch near the hind angle of the wing shaded with blackish brown inwardly. Spots large, outlined by purplish black. Claviform small, hardly visible. Outer margin with a row of black lunulate spots. Hind wings fuscous; fringes paler. Head and thorax purplish gray, the latter with a prominent crest, anteriorly. Expanse, 45-58 mm.

Not common. May be known at a glance by its large size, purplish gray fore wings, with darker costal region and prominent subterminal line. Flies during July and August.

[October, 1901.]

Mamestra meditata (Gr.).

Fore wings deep reddish brown, with bluish scales. Transverse line indistinct, sometimes barely traceable, or relieved by a pale included space. Reniform and orbicular concolorous, often hardly traceable. Hind wings brown with the tips of the fringes pale. Head and thorax deep brown. Expanse, 27-35 mm.

Rather common, and readily known by its almost uniform dark wings with very indistinct markings. Found during May and June, and again in August and September.

Mamestra lustralis (Gr.).

Fore wings pale lilac gray, median space somewhat ochreous. Transverse lines evident, but not distinct, filled with a light shade. Posterior line with a rather prominent tooth near the inner margin. Subterminal line wavy, pale, with an ochreous spot near the hind angle. Claviform rarely complete. Orbicular rounded, with a light gray and black outline. Reniform rather narrow, pale, and outlined with black. Fringes broad. Hind wings dusky, sometimes with a somewhat darker median shade. Expanse, 27-33 mm.

Quite rare in this vicinity. A small species, recognizable by its pale lilac gray fore wings with paler shades in the transverse line. Flies in July and August.

Mamestra detracta (Walk.).

Fore wings brown to blackish with a yellowish suffusion. In dark specimens the transverse lines are indistinct, in light ones geminate, black-margined. Anterior line upright, lunulate. Posterior line parallel with the outer margin, not curved, lunulate inwardly. Subterminal line pale, always visible, irregular. Margin with a row of pale dots. A black dash at the base of the wing. Claviform filled with black and prominent, usually followed by an ochreous spot. Orbicular paler than the ground color, black-margined. Reniform large, black-margined, lighter than, or as dark as, the ground color. Hind wings fuscous. Head and thorax like the fore wings. Expanse, 27-35 mm.

Rather rare in this vicinity. Appears in May, June, and July. A medium-sized brown species with the transverse lines more or less distinct, and a prominent black claviform.

Mamestra distincta (Hüb.).

Fore wings whitish gray with a darker, usually smoky black median shade above the claviform and in the subterminal and terminal spaces. Basal space

pale. Anterior line oblique, evenly curved. Posterior line slightly curved and gently bent inwards at the middle, almost parallel with the outer margin. Subterminal line obsolete, marked by a few black points, especially at the middle. Claviform dark, broad, outlined with black, and sending a black dash to the posterior line. Orbicular large, round, whitish gray, black-ringed. Reniform gray, outwardly white, indistinctly black-outlined. Hind wings white, dusky outwardly. Expanse, 35-37 mm.

Caterpillar.—Head small, almost uniform green. Body green, marked with greenish white. A very faint dorsal line, bordered on each side with a darker shade of green. Subdorsal line distinct. Spiracular line faint; body irregularly mottled with small dots of the same greenish white tint. Length, 32 mm.

Food-plant.—Grape.

A pale whitish gray species with a dark median shade above the claviform, and on the outer parts. The claviform is broad and sends a black streak to the posterior line. Not common in this vicinity. It flies in April and May.

***Mamestra capsularis* (Guen.).**

Fore wings fuscous with gray and black shading. Transverse lines geminate. Basal line present, inner portion darkest. Anterior line upright, slightly irregular, the outer part heavier and darker than the inner; included space concolorous. Posterior line exserted over the reniform, strongly incurved below, narrowing the median space by one half, the inner part of line darkest and broadest. Subterminal line narrow, pale, partly obsolete, marked by three preceding and one following sagittate black dashes which define the Σ -shaped mark. Orbicular large, round, bluish white, outlined with black. Reniform upright, hardly constricted, concolorous. Claviform concolorous, black-outlined and extending nearly across the median space. An oblique bluish white shade through the subterminal space, distinct at apex and hind margin, or obsolete. Hind wings smoky fuscous. Expanse, 32 mm.

Rare in this vicinity. A well-marked species, which cannot be easily confounded with any other.

***Mamestra atlantica* Gr.**

Fore wings marbled with ochreous and brown, with the costa grayish, varying from light to dark. Terminal space darker. Transverse lines incomplete, sometimes almost absent. Transverse line, when present, white or brown, lunulate. Transverse line narrow, lunulate, and parallel with the outer margin. Subterminal line whitish or ochreous, preceded by a dark shade; at about the middle it forms a prominent Σ , the points reaching the outer margin. A terminal row of black lunules. A narrow black basal streak, not reaching

the anterior line. Claviform rather large, dark, with a black outline. Orbicular round, pale or dark. Reniform elongate, large, light or dark, crossed by a dark shade at the lower part. A more or less defined pale shade, from the apex through the subterminal space. Hind wings fuscous, paler basally; fringes somewhat pale. Expanse, 30-35 mm.

Not common. Appears in June, July, and August. In general appearance it looks somewhat like *M. subjuncta*, but is more marbled.

***Mamestra subjuncta* (G. & R.).**

Fore wings brown, somewhat shaded with reddish brown, especially above the basal black streak and beyond the reniform. Anterior line composed of three curves, geminate. Posterior line strongly curved outward and incurved below the middle. Subterminal line distinct, pale, with a prominent Σ at the middle, marked by black points. A terminal row of small black spots. Claviform large, black-outlined, connected with the posterior line by a black streak. Orbicular large, round, black-ringed. Reniform kidney-shaped, bordered with black. Hind wings fuscous. Expanse, 38-42 mm.

Caterpillar.—Head light shining brown with two outwardly diverging darker marks. Body fleshy gray, inclining to rust-color, finely sprinkled in the middle of each segment with very minute black and white specks. An interrupted white dorsal line and a similar subdorsal line, these being distinct on the posterior part and indistinct on the anterior part of each segment. A stripe along the side lighter than the general color of the body. On top of each segment are two distinct spots anteriorly. Cervical shield with three white lines and the anterior edge white. Legs and end of body greenish. Length, 40 mm.

Food-plants.—Cabbage and other vegetables, etc.

Allied to *M. atlantica*, but usually darker and more uniform in color, with a black streak from the claviform to posterior line. Found during May, June, July, and August. Rather common.

***Mamestra grandis* (Bdv.).**

PLATE XXXVIII, FIG. 9.

Fore wings fuscous, somewhat reddish brown, with a broad bluish-white shade between the posterior and subterminal lines, and somewhat irrorate with bluish gray. Lines indistinctly geminate, blackish; the included space pale. Anterior line outwardly scolloped. Posterior line lunulate, parallel with the outer margin. Subterminal line whitish, shaded with dark brown black; at the middle it forms a prominent Σ . A black basal dash and a black streak between the two lines. Orbicular pale reddish brown centrally. Reniform

large, colored like the orbicular. Hind wings fuscous, with a narrow dark marginal line. Expanse, 36-42 mm.

Caterpillar.—Head light shining brown, somewhat mottled. Body dull purplish, with obscure black and white mottling. Obscure dorsal and sub-dorsal lines, and a broad, ill-defined light lateral band. Four dorsal black spots on each segment except on the first to third, the anterior pair being more closely approximate than the posterior. Cervical shield dark; underside greenish. Legs and thoracic feet dull greenish, the latter tipped with brown. Length, 40 mm.

Food-plant.—Burdock.

May be readily known by the oblique bluish white shade on the fore wings, and the rich brown colors. Flies in June and July, and in August to October. Not common in this vicinity.

Mamestra trifolii (Rott.).

PLATE XXXVIII, FIG. 4.

Fore wings varying from pale to dark luteous, irrorate, gray, with the markings distinct, but not contrasting. Basal line present. Anterior line outwardly oblique, lunulate. Posterior line slightly sinuate, finely crenulate. Subterminal line pale whitish ochereous, irregular, with the usual Σ -mark distinct, preceded by ochereous or blackish streaks. A terminal row of black lunate spots. Fringes dark, cut by ochereous streaks. Orbicular round, usually pale, black-ringed. Reniform large, blackish at the lower part. Hind wings pale to a little beyond the middle, then dusky; fringes pale. Head and thorax concolorous with the fore wings. Expanse, 30-38 mm.

Caterpillar.—Head pale green. Body green with a dark dorsal line and a white line along the spiracles. Piliferous spot indistinct. Underside uniform green. Length, 25 mm.

A very common species, found from May until late in September or early in October. It is very widely distributed throughout the United States and Europe. Often found flying late in the afternoon about flowers.

Mamestra rosea Harv.

PLATE XXXVIII, FIG. 7.

Fore wings reddish testaceous to the subterminal line, beyond which the wings are dark red brown. Transverse line single, red brown. Anterior line irregularly curved. Posterior line crenulate, slightly curved outwardly. Orbicular small, round, brown-ringed. Reniform large, upright, marked with

black at the lower part, brown-ringed. Claviform more or less distinct, broad, brown-ringed. A rather broad more or less distinct dark median shade. Subterminal line very irregular. Head and thorax deep red brown. Hind wings pale, reddish fuscous outwardly. Expanse, 40-43 mm.

Not common in this vicinity. Easily known by its color and simple markings. Flies in May and early in June, and again in July.

Mamestra congermana (*Morr.*).

Fore wings carmine brown, tinged with yellowish brown, especially near the markings, which are obsolete. Orbicular very small. Reniform large, black and ocherous, hardly distinct. Subterminal line somewhat indicated by a yellowish shade. Fringes cut with yellowish brown. Hind wings pale at base, dusky outwardly. Head and thorax carmine brown, the latter with an ocherous brown line along the middle. Expanse, 35-40 mm.

Quite rare in this vicinity. Flies in May, June, July, and probably again later in the season.

Mamestra rubefacta (*Morr.*).

Fore wings uniform carmine brown with the markings obliterated. Hind wings pale, darker outwardly. Head, collar, and thorax broadly ferruginous along the middle, sides of thorax carmine brown. Expanse, 37-40 mm.

Rare in this vicinity. It may be known by the uniform red-brown fore wings, with the marking almost or entirely wanting. Appears in May and June.

Mamestra picta *Harris*.

PLATE XXXVIII, FIG. 13.

Fore wings light or dark deep red brown, especially along the costal region, with a carmine tinge; beyond the reniform and below the middle to the inner margin usually tinged with ocherous. Transverse lines obsolete. Subterminal more or less distinct, very irregular in outline, pale. Orbicular very small, pale-ringed. Reniform variable in shape, large, pale-ringed, with dark center, the inferior angle usually produced inwardly. Claviform imperfectly marked by pale scales. Hind wings white, sometimes narrowly edged with brown. Head and thorax uniform carmine brown. Expanse, 35-42 mm.

Caterpillar.—Head reddish brown. Body black, with a broad light yellow band on each side of the back and another below the spiracles. The two yellow bands are connected by narrow bright yellow transverse lines. Back

deep black. Below the lateral line the body is mottled with yellow and black. Underside yellow. Length, 55 mm.

Food-plants.—Corn, peas, beans, burdock, yellow dock, smartweed, sweet clover, etc.

Very common everywhere from June until September. A well-known and easily recognizable species. Double-brooded.

Mamestra cristifera (Walk.).

Fore wings dark gray brown, irrorate with darker scales, and with variably distinct rufous, flesh, and lilacine tints. Transverse line present, but not contrasting against the dark ground color. Basal line present. Anterior line almost upright, composed of three equal curves. Posterior line almost parallel with the outer margin, crenulate. Subterminal line very irregular, pale ochereous, with lilaceous scales, usually preceded by a narrow brown shade; between this and the posterior lines is a lilaceous shade, forming a clear large patch near the hind angle. Orbicular small, round, lilac, with a dark central spot and black outline. Reniform upright, whitish ochereous with an elongate dark mark centrally. Outer margin with a row of small, black, lunate spots. Hind wings ochereous brown or smoky brown. Expanse, 40–48 mm.

Not common. Found during May and June. May be known by the dark fore wings, pale discolorous reniform, the lilaceous patch near the hind angle, and the rufous shade before the subterminal line.

Mamestra assimilis Morr.

Fore wings deep smoky brown black. Transverse lines very indistinct, single. Subterminal line composed of white dots. A rather prominent whitish spot near the hind angle. Claviform, orbicular, and reniform outlined with black, but not contrasting. Hind wings soiled whitish, smoky brown outwardly and with an elongate mark at the end of the cell. Head and thorax uniform brown black. Expanse, 33–38 mm.

Caterpillar.—Head reddish brown. Body thickest in the middle, tapering slightly to each end. Dorsal space reddish brown, shading to dull red on the subdorsal. Along the dorsum a bright yellow stripe, with a narrow creamy white one adjoining it on each side. Along the spiracles a bright yellow stripe, with a creamy white stripe adjoining it above and below, the latter edged with black. Length, 30 mm.

Food-plant.—Goldenrod.

The brown black fore wings and subterminal line composed of white spots and the black-ringed spots will serve to at once

distinguish this species. Very rare in this vicinity. The moth flies in June and July.

Mamestra latex (*Guen.*).

PLATE XXXVIII, FIG. I.

Fore wings whitish gray tinged with darker gray. A dark gray or blackish patch on the costa between the basal and anterior lines, and an oblique blackish shade from the costa and between the spots. Transverse lines geminate, faint. Anterior line upright. Posterior line rather strongly bent inwardly in the middle. Subterminal line marked by the difference in shade of the subterminal and terminal spaces. Terminal space with three black dashes on the upper part and one on the lower part, above the angle. Orbicular large, concolorous with the pale ground color with slightly darker outline. Reniform very large, outlined with black, gray with reddish brown central mark. Claviform black-outlined. Hind wings dusky or luteous gray brown. Thorax gray, usually with a black line along the middle. Expanse, 38-45 mm.

A light whitish gray species, with an oblique blackish shade between the large spots, and black outer dashes. It is not uncommon, flying in May, June, and July.

Mamestra adjuncta (*Bdv.*).

PLATE XXXVII, FIG. 19.

Fore wings black with white contrasting markings. Basal line black, white on each side, not reaching the inner margin. Anterior line black, scolloped, marked with white on the costa. Posterior line almost parallel with the outer margin, filled with a little white in some specimens. Subterminal line rather broad, very irregular, dentate, white, marked with black inwardly. Terminal row of spots black, marked with white inwardly. Orbicular white, center smoky black. Reniform large, white, with a dark central line. Hind wings blackish fuscous, somewhat paler basally, and with a marginal row of blackish spots. Head and thorax blackish; the latter marked with white. Expanse, 32-40 mm.

Caterpillar.—Body green. On each segment is a semicircular dark green dorsal line, concave anteriorly; segments 4, 5, and 11 marked with olive green. A pale spiracular line, giving off a line to the back of each abdominal leg. Last segment elevated in a hump. Sometimes the larva is cinnamon brown with a large subdorsal velvety dark brown shade on the fourth, fifth and eleventh segments and on each of the remaining segments except the first three and the last. A dorsal curved line, two roundish spots of the same color, and two larger square dark brown dorsal spots edged with yellowish. Spiracles white, edged with brown. Underside brown. Length, 35 mm.

Food-plant.—Common brake (*Pteris aquilina*).

Not common. Found in June, July, and August. The black color and contrasting white markings will serve to at once distinguish the species.

Mamestra legitima (Gr.).

Fore wings blue gray, more or less suffused with red brown, especially on the upper part of the wings and terminally. Basal line evident. Anterior line slightly bent outward. Posterior line almost parallel with the outer margin or slightly bent inward at the middle. Subterminal slightly dentate, pale, preceded by a narrow reddish brown shade, and followed by the dusky or red brown terminal shade. Claviform black. Orbicular not distinctly defined, gray, sometimes open at the lower part. Reniform large, distinctly defined, red brown, dusky at the lower part, with a pale ring. Two rows of minute black dots through the subterminal space. Hind wings luteo-fuscous, dark outwardly, fringes paler. Expanse, 33-38 mm.

A common species, readily known by its gray and red brown colors. The moth flies in June, July, and August.

Mamestra lilacina Harv.

Fore wings bluish gray, shaded with reddish brown or brown black along the upper part of the wing except at the apex. Terminal space dusky. Basal line present. Anterior line lunate, outwardly oblique. Posterior line crenulate, parallel with the outer margin. Subterminal line almost even, pale, preceded by a narrow red brown or dusky shade. Orbicular oblique, blue gray. Reniform rather large, constricted at the middle, dark-outlined, dusky at the lower part. Claviform dark-outlined. Hind wings luteo-fuscous, dark outwardly. Expanse, 32-36 mm.

Allied to *M. legitima*, but may be readily separated from this species by the almost even subterminal line. The color is also more uniform, with a variable amount of dark shading on the fore wings. Flies in July, August, and September.

Mamestra goodelli Gr.

Fore wings shiny reddish brown, with the terminal space and costal region slightly shaded with greenish. Transverse lines geminate, rather indistinct and slightly lunate. Posterior line prominently exerted. Orbicular small. Reniform moderate, ill-defined, outwardly shaded with whitish. Subterminal line not prominent. Hind wings fuscous, fringes pale. Collar greenish, edged with black. Thorax reddish brown with the tegulæ dark margined. Expanse, 30 mm.

Not common in this vicinity.

Mamestra ectypa *Morr.*

Fore wings rich, dark umber brown, with a violet tinge in front of the transverse anterior and behind the posterior lines. Basal line distinct, double, absolutely geminate. Anterior line almost even, outwardly curved with a strong indention near the inner margin. Posterior line lunulate, nearly parallel with the outer margin. Subterminal line contrasting, pale yellow, sinuate, marked and preceded by dark spots. A terminal row of black lunules. Orbicular rather large, oval, oblique, pale-ringed with a somewhat darker center. Reniform rather long, a little oblique, black-ringed, concolorous or somewhat paler. Claviform black, outlined and followed by a pale shade which extends obliquely upward over the orbicular to the costa. Hind wings smoky brown. Expanse, 27-30 mm.

Very rare in this vicinity. Known by its bright colors and prominent subterminal line.

Mamestra renigera (*Steph.*).

PLATE XXXVIII, FIG. 8.

Fore wings light or dark purplish brown, with a mossy green basal streak to the anterior line, and a black spot on the inner margin near the base. Transverse line narrowly geminate. Anterior line almost straight. Posterior line usually forming an angle opposite the cell. Subterminal line marked by the contrast of the subterminal and terminal spaces. A large mossy green spot in the lower part of the subterminal space. Claviform large, black. Orbicular more or less distinct, round, small, black-outlined. Reniform upright, narrow, mossy green, white-ringed; whitish, darker outwardly, in the male, darker in the female. Expanse, 25-30 mm.

Caterpillar.—Head dark brown with a narrow stripe in the middle and a broader one at the sides. Body dark fawn brown with a pale narrow dorsal line, and on each segment, dorsally, a brown diagonal shade, on the apical points of which are two small shining black tubercles. The marks on the last two segments are triangular. A broad and decided black lateral line above the spiracles, and beneath this, enclosing the spiracles, which are black, is a waved double line of pale brown; below this again a pale fawn-colored corrugated fold. Underside dull stone drab. All the feet are black at the base. Length, 25 mm.

Food-plants.—*Cichorium intybus*, and many other garden plants and weeds.

Very common everywhere in this neighborhood, and is on the wing from June to September. Double-brooded. Readily distinguished by the purplish-brown fore wings, mossy-green markings, and white-marked reniform.

***Mamestra olivacea* Morr.**

Fore wings gray to brown gray, usually more or less suffused with olive green; terminal and subterminal space usually whitish, with olive green; median space darkest. The dark brown specimens usually have a pinkish shade in the basal area and in the lower part of the subterminal space. Lines black. Anterior line with an even, somewhat oblique outward curve. Posterior line outwardly curved over the reniform and inwardly curved beneath, the included space pale, and the outer portion of this line often indistinct. Subterminal line more or less evident, pale. Orbicular usually obscured by the ground color, small, round. Reniform whitish, with a greenish or dusky center. Hind wings light or dark fuscous. Thorax often discolored, white. Expanse, 23-26 mm.

Not common in this vicinity, but rather abundant in the Northern States. Flies from June until September.

***Mamestra rectilinea* Smith.**

Similar to *M. olivacea*, from which it differs in having the posterior line evenly oblique and the anterior line more irregular. The maculation is more powdery and there is never so much contrast in the subterminal space, with a prominent paler patch in this space near the hind angle. Expanse, 25-28 mm.

Recorded from New York and possibly found in this vicinity.

***Mamestra laudabilis* (Guen.).**

PLATE XXXVIII, FIG. 2.

Fore wings pale sea-green, with the median space blackish, or marked with reddish, especially in the cell between the spots and before the orbicular. Basal line geminate, black, included space whitish; sometimes broken, rarely wanting. Anterior line black, inner line often absent, included space whitish, in its lower course a strong inward dent. Posterior line black, crenulate, included space whitish, followed by a series of venular dots indicating the outer course of the line. Subterminal line whitish with a series of black dots. Above the angle sometimes a dusky patch. Fringes white with a row of black dots. Orbicular small, round, outlined in black. Reniform oblong, green, outlined in black. Claviform variable, black outlined. Hind wings whitish, darker outwardly. Expanse, 25-30 mm.

Quite rare in this vicinity. The moth appears in May and June, and again in July and August. It is probably double-brooded.

Mamestra lorea (Guen.).

Fore wings ocherous with the median space considerably darker, rather sharply defined. Transverse lines single. Anterior line upright, angulate between the veins, sometimes a little oblique. Posterior line outwardly bent over the reniform, then oblique to the inner margin. Subterminal line wavy. A fine terminal brown line. Spots not very distinct, brown-ringed. Hind wings luteo-fuscous. Head and thorax ocherous brown. Expanse, 25-31 mm.

Caterpillar.—Head black with dirty whitish, irregular markings; antennæ pink. Body dirty creamy brown, except the first three segments, which are blackish. Along the dorsum is a series of lozenge-shaped blackish patches, one on each segment; also two rows of minute piliferous spots and two rows along each side, where there is also on each segment an ill-defined, oblique blackish stripe. Underside translucent white. Thoracic feet pale brown. Length, 35 mm.

Food-plants.—Strawberry, wild geranium, etc.

Common, but not abundant. Easily known by the ocherous brown fore wings with darker median space. Flies from the latter part of May until July.

Mamestra anguina Gr.

PLATE XXXVIII, FIG. 16.

Fore wings dark ash gray, median space usually somewhat darker. Basal line present. Anterior line outwardly convex, not strongly curved between the veins. Posterior line strongly curved around the reniform, then with a deep inward curve, narrowing the median space by one half. Subterminal line pale, sinuate, strongly marked above the hind angle, where it is crossed by a distinct black streak. Orbicular round, black-ringed. Reniform inwardly black, outwardly gray, its lower part touching the posterior line. Claviform not distinctly outlined, sometimes running across the median space. Hind wings of male whitish, of the female fuscous. Expanse, 29-32 mm.

Rare in this vicinity. May be known by the strongly incurved posterior line, and indefinite reniform. Flies in May and June.

Mamestra vicina Gr.

Fore wings light or dark ash gray, with a more or less evident rufous tinge, most marked in the median space. Sometimes the red tinge is absent. A longitudinal black basal streak to the basal line. Anterior line even, outwardly oblique, with an inward curve at the lower part. Posterior line somewhat irregular, nearly parallel with the outer margin. Subterminal line variably distinct, sometimes obsolete, irregular, and always with a whitish spot a little

above the angle, sometimes preceded by a row of small black spots. Claviform black-outlined, touching the posterior line. Spots concolorous, outlined with black. Orbicular oblique, more or less oval. Reniform oblique, kidney-shaped. Hind wings varying from dirty white to grayish fuscous. Expanse 25-32 mm.

Quite rare in this neighborhood. The moth flies in June and July. Easily confused with *M. anguina*, but the posterior line is almost oblique to the outer margin while in *anguina* it is very strongly incurved. It also differs in the complete reniform, black basal streak, and the usually rufous tinge on the fore wings.

Ulolonche modesta (Morr.).

PLATE XXXVIII, FIG. 18.

Fore wings with basal, terminal, and half of median space purplish gray; outer half of median space darker purplish-gray. Ordinary spots indistinct, lines conspicuous. Basal line present. Anterior line slightly oblique, undulating, geminate, space between concolorous. Posterior line geminate, included space pale; above it is rounded and projects outwardly beyond the cell; below it extends obliquely to the inner margin. Claviform absent. Orbicular very small, with a fine black ring and a central dot. Reniform indistinct, with a minute white dot at its base. Subterminal space above dark purplish and contrasting with the pale terminal space; below it is lighter and not so well defined. Subterminal line blackish. Terminal space light purplish gray. Hind wings even, dark fuscous, with a faint discal dot. Head and thorax purplish gray. Expanse, 28-30 mm.

Quite rare in this vicinity. The moth flies in June.

Hadena stipata (Morr.).

Fore wings rather narrow, pale fuscous, with usually a violet shading along the costa. A black basal streak; one on the inner margin and one in the median space between the two lines. Median vein and its branches white. Transverse basal and anterior lines obsolete. Posterior line faintly visible. Subterminal line faint, slightly marked by dusky shades in the terminal space. A series of minute black dots. Orbicular very small, not visible in some specimens. Reniform indefinite, small, upright, and resting on the white forks of the median vein. Hind wings dirty white. Head and thorax concolorous with fore wings. Expanse, 38 mm.

Quite rare in this vicinity. It flies in July and August.

Hadena passer (*Guen.*).

PLATE XXXVII, FIG. 15.

Fore wings varying from dark to pale leathery brown, sometimes with a reddish tinge. Transverse anterior line hardly visible, or absent, outwardly angulate when present. Posterior line distinct but not prominent, curved outwardly and bent inwardly below the middle, crenulate. Subterminal line pale, faint. Orbicular round, black-ringed. Reniform large, more or less completely black-ringed, outwardly pale. Claviform very distinct, heavily outlined in black. Hind wings fuscous. Expanse, 35-45 mm.

Readily known by the conspicuous black-winged claviform and leathery brown fore wings. Occurs in June.

Hadena burgessi (*Morr.*).

Fore wings brown, basal and subterminal spaces usually paler. Basal line present. Anterior line geminate, the outer line of the same more distinct, outwardly oblique, and angulate below the middle. Posterior line dentate on the veins, outwardly bent over the cell, thence parallel with the outer margin. Subterminal line irregular, pale, forming a more or less distinct Σ and preceded by brown or blackish dashes and followed by blackish intervenular lines to the outer margin. Orbicular rather large, concolorous. Reniform large, kidney-shaped, pale outwardly, black-margined inwardly. Hind wings white, dusky outwardly. Expanse, 35-41 mm.

Rare in this vicinity. Flies in August and September.

Hadena remissa (*Hüb.*).

PLATE XXXVIII, FIG. 10.

Fore wings pale clay brown with the median area dark brown, the line which connects the anterior and posterior lines. A black basal streak and two dark patches on the outer part of the wing. Orbicular and reniform large, pale clay brown. Basal line geminate, rather distinct. Anterior line outwardly bent, the included space pale. Posterior line slightly curved around the cell, thence nearly straight. Subterminal line wavy, pale. A row of black lunules on the outer margin. Hind wings smoky fuscous with a darker median shade line across the middle. Tegulae shaded with dark brown. Expanse, 35-40 mm.

Not common in this vicinity. Flies in July and August.

Hadena separans *Gr.*

Fore wings dark gray shaded with blackish. Lines black. The subterminal

line forms a decided Σ -mark, but not cutting the fringes. A black dash connects the claviform with the posterior line, and the inner margin has a black streak at the base. The terminal space is shaded with blackish above and below its central constriction from the teeth of the subterminal line. Orbicular oblique. Expanse, 36-40 mm.

Recorded from New York, and possibly found in this vicinity. Flies in June.

***Hadena suffusca* Morr.**

Fore wings ashen blue gray or pale buff, more or less suffused with reddish brown, always well marked along the costal region. Lines indistinct. Claviform obsolete. Orbicular rounded, small, outlined with rusty. Reniform rather large, black-filled. Terminal space shaded with blackish and a black mark on the lower part of the subterminal line. Hind wings fuscous. Head and thorax concolorous with the fore wings. Expanse, 37-42 mm.

A plainly marked species with the fore wings suffused with red brown. Not common. The moth appears in June, and July.

***Hadena vultuosa* Gr.**

Fore wings ocherous, more or less shaded with brown, especially along the costa. A brown black basal streak and another on the inner margin to the anterior line, broader and better marked. Transverse line indistinct or absent in pale specimens. In dark specimens the anterior line is geminate, outwardly arcuate. Posterior line lunulate, imperfect, and followed by a row of geminate, venular black dots. Terminal space with irregular brown patches. Fringes cut with ocherous. A reddish brown median shade, sometimes absent. Orbicular narrow, elongate, sometimes almost elliptical. Reniform upright, constricted at the middle, sometimes very indistinct. Hind wings fuscous. Head and thorax ocherous, marked with rufous, or almost entirely rufous. Expanse, 37-42 mm.

Not common. Found in June and July. A variable species. Sometimes the fore wings are ocherous with the costa and outer margin dark and the marking almost absent.

***Hadena apamiformis* (Guen.).**

PLATE XXXVIII, FIG. 5.

Fore wings chocolate brown with the outer margin very dark with two rather prominent projections inward. The markings are more or less distinct, most prominently indicated on the costa. Lines geminate. Anterior line rather prominently scolloped. Posterior line somewhat rounded above, thence parallel with the outer margin, followed by a double row of black dots. Subterminal

line wavy, pale. Claviform rather broad, not distinct. Orbicular elongate, concolorous, black-ringed, sometimes with a dark center. Reniform elongate, dark centrally, ochreous outwardly. Hind wings smoky brown. Fringes ochreous. Expanse, 40-50 mm.

Not common. Easily known by the chocolate brown fore wings with darker shadings. The moth flies in May, June, July, and August.

***Hadena finitima* (Guen.).**

PLATE XXXVIII, FIG. II.

Fore wings pale grayish brown, washed slightly with reddish; median space reddish brown. Lines distinct, black. Basal line touching a short black basal streak. Anterior line outwardly arcuate. Posterior line rounded outwardly above, thence bent inward and followed by a row of venular dots. Orbicular large, rounded, pale, touching the anterior line, black-ringed and often with a white anterior annulus. Reniform large, constricted in the middle on both sides, or only outwardly, black-ringed, with a white interior annulus, and sometimes with black powdering below. Claviform small, black-ringed. Subterminal shade-line pale. A terminal row of black dots. Hind wings fuscous, fringes pale. Head and thorax concolorous with the fore wings. Expanse, 35-39 mm.

The moth flies in May and June, and is not uncommon.

***Hadena laterita* (Hufn.).**

Fore wings rusty brown, inclining toward reddish, with sparse whitish powdering. Veins blackish. Lines very faintly marked. Orbicular oval, almost absent in some specimens. Reniform large, usually filled with ochreous outwardly. Hind wings fuscous, fringes reddish. Head and thorax concolorous with fore wings. Expanse, 37-50 mm.

Caterpillar.—Head brown with a black triangular mark on the vertex. Body dark gray with large black piliferous spots. Spiracles brown. Cervical shield and anal plates black, the former with a brown line in the middle. Length, 40 mm.

Food-plants.—Grass and other low plants.

A very widely distributed species, found in the United States and Canada, from the Atlantic to the Pacific, and also in Europe. The moth flies in June, July, and August.

***Hadena dubitans* (Walk.).**

Fore wings glossy purplish brown black, with the lines obsolete. Subterminal

line pale, broken, preceded by glossy marks. Orbicular usually obsolete, oval, sometimes powdered with white. Reniform large, contrasting, partly filled with yellowish white. Hind wings fuscous, fringes pinkish. Head and thorax concolorous with the fore wings. Expanse, 40-44 mm.

A common species, found during July, August, and September. May be recognized by the dark fore wings with contrasting reniform.

***Hadena ducta* Gr.**

Fore wings blackish. Transverse lines double. Subterminal line whitish, narrow, continuous, and followed by deep black intervenula dashes; the usual Σ -mark indicated, not very prominent. Fringes blackish with pale dots on the veins. Reniform large, black-ringed, filled with white. Claviform concolorous, moderate, a black shade along the submedian fold, connecting the two lines where they are approximate. Median shade black, inconspicuous. Posterior line lunulate. Hind wings fuscous. Head and thorax blackish. Expanse, 40 mm.

Recorded from New York and possibly found in this vicinity.

***Hadena impulsata* (Guen.).**

PLATE XXXVIII, FIG. 19.

Fore wings black with the markings intense velvety black. Transverse lines geminate. Basal line joining a short basal streak. Anterior line arcuate, rounded between the veins. Posterior line scolloped, the outer part less distinct. Subterminal line composed of yellowish dots, preceded by black dashes. An oblique median shade, in its lower course parallel with the posterior line. Claviform distinct. Orbicular rounded. Reniform rather large, the inner part resting on the median shade line, the outer part with a few pale scales. Hind wings smoky, paler at the base. Head and thorax blackish. Expanse, 32-42 mm.

Not common. Flies during May, June, and July. The species may be known at a glance by the black fore wings with intense velvety black markings.

***Hadena devastatrix* (Brace).**

Fore wings varying from pale ochreous gray to dark blackish gray sprinkled with light gray. The markings are, as a rule, distinct. Transverse line darker than the ground color, with the included spaces paler. Basal line present. Anterior line outwardly oblique, often curved between the veins. Posterior line rounded over the cell, thence inwardly oblique. Subterminal line whitish, preceded by black sagittate dashes. A terminal row of black, lunulate dots.
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Claviform rather large, usually distinct, outlined with black. Orbicular variable in size, black-ringed, sometimes marked with yellowish. Reniform large, upright, constricted, black-ringed, with an inner yellowish annulus. Hind wings fuscous, paler basally. Head and thorax concolorous with the fore wings. Expanse, 35-45 mm.

Caterpillar.—Head very glossy chestnut brown; mouth parts pitchy black. Cervical rounded at the sides and behind, testaceous; anterior edge blackish, glossy. Body dirty brownish white, very glossy, with a dark band at the junctions of the segments. A few hairs are scattered over the body, arising from small black piliferous spots. Thoracic feet testaceous, tips pitchy black. Spiracles black. Abdominal legs not prominently developed. Length, 30 mm.

Food-plants.—All kinds of herbaceous plants.

One of the most common species, found everywhere from the Atlantic to the Pacific. Flies from June until late in the fall. The larva lives in a burrow, several inches deep, coming forth at night to feed.

***Hadena arctica* Bdv.**

Fore wings carmine brown, basal and subterminal spaces more or less bluish gray; terminal space darkest. Anterior line slightly oblique, rounded between the veins. Posterior crenulate, spaces between lines grayish. Subterminal irregular, ocherous, preceded by a rusty brown shade. Claviform carmine brown, a little darker than the ground color of the wings, not contrasting. Orbicular round, concolorous, more or less powdered with pale. Reniform large, upright, with an ocherous mark outwardly, and speckled with white. Hind wings fuscous, with a dark discal shade mark. Head and thorax concolorous with the fore wings. Expanse, 40-50 mm.

Caterpillar.—Head tawny yellow. Body pale smoky gray. Cervical shield tawny yellow. Anal plates brown. Piliferous spots each with a short hair. Length, 36 mm.

Food-plants.—Various kinds of herbaceous plants.

An exceedingly common species, found everywhere east of the Rocky Mountains. In this vicinity the moth appears in June and flies until late in September. It may be known at once by the carmine brown color of the fore wings, with bluish gray subterminal space.

***Hadena verbascoides* (Guen.).**

Fore wings rather pale ocherous brown with a rich longitudinal shade

through the middle; costal region pale, veins marked with black. Basal line absent. Anterior and posterior lines obsolete; the latter is composed of a series of small, geminate, venular dots as far as the submedian space, where it forms a distinct pale lunule, margined by narrow black lines. Subterminal line broken, not distinct, crossed in the middle by two dashes to the outer edge of the fringes, which are cut with ocherous above. Orbicular and reniform scarcely visible. A short black basal streak, a large one below and beyond, touching the pale lunule, and another short one at the base a little above the inner margin. Terminal space dark, except at apex. Median vein marked with white on its furcation. Hind wings fuscous, usually paler at base. Head pale; thorax pale along the middle; collar and tegulæ dark brown. Expanse, 38-42 mm.

Not common in this vicinity. The moth flies in June, July and August. May be known by the ocherous fore wings, with dark brown longitudinal shades and streaks.

***Hadena nigrior* (Smith.).**

Fore wings purplish brown with the markings like those of *H. verbascoides*, but more distinct. Costal region marked with gray to the posterior line. Basal line geminate, indicated on the costa. Posterior line indicated by whitish scales and geminate venular dots defining its course. Subterminal line pale, broken, sending two prominent teeth to the outer margin at the middle. Orbicular elongate, pale-ringed, small. Reniform larger, upright, pale-ringed. Longitudinal black dashes similar to those of *H. verbascoides*. The one at the inner margin at base is followed by a white shade and outwardly defined by a black line. Hind wings smoky, paler basally, fringes ocherous. Head pale, thorax dark, pale centrally behind. Expanse, 37-45 mm.

Allied to *H. verbascoides*, but very much darker, with distinct ordinary spots on the fore wings. Quite rare in this neighborhood. Flies in June and July.

***Hadena cariosa* (Guen.).**

PLATE XXXVIII, FIG. 21.

Fore wings pale gray brown, dark brown below the costa to the posterior line, and on the terminal space. Lines double. Basal line marked on the costa only. Anterior line wavy, outwardly oblique, bent inward a little above the inner margin where it is defined by a whitish streak, above which there is a black dash. Posterior line not prominent, outer part defined by a double row of small black dots. Subterminal line pale forming a distinct Σ -mark at the middle; preceded by black brown dashes in the pale subterminal space. A deep black basal dash; below and a little beyond it is a similar dash touching

the posterior line, on both sides thence to the subterminal line. Orbicular pale, good sized, round. Reniform oblong, large, upright. Hind wings dark fuscous, fringes ocherous. Head pale, thorax pale, with dark tegulæ and collar. Expanse, 35-42 mm.

Rather rare in this vicinity. The moth flies in June and July.

***Hadena vulgaris* (G. & R.).**

Fore wings ocherous brown, marked with a little darker brown, especially between the veins and on the terminal space. Veins marked with black. Transverse lines and ordinary spots indistinct. Anterior line outwardly oblique, rather strongly dentate, indefinite through the wing. Posterior line vague, followed by a double row of small black dots. Subterminal line not distinct, with a Σ -mark at the middle. Basal dash and the one below on the inner margin not distinct; the dash from the claviform to the subterminal line broken by the posterior line. Orbicular elongate. Reniform upright, both vaguely defined. Head and thorax pale, the latter with a dark line on the tegulæ. Hind wings ocherous fuscous. Expanse, 40-45 mm.

Not common. Found during May, June, and July.

***Hadena lignicolor* (Guen.).**

PLATE XXXVIII, FIG. 15.

Fore wings pale luteous, thickly scaled and shaded with reddish brown, especially along the costal region; terminal space darker, except pale at the apex. Lines more or less distinct but never prominent. Anterior line dentate. Posterior line rather even, outer line partly punctate. Subterminal line with Σ -shaped mark distinct. Ordinary spots concolorous, not well defined. Orbicular elongate, variable in shape. Reniform upright, lower part filled with dark. Basal dash at middle and inner margin not very distinct. Hind wings fusco-luteous, fringes pale. Head and thorax reddish ocherous. Expanse, 40-47 mm.

A common species, found during June, July, and August.

***Hadena inordinata* Morr.**

Fore wings luteous brown, especially in the basal and median areas, terminal space brownish, costa scaled with white. Lines black filled with white, prominent. Anterior line almost straight, lower half bent outwardly and again inwardly before it reaches the inner margin. Posterior line bent around the cell, thence inwardly oblique, and rather even. Subterminal line white, preceded by black, sagittate marks; Σ -mark prominent. A terminal row of black dots. Fringes dark, cut with pale. Orbicular oblique, white-ringed. Reniform rather

large, white-ringed, with a dark center. Hind wings ochereous, a broad dark outer border, a narrow median line and large discal mark, dark; fringes pale. Head and thorax ochereous gray. Expanse, 32-35 mm.

Not as yet recorded from this vicinity, but possibly will be found here when we know more about the noctuid fauna. Flies in May and June.

***Hadena bridghami* (G. & R.).**

Fore wings rather bright purplish red, tinged with yellowish, especially in the median space; basal space scaled with bluish white. Subterminal space rather bright bluish or purplish white to the apex. Terminal space like the median space. Ordinary spots bluish white and rather conspicuous. Basal line evident, pale. Anterior and posterior lines obsoletely geminate, included spaces bluish white. A reddish angular median shade line, not contrasting. Hind wings whitish, with an indistinct median line, dusky or reddish outwardly; fringes white. Head and thorax whitish, marked with reddish. Expanse, 28-32 mm.

A beautiful, well-marked species, not easily confounded with any other found in this vicinity. Flies in June and July.

***Hadena claudens* Walk.**

Fore wings white, gray, and black, very distinctly marked. Lines black, geminate. A black basal dash. Anterior line black, its inner course indistinct, erect, touching the orbicular, dentate on costa; opposite orbicular, a broad obtuse tooth from median to submedian vein and a shorter one at inner margin. Posterior line well exerted around the reniform, and running strongly inward below, scolloped, outer line faint. Orbicular white, irregularly rounded, a little oblique. Reniform good sized, white, kidney-shaped. Claviform concolorous, defined by two narrow black lines running across the median space. Veins on submedian space marked with black. Subterminal line with the usual Σ -mark much reduced. Terminal line black, interrupted. Hind wings dark fuscous, fringes whitish. Head and thorax whitish; tegulae lined with black. Expanse, 30 mm.

Recorded from New York, and very likely found in this vicinity. The moth appears in July and August.

***Hadena fractilinea* Gr.**

PLATE XXXVII, FIG. 17.

Fore wings dull brownish and pale flesh-color, the pale color extending along the inner margin and subterminal space to the apex. Terminal space brownish,

narrowly flesh-color beyond the ferruginous subterminal line. The transverse lines not prominent, the posterior line followed by a double row of small black dots. Orbicular obscured by the dark brown. Reniform small, flesh-colored, with a dark central dot. Hind wings fuscous. Thorax dark brownish, flesh-color along the middle, posteriorly. Expanse, 26–30 mm.

Var. *VULVIVAGA*.—Like the type form, but the entire fore wings are almost uniform dark fleshy brown, there being no contrasting colors.

Not common. Found in July and August.

***Hadena misera* Gr.**

Fore wings dark fuscous with inconspicuous markings. Reniform moderate, discolorous, yellowish. Orbicular hardly indicated. Lines lost, except the waved, rusty yellow subterminal line. Costa dotted with pale yellowish. Hind wings dark fuscous, paler than fore wings, with a discal dot and median line. Head, collar, and tegulæ blackish fuscous. Disk of thorax somewhat rusty and paler.

Recorded from New York, and possibly found in this vicinity. August.

***Hadena miseloides* Guen.**

PLATE XXXVIII, FIG. 12.

Fore wings mossy green with darker shadings, especially along the veins. Lines black, geminate. Basal line present. Anterior line strongly waved. Posterior line dentate, very slightly bent around the reniform. Subterminal line pale green, not very distinct. Orbicular variable in size, concolorous. Reniform very large, concolorous or pure white. Claviform filled with black. Hind wings fuscous. Head and thorax mossy green. Expanse, 30–35 mm.

The mossy green color of the fore wings, with the very large reniform spot, which is often white, will serve to distinguish this species at a glance. It is rather common and flies in June, July and August. The larva is green and lives solitary on smilax.

***Hadena mactata* (Guen.).**

Fore wings rather rich brown with the subterminal and basal space usually paler. Basal line evident. Anterior line outwardly very oblique, slightly wavy, and forming a tooth at the inner margin. Posterior line curved around the reniform, thence evenly bent inward, slightly crenulate. Spaces between lines usually pale. Subterminal line pale. Claviform outlined with black, connected with the posterior line by a black dash. A short black basal dash also present.

Orbicular variable in size, usually large, round; reniform larger. These spots are light or dark. Hind wings fuscous. Head and thorax brown, mixed with light brown. Expanse, 30-35 mm.

A rich brown species with orbicular and reniform large. It is not common, and flies in July, August, and September.

Hadena turbulenta (Hüb.).

PLATE XXXVIII, FIG. 20.

Fore wings varying from light to dark wood brown, the outer part usually palest. Lines geminate. Basal line present. Anterior line oblique, wavy, and forming a tooth at the inner margin. Posterior line rather prominently dentate around the reniform, thence crenulate. Orbicular small, concolorous. Reniform oblique, large, light or dark. Claviform black-ringed, small. Beyond the posterior line to a little above the hind angle is a broad black dash and two or three streaks at the costa in front of the apex. Subterminal line scarcely evident. Hind wings dusky outwardly, paler at base, an indistinct discal spot and mesial line. Head and thorax brown. Expanse, 22-32 mm.

Caterpillar.—Head jet black; mouth parts sordid white. Body above jet black with a number of fine longitudinal white lines, beginning at the anterior part of the second segment and ending at the end of the tenth segment. Last segments with a number of white spots. Cervical shield velvety black. Body at sides and beneath dull amber yellow. At the sides are three white stripes, two of them below the spiracles. Thoracic feet black. Abdominal and anal legs dull amber yellow with a brownish patch, followed by a white one, on the outside. All the lines on the black part of the body are connected posteriorly.

Food-plant.—Catbriar (*Smilax*).

The larvæ of this species are more common than the perfect insects. They live socially in all their stages, in rather dense clusters. The moth may be found in May, June, and August.

Hadena modica (Guen.).

PLATE XXXVIII, FIG. 6.

Fore wings pale whitish gray with the median space very dark, basal space tinged with ocher gray. Sometimes both median and basal spaces are dark. Anterior line curved outwardly, touching the orbicular, which is pale or dark, not distinct and contrasting. Posterior line very indistinct, scarcely traceable, followed by a row of black dots. Subterminal line vague. Fringes dark, cut with pale. On the costa are two black marks, sometimes connected and forming a semicircular line. Reniform large, pale, dark-ringed; on the outer part a light ocherous rounded shade, looking like a part of the reniform. Claviform

dark, black-outlined. A blackish median shade. Hind wings fuscous. Expanse, 25-32 mm.

Common, but not abundant. Flies in June, July, and August.

***Hadena hausta* Gr.**

Fore wings deep brown to the transverse posterior line, except over the reniform. Subterminal space grayish. Terminal space narrow, ferruginous. A costo-apical light brown spot on the subterminal space. Fringes dark, finely cut with pale. A black mark in place of the claviform, across the median space. Anterior and posterior lines double, indistinct. Reniform grayish. Hind wings pale fuscous, with a darker median line. Head and thorax dusky brownish. Expanse, 21 mm.

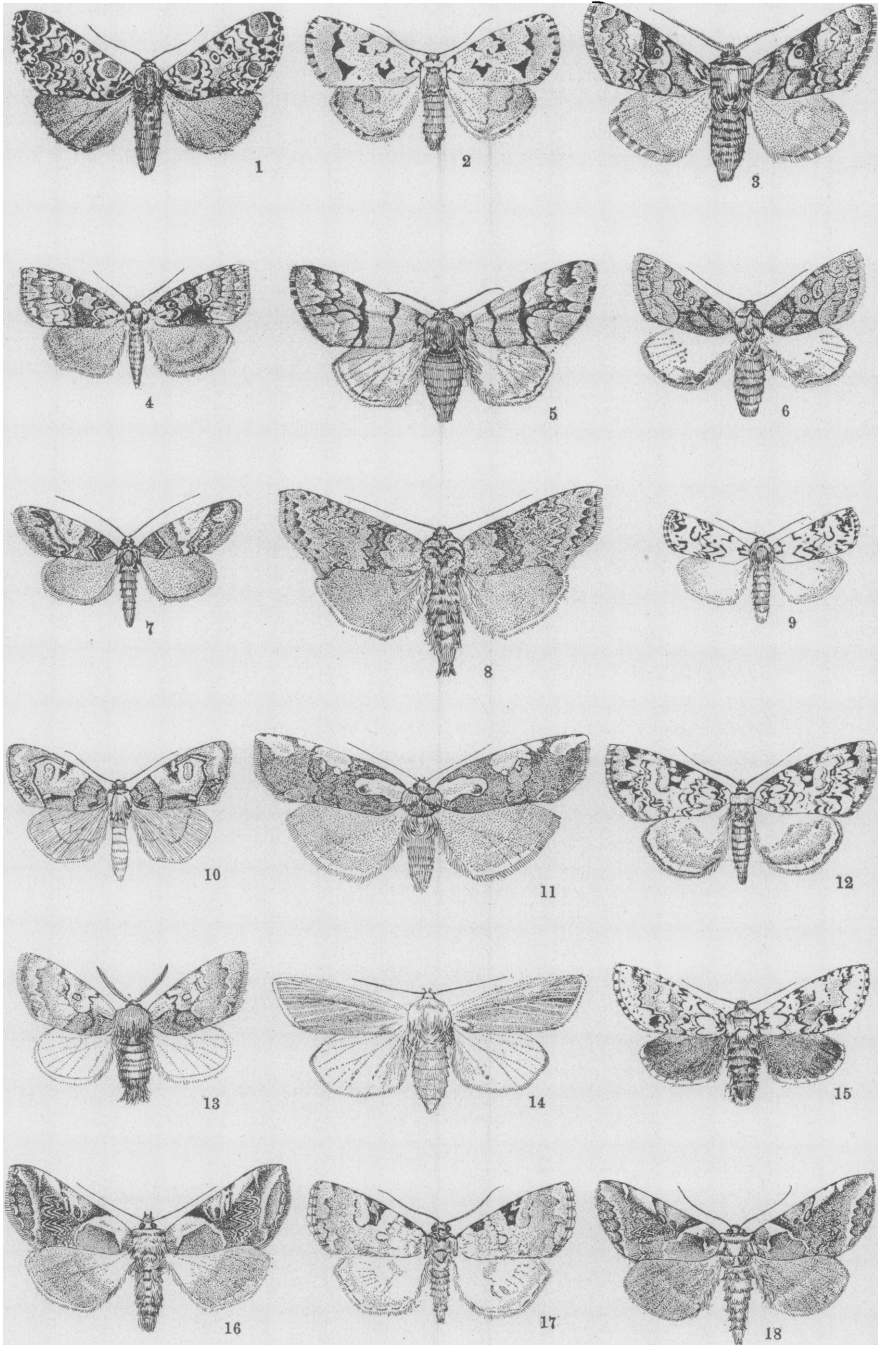
Quite rare in this neighborhood. Flies in April and May.

***Hadena diversicolor* (Morr.).**

Fore wings with the basal space green, median space brown black to the median black shade line, beyond which the wing is white, shaded with light green in the subterminal and terminal spaces. Anterior line distinct, double, touching the orbicular, notched on the costa, and forming an outward lobe to the inner margin. Posterior line not distinct, dentate opposite the cell. Subterminal line white, irregular, with two blunt teeth and a black dash above the hind angle. Orbicular elliptical, whitish, contrasting, with a green inner shade; it opens into a basal, costal, greenish white shade. Reniform hardly visible. Claviform concolorous. A series of terminal black dots. Fringes dark, cut with ocherous. Hind wings whitish, with a dark discal dot, angulated median shade line and terminal shade. Head and thorax light gray, tuft of latter tipped with black. Expanse, 32 mm.

Recorded from New York and may be found here. Flies in September.

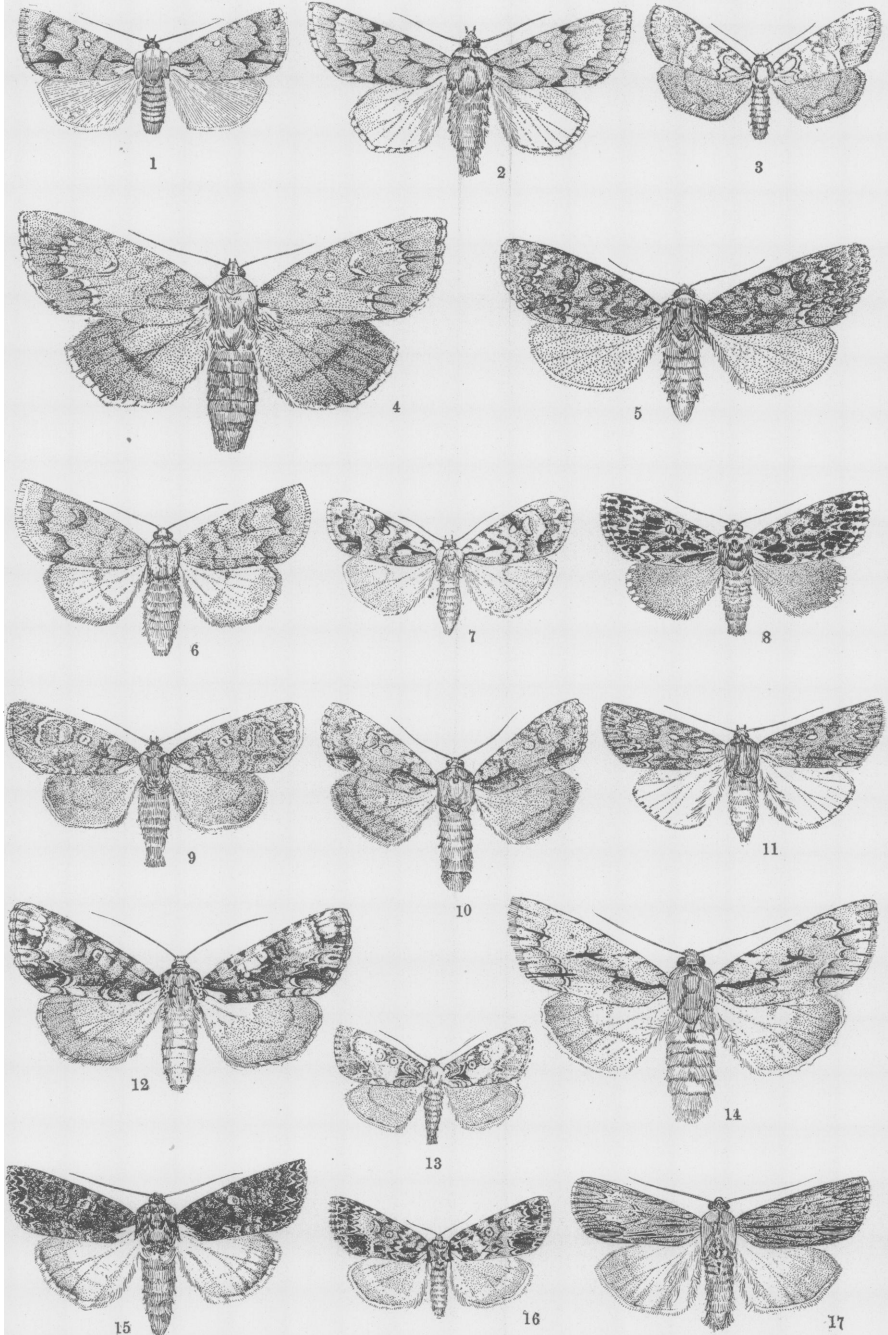
(*To be continued.*)



1. *Harrisimenna trisignata*.
2. *Moma fallax*.
3. *Charadra deridens*.
4. *Bryophila lepidula*.
5. *Panthea furcilla*.
6. *Raphia frater*.

7. *Leptina dormitans*.
8. *Pseudothyatira expultrix*.
9. *Polygrammate hebraicum*.
10. *Chytonix palliatricula*.
11. *Euthyatira pudens*.
12. *Microcœlia diphteroides*.

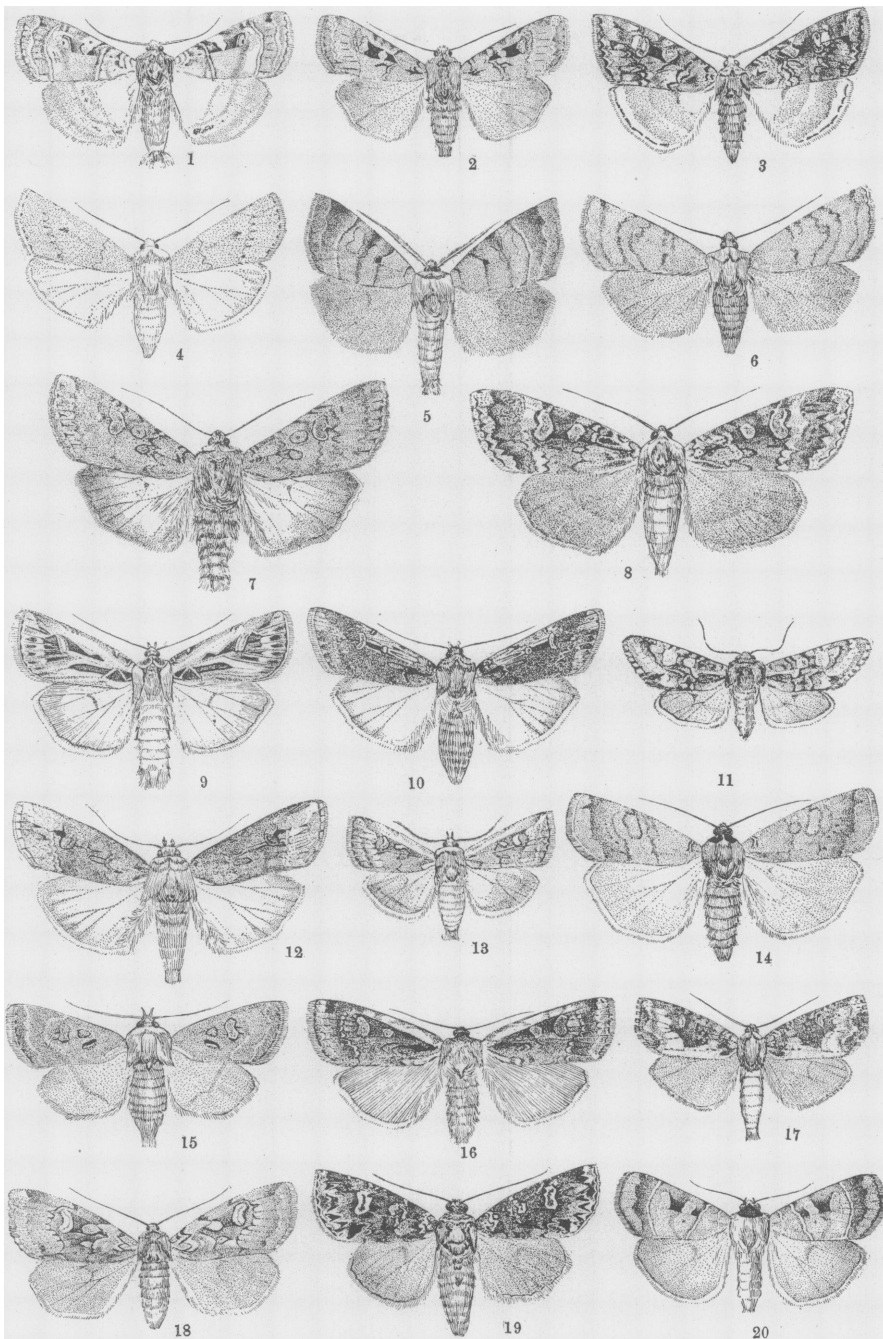
13. *Demas flavicornis*.
14. *Arsilonche albovenosa*.
15. *Ferialia jocosus*.
16. *Thyatira scripta*.
17. *Microcœlia diphteroides* var. *obliterata*.
18. *Thyatira rectangularis*.



1. *Apatela tritoña*.
 2. " *lepusculina*.
 3. " *modica*.
 4. " *americana*.
 5. " *luteicoma*.
 6. " *betulæ*.

7. *Apatela vinnula*.
 8. " *noctivaga*.
 9. " *clarescens*.
 10. " *pruni*.
 11. " *xyliniformis*.
 12. " *superans*.

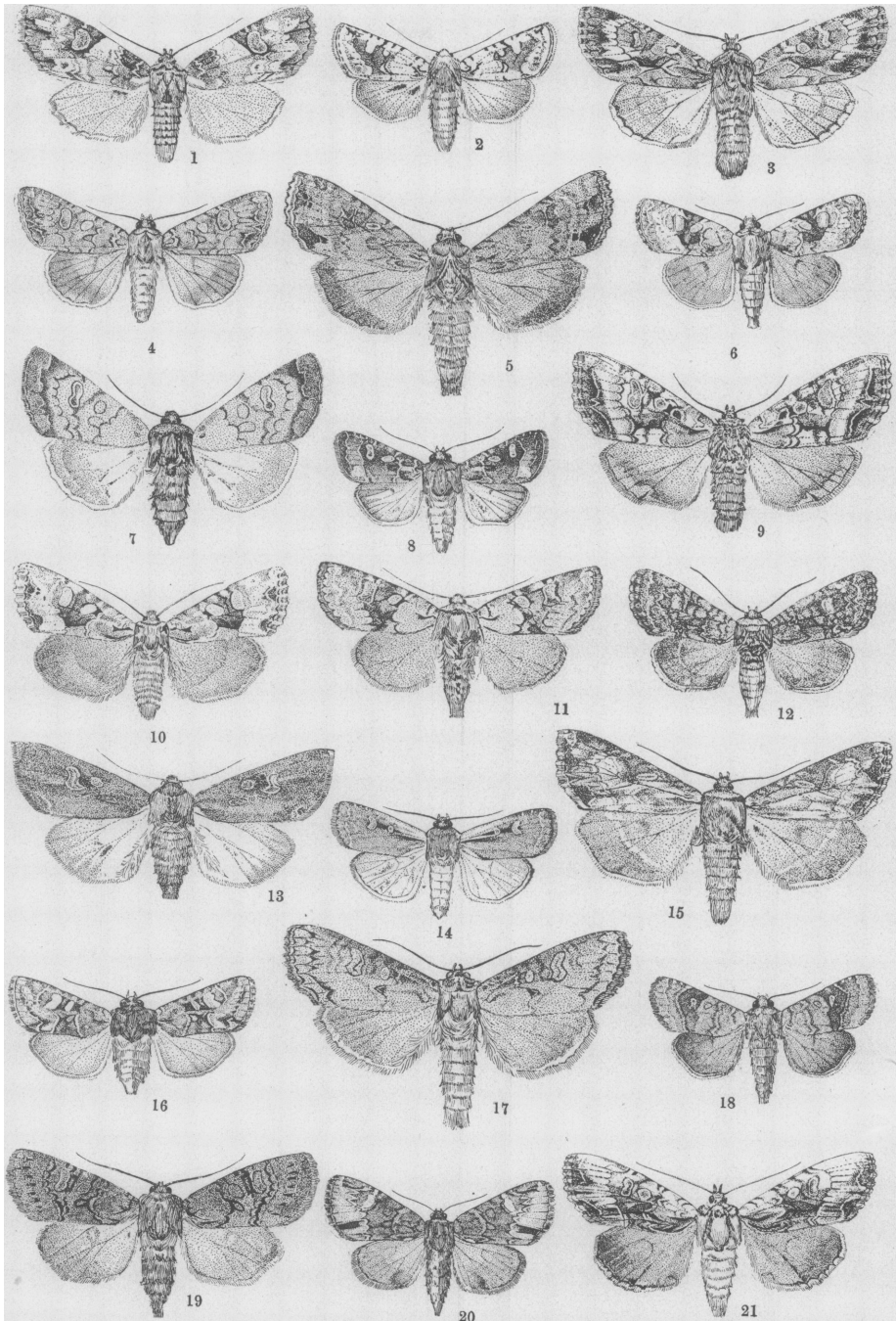
13. *Apatela retardata*.
 14. " *lobeliæ*.
 15. " *afflicta*.
 16. " *fragilis*.
 17. " *lithospila*.



1. *Noctua normaniana*.
2. *Carneades tessellata*.
3. *Platagrotis pressa*.
4. *Porosagrotis vestusta*.
5. *Agrotis badinodis*.
6. *Carneades bostoniensis*.
7. *Peridroma saucia*.

8. *Adelphagrotis prasina*.
9. *Feltia subgothica*.
10. " *annexa*.
11. *Psaphidia grotei*.
12. *Agrotis ypsilon*.
13. *Carneades detersa*.
14. *Rhynchagrotis rufipectus*.

15. *Hadena passer*.
16. *Eueretagrotis sigmoides*.
17. *Hadena fractilinea*.
18. *Semiophora elimata*.
19. *Mamestra adjuncta*.
20. *Noctua collaris*.



1. *Mamestra latex*.
2. " *laudabilis*.
3. *Anytus privatus*.
4. *Mamestra trifolii*.
5. *Hadena apamiformis*.
6. " *modica*.
7. *Mamestra rosea*.

8. *Mamestra renigera*.
9. " *grandis*.
10. *Hadena remissa*.
11. " *finitima*.
12. " *miseloides*.
13. *Mamestra picta*.
14. *Noctua plecta*.

15. *Hadena lignicolor*.
16. *Mamestra anguina*.
17. " *purpurissata*.
18. *Uloloncha modesta*.
19. *Hadena impulsula*.
20. " *turbulenta*.
21. " *cariosa*.

