

NEW SPECIES AND GENERA OF THE LEPIDOPTEROUS  
FAMILY NOCTUIDÆ FOR 1907. PART II.<sup>1</sup>

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No branch of zoölogy has profited more by the explorations and collections made during the past decade than entomology. Not only have new species been found in localities collected over for the first time, but, as the result of more thorough investigation of the fauna of older regions, we have learned that mere resemblance to species of other faunal regions does not mean necessarily specific identity. With more abundant material, our conception of the limits of species became more accurate, and definition became possible.

In the Canadian northwest a quite distinct noctuid fauna is becoming gradually known, and in the southwestern portion of our own territory the canyons are yielding not only specific but also generic types heretofore unknown.

For some time past, material has accumulated gradually in my collection which could not be referred satisfactorily to known or described species, — sometimes in single examples only, sometimes in small series, — and this has increased gradually to such an extent as to demand a general clearing-up, although descriptive work of this kind is perhaps the least attractive to the true student.

**Viridemas** nov. gen.

Head retracted, small; front with an upright, blade-like corneous process, which reaches to the end of the short, rough vestiture, and does not modify the general impression of a flat head. Palpi very short and weak, not extending beyond the edge of the front. Tongue weak, not functional. Eyes large, round, naked, not fringed with lashes. Antennæ of normal length; those of the male with the segments marked and the projecting angles set with short bristle-tufts, those of the female simple. Thorax short, quadrate; collar round, flat; patagia well marked.

<sup>1</sup> Part I of the descriptive papers for 1907 is in the Transactions of the American Entomological Society, Vol. XXXIII, pp. 125-143, where twenty-nine species are described. In the present paper forty-seven species are characterized and four new generic terms are proposed.

The types are in most instances in the author's collection at Rutgers College, New Brunswick; a few of them are at the Museum of the Brooklyn Institute of Arts and Sciences.

a little uplifted; vestiture scaly with an admixture of flattened hair, forming, posteriorly, a large mass, which is scarcely a definite tuft. Legs short, middle and hind pairs sub-equal in length; tibiae unarmed, not spinulate, in the male clothed with a mass of rough scales and hair. Abdomen stout, well exceeding the secondaries; in the female, stout, sub-equal and sub-cylindrical, obtusely terminated, with a prominent little tuft on the third dorsal segment. Primaries trigonate, rather broad; apex well marked; outer margin arcuate, oblique; hind angle rounded; venation normal; accessory cell present, giving rise to 7, 8 + 9 and 10 from its end. Secondaries proportionate, with vein 5 obsolescent.

***Viridemas galena* nov. sp.**

Ground-color ashen gray, powdery. Front with an admixture of brown scales. Collar with an obscure median line and an admixture of bluish-green scales. Patagia with disk clothed with green scales, and with a blackish sub-marginal line. Posterior scale-mass bronze-brown. Abdomen dark gray, the posterior margins narrowly light gray. Primaries with all the usual maculation traceable, but obscured by the powdering of dark scales. Basal space green-powdered, and on this the short, single, black basal line is fairly defined. T.a. line black, single, upright, a little irregular. T.p. line single, black, slender, discontinuous, a little lunulate, well exerted over the cell and almost as much incurved below, followed in the sub-median interspace by a conspicuous greenish-white blotch, which is the most obvious feature in the maculation. There is a broken, black median line, which extends along the inner margin of the reniform, and below it to the margin. S.t. line whitish, diffuse, powdery, discontinuous, partly defined inwardly by black scales, which give the line a jagged appearance. A series of black terminal lunules is followed by a pale line at base of fringes. Claviform a broad, black-ringed loop, extending about one-third across the cell and as broad as long. Orbicular large, round, gray, ringed by black scales, a little darker centered. Reniform large, gray, not defined above or below. Secondaries gray, with a dark, lunate terminal line. Beneath, gray, powdery, with a broad, diffuse exterior line and a lunate discal spot, which tends to become obscure on the primaries.

Expands 1.16-1.32 in. = 29-33 mm.

*Habitat:* Huachuca Mountains, Arizona, VII, 30; Palmerly, Cochise County, Arizona, VII.

Two males and one female, in fair condition. The males are purchased specimens from my own collection, the female is from the collection of the Brooklyn Institute. A perfect, fresh specimen will show undoubtedly a considerably greater admixture of green, and, on the other hand, in old specimens the green tends to become dull and to mingle with the gray base so as to become inconspicuous except under a lens.

***Meleneta* nov. gen.**

Eyes hairy, without overhanging lashes. Head moderate or rather small, applied very closely to the thorax; front very flat, quadrate, clothed with short,

divergent, hairy vestiture. Palpi very short, straight, extending scarcely beyond the frontal margin; second joint with long hair below; third joint as long as second; cylindrical, truncate. Tongue functional, well developed. Antennæ of male thickened, the joints marked by impressed rings, without vestiture of any kind. Thorax quadrate, rather small; collar round, not produced; patagia well defined; vestiture coarse hair, not forming obvious tufts. Legs rather short; tibiæ clothed with dense, long, coarse hair, not armed or spinulated. Abdomen with long tufts of fine hair laterally at base, and with small, indefinite dorsal tuftings. Primaries trigonate; costa arched; apex marked; outer margin arcuate, decidedly oblique; hind angle obtusely rounded; veins 7 to 10 out of the end of the elongate accessory cell; 7 and 10 from the lower and upper angle respectively; 8 and 9 on a stalk from the middle, between the two. Secondaries with vein 5 as strong as the others, out of the cross-vein not far removed from 4.

This is a genus related to *Raphia*, with similar wing and body structure; differing in the antennæ, character of vestiture, and absence of the characteristic tuftings. Only males are at hand, unfortunately, and the above characterization is drawn from that sex alone.

***Meleneta antennata* nov. sp.**

Deep bluish gray, the markings black or blackish. Head with vertex black; collar black-tipped; edges of patagia and dorsum black-edged. Antennæ deep chrome-yellow. Primaries with the normal marking well defined. Basal line black, geminate, included space gray, and with a gray patch just outside. T.a. line geminate, outer portion most obvious, almost upright, accompanied by a paler gray shade. T.p. line less definitely marked, geminate, the inner portion reduced to scattered black scales, the outer portion more continuous, but diffuse and irregularly defined, with an even outcurve over the cell and almost straight below. Median shade blackish, diffuse, darkening the space between the ordinary spots. S.t. line very irregular, pale, preceded by a black shading, which is best marked on the costa and below vein 2. There is a narrow, black terminal line, and the fringes are concolorous. There is no obvious claviform, but there is a little jog in the t.a. line where it should be, and beyond is a rusty brown patch that extends to the median shade. Orbicular small, round, with a distinct black ring and an equally distinct black central dot. Reniform rather large, oblique, narrow, centrally a little constricted, narrowly black-ringed, gray with a white central line. Secondaries white, with a blackish terminal line which extends from the apex halfway to the inner angle. Beneath, primaries blackish, costal and outer margin with white powderings; secondaries white, costal margin with black powderings, a blackish terminal line from apex halfway to the inner angle.

Expands 1.25-1.40 in. = 31-35 mm.

*Habitat:* Huachuca Mountains, Arizona, VII, 30. Palmerly, Cochise County, Arizona, VIII.

Two males, in good condition; one of them a purchased specimen, the collector unknown; the other from the collection of the Brooklyn Institute,

taken by Mr. Carl Schæffer. The species is quite characteristic, and I am sure that I have seen it in another collection.

***Acronycta othello* nov. sp.**

Ground-color whitish ash-gray with sooty black shades and markings. Head, vertex black except at sides. Collar mostly black or sooty. Disk of thorax and margins of patagia black or sooty. Abdomen smoky gray above, whitish below; basal tuftings black or sooty; edges of segments narrowly white. Primaries with a broad basal space rather evenly washed with thin blackish over a bluish-gray base. T.a. line geminate, black, moderately outcurved and oblique, and with outcurves in the interspaces. T.p. line geminate, black; outer line most distinct, denticulate, with well-marked outward teeth on the veins: as a whole, well curved over cell and deeply drawn in below. There is no obvious s.t. line. The outer part of the median space above median vein is filled with blackish, and below this vein the entire space is sooty black, but not contrasting or intense. The outer part of the wing is gray, the veins blackish-lined, and a sooty black streak from t.p. line to hind angle just below vein 2. The fringes are cut with sooty brown on the interspaces. Orbicular a small black circle which may be obscured by a shading from the t.a. line. Reniform moderate or small, lunate, incomplete, obscured by the median shade. Secondaries in the male white, in the female washed with smoky gray. Beneath, whitish, powdery, the primaries darker (darker in the female than in the male); secondaries with a small, blackish discal spot. Legs smoky, annulate, with white at the joints.

Expands 1.75 in. = 44 mm.

*Habitat:* San Diego, Cal., Sept. 15.

One male and one female, in good condition; from Mr. Frank A. Merrick. The species is allied to *perdita*, but is obviously distinct by the absence of basal streaks and by the soft gray and black shadings.

***Acronycta lepetita* nov. sp.**

Ground-color pale bluish gray with an olivaceous shading. Palpi black at sides, a black dot at base of antennæ. Primaries with black basal streak extending to the t.a. line; a slight spur inferiorly at about the middle, a longer narrow branch on the upper edge, which reaches the t.a. line. A slender black streak crosses the t.p. line in the sub-median interspace, and extends to the outer margin. The basal line is indicated by an olivaceous costal spot. T.a. line geminate, olivaceous gray, very oblique, so as to reach the inner margin almost at middle. T.p. line geminate, outer line black, included space whiter than ground, somewhat squarely exerted over the cell and only moderately incurved below. S.t. space beyond the t.p. line is more olivaceous shaded, and this is best marked on the costa and over the black streak above anal angle. A series of terminal black points on the veins. Median shade obvious on costa, oblique over the reniform, which it darkens, and then lost. Orbicular oval, oblique, concolorous, narrowly outlined by black scales. It may or may not touch the reniform; but, when it does, the junction forms an obvious, curved black mark. Reniform large, broadly lunate, somewhat irregular, a little

dusky, incompletely outlined by blackish scales. Secondaries smoky, paler at base, the fringes whitish. Beneath, whitish, the primaries smoky on disk; both wings with discal marks and more or less obvious extra-median lines.

Expands 1.05-1.10 in. = 26-28 mm.

*Habitat:* Esper Ranch, Brownsville, Tex.

One male and one female, in good condition; from the collection of the Brooklyn Institute of Arts and Sciences. The species is allied to *vinnula* and *paupercula*, but is smaller than either and much more delicately marked. Comparatively, also, the primaries of the new species are shorter and broader.

**Noctua larga** nov. sp.

Head and collar bright rusty brown, the head darker in shade. Thorax brown with a more or less marked rusty tinge. Primaries gray-brown with a reddish tinge, varying in the specimens. All the lines single, punctiform. Basal line marked only on costa and in the cell. T.a. line with black venular spots and a scattering of black scales that marks the line across the costal region. T.p. line even, marked by distinct black dots on the veins, in course parallel to the outer margin. S.t. line wanting. A series of black, inter-spatial terminal dots. Claviform vaguely indicated by scattered black scales. Orbicular indicated by a few black scales, or altogether wanting. Reniform marked by a black dot and a variable number of black scales; not complete, or even so outlined as to make out a definite form, in any case. Secondaries pale at base, outwardly dusky, darker throughout in the female. Beneath, primaries smoky, secondaries whitish, both darker in the female.

Expands 1.80-2.10 in. = 45-52 mm.

*Habitat:* Palmerly, Cochise County, Arizona, August; Huachuca Mountains, Arizona, June 16.

Three males and one female, in good condition; from the Museum of the Brooklyn Institute. The specimens were taken by Mr. Carl Schäffer, who says they were commonly found under shelter, much as our *clandestina* are sometimes found in large numbers. There are other rubbed examples in the Museum collection; but all seem to be very much alike. The large size and simple markings, allied to those of *clandestina*, distinguish the species.

**Rhizagrotis acclivis** Morr., Ann. Lye. Nat. Hist., N.Y., XI, 93, **Agrotis**, 1875; **reclivis** Dyar, Jour. N.Y. Ent. Soc., XV, 106, **Rhizagrotis**, 1907.

Mr. Morrison's specimen came from New York and the type is in the Tepper Collection. About the same time, Dr. Harvey described *Agrotis opaca*, from Texas, and in 1890 I recorded my belief that the two gentlemen had named the same species. I had, then and later, examples from Texas,

Arizona and Colorado, and, as the type of maculation and structure was unusual for the eastern fauna, I questioned whether the locality of the specimen in the Tepper Collection might not be erroneous. An examination of Dr. Harvey's type in the British Museum confirmed my belief; and in my Catalogue of 1903 (Bull. 44, U.S. Nat. Mus., 79) I cited the two names as referring to the same species, and gave the New York locality with an "(?)." Until 1907 I did not see another eastern example, though I had a number from southwestern localities. In a miscellaneous lot received from Dr. Dyar for determination, there was an example which I named *acclivis*, and to which I appended the note quoted by Dr. Dyar: "The first authentic specimen I have seen from this region. It indicates that the New York locality which I questioned in my Catalogue may have been correct, or it may indicate two very similar species which I have not had material enough to discriminate."

Dr. Dyar did have material to discriminate, and he gives the differences between the eastern and the southwestern forms; but in giving a name he re-describes the eastern form that served Morrison as a type, and therefore creates a synonym merely. I assume that Dr. Dyar is correct in determining that there are two species, though I have not been able to verify that point; but, if this is so, it simply means that Dr. Harvey's name must be restored to the list and that the southwestern specimens now labeled *acclivis* Morr. in collections must be re-labeled *opaca* Harvey.

***Euxoa cocklei* nov. sp.**

Head, thorax and primaries dull brown, varying from chocolate to smoky, and more or less irrorated with black. Collar with a more or less marked black median line. Disk of thorax and patagia with a sparse admixture of yellow scales. Primaries with all the maculation traceable, and usually well written. Basal line geminate, black, included space yellowish. T.a. line geminate, included space yellow, the edgings black; upright to median vein outcurved in the space below and outwardly bent below vein 1. T.p. line geminate, inner portion lunulate, not well marked, outer portion hardly distinct; the included space yellowish, variably marked and not always continuous; in course moderately outcurved over the cell and then parallel with outer margin. S.t. line a little irregular, broken, yellowish, sometimes reduced to scattered yellow scales. A series of dusky terminal lunules, which are rarely distinct. There is a tendency to a darkening below the median vein, between the basal and t.a. line, and in one example there is a distinct black line. Claviform moderate, black-bordered. Orbicular round or oval, moderate in size, with a narrow black edging within which is a ring of whitish scales. Reniform moderate in size, kidney-shaped, edged with black scales, then with an inner (more or less incomplete) border of yellowish; the spot sometimes darker inferiorly. Secondaries smoky yellowish, almost uniform, with an obscure dusky lunule. Beneath, dull

smoky; secondaries more yellowish and powdery; all wings with an outer shade band and discal mark, less evident on primaries.

Expands 1.15-1.35 in. = 29-34 mm.

*Habitat:* Kaslo, B.C., July 27.

Two males and five females; from Dr. James Fletcher, collected by Mr. J. W. Cockle, after whom the species is named. All the examples are in good condition and no two are alike. The two males are smaller than all the females, although the larger of the two is almost as large as the smallest female. So the males are also darker and less distinctly marked, the ornamentation in one case, indeed, being scarcely traceable. In all the females all the markings are at least traceable, and in one case every feature is complete, and, in addition, the s.t. space is a little paler than the rest of the wing. The type of maculation is similar to *insulsa*, but there is no darkening of the cell and the wings are also too powdery. There are no strong positive characters, and in Hampson's Tables it falls between *submolesta* and *procellaris*, neither of them American species.

#### ***Euxoa criddlei* nov. sp.**

Head, thorax and primaries mahogany-brown; the head and thorax darker, without markings; primaries with all the transverse maculation lost, except the s.t. line, which is traceable by a line of pale scales edging the darker, more blackish terminal space. No trace of claviform. Orbicular faintly indicated by a blackish powdering. Reniform faintly outlined by scattered pale scales inferiorly filled with blackish. Secondaries dull yellowish becoming smoky at outer margin, with a dark discal lunule. Beneath, smoky, powdery; primaries darker; all wings with a discal lunule. Abdomen dull smoky.

Expands 1.40-1.50 in. = 35-37 mm.

*Habitat:* Aweme, Manitoba, Aug. 24, 25, Sept. 4.

One male and two females, in good condition; from Dr. James Fletcher, collected by Mr. Criddle, after whom the species is named. This is a very simply marked form, and in fact, at first sight there appear to be no markings at all, so feebly are they indicated. In wing form the species is like *pastoralis*, with which it will be most naturally associated in the list. In Hampson's Tables the species would fall in next to *stigmatilis* Sm., to which the new species has but a slight resemblance.

#### ***Euxoa quinta* nov. sp.**

Head, thorax and primaries dull ashen gray, the entire surface with uniformly placed brown irrorations, which are quite conspicuous under the glass, and give a soft shading to the insect. Transverse maculation, except s.t. line, brown or black-

ish, broken, more or less lost. S.t. line pale, rather conspicuously relieved by a smoky preceding shade. Basal line marked by a geminate spot on costa and sometimes by a dot on median vein. T.a. line geminate, outer line best marked, evenly oblique, with small outcurves in the interspaces; always broken. T.p. line geminate, only a little bent over the reniform, parallel to outer margin; outer line a series of venular points; inner tending to become diffuse. A broad, diffuse, obscure median smoky shade. S.t. line irregular, complete or nearly so, emphasized by white scales. A series of small black terminal dots and a narrow line at base of fringes. Orbicular moderate, round or oval, incompletely marked by whitish scales. Reniform moderate, kidney-shaped, outlined by a vague yellowish ring, inferiorly black-filled. Secondaries smoky fuscous, more yellowish at base, with a dark discal lunule and pale fringes. Abdomen pale ashen gray. Beneath, primaries smoky with a powdery pale-gray border, an extra-median line marked on costa, and an obscure discal spot; secondaries pale gray, powdery, with a conspicuous black discal line and an incomplete extra-median band, beyond which the marginal area is blackish.

Expands 1.35-1.42 in. = 34-36 mm.

*Habitat:* High River, Alberta (Mr. Thomas Baird); Kaslo, B.C., June 1, 30, July 7, 10 (Mr. J. W. Cockle).

Three males and two females, all in good condition; received from Dr. James Fletcher. The examples are all very much alike, a slight difference in the amount of dark filling in the reniform and in the completeness of the transverse lines being all the variation noted. The species belongs with the *bostoniensis* series, but differs from all those previously known to me, in the dark secondaries of both sexes. It recalls *scandens* at first sight, but is much darker than that species throughout.

#### *Euxoa capota* nov. sp.

Head dark brown in front, vertex reddish gray, a black line dividing the two. Collar reddish at base, tip velvety black; a white line between the two. Disk of thorax reddish gray. Primaries brown; median space very dark purplish brown, almost black; costal region to t.p. line whitish; the ordinary spots of the brown ground-color. A black basal shade margins the costal pale area inferiorly. T.a. line geminate, black, obsolete on costa, very distinct below it and with an inward curve at the middle of its course. T.p. line geminate, black, the outer line less distinct, almost straight from the costa to end of cell and then with a very small incurve. S.t. line pale, only a little irregular, chiefly defined by the slightly darker terminal area against the s.t. space, which is the lightest part of the wing. Claviform narrowly outlined in black, incomplete, concolorous. Space between the ordinary spots black-filled. Orbicular, U-shaped, open to the costal pale area. Reniform large, incompletely outlined by dark and pale scales, lunate rather than kidney-shaped. Secondaries smoky brown, with a small, darker discal lunule. Beneath, reddish gray, powdery, with a common outer line and a discal lunule on all wings.

Expands 1.15-1.30 in. = 29-32 mm.



*Habitat:* Palmerly, Cochise County, Arizona, July and August.

Eight examples, mostly in good condition, all very much alike and all females. The reference to *Euxoa* is in the sense in which that genus is used by Hampson. The frontal structure in this species is as in *Chorizagrotis*, but the body is not depressed. As there are no males, the antennal structure of that sex cannot be used as a guide, and the generic reference must be provisional. The species is altogether unlike any other form known to me from our fauna, and the peculiar course of the median lines should serve as a means of recognition.

***Ufeus electra* nov. sp.**

Ground-color dull chocolate-brown. Head and thorax with dark hair intermingled. Primaries so densely set with long black hair as to give the whole a blackish appearance. A black basal streak in the sub-median interspace extends almost to the middle of the wing. Another streak extends, with little interruption, through the cell and beyond it to the outer margin. T.a. line lost. T.p. line outwardly bent from costa, obscure, blackish, with small outward extensions on the veins. A series of black inter-spatial marks at base of fringes, becoming longer toward the apex. Secondaries dull yellowish, smoky, with an overlay of black hair; a distinct discal lunule and a well-marked extra-median shade line. Beneath, reddish gray, powdery, darker at the margins on primaries; secondaries with an obvious extra-median line and a distinct discal lunule.

Expands 1.55-1.65 in. = 39-41 mm.

*Habitat:* Oregon.

Two female examples, without date or name of sender. Evidently they are electric-light captures, and more or less defective; but their difference from the allied forms is obvious. The species is nearest to *plicatus* in type of maculation, and it is quite probable that in some specimens, traces of the discal spots will occur.

***Ufeus hulstii* nov. sp.**

Ground-color rather light red-brown. Head and thorax without markings. Primaries with fine black hair, the veins a little darker. T.a. line distinct, single, blackish, outwardly oblique, with three distinct outward angulations, - one on the sub-costa, one below the median and the other on vein 1. T.p. line single, black, followed by a slightly paler shade, evenly and moderately outcurved, with short outward spurs on the veins. A series of small black terminal dots. Fringes cut with yellowish. Secondaries silky gray with a reddish tinge. Beneath, very pale pinkish gray, *immaenulate*.

Expands 1.38-1.42 in. = 34-35 mm.

*Habitat:* Black Hills, Wyo.; Stockton, Utah, July 22

Two male examples. One of them is from the Hulst Collection, with

out abdomen, but else in good condition; the other is from Mr. Thomas Spalding and in good shape. This differs from the other described species, all of which are represented in my collection by the distinct and rather even red-brown, and the well-marked median lines. It is perhaps nearest to *satyricus* in type of maculation, but differs obviously in color, in the absence of all trace of ordinary spots, and in the immaculate under side.

*Mamestra leomegra* nov. sp.

Ground-color blue-gray shaded with smoky, powdered and ornamented with black. Head with a black line across front. Collar with a black line across middle, dividing the smoky lower from the ashen upper portion. Thorax mottled with blue-gray, smoky, white and black, forming no distinct markings. Primaries with all the maculation obvious, but so obscured and mottled that scarcely any of it is clear-cut and distinct; the narrow yellowish s.t. line with the prominent black preceding shades forming the most conspicuous feature of the wing. Basal line geminate, black, broken, the whitish included space broad and most obvious; a pair of curved black marks just below the median vein. T.a. line geminate, blackish, oblique, outcurved in the interspaces; included space broad, pale. T.p. line geminate, lunulate, a little irregular, broadly exserted over the cell and a little incurved below; included space narrower and not so pale as in t.a. line. There is an obscure, diffuse, smoky median shade, which darkens the outer part of the median space. S.t. line forms a small W on veins 3 and 4, where the preceding black shading is less conspicuous than it is above and below. A series of conspicuous black terminal lunules. Claviform small, concolorous, black-margined. Orbicular, of good size, broadly and irregularly ovate, oblique, black-margined, a little lighter than the ground, with a smoky center. Reniform large, lunate, black-edged, outwardly with a margin of white scales within the black, center smoky, inclosing a curved gray streak. Secondaries blackish, the outer margin narrowly gray. Beneath, gray, powdery; both wings with a conspicuous black discal mark and a more or less evident extra-median line. The primaries have a narrow whitish outer border, and in the female this is obvious on the secondaries as well.

Expands 1.90-2.00 in. = 47-50 mm.

*Habitat:* Grand Lake, N.F., Aug. 28.

Three males and one female, of which only one female is in really good condition. The specimens were caught at light by Mr. Owen Bryant, packed dry in cotton, and sent me through Mr. C. W. Johnson of the Boston Society of Natural History. The species is obviously related to *imbriifera*, but is larger and darker throughout, and distinctly more blue-gray in color. The W of the s.t. line, while small, is distinct. The antennæ of the male have the joints only a little marked, with little tufts of fine bristles and longer single ciliæ. The tuftings appear to be as in *imbriifera*, but less developed.

**Mamestra pallicauda** nov. sp.

Head and thorax dark brown; abdomen gray, the dorsal tuft at base brown. Primaries red-brown tending to gray, with black powderings and transverse lines. Basal line geminate, black, distinct; included space with pale scales; outcurved in the interspaces, reaching to the sub-median vein. T.a. line geminate, black, inner portion tending to become lost; outcurved in the interspaces, a little outcurved as a whole; below vein 1 the included space is white. T.p. line single, black, irregular, incurved in the interspaces, scarcely clears the reniform; a white lunule follows that part below the sub-median vein. The median space is very narrow; and the median shade, which is blackish, runs close to the inner border of the reniform across cell, and then close to the t.p. line below it. S.t. line irregular, marked partly by blackish shadings and spots, and partly by the darker terminal space. A black terminal line broken by whitish points on the veins, the veins themselves more or less black-marked. Three white points in costa between t.p. and s.t. lines. Orbicular obscure, traceable as an indefinite paler brown blotch. Reniform small, oblique, incompletely outlined, a series of three white dots along the outer edge and a fourth at the lower inner angle. Secondaries smoky, the veins darker, fringes tipped with white. Beneath, smoky gray, powdery, with a smoky extra-median shade and a small dark discal lunule. Tip of abdomen of female obtuse, with a mass of white fluffy hair arranged so as to form a compact mass.

Expands 1.24 in. = 31 mm.

*Habitat:* Palmerly, Cochise County, Arizona, July; Huachuca Mountains, Arizona, July 12.

Two female examples, one of them, belonging to the Brooklyn Institute, in perfect condition; the other, from my own collection, somewhat rubbed. This is altogether unlike any other species known to me, and eventually must be removed from *Mamestra*, to which I have referred it tentatively in the absence of a male. It belongs to *Hadena* as limited by Hampson, and has only a basal tuft on the dorsum of the abdomen; but it agrees with none of the species that he places in that genus. The cylindrical, squarely truncate abdomen, with its dense tuft of white fluffy hair, is characteristic, and may indicate some unusual character in the male as well.

**Miodera** nov. gen.

Eyes moderate in size, round, hairy. Front protuberant, roughened, obtuse without processes or plates. Tongue fully developed. Palpi small, oblique, not reaching to the middle of the front. Antennae of male lengthily bipectinated, the branches decreasing in length toward the tip, the last few joints merely serrate. Thorax quadrate, heavily clothed with scaly vestiture, forming an obscure anterior and somewhat more obvious posterior tuft; patagia well marked. Vestiture of under side dense, somewhat hairy, loose. Legs short and not especially stout, though the heavy vestiture makes them appear so; anterior tibia and tarsi without

special armature; the terminal claws, however, unusually long. Abdomen with a loose tuft at base, otherwise dorsum untufted. Primaries short, broad, trigonate, the apices well marked.

Differs from *Mamestra* chiefly in the very stout body, lengthily pectinated antennæ and protuberant roughened front. I cannot identify it with any of the genera of Hampson's monographic work.

***Miodera stigmata* nov. sp.**

Head, thorax and primaries deep dark brown. Head with a scant admixture of gray and black scales. Collar with a blackish transverse line. Thoracic disk with an admixture of gray scales, varying in the examples; patagia with a black sub-margin. Primaries with smoky and blackish shadings variably mixed with gray, and with a sprinkling of yellow scales that gives a richness of color to the wings. Basal line black, geminate, interrupted on the sub-costa. A short black basal dash that just reaches the t.a. line. T.a. line geminate, black, the included space sometimes lightened by yellow scales, in course outwardly oblique, with three moderate outcurves. T.p. line geminate, black, abruptly bent out below costa, then almost parallel with outer margin; the inner line lunulate and usually, at least, traceable across the wing, the outer more even and usually lost below the cell. S.t. line more or less yellow, variably defined by darker preceding or following shadings, with a well-defined W on veins 3 and 4. A lunate black terminal line followed by yellow venular points at the base of the long interlined fringes. Claviform a small but conspicuous black loop. Orbicular round or nearly so, moderate in size, concolorous, ringed with yellow scales. Reniform large, upright, a little constricted at middle and expanded below, inferiorly black-filled, the upper half paler, and edged with yellow scales. Between the spots the cell is darker or even blackish. Secondaries smoky yellowish, with a discal lunule, a somewhat waved extra-median line and a distinct blackish terminal line. Beneath, gray, powdery, with a narrow, distinct extra-median black shade line crossing both wings. All wings with a discal spot and a lunate marginal line. Abdomen like secondaries in color.

Expands 1.04-1.14 in. = 26-28 mm.

*Habitat:* Witch Creek, Cal., Jan. 12-Feb. 3.

Ten males, in good or fair condition. This is a well-marked and rather pretty species somewhat resembling *Mamestra ectypa*, and it does not appear to vary to any considerable extent.

***Tæniocampa macona* nov. sp.**

Ground-color of head, thorax and primaries, creamy to luteous gray. Head and thorax without maculation. Primaries more or less powdered with black atoms, and veins tend to become pale. Basal line geminate, broken, usually marked by black spots on costa and median vein. T.a. line outwardly oblique, even, of the ground-color or paler, marked on both sides by black scales so as to define the entire line in the best case, but so irregularly in others that it may become entirely lost

beyond the costal area. T.p. line concolorous or a little paler, almost parallel with outer margin, preceded by black scales or lunules, so variable that the line may be either completely defined, or almost lost. A black median shade extends obliquely from costa across the reniform, forms an angle at its lower margin, and extends obliquely inward to the middle of the inner margin. This shade is usually distinct, and when it is obscure the median lines are best defined. S.t. line concolorous or a little paler, a little irregular, defined by a preceding black powdering, which may extend across the wing or may be confined to the costal region. A series of black terminal dots in the interspaces. Orbicular concolorous, usually lost, sometimes defined by a slightly paler ring, then large, ovate, joining the reniform inferiorly. Reniform large, oblique, broadly oval, pale-ringed, always darker and usually contrasting, filled with black powdering. Secondaries whitish with a reddish tinge, a small dark discal spot, a punctiform, obscure extra-median line, and a series of dark terminal lunules. Beneath, with a reddish tinge, coarsely black powdered; primaries with blackish orbicular and reniform and a broken exterior line; secondaries with dark discal spot and punctiform extra-median line.

Expands 1.36-1.50 in. = 34-37 mm.

*Habitat:* Witch Creek, Cal., Jan. 30, Feb. 1-14.

Two males and two females, varying greatly, as indicated in the description. At first sight the species suggests *flaviannula*; but the male antennæ are not pectinated. They are bristle-tufted, and therefore the species belongs with *alia*. Sir George Hampson refers these species to *Monima* Hbn.

***Tæniocampa bostura* nov. sp.**

Head, thorax and primaries dull luteous brown with smoky powderings, which give the insect a sordid appearance. Primaries with all the markings present, but not relieved or distinct. Basal line geminate, blackish, complete, included space of the ground-color. T.a. line geminate, outwardly oblique, with small outcurves in the interspaces, outer portion well marked, included space of the ground-color. T.p. line with a moderate outcurve over cell and an almost even incurve below it, the inner portion obscurely lunulate, the outer punctiform. A very obscure median shade through the outer portion of the median space. S.t. line yellowish, narrow, only a little irregular, preceded by a continuous blackish shade, which darkens the outer half of the s.t. space. A continuous, slightly waved yellow line at the base of the fringes. Orbicular not traceable in the specimen. Reniform large, oblique, a little constricted, blackish-filled, obscurely outlined by yellowish scales. Secondaries dull whitish at base darkening to a smoky outer margin, the fringes more yellowish. Beneath, reddish gray, powdery. All wings with a distinct extra-median line and a small discal spot.

Expands 1.30 in. = 32 mm.

*Habitat:* Kaslo, B.C.

One male, in good condition; from Dr. James Fletcher. The species is allied to *rufula* and *indra*, but is more sordid and powdery in appearance than either, while the course of the lines is quite different. The thoracic

vestiture is thicker and the patagia are much better defined than in the allied forms. It is Dr. Fletcher's No. 168.

***Tæniocampa fringata* nov. sp.**

Rusty red-brown darkening to brown-gray. Lower part of front and palpi crimson. Antennæ bright red with a white dot at base. Collar and thorax tending to become hoary through gray-tipped hair. Primaries tending to an overlay or powdering of bluish-gray scales, and with a vague irrorate appearance, the maculation never conspicuous and sometimes scarcely traceable. Basal line geminate, gray-filled, rarely evident. T. a. line geminate, a little darker than the ground, sometimes with gray filling, a very little oblique, and slightly outcurved in the interspaces. S.t. line brown, geminate, evenly outcurved over the cell and a little incurved below; included space concolorous; followed on each vein by a short blackish line which is interrupted by a pale dot, so that there is the appearance of a double dotted line, which is easily mistaken for the t.p. line. S.t. line pale, obscure, a little irregular, defined by a slightly darker preceding narrow shade line. A vague median shade line is traceable below the reniform, parallel to the t.p. line. Claviform barely traceable in one example. Orbicular dusky, oblique, elliptical, with narrow yellowish outline, obvious in most specimens. Reniform large, upright, a little constricted, dusky, narrowly ringed with yellow, obvious in all specimens. Secondaries smoky fuscous with carmine fringes. Beneath, gray with a crimson tinge, powdery. Both wings with a discal spot and outer line, which are best marked on secondaries, but always at least traceable on primaries. The tarsi tend to become narrowly white-ringed.

Expands 1.24-1.34 in. = 31-33 mm.

*Habitat:* Monterey County, California, March; Santa Cruz Mountains, California.

Five males and two females, all save one in good condition. This is an ally of *præses* and *saleppa*, and yet more closely of *transparens*. It is referable to the *Perigrapha* of Hampson, and has the ridged crest of the species that stand as *Stretchia* in our Catalogue. Except in the ground-color, there is very little variation among the specimens at hand.

***Stretchia erythrolita* Grt.**

Until recently this species has been represented in my collection by a single male example labeled by Mr. Grote, and agreeing well with his description and type. In 1906 I received two examples from Pasadena, taken in March and April, which indicated quite a range of variation, but which nevertheless were very similar to the typical form. Recently I received from San Diego County a series of upwards of thirty examples, taken in early February, no two of which were alike, the extremes being so far apart that probably I should have considered them distinct, had I received

single specimens only of each. In color they vary all the way from uniform mouse-gray to uniform smoky black, with scarcely a trace of maculation. The s.t. line is most frequently present and the tendency is to a pale terminal space, the extreme of this type being a glossy black primary with a contrasting gray terminal space. Then the black breaks up at base and the wing becomes mottled in every possible intermediate form. In the pale examples, the reniform tends to become relieved, especially in the males, and in the extremes this is ringed with yellow, and filled with dark brown. The orbicular is rarely present, but may be as conspicuous as the reniform, though in only one case is it as well defined.

I have no information as to the habits of the insect; but it is quite obvious that it may at times be much more common than the number of specimens in collections indicates.

***Himella rectiflava* nov. sp.**

Of the usual powdery luteous ground-color, the markings obscure, except for the conspicuous yellow s.t. line and the scarcely less defined dusky median shade line. Head and thorax with scattered black powderings only. Primaries, basal line traceable by the pale included shade and the slightly more dense powderings at its borders. T.a. line geminate, smoky, included space not paler, with a very regular and even outcurve from costa to inner margin. T.p. line geminate, tending to become punctiform, the veins blackish beyond the line and so interrupted as to give the appearance of geminate dark points; outwardly bent over cell, with the angle on vein 7, below which the line runs evenly oblique to the inner margin. Median shade distinct, blackish, a little diffuse, outwardly bent from costa to bottom of reniform, then evenly oblique to the inner margin. S.t. line conspicuous, yellowish, preceded by a distinct, even, continuous, narrow brown shade, the following terminal space darker than the rest of wing. A yellowish crenulated terminal line, from the points of which pale lines extend across the fringes. No obvious claviform. Orbicular round, with narrow smoky ring, of ground-color, but not powdery. Reniform upright, oblong with rounded corners, concolorous, defined by a narrow dusky line within which there is a paler ring. Secondaries fuscous, paler at base, fringes more luteous. Beneath, reddish gray, powdery. Both wings with an extra-median line; secondaries also with a discal spot.

Expands 1.10 in. = 27 mm.

*Habitat:* Huachuca Mountains, Arizona, July 30.

One male specimen, in good condition as to wings, somewhat defective as to antennæ, etc. The specimen was received in paper in a purchased lot, and the collector is unknown. It belongs to *Eriopyga* of the Hampson Catalogue, in the series in which the males have ciliated antennæ and no other conspicuous secondary sexual characters.

**Orthodes keela** nov. sp.

Head, thorax and primaries red-brown; head with a paler, more yellowish shading. Secondaries and abdomen smoky. Primaries with all the normal markings traceable, but none of them distinct or well written. Basal line geminate, smoky, obscure, included space with a few yellowish scales. T.a. line geminate, smoky, obliquely outcurved, with small outcurves in the interspaces, some pale scales in the included space over the costal region, the line tending to become obscure below the middle. T.p. line geminate, blackish, only a little bent over cell, then almost evenly parallel with outer margin; inner portion more or less lunulate; outer, punctiform below costal region. An outwardly curved smoky median shade. S.t. line marked by scattered yellow scales and by a continuous, narrow, blackish preceding shade, only a little irregular in course. A broken, yellowish terminal line. Orbicular small, obscurely outlined by yellowish scattered scales. Reniform small, narrow, oblique, a little constricted, outlined and partly filled by yellow scales, with a blackish superior dot and a dark inferior filling. Secondaries uniformly smoky with a bronze luster, the fringes more yellowish. Beneath, primaries with disk smoky, lustrous, the margins yellowish with reddish powderings; secondaries yellowish with reddish powderings, with a smoky broken outer band and a smoky discal lunule.

Expands 1.07-1.15 in. = 27-29 mm.

*Habitat:* Palmerly, Cochise County, Arizona, August.

One male and one female, in good condition; from the collection of the Brooklyn Institute of Arts and Sciences. The male is the smaller of the two, more deeply colored and less distinctly marked. The species is an ally of *vecors*, and ranges next to it in Hampson's Catalogue, under *Eriopyga*. It is narrower winged, however, much more uniformly tinted, with more even median lines and a different s.t. line. In wing-form it is nearer to *imora* Streck., which is darker lustrous, and has the maculation reduced to a small gray reniform.

**Faronta** nov. gen.

Eyes hairy, large, round, globose, not overhung by long cilia. Tongue fully developed. Front roughened, slightly protuberant, without processes or excisions. Palpi straight; terminal joint very short, poorly developed, not projecting much beyond front; the second joint with short vestiture. Antennæ in male, ciliated; in female, simple. Thorax convex, rounded; vestiture hairy, forming no tufts, rather smoothly laid. Legs moderate in length, strong, without spines or other unusual armature on tibiae or tarsi; tibiae in the male more thickly clothed with hair, but forming no obvious tufts. Abdomen smoothly clothed, without tufts or fringes of any kind, stout, extending well beyond the hind angle of secondaries. Primaries elongate, narrow, sub-lanceolate, the apex not acutely drawn out, margin gently rounded, venation normal. Secondaries proportionate.

Differs from *Leucania* in the stout convex thorax and long stout abdomen, as well as the narrow elongate wings. From *Neleucania* it differs in the



more robust build throughout, in the more closely appressed vestiture and the rounded margin and apex of primaries. From *Meliana* it differs in the stouter form, less pointed wings, and comparatively simple antennæ of the male. The roughened front may not be peculiar, in the absence of plates or processes.

***Faronta aleada* nov. sp.**

Head, thorax and abdomen uniform creamy white or grayish tending to yellowish, the head usually most intense in color. Primaries with the disk a faint leaden gray, costa and internal margin creamy white, median vein pale, and dividing into pale rays on veins 3 and 4. In the apical region the veins are a little dark marked. No lines or dark spots on the wing. Secondaries white in both sexes. Beneath, white; primaries with a tinge of yellow, which is better marked at the margins.

Expands 1.30-1.42 in. = 32-35 mm.

*Habitat:* Brazos, Tex.

One male and three females, all in good condition; from the collection of the Brooklyn Institute of Arts and Sciences. The species is entirely unlike any other of our leucaniids, and agrees with nothing described by Hampson from the adjoining faunal region. The tendency is for the leaden gray disk to become rubbed so as to give a uniform creamy appearance.

***Anarta* Ochs.**

The species of this genus are not well represented usually in American collections, and my own material has been for two years or more eked out by a collection loaned me by Mr. Philip Laurent of Philadelphia. This was mostly purchased from Staudinger, and contained a fair series of the circum-polar species, including those listed as common to the American and European faunas.

Sir George Hampson's revision of the species drops out several of our listed names, and adds others, so that I found it desirable to rearrange my material, and did so with very interesting results.

Three series are recognized: --

- I. Antennæ of male strongly serrate and fasciculate, fore wings very narrow.
- II. Antennæ of male minutely serrate and fasciculate
- III. Antennæ of male ciliated.

The first of these series contains only a single species, and is not represented in our fauna.

The series in which the male antennæ are minutely serrate and fasciculate, or bristle-tufted, is divided as follows: --

Hind wings white.

Primaries with s.t. line angled inward in discal fold . . . *staudingeri*

Primaries with s.t. line not so angled.

Primaries with prominent series of dentate black marks

before s.t. line . . . . . *richardsoni*

Primaries without such marks before s. t. line . . . *quadrilunata*

Hind wings yellowish . . . . . *leucocycla*

Hind wings uniformly suffused with fuscous.

Primaries with the stigmata not filled with blue-gray . . . *etacta*

Primaries with the stigmata filled with blue-gray . . . *membrosa*

*Staudingeri* has not appeared heretofore in our Catalogue; but I found, on comparing the figure and descriptions carefully, that I had two males, one from Labrador and one from "British Columbia," which were apparently the same, and which agreed with the characters given for the species.

Of *quadrilunata* I have a pair from Colorado, which are properly determined. An example from Laggan may indicate a new form.

Of *richardsonii* I supposed I had a long series; but I found, to my surprise, that only one nice pair from Labrador answered all the requirements of Hampson's definition. My Greenland examples received through Staudinger did not answer at all. The White Mountain examples, which stand under *richardsoni* in our collections, had the s.t. line of *staudingeri*; and the long suite of specimens from Newfoundland represented yet another form. They are distinctly yellow-winged, but will not do for *leucocycla* at all. The species marked *schænherrri* in my collection, and to which name *leucocycla* has been cited heretofore as a synonym, was neither one nor the other.

Using the same characters used by Hampson, in a somewhat different form, I differentiate the species now before me as follows: —

S.t. line of primaries angulate and dentate.

Secondaries white or nearly so.

Ordinary spots of primaries white-marked, median

line white-shaded . . . . . *staudingeri*

No white on primaries, all the pale markings bluish

gray . . . . . *hampa*

Secondaries decidedly yellow.

Ground-color blue-gray, terminal space contrastingly

blue-gray . . . . . *flanda*

S.t. line of primaries even, or scarcely irregular.

Secondaries white, primaries contrastingly black and white marked.

T.a. line oblique, outcurved in the interspaces . . .	<i>richardsoni</i>
T.a. line angulated on the median vein, then rigidly oblique to inner margin . . . . .	<i>lanuginosa</i>
Secondaries pale yellowish, primaries smoky brown, not contrasting.	
S.t. line distinct, with preceding dusky shades or spots	<i>squara</i>
S.t. line partly obliterate, preceding shades on costa only . . . . .	<i>quadribunata</i>

*Etacta* and *membrosa* are left out of consideration here.

*Hampa* and *flanda* are allies of *staudingeri*, but are larger and darker. *Flanda* has decidedly yellow secondaries, and that is its chief superficial difference from *hampa*. I might have deemed it racial or varietal, were it not accompanied by a decided difference in the eyes; those of *flanda* being distinctly larger, and decidedly more rounded.

*Squara* is based on Greenland examples of *schænherrri*, from which it differs by the distinctly yellowish secondaries and the totally different type of transverse lines. I am, of course, assuming that all the names cited by Hampson to *richardsoni* are really identical with the form to which he has applied that name.

The third series, in which the male antennæ are ciliated only, is separated by Hampson as follows:—

Hind wings bright yellow.	
Fore wings with the ground-color deep red . . . . .	<i>myrtilli</i>
Fore wings with the ground-color blackish.	
Fore wings with the reniform white-filled . . . . .	<i>cordigera</i>
Fore wings with reniform not white-filled . . . . .	<i>mimuli</i>
Hind wings yellowish, tinged with brown . . . . .	<i>impingens</i>
Hind wings uniform brown . . . . .	<i>phæa</i>
Hind wings white, more or less suffused above with fuscous.	
Fore wings broad, triangular.	
Reniform without whitish annuli . . . . .	<i>melanopa</i>
Reniform with whitish annuli . . . . .	<i>mimula</i>
Fore wings narrow, elongate.	
Fore wings pale olive-gray . . . . .	<i>mausi</i>
Fore wings fuscous . . . . .	<i>zemblica</i>

*Myrtilli* Linn. is in our collections as *acadiensis* Beth., and is listed from Canada northward. It occurs also in the mountains of Colorado, and I have never been sure that there was only a single species represented. I have compared the Colorado examples recently with German specimens,

and am by no means certain that the two are identical. The resemblance is very close, however, and my material is not sufficient to induce me to dispute the union.

*Cordigera* Thumb. is a very sharply-marked species, and I have in my collection examples from Colorado, Labrador and Germany, which are practically alike.

*Mimuli* Behr. is a Californian species unknown to Hampson, and not represented in my collection. The type has been destroyed in the San Francisco fire.

*Impingens* Wlk. — with *curta* Morr., *nivaria* Grt. and *perpura* Morr. as synonyms — is a purely American species, which differs quite markedly from the preceding species in general habitus, and comes nearer to *Scotogramma* in wing-form. I have it from Colorado only; but it is also recorded from British Columbia.

*Phæa* Hampson is a new species to our fauna, and quite a close ally, in appearance, to the preceding. It comes from Victoria Land, Cambridge Bay, and is not represented in my collection.

*Melanopa* Thunb., re-described by Packard as *nigrolunata*, is another sharply-defined form which is very widely distributed. It occurs in the United States from Mount Washington northward, and extends along the Rocky Mountain chains into New Mexico. My examples are from Colorado and Labrador, without very much difference between them.

*Mimula* Grt. is from New Mexico, and the type is in the Snow Collection. Professor Snow was good enough to send it to me for examination nearly fifteen years ago, and since that time I have not seen another example, so far as I know.

*Laerta* Smith was not known to Hampson when he wrote, and differs from *melanopa* in the more sordid fuscous color throughout and by the much reduced whitish area of secondaries. From *mimula* it differs in the ordinary spots, the reniform not being ringed with pale scales. This really resembles *A. kelloggi* Hy. Edw. very much; but Hampson places that species in *Sympistes* with naked, reniform eyes, while in *laerta* they are distinctly hairy.

*Mausi* Hampson is from E. Turkestan, and the only species in the series that is not American or circum-polar.

*Zemblica* Hampson is from Nova Zembla, and is a narrow-winged ally of *mausi*. While not really American, it is not unlikely that the species will be found in Alaska, and so should be looked for.

The other species referred to this genus I have commented upon in the N.Y. Ent. Soc. Jour., Vol. XV, p. 151, and have there stated the disposition made of them.

I still have in my collection a few examples that do not fit into any of the

described species; but they are not sufficiently well marked, nor in sufficient number, to warrant me in describing them at present.

**Anarta hampa** nov. sp.

Ground-color dull smoky fuscous with black and gray maculation. Patagia with sub-marginal black line and gray disk, dorsum posteriorly mottled with gray. Basal line black, outwardly shaded with gray, with two moderate angulations. T.a. line black preceded by a gray shading, a little oblique outwardly, irregularly outcurved. T.p. line denticulate, black followed by a narrow gray shading, moderately outcurved and only a little incurved in its course. S.t. line gray or yellowish, marked by the evenly dark s.t. space, drawn in on veins 2 and 5, outcurved between and on each side. A series of black terminal lunules. The fringes dusky, cut with yellowish. A vague median shade in the paler examples. Claviform small, but distinctly outlined. Orbicular small, round or oval, more or less gray-marked. Reniform small, narrow, upright, with narrow pale ring, a little constricted centrally. Secondaries very pale straw-color, almost white, smoky at base and along inner margin, with a distinct discal mark, a narrow, almost crenulated outer line, and a broad blackish outer margin; fringes white. Beneath, whitish, more or less shaded with blackish, with a black discal spot, an extra-median blackish line, and a blackish outer margin on all wings. Primaries with fringes checkered, black and white; secondaries with fringes white.

Expands 1.10-1.20 in. = 28-30 mm.

*Habitat:* White Mountains, New Hampshire.

Two males and one female, all in good condition. One of the males came originally from Mrs. Slosson; the others have no indication of their source, and none have a date label. Mossy yellow scales are in the median space in cell and sub-median interspace, and along the line of the s.t. line, beyond it.

**Anarta flanda** nov. sp.

Head and thorax gray to blackish, mixed with black scales; collar gray-tipped; patagia with black sub-marginal line, disk posteriorly black-spotted. Abdomen smoky, with a yellowish tinge in the male. Primaries gray marked with black, and sometimes so much black powdered that only the lines and terminal space are of the gray base. Basal line geminate, black, included space gray, with two distinct outward angulations in its short course. T.a. line geminate, black, included space gray, outwardly oblique and very irregular. T.p. line lunulate, black, denticulate on the veins, the accompanying gray shade narrow, moderately outcurved over the cell, and then almost parallel with outer margin. S.t. line irregularly and variably dentate, sharply defined by the contrast between the black or blackish s.t. space and the gray terminal area. A series of small black terminal lunules between which the long dark fringes are cut with yellowish. In lighter examples a distinct median shade line extends from costa outwardly between the ordinary spots, and then, from an obtuse angle inwardly oblique to the inner margin. Orbicular round or oval,

small or moderate in size, usually gray. Reniform, moderate, upright, centrally constricted, usually obscure, rarely paler in part. In the median space there is usually a more or less obvious powdering of mossy yellow scales at the outer portion of the cell and in the sub-median interspace. Secondaries dull yellow, smoky at base and along inner margin, in the female with a dark discal lunule, a narrow blackish extra-median line and a broad blackish outer border; fringes yellow; beneath, yellow. Primaries paler, outer border blackish with a black discal spot. Secondaries with a black discal spot, an incomplete extra-median line and a narrow blackish border.

Expands 1.00-1.16 in. = 25-29 mm.

*Habitat:* Newfoundland (Mr. Owen Bryant).

Over fifty examples, taken at light, and sent unpinned in layers of cotton. There are few antennæ, and legs are at a premium; but many of the specimens are otherwise in good condition, and the series is excellent to determine the constancy of the type. They range from almost ash-gray with black transverse lines to almost black with gray lines, the terminal space being always contrasting, and relieving the irregular s.t. line. The secondaries tend to become suffused, and examples of both sexes are almost uniformly washed with black. The mossy yellowish shading is a decidedly variable quantity.

*Anarta squara* nov. sp.

Head, thorax and abdomen blackish, the vestiture of head and thorax more yellowish, somewhat intermixed with white. Primaries dull smoky brown, more or less gray, and black-powdered. Basal line distinct, single, black, rather diffuse. T.a. line black, single, diffuse, almost upright to vein 1, and then outwardly bent to inner margin. The space between basal and t.a. line may be gray-powdered. T.p. line more or less lunulate, evenly outcurved over cell and scarcely drawn in below it, accompanied outwardly by paler lunules and a more or less traceable defining-line. S.t. line even, pale, preceded by blackish or dark spots or shadings. A series of black or dark terminal lunules. The dark fringes narrowly pale cut. Orbicular large, irregular, oblique, incomplete, concolorous, or paler. Reniform large, upright, centrally constricted, incomplete, more or less marked with pale. Secondaries dull yellowish, smoky along inner margin, with a broad blackish outer marginal band and a blackish discal lunule. Beneath, all wings whitish to a broad black marginal band, and all with a distinct black discal spot.

Expands 1.30-1.38 in. = 32-34 mm.

*Habitat:* Greenland.

Two males and one female. The female is more uniform in color, and has no white shadings. One male is much like this, but the median space is darker, the lines are better marked, and the paler shadings are more obvious. The other male has the basal and terminal spaces and the ordinary spots mottled with gray in which mossy yellow scales are intermixed. A somewhat defective female from Colorado may be referable here.

**Luperina innota** nov. sp.

Ground-color a reddish rusty luteous. Head and thorax concolorous, somewhat deeper in reddish than primaries. Primaries with median space more reddish and darker than basal and extra-median areas. Basal line barely indicated on costa. T.a. line single, brown, barely relieved, outcurved in the sub-median interspace. T.p. line single, brown, barely relieved, with little outward points on the veins, evenly outcurved over the cell and almost evenly oblique below it. S.t. line marked near costa by a brown shade in the s.t. space, thence lost, or barely marked by a slightly darker preceding shade. Claviform long, narrow, extending nearly to t.p. line, but so slightly relieved in outline as to be readily overlooked. Orbicular round, moderate in size, a little paler, else not defined. Reniform moderate, broadly lunate, a little paler than its surroundings. Secondaries pale, transparent yellowish with a smoky tinge. Beneath, yellowish; secondaries paler, primaries tinged with smoky in the male.

Expands 1.36-1.45 in. = 34-36 mm.

*Habitat:* Yellowstone Park, Wyoming, July 8; Arangie, Idaho.

One male and one female in good condition, and two poor males, which are probably the same; from Colorado localities. The type of maculation is not unlike that of *passer*; but the faded, rusty, washed-out appearance is more like the orthosiids of the *citima* type. A male example is in the British Museum, and I owe acknowledgments to Sir George F. Hampson for comparing it with the Museum material.

**Hadena (Luperina) binnata** nov. sp.

Head and thorax dark purplish brown, vertex of head and tip of collar with yellowish hair admixed. Primaries light brown; the upper half to t.p. line, a quadrate patch in s.t. space on costa, and terminal space (save apex), dark brown with a blackish shade or powdering. Basal line obscurely marked as a pale spot on costa. T.a. line vaguely traceable by a paler shade across the dark portion of wing, altogether lost below that. T.p. line obvious throughout its course, but hardly well defined: on the costa it is obviously geminate, and makes a rather abrupt even bend over the cell, well defined by the difference between the dark median and pale s.t. space; below vein 2 the difference between the spaces is slight, and the line is defined by a narrow line of darker brown scales. S.t. line marked chiefly by the contrast between s.t. and terminal spaces, the darker shades extending inward opposite the cell and in the sub-median interspaces. A series of small black terminal lunules. Fringes cut with yellowish. Claviform absent, or barely marked by a few black scales. Orbicular obscure, vaguely black-edged, irregular, of moderate size. Reniform moderate in size, broadly lunate, discolored, lighter than the rest of the wing, not completely outlined nor well defined, inferiorly, and at the branching at the end of the median, marked with black scales. Secondaries even dull yellowish or smoky. Beneath, yellowish gray, powdery; disk of primaries darker; secondaries, costal area and a discal spot darker.

Expands 1.12-1.32 in. = 28-33 mm

*Habitat:* Newfoundland.

Three male examples, one of them almost perfect, a second fair, and a third more or less oily, yet with maculation in good condition. This is a close ally of *L. passer* Gn., and I thought, at first, a small, local race; but in the long series of *passer* in my collection, covering from the Atlantic to the Pacific, and the Rocky Mountain region into the mountains of Canada and Manitoba, there are certain features that occur always, in spite of differences in size, and variations in color and markings. In the almost total absence of claviform, in the form, marking and outline of reniform, and in the course of the s.t. line, the new species differs most markedly from *passer*, as well as in the smaller size. A defective example from St. John, N.B., will probably prove referable here.

It might be added that I have an example of true *passer* from Grand Lake, N.F., as small as *birnata*, but quite characteristic in other respects.

***Xylophasia illustra* nov. sp.**

Ground-color sooty black, dull. Head and thorax concolorous. Primaries with all except the s.t. line lost. The latter is marked by white scales, but is broken and fragmentary: so far as it shows, it is irregular, indicating a small W-mark, and partly preceded by velvety black scales forming an irregular, vague preceding shade. A yellowish line at the base of the fringes, emphasized by larger dots at the ends of the veins. The reniform is vaguely indicated by paler scales. Abdomen dusty gray, the dorsal tuftings well marked. Secondaries yellowish gray with a darker line at the base of the paler fringes. Beneath, smoky gray; primaries darker with terminal space paler; secondaries paler, more powdery, with a moderate discal spot.

Expands 1.52 in. = 28 mm.

*Habitat:* High River, Alberta.

A single good male, taken by Mr. Thomas Baird and sent me by Dr. Fletcher. The species resembles *sputatrix* and *plutonia* in the dark color; but this color is dull, not glossy, and the secondaries have no trace of yellow or brown.

***Xylophasia miniota* nov. sp.**

Ground-color dull, smoky fuscous without strong contrasts of any kind. Front of head and collar, inferiorly, more yellowish; front with a black transverse line; collar with a black line dividing the lower pale from the upper darker portion; disk of thorax mottled with black scales. Primaries dull with black powdering, all the maculation present, but not contrasting. A short black streak at base, reaching to the basal line, which is geminate, blackish, included space a little paler. T.a. line geminate, blackish, included space concolorous, outwardly oblique, with a little irregular outcurve. T.p. line geminate, the inner portion black, more or less lunulate and irregular, the outer obscure, brown, even, partly lost: as a whole, some-



what irregularly outcurved over cell and decidedly incurved below it. S.t. line narrow whitish, irregular, with a distinct W, preceded by sagittate black marks and shades which tend to become lost, and sometimes outwardly emphasized by black scales. A series of black terminal lunules, beyond which the fringes are cut with yellow. Claviform short, broad, outlined by blackish scales, concolorous. Orbicular of good size, irregularly oval, oblique, incompletely outlined, not so powdery, and sometimes a little paler. Reniform large, broad kidney-shaped, outlined in black, outwardly relieved by a pale blotch which has somewhat the appearance of a small reniform stuck in the upper outer corner of a very large one. Secondaries pale dirty yellowish, outwardly smoky, with a more or less obvious outer line and discal spot, darker in the female. Beneath, smoky, powdery; secondaries paler; all wings with a more or less well-marked extra-median line and a small dusky discal spot.

Expands 1.36-1.62 in. = 34-41 mm.

*Habitat:* Manitoba; Miniota, May 5, 11, 22; Cartwright, May 24.

Three males and six females, mostly in fair condition, are under examination, two of them belonging to Mr. Heath, the others received through H. H. Brehme. The species is in some respects intermediate between *versuta* and *runata*, and is characterized principally by having no very strong characters. There is quite a variation in the distinctness of the sagittate marks preceding the s.t. line, one example from Cartwright having the entire series fully defined, while in other examples they are almost entirely absent.

#### ***Hadena ferida* nov. sp.**

Ground-color dull rusty brown with black powderings. Head with a dusky frontal line. Collar with two narrow blackish lines. Thoracic disk and patagia more or less marked with dark brown or black scales. Primaries with all the normal maculation present, but not contrasting, and more or less obscured by black powderings. Basal line geminate, black, broken, angulated. T.a. line geminate, black, the inner part less marked, outwardly oblique, somewhat curved, with an obtuse angle just below the middle. T.p. line geminate, inner portion somewhat lunulate, outer more even and less distinct, followed by a series of pale venular points; outwardly bent over cell, then oblique, nearly parallel to the outer margin, except for an incurve in the sub-median interspace. S.t. line yellowish, broken, almost punctiform in some examples, a distinct though broken W on veins 3 and 4. A series of black terminal lunules, between which the fringes are cut with yellow. There is a somewhat obscure, diffuse median shade, which is more obvious on the costa and again below the claviform, where the entire median space is somewhat darkened. Claviform pointed, large, extending across the median space, the lower margin forming an obvious black bar, the upper margin less conspicuous and sometimes incomplete. Orbicular very large, oblique, irregularly ovate, incompletely outlined by black scales, a little paler than ground, with a dusky central dot, spot or line. Reniform large, irregular, the upper and lower margins extending beyond the cell, and not defined, more or less marked with yellowish scales, and tending to central lines. Secondaries smoky, paler at base, with a dark terminal line at the base of

the yellowish fringes. Beneath, gray to smoky, powdery, with a more or less marked extra-median line and discal spot on all wings.

Expands 1.32-1.52 in. = 33-38 mm.

*Habitat:* Newfoundland.

Four female examples, in good to fair condition except for legs and antennæ. The thoracic crests are well marked, the anterior divided centrally; abdominal tufts distinct, those on 3d and 4th segments even conspicuous. The species has no very close allies in our lists, but is perhaps nearest to *miniota*, with which, nevertheless, it can hardly be closely compared.

***Hadena susquesa* nov. sp.**

Head a dull rusty luteous. Collar luteous gray inferiorly, leaden or ash-gray at tip. Thorax with gray and black mottlings and lines over a rusty luteous base; the disk of patagia luteous. Primaries rather bright reddish luteous, with rusty brown markings and ash-gray shadings. Median lines obscure. T.a. line traceable chiefly by the difference in shade between the luteous basal space and more gray-shaded median space, also by dusky venular marks which are not connected. T.p. line indicated on costa, lost over the cell, but traceable again below vein 4, and there parallel with outer margin. There is no obvious s.t. line. A series of inter-spatial blackish terminal lunules tend to unite into a shaded line below vein 4. A narrow yellow line at base of fringes, which are narrowly cut with yellow beyond the veins. There is a rusty brown streak at base below the median vein. Claviform large, concolorous, outlined in rusty brown, extending almost across the median space: beyond it the interspace is yellowish to the outer margin. Orbicular round or nearly so, brown-ringed, then with a yellow annulus, gray-centered. Reniform large, upright, a little constricted, gray-filled, rather obscurely outlined in brown and yellow, a conspicuous yellowish shade beyond it toward apex. The veins tend to become blackish marked; and, beyond the t.p. line, veins 3 and 4 are whitish-bordered to the outer margin, giving them a white-rayed appearance. Secondaries dull smoky brown with a darker discal spot and a blackish line at base of the white-tipped fringes. Beneath, yellow-gray, more or less mottled and powdery, with variably distinct outer line and discal spot.

Expands 1.20 in. = 30 mm.

*Habitat:* Claremont, Cal. (Carl Baker); San Diego, Cal. (Frank Merriek).

Two male examples, in good condition, neither with date of capture. The example from Mr. Baker has been in my collection a long time awaiting a mate; the example from Mr. Merriek is just received, and, while it is not exactly a mate, it is at least a duplicate that shows the species to be a good one, and not discolored, as I had suspected. The peculiar reddish luteous ground, the gray shading, and the tendency to a strigate type of maculation, give the species a superficial resemblance to *Morrisonia*, and more especially to *maecens*; but it is really allied to *Hadena fumosa*, and has the excision below the apex of the secondaries well marked.

***Orthosia dusca* nov. sp.**

Has the general appearance of *euroa*, but is smaller, darker, with more diffuse maculation and with shorter, broader primaries. I have a series of ten eastern *euroa* ranging in locality from New York to Kittery Point, Me., and a series of over forty specimens from various points in Manitoba and British Columbia, and the latter are uniformly different in the points just mentioned. In the females the difference is much more marked, as a rule, than in the males; for in the female *euroa* the primaries are usually distinctly rectangular or even a little pointed at tip, the median shade is distinct and well defined, and all the maculation is neatly written: in *dusca*, on the other hand, the primaries are quite as stumpy in the female as in the male, the median shade is diffuse, often indistinct, and usually all the markings are obscure and mottled.

Expands 1.-1.12 in. = 25-28 mm.

*Habitat:* Cartwright, Miniota and Winnipeg, Manitoba, August and September; Kaslo, B.C.

***Cucullia phila* nov. sp.**

Head, thorax and primaries bluish gray. Head with two obscure blackish transverse lines. Thorax with disk brownish, the patagia obscurely sub-margined with brown or blackish. Primaries tending to brownish along the costal region, a distinct rusty shade in the cell where the ordinary spots are vaguely indicated. A distinct white, diffuse blotch in the sub-median interspace before the curved black mark representing the t.p. line. T.a. line traceable, single, slender, black, with long outward teeth, that in the sub-median interspace reaching almost to the middle of the wing. T.p. line vaguely indicated, except in the sub-median interspace, where it forms a black incurve, and over vein 1, where it is bent outwardly and is accompanied by a white band. An obscure black basal streak into the s.m. tooth of t.a. line. An oblique black streak extends from the curve of the t.p. line to the margin just below vein 2. The veins are black-marked, and beyond them the brown fringes are cut with gray. There is a narrow, black, broken terminal line. Secondaries white to the middle, then darkening gradually to a deep smoky brown outer border, the fringes white. Beneath, primaries glossy smoky brown; secondaries as above, but the dusky outer border is narrower. Abdomen grayish white, the dorsal tuftings brown.

Expands 1.50-1.60 in. = 37-40 mm.

*Habitat:* Philadelphia, Pa.; Maryland.

Two males and two females. The two males and one female are from Mr. Frederick Weigand of Philadelphia, and are bred specimens. The Maryland example is old, and has been left unnamed for years, because I had no record of its source, and I doubted a new eastern species so rare that only one example should occur in collections. It is more sordid in appearance than the bred examples, and has a brownish shading throughout the primaries, which obscures the white blotch in the median space.

The species is allied to *speyeri*, but is smaller and darker throughout, with comparatively broader primaries.

The larva, an inflated specimen of which is sent by Mr. Weigand, has the head black, clypeal sutures and an inferior lateral spot yellow; a broad orange dorsal line bordered by a broad black band which cuts into and vertically divides a yellow lateral line; a broad orange sub-lateral line inferiorly edged by a broken black line. Feet yellow, black-ringed at base. Ventral surface yellow, marked with a broken black line toward the sides. The margins of the first thoracic segment are yellow above, and the posterior margin of the dorsal hump on segment 12 is also yellow.

The larvæ were taken in fall, "feeding on the perennial or New England Aster," in Fairmount Park. Adults emerged the spring following, date not quoted.

*Copicucullia mala* nov. sp.

Head, thorax and primaries whitish gray. Head with front mixed with brownish; collar with obscure brownish transverse lines. Thorax with brown scales intermingled, but no definite maculation. Primaries with transverse maculation lost, and ordinary spots not traceable. T.a. line marked by an oblique costal brown streak. On the inner margin is a black streak, which extends from near base to about the middle of the wing. A narrow black line extends from base, through sub-medial interspace, to middle, where it dilates, and forms a streak which is dislocated at half its course, and reaches the outer margin below vein 2. Veins blackish-marked; costal region a little darker; an obscure dusky shade extends inwardly from outer margin below apex toward the middle of inner margin; but it is interrupted before the sub-medial black streak, and practically lost in the ground-color. Secondaries smoky, a little paler at base, the fringes white. Beneath, very pale whitish gray; the primaries a little darker.

Expands 1.30 in. = 32 mm.

*Habitat:* Witch Creek, Cal., Aug. 12.

A single male, in fair condition. This resembles *eulepis* Grt., but is smaller. The t.p. line is completely lost, and there is no black marking below vein 4 on the outer margin. There are other, minor differences; but those named above are most obvious.

*Plagiomimicus dollii* nov. sp.

Ground-color a luteous yellow overlaid and shaded by pale chocolate-brown, the lines luteous golden brown, and a golden brown tinge also reflected from the primaries. Head and thorax uniform brown; abdomen paler, more yellowish. Primaries with t.a., median and t.p. lines single, sub-parallel, each with a strong outward acute angle. In the t.a. line this angle is near the middle; in the median line it is on vein 5, opposite the lower angle of the cell; in the t.p. line it is above vein 6; and at the point of angulation an oblique dusky shade continues to the apex

seeming at first a continuation of the line. The s.t. line is marked by this oblique shade near costa, but below only by the difference between the luteous terminal area (which is the palest portion of the wing) and the slightly darker, very narrow s.t. space. A golden brown, continuous, even, terminal line at the base of the yellowish brown fringes. The ordinary spots are large, concolorous. Orbicular round or nearly so, inconspicuously ringed with darker brown. Reniform broad, a little constricted, incompletely defined in brown. Secondaries yellow with a golden luster, smoky toward base within a dusky extra-median line. A faint dusky lunule and a distinct brown line at base of fringes. Beneath, golden yellowish, with a dusky median shade line on both wings.

Expands 1.12-1.35 in. = 28-34 mm.

*Habitat:* Palmerly, Cochise County, Arizona, August.

Two male and two female examples, all in good condition; from the collection of the Brooklyn Institute. I cannot identify this with any of the described species from Central America, and it is quite different from those of our own species thus far described. The frontal protuberance is umbilicate, the depression roughened.

**Schinia espea** nov. sp.

Head and thorax creamy with a reddish tinge; abdomen whitish. Primaries very pale creamy with a greenish tint, the shading olivaceous. Basal area whitish to the t.a. line, which is very oblique inwardly and a little arcuate, extending from beyond basal third of costa to within basal third of inner margin. The line is outwardly shaded with olivaceous, which is darkest and broadest inferiorly, so as to slightly obscure the entire median space, the costal area being lightest, and fading out to the t.p. line. T.p. line from costa just within apex inwardly oblique, evenly bi-sinuate, to the outer third of inner margin. S.t. space very narrow, especially on costal margin, olivaceous, marking, by its contrast with the pale terminal space, an even but not at all defined s.t. line just about parallel to the outer margin. Fringes olivaceous. Secondaries white, sub-transparent, with a moderate blackish outer border. Beneath, white; primaries with smoky clouds over the costal area and s.t. space.

Expands .96 in. = 24 mm.

*Habitat:* Miaco, Florida, September.

One rather poor female out of a purchased lot, collector unknown. The species is an ally of *biundulata* on the characters used by Hampson; but the course of the median lines is utterly unlike that of any other species known to me.

**Pseudacontia cansa** nov. sp.

Head and thorax a mottling of white and glossy gray scales, more white on the head than on thorax, and more white in the male than in the female. Abdomen gray, segments narrowly white-ringed. Primaries smooth glossy gray, the median

lines forming broad, rather even white bands in the female, becoming more diffuse inwardly in the male. S.t. line whitish, very irregular, tending to become lost medially, a little emphasized by brown preceding scales in some specimens; a patch of golden brown scales at the apex. A series of black terminal dots, fringes obscurely cut with pale. Orbicular a small black dot. Reniform a small black crescent at the inner edge of the white band forming the t.p. line. Secondaries smoky gray with a diffuse whitish median band, more distinct in the male, in which a dusky lunate discal mark is more or less obvious. Beneath, primaries smoky at base, becoming paler outwardly until they are white before a distinct broad, defined blackish s.t. band, beyond which the wing is again pale. There is a small black discal lunule. Secondaries whitish, with a narrow extra-basal dark band, a broader, blackish sub-terminal band, and a black discal lunate mark.

Expands .94-.98 in. = 23.5-24.5 mm.

*Habitat:* Hamilton County, Kansas, 3500 feet (Professor F. H. Snow).

One male and two females, in fair condition. I have been inclined to regard these as forms of *crustaria* Morr.; but the receipt of quite a series of the latter shows them to be distinct. The vestiture is smoother throughout, and, while the maculation is almost the same, there is none of the bright coloring or sharp contrast of the older species. The armature of the fore tibia is also somewhat different, forming distinct outer and inner claws, instead of a long inner claw with a marked outer angle of the flat corneous tip.

***Pseudacontia louisa* nov. sp.**

Head and thorax rich yellow-brown mottled with creamy white and black scales; abdomen yellowish. Primaries creamy yellowish white marked and mottled with brown and black. Basal space brown-powdered, so that the pale ground is only just discernible; the basal line geminate, blackish, included space of the ground-color. T.a. line a broad band of the basal creamy tint, the anterior margin formed by the limits of the dusky base, the posterior a black scale line edging the brown median space; the line irregular, with a larger outcurve between veins 1 and 2, and a sharp inward tooth on vein 1. The median space is narrow, brown-powdered, with the round black reniform (which is annulate with yellow) forming a conspicuous feature, the outer margin formed by an edging of black scales, of which the small lunate orbicular forms part and the irregular inner part of the t.p. line forms the remainder. Beyond this the wing is creamy to the brown terminal space, the s.t. space appearing bluish from the dark band of under side, the edges of which are a little marked by brown scales on the upper surface. S.t. line not defined, the terminal space narrow, and irregularly brown-powdered. A series of distinct black terminal lunules at the base of the long, brown, pale interlined fringes. Secondaries blackish, with a broad yellowish white median band in which is a large blackish discal lunate mark. Beneath, primaries mottled, blackish and yellow; a distinct, extra-median, broad outer band forming the most conspicuous feature. Secondaries pale yellowish, with a large blackish discal mark and a narrow, broken, irregular sub-terminal blackish band. A broken dark terminal line on all wings.

Expands 1 10 in. = 27 mm.

*Habitat:* Sabine Parish, La. (G. Coverdale).

A single male has been in my collection a long time awaiting a mate, and is now described because there seems no present hope of more material from the same region. It was a papered example, and the body is transversely flattened out of all shape; but the primaries are perfect and the maculation is clean and well defined. It is larger than *crustaria* with a similar type of maculation; but in this the pale ground predominates, and the dusky s.t. space and more or less well-defined s.t. line are eliminated altogether. The anterior legs are wanting in the type, and the generic reference is therefore made upon the basis of the general resemblance to *crustaria*.

***Annaphila miona* nov. sp.**

Head and thorax bronze-brown with black and metallic-blue scales intermingled, forming no obvious ornamentation. Abdomen deep orange with narrow black dorsum, the edges of the segments narrowly orange. Primaries brown, mottled with black and metallic blue scales, the latter most obvious beyond the reniform and along the upper course of the s.t. line. Basal line traceable by black scales. T.a. line geminate, black, more or less broken, included space a little paler than ground, outwardly oblique and with a distinct outward tooth in the sub-median interspace. Median line black, quite obvious, outwardly oblique and a little outcurved. T.p. line, consisting of a very even brown band, very regularly bent over the cell, and an inner, broken, very irregular blackish line forming the outer border of the median space, and this is inwardly toothed on vein 2. The outer part of the wing is black at apex, shading to brown at anal angle; and through the black portion the s.t. line is very irregularly marked out by brilliant blue scales: below the middle the line becomes more even and pale. Fringes brown with a black interline, beyond which they are checkered with black. Orbicular not obvious in the specimens. Reniform large, irregularly lunate, pale brown, ringed with white, with a whitish patch above it to costa, and outwardly three lobe-like extensions of the t.p. line filled with blue scales. Secondaries deep orange with a broad, even, black margin and a very faint basal line of blackish scales. No discal spot. Beneath, orange; primaries with a broad outer border, narrowing toward the angle, interrupted by a series of orange spots, and a broad median band from inner margin to center, where it breaks, and sends spurs toward costa and outer margin; secondaries with a broad black outer band in which a series of orange spots is traceable.

Expands 80 in. = 20 mm.

*Habitat:* Plumas County, California, June

Two females, in good condition save for lack of antennas. At first sight the orange of secondaries seems unbroken, except for the broad, solid, black outer band, and this forms a characteristic of the species. The faint blackish basal line becomes obvious enough when attention is drawn to it; but there is no black shading at the extreme base of the wing.

*Annaphila variegata* nov. sp.

Head and thorax bronzed brown mottled with blue and white scales, the latter tending to form a white tip to the collar. Abdomen orange, dorsum blackish, the segments narrowly orange-ringed. Primaries with basal area grayish brown to t.a. line; the median space, except reniform, darker, more or less blue-powdered; reniform, and obliquely below to the inner angle, white or very pale orange-yellowish merging outwardly into a dusky terminal and apical shade in which a black-edged s.t. line is prominent to the middle: the line itself consists of scattered white scales forming a white mark on costa, and beyond it are blue scales. Basal line dark chocolate-brown. T.a. line geminate, black or blackish, forming a sharp outward tooth in the sub-median interspace, and almost or quite meeting an inward tooth of the median shade; black scales connecting the two when they do not actually meet. Median shade line black, very irregular, keeping close to the t.p. line so far as that is defined below the reniform. T.p. line discontinuous, brown, and partly defined by the s.t. space from costa over cell, broken opposite the lower angle of the reniform, where a loop-like extension of the dark median space forms the lower angle of that spot, then black, with an inward angle on vein 2. Orbicular very obscure, round, concolorous, traceable by an outline of black scales. Reniform a large white or faintly orange blotch, inwardly and inferiorly defined, upwardly extending to costa, and outwardly merging into the s.t. space. There is a series of black terminal spots which tends to become sagittate above the pale area. There is a pale line at the base of the long fringes, which are brown with a black interline, and outwardly checkered gray and brown. Secondaries orange-yellow, varying in depth; the males paler, with a broad black outer band having an irregular inner margin, a more or less continuous narrow sub-basal band, and a black spot on the inner margin above the anal angle. Beneath, orange; primaries with a broad outwardly oblique black band, a black sub-marginal band which is broad from costa to the middle, where it touches the inner margin and is then very narrow and linear, and a black outer border, which is separated from the black fringes by a very narrow orange line; secondaries with a broken black inner line, a fragmentary median line indicated by two spots near inner and one on costal margin, a very irregular outer band more or less connected with the narrow black outer margin.

Expands .88-.95 in. = 22-24 mm.

*Habitat:* Placer County, California, 2500 feet.

Five males and five females, in good condition and all very much alike. The males are uniformly a little smaller and less intensely colored, with the inner black band on secondaries more generally broken. There is no black discal spot on secondaries, and the maculation of the primaries is more like the yellow-winged forms than any other of the orange-winged species, except *miona*.

*Erastria puncticosta* nov. sp.

Ground-color very pale ashen with a smoky gray powdering and overlay. Head and collar dark chocolate-brown, but varying toward the ground. Primaries with large brown costal spots at the inception of the basal, t.a. and t.p. lines, and beyond



the latter a series of alternate brown and pale marks to the apex. The basal line does not extend much below the costal spot. T.a. line single, narrow, broken, irregular, inwardly oblique. T.p. line single, broken, very irregular, outwardly bent over cell, and partly obsolete at that point. S.t. line pale, very irregular, preceded by a dusky shading, which may be emphasized by still darker, more sagittate spots. A series of black terminal lunules, beyond which the fringes are cut with pale. There is no obvious orbicular. Reniform a narrow black line or lunule, which may or may not be margined outwardly with whitish. Secondaries uniformly smoky brown. Beneath, smoky, varying in tint; the primaries always darker, with the white costal dots of upper side reproduced; the secondaries more whitish, tending to a dusky outer margin.

Expands .60-.66 in. = 15-16.5 mm.

*Habitat:* New Brighton, Pa., July 22-Aug. 11.

Nine examples, all males and mostly in good condition. The species at first sight resembles the deltoid species of *Megachyta* by the prominent brown costal spots. There is little variation in the examples before me, except in the amount of the dusky overlay. In the best examples this extends from just beyond the base to the outer margin, becoming gradually more intense, so that the pale s.t. line stands out clearly in contrast; in the poorest examples the dusky tint remains over the terminal area only, and the s.t. line loses in relative distinctness. The abdomen is smoothly scaled, with a small dorsal scale-tuft at base in the better specimens. Beneath, the legs are dusky and the tarsi narrowly pale-ringed.

The species seems to be not uncommon at New Brighton, but I have none at present from other sources.

#### *Erastria humerata* nov. sp.

Head and collar chocolate-brown; thorax and ground-color of primaries gray with an overlay of yellowish pale brown scales. Primaries with median space filled by a blackish-brown shading and a sub-quadrate patch of the same color on costa in s.t. space. Basal line brown, extending to median vein, and from it, to base of wing, is a dark chocolate-brown spot, which looks like the extension of the collar. T.a. line dark brown, irregular, a little inwardly oblique, outwardly diffuse, preceded by a whitish line or shade. T.p. line blackish, broken, irregular, abruptly and squarely exserted over the cell. This outward exsertion of the paler ground occurs beyond the linear black reniform, so that at first sight the t.p. line seems to cross the wing with only a slight outward curve. Outwardly the t.p. line is bordered by pale scales. S.t. line pale, very irregular, forming a broad inward angle opposite the cell, and an almost equal outward angle between veins 3 and 4. As a whole, the s.t. space is a little smoky, darkening to the large brown costal patch. Terminal space usually paler and a little more brown than the rest of the wing. A series of distinct black terminal lunules, beyond which the dusky fringes are cut with yellowish. Orbicular wanting. Reniform black, linear, upright. A series of three white dots on costa between t.p. and s.t. lines. Secondaries uniform smoky. Beneath,

smoky; primaries darker, with the costal dots of upper side intensified and a larger one at inception of t.p. line; secondaries paler, with a large discal spot.

Expands .58-.64 in. = 14.5-16 mm.

*Habitat:* New Brighton, Pa., July 11-31.

Eight examples, in good to fair condition, all males; from Mr. H. D. Merrick. As in *puncticosta*, the antennæ have the joints distinctly marked and feebly serrate, with obvious ciliæ but no distinct tufts. There is also a small scale-tuft at the base of the abdomen, which is rubbed in most specimens. There is little or no variation except such as is due to the condition of the specimens, producing more or less contrast between the median and the outwardly adjoining areas.

***Erastria immuna* nov. sp.**

Deep purplish brown or blackish over a pale base, the maculation black. Wherever the purplish overlay has been marred, the whitish base becomes more or less evident. Primaries with basal line black, obvious on costa, and emphasized by whitish scales outwardly. T.a. line black, single, velvety, a little outcurved in the interspaces, and on the whole a little inwardly oblique. Median shade black, nearly upright, a little diffuse, and beyond it the wing tends to a little mottling. T.p. line black, single, more or less lunulate, irregularly outcurved over the cell and inwardly bent below it, emphasized by a few pale scales. S.t. line irregular, broken, pale, chiefly marked by a black preceding shade which is sharply defined on the line, but becomes diffuse inwardly. A series of black terminal lunules which may be emphasized by pale scales. A series of four white costal dots before apex. Fringes cut with pale opposite the cell. Orbicular wanting in the specimens. Reniform a creamy white lunule. Secondaries even, smoky gray. Abdomen smoky gray with a conspicuous black basal tuft on dorsum. Beneath, gray, powdery; primaries darker, with a paler terminal space; secondaries more whitish, with a small discal spot and a tendency to an exterior line.

Expands .80 in. = 20 mm.

*Habitat:* New Brighton, Pa., July 21, 28.

Two males, in fair condition; from Mr. H. D. Merrick. The species is similar to *muscosula* in size and wing-form, but is much darker throughout, and darker than any of the other species known to me. Of the two examples before me, the one taken July 21 is almost uniformly purplish black with the pale reniform and the small whitish costal dots conspicuous; the specimen taken on the 28th has the outer half of the wing distinctly pale-flecked, and this seems to be due to the removal of some of the surface scales. The species is therefore apt to be apparently variable, the more so as the black markings are composed of somewhat elevated scales.

**Thalpochares fractilinea** nov. sp.

Head, thorax and primaries pale, creamy yellowish, the latter washed and shaded with luteous. Basal line wanting, or marked only by black dots on costa and sub-costa. T.a. line a series of black dots which are sometimes connected by a brownish line, in course a little inwardly oblique. T.p. line black, broken, squarely exerted over the cell, followed by a more or less obvious pale shading. S.t. line pale, very even, outwardly diffuse, preceded by a darker shading in which there may be some black scales. A series of distinct black terminal lunules and a pale line at base of fringes. A somewhat obscure median shade darkens the outer portion of median space. Orbicular wanting. Reniform a small black, somewhat lunate mark. A series of four pale costal spots from t.p. to s.t. line. Secondaries uniformly smoky. Beneath, primaries dusky, with the costal spots of upper surface obscurely reproduced; secondaries paler, without obvious maculation.

Expands .48-.52 in. = 12-13 mm.

*Habitat*: New Brighton, Pa., June 12, July 29, Aug. 3, 9, 12, 14, 26.

Five males, one female, and two specimens in which the sex is indeterminate, owing to their defective condition; from Mr. H. D. Merrick. The species is narrower-winged and has longer palpi than the other American forms referred to this genus, and this may not be the best place for it. The primaries lack the accessory cell in the two specimens examined, and this determined the generic reference.

**Homopyralis bigallis** nov. sp.

Of the usual red-brown overlying a dull luteous, which becomes apparent when the specimen is flown? Maculation black. More or less black powdering, which usually darkens the basal space and may obscure the outer half of median space of primaries. Head and thorax marked with black and purplish intermingled scales. Primaries with t.a. line black, geminate, outcurved below median vein, inner part of line not distinct from dusky basal space. T.p. line geminate, inner portion lunulate, more or less broken, rather squarely exerted over cell; outer portion incomplete, in part reduced to a series of pale venular dots. A pair of waved black shadow lines through the outer portion of median space. S.t. line pale, irregular, variably defined, preceded by a quadrate blackish patch on costal area. A series of black marginal followed by smaller, yellow terminal dots. Orbicular a small, round, solid black spot. Reniform a large, solid black quadrate or oblong spot. Secondaries with the maculation of primaries continued across the disk, but as a whole nearer to the base than on primaries. There is a tendency to a purplish shading through the outer part of the wings. Beneath, smoky luteous; both wings with a curved extra-median line, a crenulated terminal line, a more diffuse sub-basal line, and an obscure discal lunule.

Expands 1.15-1.40 in. = 29-35 mm.

*Habitat*: Hot Springs, New Mexico, 7000 ft., September; Yavapai County, Arizona, Aug. 8; Huachuca Mountains, Arizona, July 30; Palmerly, Arizona, without date.

Four males and two females, in fair condition. The markings are more clearly defined and the lines are better separated than in the allied species. Superficially the larger size will at once make it recognizable.

***Epizeuxis intensalis* nov. sp.**

Head, thorax and primaries deep, rich, lustrous smoky brown; on the head and thorax uniform, on the primaries overlying a pale, glossy luteous which appears through in places, and gives the wing a mottled appearance. T.a. line upright, with three equal outward teeth or angles only a little darker than the ground, and usually best marked by the preceding pale shade, which is variably complete and always diffuse. T.p. line sharply denticulate, with long outward teeth on all veins, only a little outcurved over cell and incurved below, best marked by the well-defined pale line which follows the obscure darker line. S.t. line very irregular, forming three main outward lobes and three long inward angles, the first outward lobe beginning at costa and extending to the inward tooth opposite middle of cell; the second lobe begins at the latter point, and extends to the inward angulations on veins 1 and 2; the third outward lobe is only partial, and extends to the inner margin. The terminal space is always paler than the rest of the wing, often mottled, and sometimes contrastingly so. There is no obvious median shade. A distinct black terminal line, narrowly interrupted on the veins. Fringes smoky, narrowly cut with yellow. Orbicular a small round dot of the yellow ground-color. Reniform moderate in size, somewhat lunate, consisting of a dark crescent set in a larger spot of the pale ground-color. Secondaries whitish, with a yellowish or smoky suffusion, darker outwardly. There is a dusky median line followed by a pale shading, a pale sub-marginal line, and a distinct brown terminal line. Beneath, yellow, very sharply marked with a common black median line, a much fainter and variably evident s.t. line, and obscure discal spots.

Expands 1.10-1.40 in. = 28-37 mm.

*Habitat.* Yavapai County, Arizona, July and August (Hutson); Southern Arizona, June 15-30 (Poling); Southern California (Poling).

Six males and one female, in fair or good condition. This species resembles *cobeta* Barnes at first sight, but differs from all others in the genus by the distinctly annulate reniform, the contrasting terminal space, and the sharply-marked under side. The secondaries also are paler than in any other of the allied forms, so that we have a fairly well-defined species in an aggregation of decidedly variable forms.

***Epizeuxis partitalis* nov. sp.**

Head and thorax glossy brown with a smoky tinge, abdomen somewhat paler. Primaries glossy brown; basal area a broad diffuse median shade, and all beyond the t.p. line smoky blackish. T.a. line nearly upright, with three moderate out-curves in the interspaces. T.p. line blackish, well-defined, denticulate, followed by a less distinct paler line, moderately outcurved and drawn in only a little in the

submedian interspace. S.t. line pale, irregular, incomplete. A black, somewhat lunate terminal line. Fringes pale brown, obscurely cut with darker brown. Orbicular not marked in the specimens before me. Reniform a small, upright dark bar preceded by a paler shading. Secondaries smoky, darker outwardly, almost whitish at base. There is a blackish median, a whitish sub-terminal, and a blackish terminal line; the fringes pale dull yellowish. Beneath, powdery yellowish basally, smoky or blackish beyond the middle; all wings with a small discal spot; primaries with diffuse median shade, with obvious t.p. and pale s.t. line; secondaries reproducing more clearly the maculation of upper surface.

Expands 1.24–1.32 in. = 31–33 mm.

*Habitat:* Yavapai County, Arizona, July 24 (Hutson).

One male and one female. Differs from the allied species in the paler median space crossed by an obvious median shade. The secondaries are as dark as in *lubricalis*; and as a whole it is very markedly distinct from *intensalis*, which was collected in the same locality.