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### NEW NOCTUIDS AND NOTES.

BY JOHN B. SMITH, Sc.D.

#### **Cobalos**, gen. nov.

Eyes naked, without lashes or lateral fringes, hemispherical. Head of good size, but retracted; front flat, broad, palpi short, not exceeding middle of front, terminal joint small, a little oblique. Tongue strong. Antennæ in the ♂ lengthily bipectinated, in the ♀ simple. Thorax sub-quadrated, rather short, collar and patagiæ defined, vestiture somewhat loose, divergent, composed of scaly hair, forming no obvious anterior tuftings and but a loose though well-marked basal tuft. Abdomen exceeding the anal angle in both sexes, conic in the ♀, a small dorsal tuft on the basal segment, else untufted. Legs well developed, tibia without claws or spines, spurs of middle and posterior pair moderate in length, vestiture of under side fine woolly. Wings moderate; primaries abruptly widened on inner margin. Costa and outer margin oblique, the former a little depressed at middle, apex acute.

The genus is Hadeniform, allied to *Hyppa* and *Valeria*; with loose, more hairy vestiture and slighter build than either, the wing-form, retracted broad head and very lengthily pectinated antennæ being further characteristic. The insect has more the appearance of *Eucoptocnemis* than anything else, but the tibiæ are not spinose.

#### **Cobalos angelicus**, sp. nov.

Ground color light fawn brown with gray or white shadings or powderings. Head and thorax without definite maculation. Primaries with the median space somewhat more even, deeper brown than the rest of the wing, s. t. space and apex bluish white. Basal line marked on the costa only. T. a. line geminate, narrow, brown, the inner line vague, included space more or less white filled, not well marked, more or less broken, widely outcurved, inwardly dentate on the veins. T. p. line geminate, narrow, brown, the outer portion less obvious, only a little irregular, not much curved over cell and very decidedly incurved in the sub-median interspace, included space white. S. t. line irregular, yellowish, defined by the brown terminal space except at apex, and partly by a brown s. t. shade which fills the s. t. space on costa, then breaks and starts again, broadening gradually to the hind margin where it is almost half the space. On veins 3 and 4 white rays accompany an indentation of

the s. t. line almost to the outer margin. A series of blackish terminal lunules at the base of the broad fringes. Claviform outlined in brown, concolorous, moderate in size, a somewhat darker shading extending across the median space at this point. Orbicular oblong, oblique, somewhat irregular, hardly defined, more or less powdered with bluish white. Reniform moderate or rather small, narrowly kidney-shaped, very narrowly and incompletely ringed with brown, annulate with bluish white, more or less whitish powdered superiorly and a little dark shaded inferiorly, neither of the spots at all prominent. Secondaries in the male whitish with an indefinite smoky outer margin, in the ♀ darker throughout, and with a yellowish tinge. Beneath whitish, powdery, ♀ darker, more smoky, primaries more powdered than secondaries, both wings with a vague discal spot. Expanse, 32-35 mm. = 1.28-1.40 inches.

*Habitat*: Los Angeles, California.

Three examples, 1 ♂, 2 ♀ ♀; the ♂ from Mr. Coquillett (Coll. U. S. N. M.), the others of uncertain source. The species is quite distinctive in appearance, the pale s. t. space, with its distinct W mark somewhat recalling *Mamestra liquida*. But the naked eyes and lengthily pectinated ♂ antennæ dispel the illusion at once.

### **Cobalos franciscanus**, sp. nov.

Ground color rich fawn brown without contrasts except in the s. t. space of primaries. Head and thorax concolorous. Primaries with the median space somewhat deeper in tint, the t. p. line prominently white-shaded below vein 3. Basal line not obvious. T. a. line vague, brown, apparently simple, as a whole upright or a little outcurved, a small outward angle in the sub-median interspace. T. p. line brown, geminate on costa, else single, crenulate and outcurved over the cell, then even, with a regular incurve to vein 1, where it has a little outward tooth. S. t. space in costal region of ground color, below that paler along the t. p. line until, below vein 4, the latter is white shaded, the shade broadest in the sub-median interspace and forming the most prominent ornamental feature. Outwardly the space shades into a reddish brown border to the s. t. line which is narrow, pale, irregular and very poorly defined. On vein 3 a pale ray extends almost to the outer margin cutting through and not indenting the s. t. line. There is a series of brown terminal lunules, and the fringes have a pale line at base. None of the usual spots are defined. Claviform and orbicular are scarcely even indicated, reniform traceable in narrow, incomplete outline and by a dusky filling. Secondaries uniform smoky brown, a darker terminal line at the base of the paler fringes. Beneath very pale reddish gray powdery, primaries with a discal spot and a feeble reproduction of the t. p. line of upper side, secondaries with a dusky discal spot and no outer line. Expanse, 28 mm. = 1.12 inches.

*Habitat*: San Francisco County, California, a single ♂ specimen only, with the vestiture a little marred in spreading. This is a smaller species than *angelicus* with proportionately shorter, broader wings, more robust thorax, shorter antennæ, tho equally pectinated and decidedly darker colors. The maculation is practically all lost except for the pale shading in the s. t. space and the prominent white margin

to the t. p. line. The single pale ray on vein 3 gives the species a unique character that should make its recognition easy.

### *Stretchia* Hy. Edw.

**S. pulchella** Harv.—The male of this species was unknown to me in 1889 and it was not until recently that I identified two male specimens taken by Mr. Bruce in Colorado as belonging here. They are decidedly unlike the type, which I compared in the Edwards collection in that they lack that sharp contrast in color which justified the name *pulchella*, but in essential details of maculation they are alike. A characteristic feature is the almost quadrate orbicular which is slightly oblique, and another the peg-like projections from the t. p. line on the veins.

In male characters the species resembles *erythrolita*, as it does indeed in other features, but there is considerable difference in detail.

**S. addenda** Smith.—This species, described by me as a *Tæniocampa* proves more satisfactorily referred to *Stretchia*, not only by wing form but in the structure of the male genitalia. These are similar to those of *pulchella* but much heavier and more compact, as a comparison of figures will show. It is probable that *addenda* and *pulchella* can be confused, though the former has no contrasts of any kind on any specimen seen by me. It seems likely however that the latter may vary in the direction of uniformity and in such cases there may be a close resemblance to *addenda*. More material of both forms is needed to clear the situation satisfactorily.

### **Tæniocampa flaviannula**, sp. nov.

Ground color a rather light fawn brown, more or less powdered with blackish scales. The vestiture of the head and thorax is fine loose and a little divergent, a trifle darker and more grayish than the primaries. The palpi are very short, black at the sides and scarcely reach the front. Primaries with all the markings obscured; but in most specimens fairly traceable. The most prominent feature being the unusually large, broadly oval reniform which is ringed with yellow, the spot itself being sometimes a little darker than the rest of the wing. In some specimens the basal line is indicated by black dots and in one example it is geminate. It may, however, be entirely wanting. The t. a. line is generally represented by a series of black dots on the veins; but these may be entirely wanting, and on the other hand the line may become complete and even geminate. In the latter instance the line is seen to be a little irregular between the veins; but as a whole it is upright or only a little out-curved. There is a median shade line from near the middle of the costa, outwardly bent so as to cross the lower part of the reniform, then forming almost a right angle and a little oblique inwardly to the inner margin. This shade also may be entirely

absent. The t. p. line in all my specimens is a series of black dots on the veins. It originates over the reniform, is strongly bent outwardly over it and then runs very evenly oblique and inward to the hinder margin, which it reaches very close to the median shade. The s. t. line is marked by a powdery preceding shade and when most obvious shows a fairly well marked "w," a little below the middle of its course; but this line also may be entirely absent. There is a series of dots between the veins a little within the outer margin. Fringes are concolorous and with only a bare trace of a paler line at the base. The orbicular is moderate in size, a little elongate, ringed with yellowish; but this also may be entirely absent. The reniform has been already described, and this is present in all the specimens that I have seen. The secondaries are smoky and powdery, with a distinct discal lunule and a blackish terminal line. Beneath, both wings are reddish gray, powdered with a black discal spot and a more or less complete extra median line. Expanse, 1.50 to 1.75 inches = 37 to 44 mm.

*Habitat*: Glenwood Springs, Colorado, in March and April.

I have four males and one female under examination. All the males are from Dr. Wm. Barnes, one of them labelled April 20th. The only female was received from Mr. David Bruce and bears his number, 438. The antennæ in the male are lengthily pectinated, and the insect belongs in appearance and wing form with *alia*. None of the specimens have all the markings present and one specimen has practically no markings except the somewhat indistinct reniform and vaguely shaded s. t. line. The single female has the primaries apparently a little broader and the s. t. line at the base marked; but this may be an individual character and not so in that sex generally. This most obvious character is the shape of the reniform.

### ***Tæniocampa reliqua*, sp. nov.**

Ground color a deep, somewhat rusty red brown. The scales of the front are tipped with gray, as are also those forming the indefinite tuft on the posterior part of the thorax. Basal line marked by a few black scales, and there are also a few black scales in the basal space below the median vein. T. a. line fairly distinct, obsolete geminate. The outer portion of the line formed of black scales which are preceded and emphasized by a few white scales. The inner line is marked on the costa only and is rather a discal shading than a line. As a whole, the line is upright; but is outwardly bent in the interspaces. T. p. line very dark brown, deepened by a few black scales, as a whole evenly bisinuate and nearly upright, followed by white scales which make this feature the most prominent part of the wing. The s. t. line is yellowish, narrow, even, continuous, followed by a series of brown points in a somewhat gray-powdered terminal space. The fringes are long, a little paler than the ground color; but broadly cut by the darkest wing color on the veins. The ordinary spots are vague and are present rather as paler, undefined blotches. The orbicular large and elongate. The reniform somewhat lunate. There is an undefined deeper brown median shade. Secondaries reddish gray, the fringes a little more pinkish. The veins are dusky marked and there is a feeble dusky lunule. Beneath, the wings

are reddish powdery, with the disc a little smoky. The secondaries have an outer blackish line and a fairly distinct discal spot. Expanse, 1 inch=25 mm.

*Habitat*: Park County, Colorado; 10,000 feet. Bruce.

The type is a unique female from the collection of the U. S. National Museum, and it is therefore impossible to say to which section the insect belongs. It has, however, the appearance and some of the characters of *trifascia*, and may be associated with that species for the present. It is a small species with stumpy wings and the mottlings of red brown with the white scales on the median lines give it rather a distinctive appearance.

### **Xylomiges pallidior**, sp. nov.

Ground color white, flecked with black and smoky scales; lines and dots black, shading smoky. Head with a black frontal line. Collar with a broad black central line. Thorax with a few patagial scales black tipped and a black margin at the base of primaries. Abdomen cream yellow. Primaries with a black basal streak, reaching to the t. a. line. Basal line indicated by a white break in the smoky shading of the costa. T. a. line fragmentary and marked chiefly by the endings of the maculation that usually starts or terminates there, on the costa and internal margin by a smoky shade. T. p. line marked by the geminate spots on the costa, is then single, smoky over the cell, black, linear and denticulate on veins 2, 3, 4, smoky, broken and linear to the hind margin. S. t. line consists of a series of interspacial, somewhat elongate black spots, the third from the angle a little out of line and nearer the margin, dividing the series into two groups. Median shade prominent, from costa outwardly oblique along the upper margin of the orbicular, forming an acute angle on the median vein, smoky to the end of the claviform and filling the space below vein 1 to the t. a. line. Claviform concolorous, very large and broad, extending almost across the median space, the outline black. Orbicular white, incompletely black bordered, irregular, elongate, oblique, very large, extending to the end of the cell in the form of a loop along the median vein. Reniform indicated by an obscure smoky lunule, but not at all outlined. There is a series of black terminal dots, beyond which is a smoke line through the fringe. Vague smoky shadings are along the costa and internal margins and slight darkenings in the s. t. and terminal spaces. Secondaries white, with a large, half round discal spot a venular median line and a narrow terminal line, black. Beneath white, primaries powdery along the costa: a common venular extra-median line and a discal spot, small on primaries, large on secondaries, black. Expanse, 28 mm. = 1.52 inches.

*Habitat*: New Westminster, British Columbia (Fletcher).

One female only, in fine condition. The insect is, in markings, an exaggerated *simplex* with white instead of gray ground color and without the shadings of the older species. This white color on which the huge claviform and orbicular spots are outlined in black will serve to identify the species; the other prominent character being the broad oblique costal portion of the median shade.

### *Xylina Ochs.*

The following descriptions in this genus are presented in advance of a systematic treatment of the genus at large and to permit the distribution of material before the publication of the revision, which may be somewhat delayed.

#### *Xylina torrida*, sp. nov.

Ground color bluish gray. Antennæ white basally, else brown. Head with a black line across the middle of the front, the vertex usually a little smoky. Collar, as a rule, paler than ground color, sometimes whitish, usually with a reddish flush toward a sub-apical black line, which in some examples is almost obsolete. Thorax more or less white powdered, not definitely marked, patagiæ black edged at the base of the wings. Abdomen with a reddish flush in well preserved specimens. Primaries more or less powdered with smoky or blackish scales, varying the tint and often clouding the median space. Basal line geminate, blackish, marked through the costal cell only. A black longitudinal line extends from the base through the s. m. interspace half way to the t. a. line and is then obliquely extended by a black or blackish shade to the costa within the origin of the t. a. line. The space included in this boundary at the base of the wing is whitish or much paler than the rest of the wing, further emphasized by a rusty shading just above the black streak. T. a. line geminate, black, the outer portion most sharply defined, outcurved in the interspaces and quite sharply toothed inwardly on the veins, as a whole a little outwardly oblique. T. p. line lunulate, geminate, outer line smoky, indefinite and quite even, lines black, often disconnected and tending to obsolescence: as a whole the line is outwardly exerted over the reniform and almost upright below that point. S. t. line marked by a series of triangular black, preceding spots, except at the costa where a smoky shade precedes it. This series of spots is in a way the most prominent and certainly the most constant feature of the wing. A series of terminal spots which are not at the extreme edge of the wing and which are elongate though not connected into a line. A more or less diffuse median shade, almost or quite filling the space between the ordinary spots, parallel with and close to t. p. line below the reniform. Claviform black ringed and sometimes almost black filled, small, pointed, not reaching the middle of the median space. Orbicular upright, oval, of good size, as pale as any other part of the wing, black ringed except superiorly; below the median vein there is attached to it a smaller, less prominent, sub-orbicular, which is usually smoky centered and may become entirely obscured. Reniform large, upright, oval, only a little kidney-shaped, black ringed, centered with smoky in which is a reddish shading. The veins are more or less smoky. Secondaries smoky with a reddish tinge, sometimes quite pale. Beneath with a reddish flush, powdery, both wings with an outer smoky line and round discal spot. Expanse, 40-46 mm. = 1.60-1.80 inches.

*Habitat*: Pullman, Washington, October, March and April (C. V. Piper); Garfield Co., Colorado, 4000 feet (Bruce); N. W. British Columbia (Ottolengui); Soda Springs, California, October 16th (Hy Edwards).

In all ten specimens are before me, varying only in the relative distinctness of the maculation. In one example everything is clear cut and every line and shade recognizable at a glance; in another all save the s. t. line and the ordinary spots is obscured, and between these extremes the others range.

The species resembles *tepida* most nearly in type of maculation; but it is much larger and the more obscure examples remind one of the *antennata* type. The male characters are distinctive and confirm the superficial points of distinctness from other species.

### **Xylina dentilinea** sp. nov.

Ground color a dirty ashen gray with an admixture of smoky shadings. Head brownish in front, a black line rising on each side at the base of the antennæ and extending obliquely to the middle of the collar on each side. This line is margined inferiorly by a reddish shading and superiorly by whitish scales. The thoracic crest is a little smoky and is not well marked, the tuft being loose and diffuse. Primaries with the markings fairly evident. The basal line is marked by a blackish lunule across the costal space. The t. a. line is geminate, black, the inner line more brownish and hardly visible. The intervening space lighter gray. In course the line forms one large outward tooth in the middle of the submedian interspace. On the internal vein it forms an angle from which the line extends outward to the middle of the internal margin. The t. p. line is broken, not complete in any specimen before me, black followed by a whitish or gray shading which is lost opposite the cell. As a whole the line seems to be rather abruptly bent over the cell, it becomes more distinct below that point and is rather strongly incurved in the submedian interspace where it is usually connected with the outward tooth from the t. a. line. The s. t. line is irregular, broken, indicated principally by shades and dashes and characteristically marked by a roundish spot in the submedian interspace, which precedes it and beyond which an oblique dash crosses vein two to the upper margin. This mark is present in all the specimens and if the wings be turned so that the apex is upward the mark has the appearance of an exclamation point, the dot being separated from the stem by the s. t. line. There is a series of small black terminal lunules, which may become united into a terminal line. The fringes are pale with darker interlines. The ordinary spots are not well defined in any specimen and their shape can hardly be described. Both the orbicular and reniform are marked by blackish dots. In some specimens there is a fairly obvious median shade which is best marked on the costa and internal margin. Secondaries whitish at base, becoming blackish towards the apex. The veins are strongly dark lined. Beneath the primaries smoky, the secondaries smoky along the costal margin, the apex and part of the outer margin. Expanse, 1.30 to 1.52 inches = 32 to 38 mm.

*Habitat*: Senator, Arizona, Dr. Kunze. Denver, Colo., at light, Mr. Bruce. Garfield Co., Colo., Mr. Bruce. Fort Collins, Professor Gillette.

Six specimens representing both sexes are before me. The refer-



ence of this species to *Xylina* is not quite satisfactory: the wings are more pointed, more triangular and with a more even outer margin than in the normal form. The character of the secondaries also is a little defined, the wings being proportionately smaller and more triangular than in the typical forms. The thoracic crest is very imperfectly marked and the abdomen is longer and more cylindrical in both sexes.

***Xylina pomona*, sp. nov.**

Ground color a dirty bluish gray with a slight admixture of red. Head a little darkest between the antennæ; collar inferiorly with a reddish tinge, a black line just above the center emphasized by a surmounting series of whitish scales. The thoracic crest is not prominent; but both of my specimens are a trifle imperfect in the thoracic vestiture. The primaries are irregularly mottled with smoky brown and none of the markings are distinct. The t. a. line is geminate, the defining lines black, the very narrow included space a little paler gray. It is very strongly zigzagged, forming long teeth in the interspaces. The t. p. line is not sufficiently evident to be described in either of the specimens before me. The s. t. line is broken and consists of a series of sagittate black spots which are outwardly marked by reddish or whitish scales. Just below the apex is a dusky terminal shade that emphasizes the line at that point. There is a series of blackish terminal marks on the veins and an appearance of pale terminal lunules. The ordinary spots are vaguely traceable. The orbicular is a little paler than the ground color, without defining line; but with four black dots arranged almost in a square. The reniform is large, a little dilated inferiorly, yellowish brown centered and the lower margin marked with blackish scales. Secondaries silky, reddish gray with a discal lunule. Beneath with reddish tinge, powdery, somewhat smoky gray, both wings with an outer line and a discal spot. Expanse, 1.35 to 1.55 inches=34 to 39 mm.

*Habitat*: Alameda County, California, in July, larva on apple, Koebele. Olympia, Washington.

I have a male and female, the former from Washington, the latter belonging to the National Museum, from California. The species is somewhat obscure and a little off type for the genus. The primaries are a trifle more pointed and less parallel than is usual, while the thoracic crest is less marked. Yet this appearance may be in part due to the fact that neither of the specimens is in very good condition.

***Xylina longior*, sp. nov.**

Ground color a bright bluish ash gray with a more or less obvious admixture of reddish. Head with black scales between the antennæ and the front also blackish or smoky. Collar with a distinct reddish shade crowned by a short blackish line, above which the scales are white-tipped at the base of the prominent crest. The thorax has some reddish scales intermingled, and there is a distinct black line at the sides of

the patagiæ covering the base of the wings. The primaries are in most cases quite distinctly marked. There is a blackish basal streak which extends below the median vein and reaches a little beyond the inner fourth of the wing. The tendency of this streak is to become lost. The t. a. line when present is very narrow, black, but shaded with smoky and emphasized by a few preceding white scales. It is strongly bent outwardly, irregular in the interspaces and forms an acute tooth at the middle of the submedian interspace, where it touches a short and prominent black dash. It is then bent inward, so that it reaches the internal vein just about as far from the base as is the inception of the line on the costa. The tendency of this line is also to disappear and to leave only a black streak extending from the internal vein about one-fourth from base to the middle of the submedian interspace. This portion of the line is distinctly present in all the specimens seen by me. The t. p. line is not complete in any specimen. It is traceable in one example as a lighter shading through the darker powderings in the costal region. It is marked by black points below the cell and by blackish scales which connect it with the short black dash already described as attached to the tooth of the t. a. line. Below that point it is not traceable in any specimen. The s. t. line is indicated only by two oblique triangular blackish or brown shades. The first of these starts from a blackish point between veins 4 and 5 and reaches the external margin just below the apex. The second of these shades is more brownish and starts from a point below vein 2, reaching the external margin just below vein 4. The ordinary spots, at least the reniform, are traceable in most cases. The orbicular is large, oval, oblique and is outlined by a few paler scales. The reniform is large, broad, a little constricted in the center, extending inward inferiorly, so that it touches and may become connected below to the orbicular. It is marked inferiorly by a reddish shading and is outlined by whitish scales, which at the latter margin are preceded and followed by a black shade that makes this part of the wing characteristic. All the veins are somewhat marked by black scales. The secondaries are smoky brown, the fringes a little paler and with a pinkish tinge. Beneath smoky gray, powdery, the disc a little darker, both wings with discal spots. Expanse, 1.56 to 1.80 inches=39 to 45 mm.

*Habitat*: Glenwood Springs, Colo., March 10th, 27th, April 10th, October. Dr. Barnes.

There are five specimens under examination, both sexes being represented. No two specimens are quite alike, yet that they belong together is easily seen. In the best marked examples the characteristic appearance is given by the blackish basal dash, by the very prominent oblique portion of the t. a. line, by the blackish inferior margin of the reniform surmounted by a brownish red shade and by the upper of the two triangular shades marking the s. t. line. As to size, the largest specimen happens to be a male.

### ***Xylina itata*, sp. nov.**

Ground color a dull ashen gray with very fine blackish powderings. All the markings obscured. Head and thorax without ornamentation. The thoracic crest prominent. Primaries with the markings extremely vague, in one specimen showing

only a smoky median shade, which is brightest on the costa, is bent at the end of the cell and is a little emphasized by a short blackish dash in the submedian interspace. In the best marked specimen the ground color is a little brighter. T. a. line is traceable, very narrow, black, irregular, strongly bent outward, so that at the submedian interspace it forms a sharp tooth whose apex is about at the middle of the wing. Above that point it is outcurved between the veins; below that point it makes a long inward angulation and is hardly traceable below the internal vein: a few whitish scales may emphasize this blackish line. The t. p. line is brownish, very slender, barely traceable over the cell where it is crenulate, a little better marked below that point, becoming black in the submedian interspace where a short black dash connects it with the t. a. line. The median shade is broad on the costa filling the outer part of the median space, narrowing toward the middle of the wing and less evident toward the inner margin. The s. t. line is marked by two triangular dusky shades, the first of which leaves the apex clear, and has its point at a black spot which almost touches the t. p. line between veins 4 and 5. The second of these comes to a point at a blackish spot which is just below vein 2. The ordinary spots are just traceable, the orbicular is elongate, oval, of the gray ground color, vaguely outlined in brown. The reniform is upright, rather narrow, with a blackish point inferiorly, the outline a trifle paler than the surrounding tint. The fringes have a pale interline. Secondaries a somewhat silky brownish gray, the veins a trifle more dusky and a vaguely marked discal spot. There is a smoky terminal line at the base of the whitish fringes. Beneath, smoky gray, powdery, the secondaries with a small discal spot. Expanse, 1.40 to 1.50 inches = 35 to 37 mm.

*Habitat*: Colorado, Bruce. Glenwood Springs, Col., April 30th. Dr. Barnes.

There are two female specimens before me at this time; but I have seen others that are like them. The specimen from Mr. Bruce has the markings indicated just sufficiently to enable them to be described. The specimen from Dr. Barnes, though good, is a little flown and only the dusky median shade seems apparent. The secondaries have a distinct excavation on the outer margin below the apex.

### ***Eucalyptera pectinicornis*, sp. nov.**

Ground color a dirty clay yellow, more or less powdered with black. Head and thorax without markings, the sides of the palpi more brownish. Primaries with the median space a little more heavily powdered than the rest of the wing, giving it a darker shade. No trace of a basal line is observed in the specimens before me. T. a. line single, blackish, rather close to the base, a little irregular; but as a whole with an even outcurve. It is rather well defined inwardly; but tends to become diffuse outwardly. T. p. line single, blackish, tolerably well defined outwardly, a little diffuse inwardly. It is oblique to the subcostal, then bends rather abruptly outward over the cell and is afterward a little incurved; but as a whole nearly oblique to the inner margin. It is followed by a series of lunules of the ground color which are almost indistinguishable, except for the fact that their points indent the t. p. line, the lunules being outcurved. From this point the s. t. space becomes black powdered to

the s. t. line, which is rather even, broken and marked only by the black shading which terminates at this point. In some cases it is scarcely marked at all, in others fairly defined, always best in the costal region. There is a series of small black terminal lunules in the interspaces. The orbicular is reduced to a black point which is visible in all the specimens. The reniform is marked by a few black scales, followed by fewer pale scales, altogether indefinite. Secondaries uniform, smoky clay yellow, with a darker scalloped line at the base of the fringes. Beneath almost uniformly clay yellow, in some specimens with a trace of an outer line and a discal lunule. Expanse, 1.10-1.50 inches = 27-37 mm.

*Habitat*: Phoenix, Arizona.

I have five specimens, two males and three females, from Dr. Barnes; all more or less dilapidated, but sufficiently good to make the species easily recognizable. One specimen indicates that the female may in good examples have a dense tuft of scales at the tip of the abdomen. The antennæ of the male are quite lengthily pectinated; the branches very slender, tipped by an unusually long bristle and lengthily ciliated at the sides. In wing form the primaries resemble *bipunctata*, except that the apex is distinctly better marked, a little acute, while there is a slight cutting below the apex, so that the latter seems a little pointed. The middle of the outer margin is correspondingly a little produced. In the structure of the palpi the insect agrees with *Scolecocampa* and *Eucalyptera*. This is the first species belonging to this genus from the Southwest, and thus far we have no indications as to its habits.

### **Epizeuxis suffusalis**, sp. nov.

Ground color a dull brownish yellow, overlaid by sooty brown scales which allow the paler ground to become visible only on the lines in the ordinary spots or where the covering scales are defective. Head and thorax without obvious markings. Abdomen more gray, a little powdery. Primaries with all the markings obscure. T. a. line diffuse, of the ground color, more or less obliterated by the overlaying scales, outwardly bent on the subcostal and below the median vein, as a whole almost upright. T. p. line equally obscure, very irregular, best marked on the costa, only a little outcurved. In the male the s. t. line is marked by the yellowish ground, and a somewhat darker preceding shade; in the female a few pale scales indicate the line. A series of connected black terminal lunules followed by a narrow pale line at the base of the fringes, which are interlined with pale near the tip. Orbicular small, round, obscurely yellow, not defined. Reniform moderate in size, kidney-shaped, not well defined, ocherous, with a few central brown scales. Secondaries paler, smoky, whitish toward the costal margin, crossed by three wavy brown lines, each of which is followed by a paler shade. A black, followed by a narrow pale terminal line. Beneath powdery, smoky, primaries with the reniform and orbicular marked with black dots, an extra-median bisinuate dusky line, a vague pale s. t. line and a series of black, connected terminal marks. Secondaries with a blackish discal spot and the lines of the upper side feebly reproduced. Expanse, .96-1.04 inches = 24-26 mm.

*Habitat*: Santa Rita Mts., Ariz., June 16, 19, E. A. Schwarz.

One male and one female only, the latter the larger and much the more obscure. While we have here a representation of all the markings found in the common eastern forms, all are very much obscured and the s. t. line is hardly defined at all. The femoral structure of the male is as in the other species; the antennæ are furnished with tufts of long hair and are apparently without the longer single bristles found in the other species. In the female the usual single bristles are obvious.

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## THE LIFE-HISTORIES OF THE NEW YORK SLUG CATERpillARS.—(*Conclusion.*)

PLATES VI—VIII.

BY HARRISON G. DYAR, A.M., PH.D.

The life-histories of all the Eucleids\* of New York listed by me (JOUR. N. Y. ENT. SOC., III, 145, 146) have now been made known with the exception of the little larva recorded as *T. testacea*. I have never seen this larva myself, and included it on Miss Morton's authority. It is, however, not *T. testacea* as Miss Morton thought, for I have raised that moth freely from other larvæ (JOUR. N. Y. ENT. SOC., VI, 151). From what Miss Morton tells me, I think that she had before her the larva of Reakirt's *Kronæa minuta*. This is the only record of this species that I know of since Reakirt's time (1864); but this would seem to prove it a true inhabitant of New York. It is so rare that I doubt whether I shall find it in sufficient numbers to obtain the life history, and therefore I close this series, for the present, without it, assuming it to belong to "type 7" of the revised table given below.

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\* I find it necessary to revert to the old name *Cochliidiidæ* for this family. The consensus of opinion among lepidopterists is averse to Kirby's date of 1810? for Hübner's *Tentamen*, preferring 1806, and I have concluded to accept this correction. This has the effect of changing the genus *Apoda* Haw. to *Cochlidion* Hübn. The family name founded on this genus is, therefore, again valid and antedates *Eucleidæ*, which was used by Comstock, Neumoegen and Dyar on the basis of the old names being invalid.