

of a mesial band from costa to anal angle by irregular, detached, whitish powdered spots, being smallest near apex and anal angle, and largest between first and second median nervules.

Beneath, primaries as above. On secondaries the grayish white blotches of the mesial band more pronounced and larger than on upper surface, taking irregular, triangular shapes between first, and second and third veins.

Expands 2.3-16, 2.7-16 inches.

Length of body, 1, 1.7-8 inch.

This beautiful insect is similar in its form to *H. Juno*, Pack., and *H. Diana*, Pack., but is readily distinguishable from both by the glaring red abdomen of the ♂, and the black abdomen of the ♀. Besides, *H. Yavapai* has a white sub-costal line, and other peculiarities, which do not agree with *H. Juno* (see Annual Rep. Peabody Acad. Sci. for 1871, p. 87; published April, 1872).

H. Yavapai ♀ approaches *H. Diana*, (see Rep. Zoolog. Coll. Lieut. Carpenter, Colo., 1873, U. S. Govt. Print. Off., 1875, p. 557), but is a much larger insect. It has not the conspicuous white band on secondaries, which is the salient feature in *H. Diana*, but is distinguished by the white sub-costal line.

H. Juno, *H. Diana*, *H. Yavapai*, inhabit the same zone, Southern, Southeastern Arizona and Sonora and may have a common pedigree. *H. Yavapai* is the most distinctively marked form. It has been raised by Mr. J. Doll, and of the forty ex l. examples, at present in my possession, not a single one materially deviates from the description herein given.

The habitat of *H. Yavapai* is Sierra Colorado and San Pedro river, Arizona.

Types ♀ ♂. ex l. Coll. B. Neumoegen.

MOTHS COLLECTED BY PROF. SNOW IN NEW MEXICO, WITH LIST OF EUDRIINI.

By A. R. GROTE.

The following species have been sent to me by Professor Snow from his captures this year in Northern New Mexico. The species are often the same as the Texan, while some of the forms are like those described from Mexico. The dangers of collecting in that region from the Indians are yet quite considerable. Prof. Snow very narrowly escaped capture by bands of the Apaches.

HALESIDOTA LABECULA. n. s.

♂. Abdomen scarlet above, beneath and at the sides yellowish; a stigmal series of black dots and a dorsal series on the terminal segments. Fore wings transparent, speckled with brown and clay colored scales. Five clay spots on the costa mark the inception of the transverse lines. Subterminal line, double, continued, dentate. Hind wings yellowish, transparent, with narrow brown edging.

Head and thorax pale yellowish brown. Antennæ yellowish brown, strongly bipectinate. Fore coxæ red inwardly. Legs clay colored, marked with brown, the femora stained with red within.

Expanse, 60 mil. One fresh male (869).

Larger and less yellow than *Edwardsii*, differing by the brownish thorax. The terminal abdominal marks when present in *Edwardsii* are more or less diffuse and livid.

Quadrina. n. gen.

The primaries are short and wide. The cell is very short and veins long. Median vein 4-branched, cell open, veins nearly equidistant vein, 4 from base of cell. Vein 10 out of 9, a long furcation. Abdomen untufted. Differs from *Citheronia* by the depressed apices, long, curved nervules and 4-branched median vein of primaries. Veins 6 and 7 thrown off together; 8 arising midway between 7 and 9. Median vein on hind wings also 4-branched; cell open, nervules straight and long; 4 and 5 together; 3 near 4 from lower side of vein. Costal and subcostal veins forming an accessory cell at base. Head rather broad and not as sunken as usual; thorax hardly elevated in front. Squamation and aspect of *Citheronia sepulcralis*. The cell on primaries appears closed at base by the fusion of subcostal and median veins.

QUADRINA DIAZOMA. n. s.

♀. Antennæ pectinate to tips, brownish. The four wings nearly concolorous brownish, brighter at base, where they have longer scales. A curved, even, dark, extra mesial shade line on primaries. An uneven, broken, subterminal line. Hind wings with a reddish shade, which obtains slightly at apices of primaries. Body darker, concolorous.

Expanse, 95 mil.

The neururation of this species seems to me to be indicative of a comparatively low and old type of Bombycidae. This is seen in the long veinlets, equidistant; the shape of the wing, the costal margin curved, depressed before apices. Without the male, it is difficult to be certain of the true position of this form. The brown color is brighter, more red tinted, brighter ochery brown at base of wings than in *Coloradia Pandora*, and altogether it is removed from that type and in several characters approaches *Citheronia*. Differs from *Gloveria*, by the larger head, broader clypeus and smoother body clothing. There is a gray mixture on the fore wings of *Coloradia* and *Gloveria*, wanting in *Quadrina*, which is a smaller insect. The pectinate ♀ antennæ separate the moth from the *Ceratocampidae*. The shape of the wings is like *Eacles*, but on the whole the outline is more like *Hyperchiria*. While structurally remote from any described U. S. genus, it may be catalogued next to *Gloveria* for the present.

RHODODIPSA MINIANA. n. s.

Eyes naked. Thorax covered with narrow scales. Front full. Thorax lighter honey-yellow or orange; this color spreads over base

of fore wings. Fore wings pale smooth clay color, crossed by two broad, vague, mesial white bands. Subterminal line inaugurated by a brilliant wine-red, outwardly oblique, linear scale patch, partly resolved into about three spots. A spot on internal margin. Hind wings brilliant wine red; the internal margin yellowish; indications of yellowish mesial line and the fringes are also of this color. Beneath the disc of primaries is of the same wine-red; and the hind wings are crossed by lines and shades of the same color. Length of fore wing, 10 mil.

The markings of primaries recall *Tamila Velaris*. The fore legs are wanting in the beautifully fresh example sent me by Prof. Snow under the No. 871. Quite as handsome as *R. Volupia* Grote; the red color is very rich. This genus and *Rhodophora* contain highly colored crimson or wine red species.

Bessula. n. g.

Clypeus full. Infra-clypeal plate projecting; fore tibiae with a claw on the inside at extremity of joint; a succession of three stout spines outside; all the tibiae spinose. Thorax untufted, hairy. Antennae of male simple, ciliate beneath. Eyes naked. This form differs from *Pippona Bimatrix*, by the slenderer fore tibiae which have a single stout claw-like spine on the inside; whereas in *Pippona*, which has the same characters, the joint is short and broad and there is a double spine on the inside. The fore wings are also not satiny in *Bessula*, which differs from *Antaplaga*, in the absence of the clypeal process, while in that genus the primaries are unusually produced.

BESSULA LUXA. n. s.

♂ ♀. Fore wings and thorax very light, whitish yellow, almost white, hind wings white, immaculate, silky. The fore wings have a curved t. p. line of faint ochrey dots. Two faint cellular dots. A dot or two in place of t. a. line. Sub-terminal line a succession of similar dots. All these dots are so faint that they are only noticeable in my fresh female specimen. The male, somewhat rubbed, appears almost immaculate. Beneath yellowish white. Costa and apices dusky yellowish; the s. t. line indicated over costal region as a vague, dark shaded mark.

Exp. ♂ 25, ♀ 30 mil. No. 873.

The yellow color is still fainter than in *Oxylos Citrinellus*. This species, especially the female, has a certain false air of *Pareuchaetes*.

Eudryas. Boisd.

The clypeus, wings, feet and antennae give good generic characters in the moths. If it were necessary to show the complete want of anything like anatomical study on the part of Mr. Strecker, it would be only necessary to point to his reference of *Ciris* and *Copidryus Gloveri* to the genus *Eudryas*. The three genera *Eudryas*, *Copidryas* and *Euscirrhopterus* are abundantly distinguished by the structure of the front and of the wings. The clypeus

is smooth and the apices depressed in *Eudryas*. The clypeus has a wide and thin lengthily projected "plate," and the apices are determinate in *Copidryas*. The clypeus has a circular rough projection and the male wings are almost denuded, the apices roundedly produced, the neurulation aberrant in the Cuban *Euscirrhopterus*. *Ciris* is distinguished by the pectinate antennæ and shape of wings; it is the lowest of the genera. The group is not Noctuidous, as some Continental authors seem to believe, but related to *Alypia* and *Castnia*, as sufficiently explained by Dr. Packard. I have referred the African genus *Ovios* here, in a former paper, and in my "Catalogue," I call the group *Eudriini*. The list there given is defective and should be amended as follows:

Family ZYGÆNIDÆ.

Sub-family HESPERI-SPHINGES Latreille.

Tribe *Eudriini*.

EUSCIRRHOPTERUS Grote (1866).

POEYI Grote.

Heterandra disparilis H.-S.

Cuba.

COPIDRYAS Grote (1876).

GLOVERI G. & R.

Texas; Arizona.

EUDRYAS Boisd. (1836).

UNIO Hubner.

Eud. brevipennis Stretch.

Canada to South. States; California.

GRATA Fabr.

Eud. Assimilis Boisd.

Canada to South. States.

CIRIS Grote (1863).

WILSONII Grote.

Texas.

LYGRANTHOECIA SPRAGUEI Grote.

The specimen is paler than our Eastern examples, but seems to belong to the same species. One specimen. New Mexico.

EMPLOCIA CEPHISARIA. n. s.

♀. Aspect of *Melanchroia Cephise*. Blue black above, immaculate; the short fringes are white. Beneath black, with the base of both wings on costal region shaded' with pale lake red. The collar and fore legs on the inside touched same color. Body black, as are the antennæ and legs. *Expanse* 30 mil.

In this species the primaries *above* at base show an extremely faint sub-costal shade of lake red. One specimen (868).

EMPLOCIA FERVEFACTARIA. n. s.

Above orange, with lead colored margins to the wings broken up into trigonate patches. A large triangular patch on

costa beyond the middle and another before apices. Terminal margin banded with lead color, widely above, narrowly below vein four. The lead colored fringes twice interrupted with white on the interspaces between veins two and four. Hind wings with three large marginal leaden patches, one on internal margin, another at anal angle, a third at apices. Outer edge narrowly leaden. A pale apical fleck. Beneath the markings repeated. Primaries orange; the ground color on each side of the leaden triangle at apices becoming pale. Hind wings with the orange color of upper surface replaced by pale clay, a basal dot, two discal dots and superposed costal mark on the pale ground color, distinct. Above these are indicated less distinctly. Wings at base touched with carmine, the costa of fore wings shaded with red. Body pale, head and collar touched with red.

Expanse 32 mil. One specimen (867).

BOTIS VOLUPIALIS. *Grote.*

A fresh specimen (No. 877). In this species the fore wings are colored like *Signatalis*, crossed by two broad clay lines. The inner angulated sub-medially; the outer broader, even, nearly straight. It differs decidedly from its ally in this respect, but is similarly sized and almost as highly colored and pretty a species. Body and hind wings much as in its ally. My original specimen came from the hills west of Denver. *Botis Augustalis* is nearer *Volupialis* than *Signatalis*, while quite different from either.

BOTIS TORALIS. n. s.

Fore wings olive yellow, with a broad terminal vinous border and a basal patch of same color. Thorax yellow olive. Head touched with red. Hind wings thinly scaled, pale fuscous. Beneath pale fuscous; apices of fore wings touched with wine color. Fringes wine-red. On the primaries, beneath, a dark s. t. band and discal mark are indicated. This species hardly looks like a *Botis*, it is similarly sized with *Ventralis*. (No. 872). *Expanse* 26 mil.

Among the species collected by Prof. Snow in Northern New Mexico are *Botis Fractalis* Zeller (880), *Allectalis* Grote (884-885), *Tatalis* Grote, (878). All these were described from Texas originally. There is also a specimen of *Emprepes Novalis* (881), much larger than my Texan type.



Grote, Augustus Radcliffe. 1881. "Moths collected by Professor Snow in New Mexico, with list of Eudriini." *Papilio* 1(9), 174–178.

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