On some New Species of Geometrid Moths from Arizona and California.

By George W. Taylor, Wellington, B. C.

The forms, described in the present paper, are all of them apparently new to science. The first named is in the collection of the United States National Museum, and for the privilege of examining and describing it I have to thank Dr. Harrison G. Dyar. The other forms described are all in my own cabinet.

1. **Melemaca virgata** n. sp.

This is a very beautiful insect which I thought at first might be *M. magdalena* Hulst, but the arrangement of the lines on the fore-wings is not the same, and Dr. Dyar, who has kindly sent me a rough sketch of the type of *magdalena*, assures me that it is not that species. Front and thorax pale yellow, palpi a little darker. Ground color of wings orange yellow. Fore-wings with two bands or stripes, one (outer) running from the apex of the wing to the middle of the inner margin, and the other (subcostal) from the junction veins 7 and 8 to the base of the wing. The color of the first-named stripe is olive greenish, bordered with a narrow deep red line on the inner side and by a conspicuous white stripe on the outer side. Towards the apex of the wing the red line becomes much wider and the olive line narrower. The subcostal stripe is bordered below by a red line and above by a white band, which is followed by a red stripe, the costa itself being of the ground color of the wing. The submarginal space is *orange*, becoming red at the tornus; fringe pale yellow. The hind-wings are pale orange, the color deepening from base outwardly until a reddish line is formed running in a regular curve from the apical angle to the middle of the inner margin. This is followed by a paler shade, and again towards the margin the color deepens. Fringe paler as on the fore-wings. Beneath, the color is paler, the lines of the fore-wings are reproduced faintly and the extreme apex is bright red. The hind-wings are quite pale. No discal points visible either above or below.

Expanse 28 mm.

Type.—One ♂. Huachuca Mts., Arizona, July 16–23. In U. S. Nat. Museum.

2. **Hydriomena multipunctata** n. sp.

Palpi rather large and stout, black on outside, grey on inner side and at tip. Front dark grey. Thorax concolorous with fore-wings. Fore-wing with costa almost straight for three-fourths of its length, then sharply curved so as to make a right angle with the outer margin. Color of fore-wing light fawn. In the central area the ground color is overlaid with a smoky shade, forming a band across the wing but not limited by lines.

All veins dotted with alternate white and dark brown dots as in the submarginal area of fore-wing in *Zenophleps lignicolorata*. A dark brown discal dot and faint indications of two or three parallel lines in the central band. A marginal row of black dots, one dot on each side of each vein, fringe concolorous with wing. Hind wings smoky grey, darker outwardly. In the submarginal area the veins are dotted as in the fore-wings. A small brown discal dot and marginal black dots as on the fore-wings. Under surface of all wings darkened with smoke color, and on the outer third the veins are dotted as above. The marginal black dots are also reproduced. Expanse 37 mm.

Described from one ♂. Mountains near Claremont, California. Collected by Prof. C. F. Baker, who has generously placed the specimen in my collection.

This species has a slight resemblance at first sight to *Zenophleps lignicolorata*, but it may be at once distinguished by the thickened and flattened antenna of the male. In *Zenophleps* the antennæ of the males are pectinated.

There is not any other North American Geometer known to me to which *H. multipunctata* bears any near resemblance.

3. **Hydriomena magnificata** n. sp.

This is a species somewhat resembling *Hydriomena speciosata* Packard but very much larger. The type specimen has an expanse of 45 mm., while *speciosata* ranges from 35 to 40 mm.

The prevailing colors are black and green, but in the type (which has been relaxed) the green tints have faded, as such tints generally do, to a light clay color.

Palpi long, porrect, green, with spots of black, the extreme tip green. Front green. Thorax green with black spots at sides and a conspicuous black dorsal spot. Abdomen silky grey with black dorsal spots on the posterior segments, the base of the terminal tuft being also conspicuously black. The fore-wings green with black blotches, which appear to be parts of six broken transverse lines. The extreme base of the wing is also black. The first three lines are intradiscal and are separate and conspicuous on the costa, but are united with an irregularly-shaped blackish blotch, enclosing a green spot, on the inner margin. The fourth line is extradiscal and is marked by about five narrow black blotches on the veins. It does not reach the inner margin. The fifth line is in the submarginal space and consists of a square black blotch on the costa, a much larger one between veins 6 and 4 and a third extending irregularly from vein 3 to the outer angle of the wing. The sixth line forms an irregular margin to the wing. The fringe is pale outwardly, darker at base and

cut with distinct black pencils of scales at end of veins, a few white scales being on each side of the pencils of black ones. The hind-wings are clear grey with a few dark marginal cloudings; fringe pale, slightly marked with black at ends of veins. Beneath, the markings of the upper surface are rather distinctly reflected.

Described from one ♂. Cochise Co., Arizona, March 4th.

It is possible that this very handsome species may be in some collections as *speciosata* Packard, but the true *speciosata* is, as pointed out above, not nearly so large and has moreover an unspotted thorax and abdomen, and lacks the reflected markings on the under side of the primaries.

4. **Macaria quadrifasciata** n. sp.

Male antennæ dentate fasciculate, more like *Philobia* than *Macaria*. Palpi and front dark yellow ochre. Wings, thorax and abdomen pale yellowish fawn, rather thickly covered with specks of a darker tint. Fore-wing crossed by four lines. The basal curved out from costa then straight to inner margin. Intra- and extra-discal lines are parallel to each other and to the basal line. The distance between the basal and intra-discal is only half as great as that between the intra- and extra-discal lines. The submarginal line is quite straight, running from costa about 1 mm. from apex to the internal angle. Hind wings with three lines (basal obsolete), no discal spot, fringe concolorous with wings. Beneath, all the markings are reproduced lines rather diffuse; the extreme margin of wings marked by fine black points between the veins. Expanse 32 mm.

Described from one ♂. Cochise Co., Arizona, July 8, 1904. The type was badly broken in a trip to Washington and back, but the species seems so distinct that I venture to describe the fragments.

The type specimen has lost the hind tibia, I cannot therefore be quite sure that the species belongs to *Macaria*. I think, however, that I am right in so placing it.

5. **Enemera simularia** n. sp.

Expanse 38 mm.

This moth is smaller than Californian or British Columbian specimens of *E. juturnaria*, but about the same size as specimens of that species from Arizona.

It is very similar to *juturnaria* on the upper side, the main difference being in the single extradiscal line. In *juturnaria* this line leaves the costa at about two-thirds distance from

base. It curves regularly outward, being most distant from base at vein 4, thence it curves inward to the inner margin.

In *simularia* this line commences almost exactly in the middle of the costa proceeding towards the centre of the outer margin in an almost straight line to vein 5, then turning at an obtuse angle and running in a straight line to the inner margin.

On the under side the difference is greater. An extradiscal line divides each wing into two parts. The outer half of each wing is very dark—on the hind wings nearly black.

The course of the extradiscal line on the hind wings is peculiar. The ends of the line are not at the middle of the costa and the middle of the inner margin. From each end the lines curves regularly towards outer margin, forming an acute angle on vein 5, recalling the median line on the underside of secondaries in *Cœnocalpe annellata* or *Marmopteryx marmorata.*

Types 1 ♀ and 1 ♂ in poor condition. Pasadena, California. Mr. F. Grinnell, July 22 and 29, 1903.

6. **Eupithecia helena** n. sp.

Palpi long and bushy, white, with a few black scales, tip black. Front, head and thorax dull white, with slight ochre tint. Abdomen same color, but with rather more of the ochre tint on the anterior segments; the last two segments greyish. Dorsal tufts small, black. Fore wings dull white, overlaid with brownish scales. Basal area blackish. Basal line double. Intradiscal line double, distinct on costa, faint across the wing, regularly curved, parallel with basal line. The space between basal and intradiscal lines is occupied by a broad, rusty brown, regularly curved band. Extradiscal lines double, white, wavy, very conspicuous on the costa, divided by a fine brown line; the inner white line is marked on inner side on each vein by a black dot. The course of these extradiscal lines is straight from the costa to vein 7, then evenly rounded out to vein 2, then in 2 or 3 scallops to the inner margin. Discal spots large rusty brown. Beyond the extradiscal line there is a rusty brown band which is almost continuous from costa to the inner margin. This is bounded by a distinct, white, wavy, submarginal line. The marginal space is dark grey. Marginal line distinct, black, hardly interrupted at the veins. Fringe long, color of the wings, marked at base with faint brown spots. Hind wings, color of fore wings, crossed by 7 or 8 dusky grey indistinct lines. The outermost being the most prominent. A submarginal white line and a marginal black one as on fore wings. Discal spot lengthened, blackish. Beneath, white, with indications of all the lines as alone. The rusty brown bands of the upper side show as dark grey bands below, and there is in addition a rather

conspicuous dark grey line marking the inner edge of the extradiscal lines. In the hind wings there are two extradiscal dark grey bands, the other lines being represented by faint indications only. Discal spots on all wings black, diffuse ; marginal lines black, very distinct. Legs greyish white, the anterior pair banded with black, posterior pair wanting. Expanse 26 mm.

Type.—One specimen from Pinal Mountains, Arizona, July 9, 1900.

In coloring this species recalls *E. nevadata* Packard, but in the present species the large costal blotch over the discal spot which is so conspicuous in *nevadata* and its allies is wanting. The wings in *helena* are also much rounder, the outer margins being very full. In the shape of the wings and the arrangement of the markings, but not in color, this species rather nearly agrees with *E. togata* (Hübner) of Europe.

Autolyca doylei, a new Phasmid from So. America.

By A. N. Caudell, Washington, D. C.

Male.—Elongate, black, not shining, unarmed ; the entire insect, including the legs and antennæ, covered with inconspicuous, fine, short black hairs. Head as broad as long, the posterior half of the top and sides yellowish ; antennæ black, longer than the body. Pronotum about one-fourth longer than broad ; mesonotum about one and one-half times as long as the pronotum and but slightly longer than the metanotum, including the intermediary segment, which is not quite as long as the metanotum proper. Abdomen apically much swollen and, in the only specimen seen, curved strongly upward ; segments 1–6 quadrate or barely elongate, the three terminal segments transverse ; the scoop-shaped ventral process of the seventh segment is broad and reaches to the tip of the abdomen ; cerci stout, clavate and incurved, as long as the terminal segment of the abdomen and descending from beneath that segment at nearly right angles. Legs black, except the ventral surface of the tarsi, which is yellowish brown ; anterior femora not noticeably curved at the base ; all the tibiæ areolate below and slightly longer than their respective femora and not quite twice as long as their tarsi ; all the femora, as well as the tibiæ, dully and inconspicuously carinate, the posterior femora reaching nearly to the apex of the sixth abdominal segment. Length :— pronotum, 4 mm. ; mesonotum, 5.5 mm. ; metanotum, including the intermediate segment, 5 mm. ; anterior femora, 13 mm. ; intermediate femora, 10.5 mm.; posterior femora, 15 mm.; width, head, 3.5 mm.; pronotum, 3.5 mm. ; basal segment of the abdomen, 3 mm.; apical segment of the abdomen, 4.25 mm.