

except the first, a long one in base of first sub-apical, a spot on thyridium before the posterior anastomosis and reaching into cell, and a spot in the thyridial cell still nearer the base; veins dark brown. The first and fifth apical cells extend but little basad of the anastomosis; the discal cell is a little longer than its pedicel; the veins at posterior

anastomosis are disjointed. The hind wings are hyaline, with brown veins, the fourth apical cell nearly as broad as the second, a dot in the base of the third.

Length, 13 mm.

Two specimens from top of Las Vegas range, New Mexico.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE. — XXVIII.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Eucrostis viridipennata Hulst.

Egg. Elliptical, disk-like, flattened concave above and below with sharp edges, one end a little more rounded pointed than the other, narrower, neither perceptibly truncate or depressed. Smooth olivaceous green, shining, with small, narrow and obscure reticulations. Size $.8 \times .6 \times .35$ mm.

Stage I. Head rounded bilobed, not shining yellowish ochraceous; width about .3 mm., ocelli black, mouth brown. Body with a subdorsal point on joint 2 anteriorly, the segment slightly collared; else smooth, cylindrical, moderately elongate, normal. Segments faintly several-annulate, the incisures not depressed. A slight rounded stigmatal elevation, most visible on joints 5, 6 and 10. Greenish white, a diffuse red-brown dorsal line, narrowed to obsolence at the ends. Tubercles and setae very small and obscure, the latter very short, black with enlarged tips. Skin minutely shagreened granular.

Stage II. Head bilobed, the lobes produced into vertical, conical horns, flat before; yellowish, granular, ocelli black. Body cylindrical, uniform, segments not incised, finely granular; a slightly elevated dorsal line. Feet normal, the anal ones with large granular plates. Yellowish white, tinted with brown, the granules and subdorsal line whitish, the anal plates pale edged. Conical

horns on joint 2 concolorous, granular. Thoracic feet appressed. No marks, no setae nor tubercles. Anal plate pointed behind.

Stage III. Head strongly conically bilobed, held obliquely forward, pale greenish yellow, granular. Body as before, the cones on joint 2 smaller than the head lobes but similar. Body green, the linear, subdorsal, whitish raised line looped up a little anteriorly on the segments. Pale whitish yellow with a diffuse brown dorsal band obsolete at the ends. Anal plate pointed; anal feet extended laterally with large plates.

Stage IV. Head granular, the lobes produced into conical horns, greenish yellow, apices brown, a blackish shade on the outer side of lobes; width 1 mm. Body as before, light yellowish green with a faint and diffuse brown dorsal line, obsolete at the ends. Subdorsal raised line as before, whitish, obscure. Skin densely pale granular. The long pointed anal shield exceeds the rather high anal leg shields. A dark brown shade subventrally on joint 12. Thoracic feet faintly reddish shaded.

Stage V. Head granular, the high, erect, pointed lobes projecting as far as half the height of the head; whitish green on face, lobes and sides brown shaded, with a few blackish dots; width 1.4 mm. Body slender, green, angular at the joints when bent, the cones on joint 2 smaller and slenderer than

the head lobes, but resembling them, brown shaded. Dorsum slightly yellowish between the obscure, slightly raised subdorsal lines of granules with a red-brown diffuse dorsal line. Anal plate produced into a cone behind, brownish at the sides. Thoracic feet brownish, appressed and touching the head at rest, the whole looking like one piece. A faint, pale, stigmatal shade. A dark red-brown mark subventrally on joints 12-13. Abdominal feet brownish shaded. Surface all finely pale granular. Spiracles reddish; no perceptible tubercles.

Cocoon of a few strands of silk between leaves.

Food plants. The larvae ate wild cherry, gooseberry and cottonwood but refused several herbaceous plants.

Eggs from a female taken at Boulder, Colorado, June 4th; pupation July 15th.

Another example was captured in the foothills above Golden, Col.

DISTRIBUTION OF CRYPTOCERCUS PUNCTULATA.—This cockroach was originally described from Virginia, Pennsylvania and New York. It has since been recorded from Tennessee (Saussure) and Kentucky (Garman). I have seen specimens from North Carolina (Coll. Am. Ent. Soc.), Cumberland Gap, Ky. (Dimmock), California (Rathvon) and Oregon at Glendale and Divide or Cottage Grove (Morse). *S. H. Scudder.*

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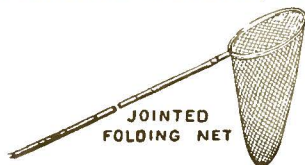
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