

GROUP CHARACTERISTICS OF SOME NORTH AMERICAN BUTTERFLIES — IV.

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

Mechanitis Fabricius.

Butterfly: Palpi thinly clothed, with first and second joints subequal and long, third very short; antennae more than half as long as fore wing. Wings opaque; fore wing twice as long as broad, the recurrent nervule in discoidal cell originating between the lowest subcostal and upper median nervules; pre-costal nervule of hind wings forked. Femur of male of same length as coxa. *Egg*: Tall, pointed above, with strong ribs and delicate transversals; laid in open clusters of about a dozen. *Caterpillar at birth*: Segments of body somewhat deeply separated, anteriorly tumid below the spiracles; ranged appendages moderately long, straight (?), pointed, perceptible in after stages. *Mature caterpillar*: Provided with an infra-stigmatal series of fleshy prominences, not prominent on the thoracic, conical and pointed on the abdominal segments, besides transverse series of papillae next the incisures and a pair of fleshy prominences on the sides of the first thoracic segment; transversely banded. *Chrysalis*: The wing-cases show a gentle arcuation along the ventral line, but the mesonotum is roundly prominent on the dorsal line; anterior extremity, as seen from the side, very acutely pointed; abdomen long conical. (μηχανιτης, a contriver; the significance is not clear.)

M. californica Reak. *Butterfly*: Wings with nearly the same markings above and beneath. Fore wings brownish black; a basal streak along the median nervure and two rounded spots near inner angle orangetawny; a yellow spot across the cell near its apex, a more or less interrupted oblique belt across the apical half of the wing and an oblong subapical spot also yellow. Hind wings orange tawny with an entire broad mesial band and narrow border of brownish black; beneath a 2-shaped blackish brown spot, much enlarged above below the middle of the apical half of costal margin. Expanse 60 mm. *Early stages*: Unknown.—Southern California.

Dircenna Doubleday.

Butterfly: Palpi thickly clothed, with first and second joints subequal and long, the third short, but not minute; antennae fully half as long as fore wing. Wings nearly transparent; fore wing twice as long as broad, the recurrent nervule in discoidal cell as in *Mechanitis*; pre-costal nervule of hind wings simple: Femur of male of same length as coxa. *Egg*: Unknown. *Caterpillar at birth*. Body cylindrical; ranged appendages long, slightly bent, seated on papillae. restricted to first stage. *Mature caterpillar*: Head round. Body cylindrical, covered with pile and spotted. *Chrysalis*: As in *Dynothea*.

D. klugii Hübn. *Butterfly*: Wings with nearly similar markings above and beneath, nearly transparent but somewhat

infumated, and with brown nervures. Fore wings with two arcuate series of large oval clearer paler or amber-like spots in the interspaces beyond the cell, subparallel to outer margin, a dusky margin and a pair of dusky dashes enclosing a broad oblique clearer band between them near apex of cell; an orange stripe with an enclosed broad black stripe following the inner margin. Hind wings margined narrowly with black, in which, beneath, are a series of transverse white dashes. Expanse 80 mm. *Early stages*: Unknown.—Southern Texas.

Subfamily HELICONINAE.

Butterfly: Head unusually broad. Palpi small, compressed, the fringes moderate. Antennae naked or sparingly scaled, exceptionally long, straight, the club well marked, sometimes abrupt. Fore legs of both sexes excessively atrophied, short and sparsely clothed with short hairs. Fore wings very long and narrow; none of the nervures swollen at the base; internal nervure absent; cell of hind wings short and closed or open; costal nervure extending to the outer margin. Abdomen exceptionally long and slender in most genera. Highly variegated and of lively colors, but rarely with delicate markings, generally similar above and beneath. Females with a pair of extensile club-shaped stink-pads at tip of abdomen, between the two last segments, brought into use when seized. Males with a similar pair on the inner side of the claspers. *Egg*: Thimble-shaped, considerably higher than broad, the outer portion of the domed summit with unusually large cells, the more or less direct continuation of the large quad-

rangular cells upon the sides. *Caterpillar at birth*: Head scarcely larger than segments following. Body cylindrical, scarcely tapering, uniform in color; ranged appendages very long, slender, and arcuate and generally, in our species always, clubbed. *Mature caterpillar*: Head armed with long and slender aculiferous coronal spines. Body cylindrical, submoniliform, more or less and delicately spotted or marmorate or blotched on the sides, armed with series of exceptionally long and slender, briefly and sparsely aculiferous spines. Feeds only on Passifloraceae, whence Müller in Brazil terms these insects maracujá butterflies. *Chrysalis*: Of very bizarre appearance; with highly conspicuous prominences in several places producing the most grotesque and distorted forms; especially are the ocellar prominences strongly compressed and generally excessively elongate and serrate, the wing-cases are excessively medioventrally protuberant and the sides of the dorsal surface of the third (sometimes second and third) abdominal segments prominent, produced or lamellate; thorax and abdomen rather deeply separated. In coloring much variegated.

Contains but a single tribe, Heliconini.

Synopsis of the genera.

1. APOSTRAPHIA. *Butterfly*: Fore wing distinctly more than twice as long as broad, its cell fully half as long as wing; cell of hind wing closed. *Egg*: Tapering only on the upper third. *Caterpillar at birth*: Three principal rows

of ranged appendages on each side, the uppermost laterodorsal, the lowermost with two appendages to a segment, all springing from flattened tubercles. *Mature caterpillar*: Spines of head slender, tapering throughout; uppermost spines of body much longer than the segments. *Chrysalis*: Frontal tubercles excessively long, ribbon-like, serrate above; antennal joints spined; abdominal prominences terminating in spines.

2. COLAENIS. *Butterfly*: Fore wing distinctly more than twice as long as broad, its cell fully half as long as wing; cell of hind wing open. *Egg*: Unknown. *Caterpillar at birth*: Ranged appendages springing from elevated tubercles. *Mature caterpillar*: Uppermost spines of body scarcely longer than the segments. *Chrysalis*: Frontal tubercles large but not elongate; antennal joints not spined; laterodorsal prominences of abdomen beyond third joint large, compressed, subquadrate.

3. AGRAULIS. *Butterfly*: Fore wing not more than twice as long as broad, its cell much less than half as long as wing; cell of hind wing open. *Egg*:

Tapering from the middle upward. *Caterpillar at birth*: Three principal rows of ranged appendages on each side, all with one appendage to a segment and all springing from elevated tubercles. *Mature caterpillar*: Spines of head stout, scarcely tapering; uppermost spines of body longer than the segments. *Chrysalis*: Frontal tubercles large but not elongate; antennal joints tuberculate but not spined; laterodorsal prominences of abdomen beyond third joint small, conical.

Apostrophia Hübner.

Butterfly: Palpi very slender, very thinly haired; antennae as long as the body, gradually clavate. Fore wings more than twice as long as broad with well-rounded tip, the cell more than half as long as the wing; cell of hind wings closed, the anal angle rounded. Fore tarsus of ♂ very short; pulvilli and paronychial present. *Egg*: Subcylindrical, tapering considerably only on the upper third, the lateral cells less than twice as broad as high. Laid singly.

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Synomila subochrearia Hulst.

Egg.—Elliptical, sides roundedly flattened, truncation rounded, a little oblique, outline in general a little irregular, no end depression. Reticulations circular-hexagonal, rounded, raised, the cell areas forming round pits like a thimble all over the sur-

face. Pale yellowish pink, turning darker. Size $.6 \times .5 \times .4$ mm. Laid loose, easily rolling around.

Stage I.—Head rounded, erect, slightly bilobed, free, dark dull brown; width .3 mm. Body moderate, normal, translucent sordid whitish, marked with sordid vinous brown.



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