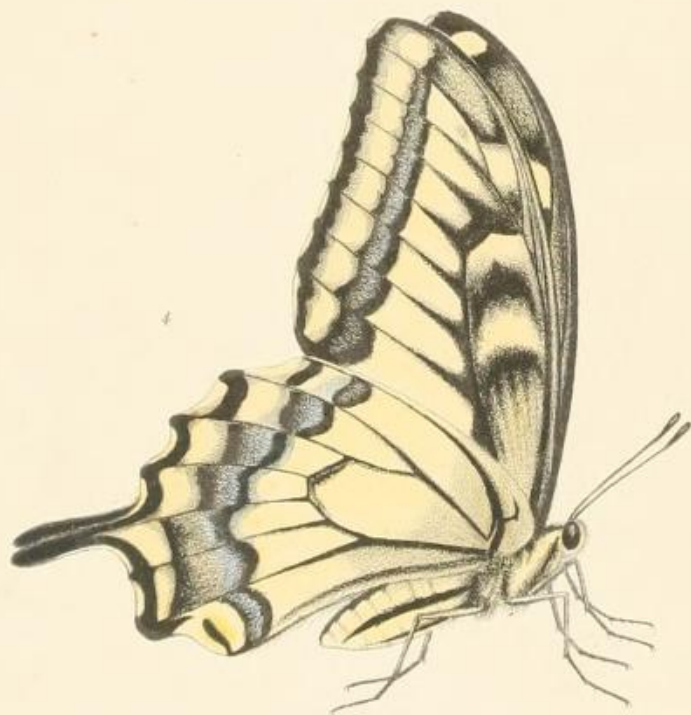
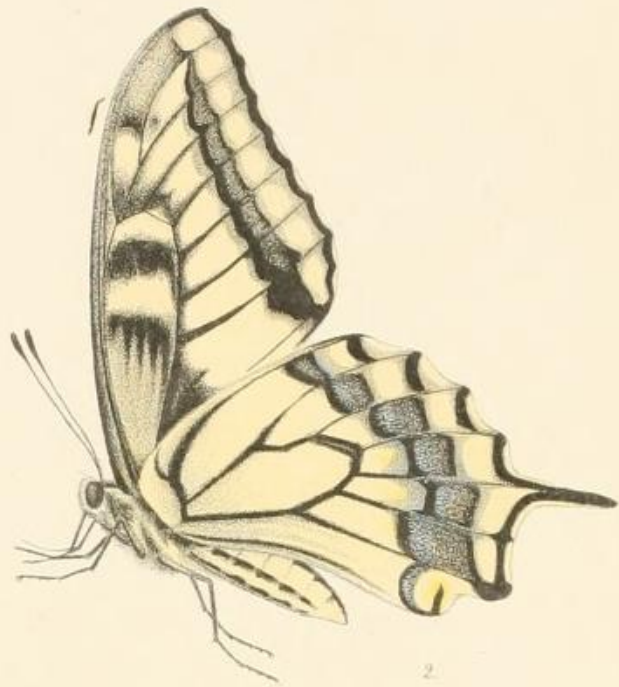


PAPILIO.

VII.



Drawn by Mary Peart.

L. Bowen, Col.

OREGONIA 1. 2 ♂, 3. 4 ♀.

PAPILIO VII.

PAPILIO OREGONIA, 1—4.

Papilio Hippocrates, Var. *Oregonia*, ♀, Edwards, Trans. Am. Ent. Soc., Vol. V., p. 203, 1876.

PRIMARIES much produced, costal margin strongly arched, hind margin straight or concave; tails long, narrow, and as in *Zolicaon*; the sexes alike in color and markings.

MALE. — Expands from 3.5 to 4 inches.

Upper side of primaries black, marked and spotted with bright yellow; of secondaries, bright yellow from base to marginal border; primaries have a sub-marginal row of eight spots, equal, mostly rounded, and a discal series of eight which form a transverse band; above them a long patch of yellow scales, and a little within this, towards base, a subovate spot, truncated on apical side; the first discal spot is deeply and roundly excavated on anterior side; the second is a little shorter than first, and third still shorter, after which there is a gradual increase in length, to the seventh, which is broad and sub-rectangular; the eighth is narrow and marginal; at the extremity of cell within is a sub-lunate transverse yellow spot and a broader one in the middle, of irregular shape, the two being separated by a black space; the basal area thickly dusted with yellow scales.

Secondaries have a broad black marginal border, which incloses a series of six yellow lunular spots, the first, at outer angle, small; above these spots are clusters of blue scales, never distinct, sometimes nearly all wanting; the inner margin bordered with black, sometimes to median nervure, but in other cases very narrowly; the anal spot small, yellow below, fulvous above, with a rounded black spot in the middle and which is connected with the narrow black edge of the margin; above the fulvous is a distinct blue crescent; tails of moderate length, narrow; fringes black, yellow in the interspaces.

On the under side, the larger part of the marginal border of primaries is occupied by a yellow band, and the remainder includes a nebulous stripe of dull

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yellow on the black ground; in the cell the yellow spots are repeated and enlarged; the base of cell is dull or luteous yellow, and sends out four long rays which nearly reach the middle; secondaries have all the nervures black, those about cell and the basal portion of the costal nervure being heavily edged with black; the lunules much enlarged and changed into subquadrate spots, occupying fully half the border, the black ground above them being heavily dusted with yellow and blue; the fulvous of anal spot is changed to orange-yellow, and the two yellow discal spots against cell sometimes have their outer ends yellow-tinted.

Body black on upper side, elsewhere yellow, but about the thorax fulvous-tinted; a black stripe from the head reaches the insertion of the wings; beneath abdomen two black stripes, and one on lower part of either side, from wings to last segment; legs black; palpi yellow, or with a fulvous tint; frontal hairs black, but next the eyes yellow: antennæ and club black.

FEMALE. — Expands 4.25 inch.

Similar to the male, the yellow paler; the blue clusters larger and more distinct.

I described this species as a variety of *Hippocrates* in 1876, from a female taken by Mr. Henry Edwards, at the Dalles, Columbia River. Mr. H. K. Morrison took several examples of both sexes in Washington Territory, near Olympia, in 1879, and from some of these the figures on the Plate are drawn. In all I have examined, 2 ♂ 3 ♀. I am satisfied they are not *Hippocrates*, but a distinct species, of same sub-group, and near to *Zolicaon*. Felder, Verhand. Zoöl. Bot., Geschied xiv. pp. 314, 362, 1864, describes *Hippocrates* as much larger than *Machaon*, the yellow area narrower, the wings narrower and more produced; the hind wings also shorter on the costa, more produced posteriorly; the tails longer, the anal spot more obscurely colored, and joined abruptly to the blue lunule; the black border of the hind wings on the under side much broader, the blue spots more distinct, and placed almost in the middle of the black ground, the outer ones accompanied by few yellow atoms, and the cells of both wings longer.

To this may be added that the black marginal border of hind wings on upper side is considerably broader than *Machaon*, if I may judge by 3 ♂ of *Hippocrates*, from Japan, before me. In all these this border is nearly straight-edged on the inner side, and almost touches the cell in two examples, and quite touches it in the other; and the tails, beside being longer, are not tapering as in *Machaon*, but are of nearly even width almost to the extremity, where they become broader, or sub-spatulate. On the under side of primaries the black cel-

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lular spots disappear almost entirely. The single female *Hippocrates* examined has the yellow area very much restricted on upper side, all the discal spots on primaries being separated by wide black spaces, and the basal area is black to middle of cell; so is the space between cell and lower branch of median nervure to both margins, except a small yellow triangle at the extremity. There is the same absence of black in cell beneath primaries as in the male. All of both sexes have the black border of primaries scarcely, if at all, dusted yellow, and all show the blue lunule meeting the fulvous anal spot with no intervening color; on secondaries beneath, the black portion of the border to hind margin is very much less dusted than in *Machaon*, in which species the black area is usually hidden by the yellow scales, and the blue spots stand in the middle of the black, on each interspace.

Much of Felder's description will apply to *Oregonia* as contrasted with *Machaon*; but the former differs from *Hippocrates* in several particulars. In *Oregonia* the yellow discal spots of primaries are larger, the black intervening spaces being narrower than in *Hippocrates*, and the yellow spots in the cell are both much smaller; the yellow area is broader on secondaries, and as in *Machaon* and *Zolicaon*; on the under side there is much more black in the cells, which is about as in *Machaon*; and the tails are shorter, narrow, and not sub-spatulate. These are between *Machaon* and *Hippocrates* in length and shape, and precisely as in *Zolicaon*. In both my ♂, the length of the tail measured on posterior side is .32 inch; the three *Hippocrates* show .44, .48, and .54 inch, respectively. In fact, *Oregonia* is nearer to *Zolicaon* than to either of the others. A large female of the last named species in my collection, expanding very nearly four inches, which is unusual, placed side by side with one of the female *Oregonia*, cannot be distinguished from it by the appearance of the upper side, except by the round and separated black spot in the fulvous anal spot, while in *Oregonia* the corresponding black spot is a continuation of the black stripe which edges the inner margin, turned in and thickened so as to have an oval shape rather than round. On the under side I can see no difference, except that the same black spot is present in *Zolicaon*, and the cell of primaries is wholly black, with a terminal and central yellow spot. There is a marked difference, however, between the bodies in these two species, in *Zolicaon* the whole abdomen being black, with only a yellow side stripe, whereas in *Oregonia* the body is yellow, with black on dorsum and with four narrow black stripes on sides and beneath, just as in *Machaon*. *Oregonia* bears much the same relation to *Zolicaon* which *Hippocrates* bears to *Machaon*. In the same district with *Oregonia*, *Machaon* also flies, of the same type with the Hudson's Bay and Alaskan examples, which are very like Var. *Asiaticus*, Mènètriès.