

Luscitiosa and *Jasminearum*. The first named is taken in Canada, Northern New York and Maine, the last will probably be found more abundantly southward. The larva of *Catalpæ* has turned out to be very numerous in various localities in the South, but the Moth has proved difficult to rear. With several other Sphingidæ, I took *Versicolor* twice at sugar near Buffalo, N. Y.; from its flight I could easily tell it from *Myron* and *Choerilus*, which came abundantly to bait, but it was harder to "bottle." It had a different way of taking the bait from the difference in tongue. *Hageni* has been taken in some quantity in Kansas by Professor Snow, and seems to occur throughout the Southwest as well as in Texas; I have not heard of its being found near the Atlantic seaboard. Our commonest species seems to be *Lineata*, after this, *Celeus*; *Abbotii* is also very well distributed. The species of *Hemaris* are more local; *Thysbé* is found over the widest territory. Mr. Hy. Edwards speaks of *bushels* of *Achemon* larvæ found in California on the vines; it is rarer in the East, but on Staten Island vineyards it was more usual than *Pandorus*. Of late years *Inscripta* has become rarer. *Labruscæ* has been found as far North as New Jersey, borne on the winds from more southerly latitudes.

In his "Synopsis of North American Sphingidæ," a work somewhat ambitious in appearance, but not evincing a corresponding study of the literature of the group, Dr. Clemens describes the following species, which are not generally known:

Calliomma Volatica from Brazil; *Deilephila oxybaphi* (larva) from Penn.; *Chærocampa Procne* said to be from California, but probably = *C. Lucasi* from East Indies; *C. Thalassina*, of which Butler says: "Seems to be allied to *Amadis*;" *C. Versuta* from Mexico. Butler seems to have overlooked *Calliomma Volatica*. Whether the type has gone the way of that of *Procne* I do not know, but it is certainly probable.

THE PREPARATORY STAGES OF ARCTIA NAIS, DRURY.

BY G. H. FRENCH, CARBONDALE, ILL.

EGG.—Diameter, .03 inch, color, white; an obtuse cone, about as high as wide, flat at the base; smooth. These were found on a ripe strawberry in a single cluster, hatched 5 days after finding. They had the appearance of being freshly deposited so that it is probable this period is from 5 to 6 days.

YOUNG LARVA.—Length .06 inch, color dull pale gray, head black on the cheeks, a triangular space above the mouth of the same color as the body. On each joint there is a transverse row of tubercles, six distinguishable, black, from each arises a black

hair as long as the thickness of the body. Feet 16. Duration of this period 6 days.

After 1st Moul.—Length .10 inch. Ground color similar to that of the preceding period; the tubercles dark brown instead of black, more than one hair from each. Head as before. Duration of this period 8 days.

After 2d Moul.—Length .20 inch. The only change aside from size is that the ground color is a little darker, and there are more hairs in the fascicles arising from the tubercles than before the moult. They are more active than they have been before. Duration of this period 6 days.

After 3d Moul.—Length .45 inch. Ground color leaden gray; dorsal, subdorsal and substigmatal stripes white. In the middle of each joint the subdorsal is orange, and there is also an orange spot just below this, above a tubercle. There are 10 tubercles to each joint distinctly visible now; the tuft of short hairs arising from each is black above but gray on the sides. Head black. Towards the close of this period the following changes were noticed: Ground color dull black, a little paler on the sides and venter; dorsal line yellowish white, subdorsal and substigmatal blackish; joint 1 somewhat lighter than the others. Head and thoracic feet jet black; prolegs pale, at the tip, orange spots on the sides dim. Duration of this period 7 days.

After the 4th Moul.—Length 1.00 inch. Color uniform black, the head shining, sides of the prolegs pale, and an indistinct pale dorsal line. As before, the fascicles of hairs from the dorsal tubercles black, those from the sides brown; those on joints 1 and 2 all brown. The interior part of the neck is reddish. Duration of this period 7 to 8 days.

After 5th Moul.—Length 1.70 inches. Color of body, tubercles and hairs as before, with the exception that the hairs on joint 2 are black, on the dorsum. Dorsal line nankeen yellow, faint on joints 1 to 3 and 11 to 12, but on all of the others distinct and expanded somewhat in the middle of each joint, those in the middle of the body expanding most; stigmata, orange. Head and thoracic legs brownish black; the prolegs brown, not very dark; venter slate color. No trace of any lines but the dorsal.

Mature Larva.—Length from 1.65 to 1.70 inches; width of head .15 inch; of middle joint .28; between joints .20; head brownish black, clypeus, palpi and antennæ whitish, the tips of the latter black; color of body and dorsal line as at the first of the period, as also the tubercles and hairs; 10 of the tubercles to each joint. All the other points as given before. Duration of this period from 3 to 11 days.

CHRYsalis.—Length .75 inch, from anterior end to end of wing cases .43 inch, these not reaching quite to the posterior part of abdominal joint 5; antennæ and leg cases .35 inch from end.

Depth, thorax .25 inch; abdominal joint 2, .27; joint 3, .30; joint 4, .31; joint 5, .28; joint 6, .27; joint 7, .25. From the posterior part of joint 8 it tapers rapidly to the end. In shape nearly cylindrical, the bulge in joints 3 to 5 being mostly dorsal. The last joint terminates in 10 hooked, brown bristles in two clusters; the tubercle supporting these is striated longitudinally. Anterior portion rounded, the prothorax containing two slight elevations covered with short hairs. Color black. Head and thorax finely granulated, the first four abdominal joints punctured with a few larger depressions, mostly smooth and shining. Duration of this period from 11 to 12 days, one day devoted to spinning in addition to this.

As intimated before, the larvæ from which the above descriptions were taken were obtained from a cluster of eggs found on a ripe strawberry. There were 29 of the eggs, but only two larvæ were reared through all their changes. The eggs were found May 20, 1882; the first moth appeared July 13, the second, July 22, making a total period of from 54 to 63 days, or about two months. From captures for several years I had supposed the species to be two brooded, one in May from larvæ that hibernated and one in September, but a two month's period from egg to moth will give us three broods in a season, one in May, one in July and one in September. I have this year found them in July and the first of August, though I had not noticed them before.

The specimens reared from these two larvæ were first a ♂ of the form *Phalerata* figured in Harris, and second form *Nais* a ♀; though this can not be altogether a sexual variation, for my other specimens of this form are males. The male answers well to Harris's figure and description of *A Phalerata*, having "the hind wings next to the body, and sides of the body, reddish," the general color of the wing being reddish, but not so much so as next to the body. The costal margin of hind wing is black, with two small spots along the outer margin. My cabinet specimens vary from two to four of these spots. The second form or the ♀ has the hind wings more distinctly red, a black costal margin to which is joined a discal dash and large apical spot, and a long angular spot below the apex on the outer border. Further along in the outer border towards the anal angle are two large, nearly round, black spots joined together. This seems to answer to Dr. Morris' description of *Nais* with the exception of the color of the hind wings. All my males of this form agree nearly with this in marking, but the ground color of the wing is lighter. I have not Drury's plate or description by me, but may say that this corresponds with another ♀ *Nais* identified for me by Mr. A. R. Grote. Of course there is a bare possibility that the cluster of eggs on the strawberry was deposited by more than one moth, but there is not much probability, as they were in a single cluster. If we take it for granted that the two forms had a common parentage,

then there is no longer any doubt of the identity of *Nais* and *Phalerata*.

With regard to *A Decorata*, I cannot as yet say as much. I have for some time regarded this as a form of *Nais*, but this season I have reared it from the larva, and found that it differs from the larva from which *Nais* was raised, as the following brief description of larva of *A Decorata* when full grown will show: It is black, rather thick, ten tubercles bearing clusters of hairs to each segment, the second and third on each side from above dark orange of rather a smoky hue, the tips black. Part of the hairs on the sides and all of those on joint 1, top as well as sides, are brown, the rest are black. Stigmata bright orange; no dorsal line. From this it may be seen that the identity of this with the others is a subject for future investigation.

TWO NEW SPECIES OF THANAOS.

BY W. H. EDWARDS.

THANAOS TATIUS.

Male.—Expands 1.6 inch.

Upper side of primaries umber-brown, blackish on disk and to base, the outer limb free from white scales; on outer edge of disk towards costa a light brown patch; on costa four sub-apical silvery dots, in zigzag line; one such dot in upper median interspace, and one, rather obscure, against end of cell; along hind margin a row of small patches of bluish-white scales; the usual (in this genus) extra-discal band is made up of large lanceolate and elongated black spots, separated, each edged on the outer sides by bluish-white scales, which scales form a conspicuous serrated line across the wing.

Secondaries black-brown with an indistinct series of lighter patches beyond the disk; fringes of primaries concolored; of secondaries white, cinereous at outer angle.

Under side of primaries lighter, the spots repeated, the one against cell distinct; along hind margin a row of white points, and at inner angle a white patch; beyond the disk an indistinct series of whitish patches, almost obsolete in the middle of the wing; the apical area dusted white. Secondaries uniform blackish-brown; along the edge of hind margin a macular white band, represented by dots on the upper half.

Body above dark brown, beneath same, but the thorax with many dark grey hairs; legs dark brown; palpi brown with dull white hairs interspersed; antennæ black, on the underside ringed white; club black above, the under side and tip ferruginous.

From a single male.

This fine species is readily distinguished from any of the



French, G. H. 1882. "The preparatory stages of *Arctia nais*, Drury." *Papilio* 2(9/10), 176–179.

View This Item Online: <https://www.biodiversitylibrary.org/item/39683>

Permalink: <https://www.biodiversitylibrary.org/partpdf/317902>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: NOT_IN_COPYRIGHT

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.