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SOME NOTES UPON THE SPHINGIDÆ OF THE UNITED STATES.

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I am indebted to my esteemed correspondent, Prof. C. H. Fernald, for a copy of his recent Synopsis of the Sphingidæ of New England. I have been greatly pleased with it, and trust that it will meet with that general distribution among the students of our beautiful science which it deserves. In the following lines I wish to present a few observations which the perusal of Prof. Fernald's book suggests.

Hemaris Tenuis, Grote.

Prof. Fernald remarks of this species: "The early stages and food plants are unknown." Presuming that the statement of the learned Professor is warranted by an exhaustive search through the literature of the subject, I shall venture to supply from my own observation what strikes me as a surprising deficiency, since *Hemaris Tenuis* is one of our most abundant species in Western Pennsylvania.

The food plant is the Snow-berry, *Symphoricarpus racemosus*, and I took last fall from one bush of this plant over twenty larvæ. My breeding cages this morning (April 26th) are full of the perfect insects, which, having just emerged from chrysalis, and lost none of the scales which at this stage cover the pellucid parts of the wings, are all of the form "*fumosa*" described by Strecker (Lepidoptera Rhopal. and Heteroceres, pp. 93, 140). Flown specimens, which abound at the lilacs in the grounds near by, are without the "smoky" appearance which led our Reading savant to apply the name, and show themselves unmistakably as "clear-wings."

Larva and Chrysalis.—A part of each larval brood is light apple-green in color; a part is reddish brown. This phenomenon is often apparent in the larvæ of the Sphingidæ, and is manifestly not due to the influence of the food plant, as both varieties are found side by side upon

the same plant. The pro-legs and the ventral aspect of the larva are in all cases chocolate brown throughout, deepening almost to black in the reddish brown portion of the brood spoken of above. The legs proper are jet black. The head is round and only partially retractile. The edge of the fleshy fold of the first segment immediately behind the head is minutely granulated with bright yellow. The spiracles are marked by small black spots enclosing two minute white points. The caudal horn is curved forward, and is covered with minute spiny processes. It is black at the tip, the black color extending downward before and behind to the junction with the body, but on either side at the base the horn is bright yellow, gradually fading into the green of the surrounding cuticle.

The larva spins a moderately compact cocoon among dried leaves at the surface of the ground. The silk is deep brown in color. The chrysalis is from seven eighths to nine eighths of an inch in length, smooth, long in proportion to its diameter, tapering to a fine point in the cremaster, and dull black in color.

Hemaris Thysbe, var. *uniformis*, G. & R.

This form is common at Pittsburgh, and prevails altogether at Cresson, Pa., on the summit of the Allegheny Mountains. I have never found it in West Virginia, North Carolina, and Southern Indiana, where I have collected extensively. I have never received it from any of numerous correspondents and collectors south of the Potomac and the lower Ohio. Prof. Fernald tells us that this variety is "common at Orono." May it not be regarded as a peculiarly *northern form*?

Amphion Nessus, Cram.

I have taken this species on several occasions at light, and it flies most commonly at dusk in these latitudes. If found flying in the middle of the day, I have noticed that it always keeps in the shadow, or slyly hovers about among the thick masses of the *Syringa* blossoms, in the deep umbrageous recesses, where it is not easily reached by the net of the collector.

Daremma Undulosa, Walker.

The larva of this species feeds occasionally upon the white oak and the red oak.

Sphinx Oreodaphne, H. Edw.

I have a specimen of this insect, taken by Mr. James Behrens, and

kindly determined by Mr. H. Edwards, which I am altogether unable to distinguish from small specimens of *Sphinx Chersis* taken in the vicinity of Pittsburgh, at Orono, Me., and various other localities in the United States. The Brooklyn Check List in making *Oreodaphne* a variety of *Chersis*, hardly goes far enough. It seems to me there can be no harm done to science by making *Oreodaphne* a synonym for *Chersis*.

Sphinx Vancouverensis, H. Edw.

I have a specimen of this form, bred by Mr. Behrens and determined by Mr. H. Edwards. It is a male. If taken in Allegheny County it would be unhesitatingly pronounced to be *Sphinx Drupiferarum*, Ab. & S. Mr. Grote, in his Check List of 1882, gives *Vashti*, Strecker, as a synonym for *Vancouverensis*. A comparison of Strecker's figure in Lep., Rhopal. & Heteroceres, pl. xv., fig. 4, with the specimen before me, indicates considerable difference. In my mind it is very doubtful whether *Vashti* is correctly regarded as a synonym for *Vancouverensis*, while it seems clear to me that *Vancouverensis* is a synonym for *Drupiferarum*, if my specimen determined by the author of the species is an index.

Dolba Hylaeus, Drury.

This moth is exceedingly common in Southern Indiana, where the larva feeds on the *Asimina triloba*, or Pawpaw. I have taken as many as ten larvæ from a small Pawpaw bush.

Dilophonota Ello, Linn. The description of the preliminary stages of this species given by Prof. Fernald is evidently founded upon Boisduval, who derives it from a figure given by Madame Merian on the sixty-first plate of her work, which Boisduval supposes was intended to represent the larva of *Ello*. The description is exceedingly defective, and in the interest of more exact knowledge I shall venture to give one founded upon a series of beautifully prepared larvæ obtained from my valued correspondent, Dr. Wittfeld, who accompanied the specimens with a number of interesting MS. notes.

Egg.—"Dark green; deposited on the under side of the leaves of the food plant, which is *Euphorbia heterophylla*." (Wittfeld).

Larva.—The larva presents again the phenomenon of dimorphism, or rather of dichromatism, alluded to in the foregoing note upon *H. Tenuis*. A part of each larval brood is green from the time of the first moult, and a part remains of a purplish brown color, the color of the newly hatched larvæ.

Green Variety.—The head is round and marked on either side by a dark brown line running from the insertion of the palpi to the vertex, and continuing along the dorsal aspect of each segment, gradually diverging until the fourth segment, then continuing parallel until they suddenly converge at the base of the caudal horn. These dark lines are bordered externally by light yellow, shading off into the darker green of the sides and ventral surface of the larva. The space upon the back of the larva enclosed by these lines is delicately sprinkled with dark brown and light yellow spots, the ground color being apple-green, save in the three anterior segments. These segments are of a light olive green between the lines, and are ornamented by a median line of dark brown or black, running from the vertex of the head to the third segment, where it is lost in a large circular black spot, margined externally by bright yellow, outside of which on either side is a shade of deep reddish brown, of a lunular form. The sides of the larva are faintly mottled in the same manner as the back and are further ornamented by small white blotches, disposed one upon each segment just posterior to its junction with the preceding segment, and on a line with the spiracles.

The legs are yellow, annulated with black, the prolegs are black, bordered at their juncture with the segments with yellow, and having the circlet also yellow. The caudal horn is very short and blunt, and distinctly four angled. In one specimen it is almost obsolete.

Brown Variety.—The brown variety does not differ from the green save in color, and the consequent obscuration of the dark lines and markings, which appear less distinct upon the darker ground, and the heightening of the effect of the light spots which come out into bold relief upon the darker surface.

The mature larva is from three to three and a half inches in length and about one-half of an inch in diameter.

The larva pupates near the surface under fallen leaves. The pupa is dark brown. The imago emerges in from fourteen to fifteen days.

The insect is very common in Eastern Florida. I have specimens also from the Antilles, Central America, Trinidad, and Brazil.

Everyx Versicolor, Harris.

The larva of this beautiful moth is found in Western Pennsylvania upon the wild Hydrangea, *Hydrangea arborescens*, which abounds in the deep ravines near streams of running water. The larvæ are either green

or pinkish brown, the brown ones being as numerous as the green. They are peculiarly liable to the attack of parasites, and out of nearly fifty specimens secured in 1884, only nine or ten came to maturity as perfect moths. The rest fell a prey to a species of *Pezomachus*.

Triptogon Occidentalis, Hy. Edwards.

This is a western variety of *T. Modesta*, Harr., differing from the type-form simply in being generally larger in size and paler in color. *Modesta* is found in Western Pennsylvania, Ohio, and Southern Indiana. The examples of *Modesta* from S. Indiana are hardly to be distinguished from specimens of *Occidentalis* from Colorado.

Cressonia Juglandis, Ab. & S.

The larva of this species is commonly found in Western Pennsylvania and Southern Indiana.

PREPARATORY STAGES OF TETRACIS TRIANGULIFERATA, PACK.

BY G. H. FRENCH, CARBONDALE, ILL.

Egg.—Elongate or oval, .03 of an inch long by .025 of an inch wide, ribbed longitudinally like a muskmelon by about 15 ribs; color pale yellowish green. Duration of this period 8 days.

Young Larva.—Length .10 of an inch; cylindrical, with 10 legs; grayish white, without marks except a bright scarlet transverse line across the posterior part of joint 2, jaws the same color, legs concolorous, the six thoracic slightly pink tinted. Duration of this period 6 to 7 days.

After First Moulting.—Length .30 of an inch; shape as before; dorsum dark purplish gray, paler in some; on each side a row of five short streaks, slightly lunate, bordered outside with paler, those at the incisures between the joints pale, on each side of joints 8 and 9 a blackish purple patch, the first the largest; venter with one pale and two dark stripes and some spots; head as before. Some examples have the dorsum pale green with a gray shading. Duration of this period 5 days.

After Second Moulting.—Length .50 of an inch; cylindrical, near the posterior part of each of joints 6 to 10 are four slight elevations in a