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THE LARGER SPECIES OF ARGYNNIS, AND THE MYSTERY OF THEIR LIFE HISTORY.

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Although the larger species of *Argynnis* which fly in the Eastern part of this Continent are known in all their stages, through the most valuable labours of Mr. William H. Edwards, there are certain problems in regard to their life history which have baffled the efforts of all the entomologists who have attempted to solve them.

On page 124, of Vol. VI. of CAN. ENT., Mr. Edwards wrote as follows:—

“There are one or two points in the life history of the larger *Argynnides* that are not yet clear. With us, *Cybele* male is on the wing from the 25th of May to the 10th of June, as I have noticed for several successive years. Probably *Aphroïte* nearly as soon, and *Diana* first appears about the 20th of June. Shortly after the 1st of June the female of *Cybele* is to be seen, and both sexes abound in the clover fields. By the end of June *Cybele* has become scarce, and the individuals to be seen have lost their freshness and are broken and worn. It is certain that these early appearing females have not matured eggs and laid them, because at no time from June to August will anything but rudimentary eggs be found by dissecting, and the eggs do not become distinguishable to the eye until August. They then mature rapidly, and in a few days attain full size. I am confident that no eggs are laid till August. But about the first of that month, and all along to near the end of it, there appear in great numbers both fresh males and females, as if just from chrysalis, with no abrasion of the hairs on thorax between the wings, which spot is the first to show wear. (I doubt if an *Argynnis* could fly two days without thus giving evidence of it.) There are flying at the same time many worn individuals, especially females. These last are the first to deposit their eggs, but shortly after, and upon the time of frosts, the others also are in condition to do the same. I see no other explanation of the appearance of these freshly emerged butterflies than that they have formed part of the brood of caterpillars hatched the previous fall, some of which brooded the butterflies that came out in May and June, and the remainder continued in the larval or chrysalis state until August, and upon these last the perpetuation of the species largely depends, for nine-tenths of the June flight must have been destroyed before August. If I am right the preparatory stages of the August *Cybele* must consume eleven months out of the twelve.”