

dampness, they being placed on stems of violets growing in pots. But the alternation of warm with cold weather during the fall and winter was unsuitable for the larvae, the leaves damped off, or the plants died, and there was a constant loss. After the survivors were brought into a warm room later in the winter they were not healthy, but lingered along, every stage being protracted, many perishing even up to chrysalis and imago, or the butterflies perhaps came out crippled. In 1873, starting with more than 300 young larvae of *Diana*, I obtained but a single butterfly. From as many eggs of *Cybele* I got three butterflies, and of *Aphrodite* one chrysalis only, which died before imago.

Encouraged by the results obtained by freezing the larvae of *Satyrus Alope* in winter of 1878-79, I determined to try the effect of cold on the larvae of *Cybele*, and availing myself of the kindly offered aid of Prof. C. H. Fernald, I sent a considerable number of recently hatched larvae to him at Orono, Maine, to be placed in ice-house. They were in small paper pill boxes, the unglazed sides of which afforded foothold. I had found that the eggs or larvae of *Alope* escaped mould in such boxes, while others on cloth were destroyed. These little boxes were placed in a flat tin box, which was deposited in the sawdust beneath the ice, "frozen sawdust," as Prof. Fernald wrote. Five months later, on 5th March, 1880, I received the boxes by mail. The larvae were found to be nearly all alive—not more than one or two dead—and when first seen several showed some movement, though only three days from ice. Others were lethargic some hours longer, but by the 6th nearly all had left the boxes and betaken themselves to the plants of violet amid which I had laid them. They crawled at and down the stems, and disposed themselves in the concave sides just as they do in the fall when about to go into lethargy. On 10th March one of the larvae was found to have passed 1st moult, several days in advance of any other, and it continued in advance to maturity, passing 2nd moult 18th, 3rd 27th, 4th 4th April, 5th 12th April, suspended 23rd, pupated 24th, and gave imago, *Cybele* ♀, 14th May. The whole period from ice to butterfly was 73 days. The other larvae passed 1st moult 19th March, 2nd 29th March to 2nd April, 3rd 4th to 6th April, 4th 11th to 12th, 5th 16th to 19th April, and the butterflies issued 12th to 27th May.

What loss of larvae there was occurred before 1st moult, partly by escape, as it seemed, but partly, as I thought, from having been introduced to a warm room too abruptly. But after the moult I lost none. I