

separate, of course, put but one in the bag; otherwise several, as half a dozen *Turnus*, for example. One can judge pretty well, either by the size of the abdomen, or by the worn state of the wings, whether the eggs are mature. If the wings are worn, even though the abdomen be not swollen, it is probable the butterfly has already laid most of her eggs. Species differ in regard to the time required after impregnation for laying. Several have been known to lay within a few hours after the two sexes had been taken in copulation, but others require several days. In these last cases the eggs are not fully formed when the butterfly comes from chrysalis, in the other they are. In Argynnis *Myrina* and *A. Bellona*, also in *P. Tharos*, the eggs are mature in the new butterfly; in *Mel. Phaeton* they are wholly unformed. In the larger Argynnis about two weeks elapse after emergence from chrysalis before the eggs are mature. In many species copulation takes place as soon as the female comes forth, often before the wings are expanded or dried. Indeed, in *Heliconia Charitonia*, the males have been observed by Dr. Wittfeld to hang in clusters of four or five upon the female chrysalis, and when the shell bursts open from their weight, one of them is sure to make connection before the shell is fully removed. I have seen old males of *P. Ajax* coursing up and down a bit of woods in which these butterflies were coming from chrysalis, and ready to pounce upon any limp-winged female that came within their vision. In CAN. ENT., viii., 161-2, I related that I turned loose at Coalburgh a dozen examples, male and female, of *A. Myrina*, the larvæ of which I had brought from the Catskills, and about three hours later found a pair of them in copulation in the grass. These I got into the house and into a box, and next day set the female on a plant of violet under a bag. Within an hour she had begun to lay eggs, and within two days laid 93.

In August, 1877, I took a pair of *Arg. Atlantis* in copulation, in the Catskills, in the forest, several miles from home, and doubting if I could get them home in this condition, I tied up my net and suspended it to a branch. The next day I returned and brought in the female, which laid fertile eggs at two days and later.

Some species, however, do not seem to lay so readily as Argynnis, and have to be kept alive artificially in the manner to be described hereafter. Often, and especially for species which lay on small plants, as violet or grasses, I set the plants in pots, or even tin fruit cans, and over the tops tie bags, which are high enough to clear the plant by a few inches. To