

diagrammatic. In no instance did I find the raised reticulation and the bosses so regular either in outline or arrangement as there depicted. I have therefore represented in Plate 1 the micropyle (fig. 1) and a part of the surface sculpture (fig. 2) from the region of greatest diameter. These figures are reproduced from camera lucida drawings, and exhibit typical characters.

*Period of incubation.*--A number of eggs were secured, with the exact time of oviposition, and in each case the birth of the caterpillar was determined to within an hour or two, except when it occurred during the night. The average duration of this stage was found to be 4 days 2 hours. Two hatched after only 3 days, and several were delayed to 5 days 4 hours.

*The larval stages.*--In freeing itself from the eggshell the caterpillar eats only enough to permit it to escape. It bites a hole through the edge of the concave top, usually destroying the micropyle. Of all the empty shells examined, only two were found with this structure intact and suitable for drawing. The newly-born larva seeks the petals\* of the flower on which it finds itself and bores a hole through them just large enough to accommodate its body. Through this it crawls into the heart of the blossom and feeds upon the stamens, pistil and carina. It is a fact worthy of note that the *alæ* and *vexillum* are not eaten, and, with the exception of the minute hole by which, as a baby, the caterpillar entered, the flower seems uninjured. Without doubt, this habit serves as a measure of protection against their ever-watchful enemies. Fig. 3 shows a flower of the lupine (x 2.25) and the small hole by which I detected the presence of many of the larvæ collected or marked for study. Around the hole the tissue dies, and is discoloured for a very little distance. Fig. 4 is the same, with one wing removed to show the riddled keel.

The first moult evidently takes place within the flower; whether the others do is doubtful. As long as the petals last the caterpillar lives within their purple shadow, † probably moving to a new home whenever the immediate supply of food has been exhausted. When this happens, the petals are not punctured, but access to the inside of the flower is gained between them. There is thus no indication of the presence of a

\*The larvæ from two eggs found on leaves attacked the parenchyma of the upper surface. These were not collected, but, with others, were left for observation in the field. One of them was discovered by a small black spider, which carried it off before my eyes. The other disappeared the day after hatching, may have been killed, or sought the flowers.

†It may be merely a coincidence, but I have never found a larva on the variety *albiflora*.