

small tube with dense walls, functions in the admission of air into the egg chamber. Whether this is so or not I could not determine in the few experiments I performed. Below the broad expanded base of the spine is a narrow lunar-shaped opening (figs. 2 and 3). This allows the entrance of water beneath the egg-case proper, and through it the newly-hatched larvæ escape. This outer sheet of silk enveloping the egg-case is very thin and semi-transparent. Through it one can readily observe the young larvæ as they hatch and crawl into this space before venturing out into the open pond.

The eggs form a disk-like mass suspended from the roof of the egg-case (Pl. XXII, fig. 3.) They are all arranged vertically, closely applied to each other and in a single layer. Above the eggs the roof is composed of a considerable thickness of rather loosely-woven silk, leaving comparatively large, open spaces. Each egg measures 4 mm. long and about 1 mm. in diameter, yellow in colour, and loosely wrapped in its own coat of silk. Although I have examined these egg-cases carefully, I have never found any water in the portion containing the eggs. It would seem as if the open spaces in the loosely-woven silk and connected with the horn-like process in front serve as a means of air supply for the developing embryos. The number of eggs in a single case is very large, and it is not known how many egg-cases may be made by a single female. In the two egg-cases counted there were 112 and 130 eggs, while Garman found 107 in the one counted by him.

The young larvæ on hatching do not immediately leave the egg-case. On the evening of June 25th I saw quite a number of the newly-hatched fellows crawl out into the space below the eggs, but they did not venture further. Next morning this space was literally swarming with them, so crowded that they could not attack each other. Shortly after they began to emerge; slowly at first and then more rapidly. Soon the small aquarium was a seething mass of wriggling savages. They nipped at each other fiercely, each shying off, but soon one got a death-grip. The successful grip is directly back of the large head (fig. 29), for then the larva is helpless, and the other little savages soon close in and complete the killing. One is not much of a feast for over a hundred hungry chaps, and the first taste is only the beginning. After considerable manœuvring, another is seized and the