

and are replaced with fertile ones. This takes place as late even as the eighth day of incubation.

The duration of incubation is from ten to twelve days, at the end of which time the egg-cases and adhesive nidus that holds them are cast off entire, providing there be no late-laid eggs, in which instance the whole mass, including empty eggs and nidus, remain attached to the back of the male until the last one is hatched. And just why it is that a few unfertile eggs will drop away from among the mass of fertile ones and leave the parent before incubation is complete, whereas, on the other hand, the empty egg cases and nidus remain until the very last laid egg is hatched, I cannot understand.

The eggs are a long oval, five mm. long by one mm. thick, and are the same colour as the parent bug. The cast-off nidus and egg cases resemble a knobbed shield as nearly as anything that I can think off, being an oblong oval, with concave surface to back of parent.

During the period of incubation the male spends much of his time in aerating the eggs. This is done by gently raising and lowering the wings so that the air taken in at the surface, and held under the wing-cases, is moved back and forth beneath the mass of eggs, which take it up little at a time, as the needs of incubation require. The adhesive nidus into which the eggs are set must perform the same office or function for the gestating insect that the placenta in warm-blooded creatures performs for their gestating young, with this difference, that in warm-blooded animals air is taken into the blood from the lungs, and transferred to the placenta through the circulation, while in the creature under discussion the air is absorbed directly through the pores of the wing-sheaths.

At the end of incubation the male comes to the surface, and with his back partly out of the water, the young begin to appear.

The first thing seen after the rupture of the egg-case is the beady-black eyes. Then the male continually raises and lowers the wing-sheaths and executes a jerking motion along with it, at regular intervals. The young insect is extruded from the egg-case by easy stages, and in a manner very similar to the birth of a mammal. I am not sure whether the power of extrusion lays wholly in the egg-case or not, but incline to the belief that some pneumatic pressure is brought to bear on the foetal insect from the air beneath the wing-sheaths of the male, which is kept in constant motion, and which of necessity must exert more or less pressure,