

through two thicknesses, or even one, of glass. Moreover, an admirable description of the metamorphosis can be read in Mr. Cowan's "The Honey Bee," page 158.

The first thing noticeable was the general wrinkling of the skin, with signs of a neck and waist being formed. Then very slowly a vague outline of limbs and wings was formed, so gradual that you could not say how it was done. There was something ghostlike, something quite uncanny, in this constant motionless development. Day after day the pure white nymph lay perfectly still on its back; no sign of life, no sign of color. At last, on June 18 the head began to color purple. The next day it darkened a little, and the body showed slight signs of color. On the 20th came the first sign of life. At first a slight motion of the head from side to side; later in the same day the legs began to move a little. On the 21st the body had become generally darker; the wings were tinged towards the points of attachment, but the nerves remained white. That morning the insect—began to push with its legs, while the head moved more frequently from side to side. Life was beginning fast. By noon it had turned off right over, and for a while lay on its belly, after which it turned back again and rested. In a short time these movements were repeated. The thorax had by this time become dark, and hairs were now visible over the body. At night the insect looked very like a drone, and by the next morning, the 22nd, the tomb was empty, and work-bees were busy filling it up. From the time the young creature showed signs of life the bees had been very busy at the entrance of the cell, but I could not

see that they did anything towards freeing its inhabitant.

The little game of "chiveying" which I described in my former letter was again very popular in my hive, and I was amused to observe it being indulged in by some bees on the outside of a swarm-cluster one day when I was looking for the queen.

I am inclined to believe that bees cannot continue in health in a hive temperature over 90 deg. Fahr. Last year I noticed signs of discomfort when the thermometer showed 92 deg. This season, when the drone-bug above mentioned was first described, I feared that it might become chilled in its position against the glass. I therefore kept on the lined shutters of the hive as much as possible day and night, and the thermometer was generally in the neighborhood of 92 deg. Bees began to die, and before long had done so in such numbers that I had in the end to take off the glasses from one side of the hive and remove the corpses, hundreds in number, the bees being no longer able to cope with them. This done, and on my ceasing to use the shutters, the mortality ceased at once and the hive remained perfectly healthy. The ventilation was good all the time, though perhaps somewhat interfered with towards the end by the accumulation of dead bees. I conclude, therefore, that these were killed by the constant heat. When in an ordinary hive the temperature from any cause rises to an uncomfortable heat, say 90 deg., the bees leave the hive; sometimes, as many must have noticed, hurrying out; and they remain outside until the heat has become bearable. The construction of an observatory hive, especially with the glass-covered exit passage that I have adopted, makes this exodus inconvenient. The bees