

in one case 82 seconds, the period always ending with the approach of the ants.

When I placed a fresh larva, taken from the house, on the stem, as soon as the ants discovered it there was immense excitement among them, and a rush for the last segments. The larva forthwith relieved itself by the excretion of the fluid, and the tubes stood out with domes expanded between the times of secreting. If I placed a fresh larva on a stem on which were no ants, there was no excitement in the larva, no appearance of the tubes and no movement in 11th segment. I have watched repeatedly to make sure of this. But if ants were now transferred to the stem, the moment the caressings began the larva changed its behavior.

From what I have seen, I am led to believe that these tubes are merely signals to the ants, and that when the latter discover them expanded they know that a refecation is ready, and rush to the orifice on the 11th segment. If the tubes serve any other purpose, I have failed to discover it. There is no duct visible on the dome of the tube when largely magnified, and the ants seek nothing of the tube or on the 12th segment. It might be supposed that the tubes are used for intimidation, to frighten away enemies, but they certainly are not. They are in some way connected with the organ in 11, and in the younger stages, when the larvae suffer most from enemies, neither tube nor this organ is available. The outward openings, and the orifice in 11, are visible in the youngest larval stages, but till near maturity the larva has no use of the tubes and cannot emit the secretion. The ants rarely attempt to caress or solicit young larvae, but pass them by with indifference. When I have occasionally seen an ant run about one of these, the larva manifested great annoyance, throwing up the hinder segments to drive away the intruder. The larva plainly considers the ant as a something to be got rid of—as an enemy. If the tubes could now be thrust out the ant would be attracted, not repelled. But the moment that the tubes are free, and the secretion ready to flow, which I believe to be immediately after 4th and last moult, but may perhaps be just after 3rd moult, and is certainly not earlier than that, the larva submits quietly to the attentions of the ants, and invites and rewards them. Dr. Weismann wrote: "You should try and observe what enemies the larvae have. It is conceivable that there are such enemies as are afraid of ants." I find four species of parasites about these larvae. Two are Dipterous. These are of the size of the common house fly. They deposit eggs on the skin of the larva (in an instance observed, on the