

the fourth I have seen but a single ant and in one instance. I have watched and experimented in various ways on both larvae and ants, shifting either from one stem to another, fresh larvae to ants and ants to larvae. The ants, when discovered on a stem, will invariably be on or near the larva. They run over the body, caressing with antennae, plainly with the object of persuading the larva to emit a drop of the fluid on 11. Most of this caressing is done about the anterior segments, and while the ants are so employed, or rather, while they are absent from the last segments, the tubes of 12 are almost certainly expanded to full extent, and so remain, with no retracting or throbbing, until the ants come tumbling along in great excitement, and put either foot or antenna directly on or close by the tubes, when these are instantly withdrawn. The ants pay no heed to the tubes, do not put their mouths to them, or to the openings from which they spring, nor do they manipulate that segment. They seek for nothing and expect nothing from it. But they do at once turn to 11, caress the back of the segment, put their mouths to the opening, and exhibit an eager desire and expectancy. By holding the glass steadily on 11, a movement of the back of this segment will soon be apparent, and suddenly there protrudes a dull green, fleshy, mamilloid organ, from the top of which comes a tiny drop of clear green fluid. This the ants drink greedily, two or three of them perhaps standing about it, and they lick off the last trace of it, stroking the segment meantime. As the drop disappears this organ sinks in at the apex and is so withdrawn. The ants then run about, some seeking other larvae on the same stem, some with no definite object, but presently all return, and the caressings go on as before. The intervals between the appearance of the globule varied with the condition of the larva. If exhausted by the long continued solicitings, some minutes would elapse, and the tubes meanwhile remained concealed; but a fresh larva required little or no urging, and one globule followed another rapidly, sometimes even without a retracting of the organ. I have counted six emissions in seventy-five seconds. The larva did not always await the approach to the 11th segment, but gave out the drop unsought and as soon as it was aware of the presence of the ant. Now and then the drop was preceded by a bubble several times larger than itself.

As I have stated, the tubes are usually expanded when the ants are absent from the last segments, and are certainly retracted when they come near. I counted the length of these periods of expansion, 10, 20, 50, and