

vations and experiments published (Weber 1956). During the summer of 1963 fresh colonies from the same site, the intersection of U. S. Highway 322 with the boundaries of Atlantic and Gloucester Counties, were used for the following studies. One colony (No. 4263) taken 4 June 1963 was the source for the specimens drawn.* It was normal in all respects and had two chambers at depths of 8 cm and 20 cm in sand; temperatures were 24.5 and 19.9° C., respectively. The fungus garden was formed on typical vegetal substrate. Eggs were recognized 6 June. By 20 June in the laboratory there was a brood of large larvae, some 4 mm long. Temperatures were variable, 24–30° C., until on 15 July the colony was placed in a room of 23.4–24.0° C. Pupae appeared on 27 June and the first callows of all castes on 5 July. The callow stage may be defined as the stage following the pupa when the ant has been removed from the exuvia and can stand but lacks full pigmentation. At first it stands unsteadily on its legs, then it starts to walk about and feed on the fungus by itself.

The descriptions and figures below were made from living specimens (except Figs. 9–10) since the color changes after death.

PIGMENTATION IN THE PUPA

The compound eyes become pigmented before other parts of the body in all castes. Ocelli of the males and females become pigmented before the body. In all castes the masticatory border of the mandibles next darkens slightly, followed by a brownish outline of some of the thoracic sutures (male and female). By this time the pupa has become a grayish white. As the mandibular margins darken, the frontal ridges of the head and

*By Marilyn Warkentin under the National Science Foundation Undergraduate Research Participation Program.

FIGS. 1–7. *Trachymyrmex septentrionalis* callows drawn from life (appendages omitted).

1. Worker, 1st week. 2. Worker, 2nd week. 3. Worker, nearly adult pigmentation. 4. Female, 1st week. 5. Female, 2nd week. 6. Female, nearly adult pigmentation. 7. Male, 1st week.