

cation that larvae were only marginally suitable for this work. Treated larvae were sometimes returned to the nest, as though larval odor, even when overlaid by that of oleic acid, still dominated behavior. With cocoons, however, worker reactions were more consistent.

At 5:30 p.m. two piles of 10 larvae and 10 cocoons each were placed on top of the Lubbock nest. The larvae were quickly restored to the nest. By 6:15 p.m., 5 cocoons of the untreated group had been transported to the nest, together with 3 from the fraction treated with oleic acid. By 6:38 p.m. all cocoons from the untreated pile had been transported to the nest, while no further oleic-acid-treated cocoons had been removed. By 8:55 the following morning, however, 4 of the oleic-acid-treated cocoons had been deposited in refuse middens in the arena, 2 being deposited 45" from the nest entrance and 2, 10" away. Three were still in original position on the cardboard, but had been well covered with earth. Earth grains obtained from inside the nest had also been deposited on spots of oleic acid which had drained from the cocoons to the cardboard.

The experiment was then repeated more precisely in the pattern of the work reported with *P. badius*. Ten squares of paper, $\frac{1}{2}$ " \times $\frac{1}{2}$ ", were soaked with oleic acid and scattered at random over the surface of the nest, together with 10 identical but untreated squares, appropriately identified. Two larvae, likewise treated with oleic acid, were included. The trial was begun at 9:10 a.m.

Workers coming into contact with the treated objects immediately executed marked cleaning movements and a rubbing of the gular surface of the head against the substrate. At 9:20, 1 larva was picked up by a worker after much hesitation and held in the mandibles for 4 minutes, when it was grasped by a second, and then deposited by both at the nest entrance, but not taken inside. The impression of a conflict of drives was strong. One minute later this larva was again picked up, carried about 3" from the nest entrance, and dropped. By 9:53, it had been brought into the nest, while the second larva was held within $\frac{1}{2}$ " of the nest entrance. Two minutes later it also was brought into the nest.

At 10:00 a.m. a worker was beginning to deposit earth grains on the oleic-acid-treated papers, and by 10:53, 4 papers carried earth grains. By 1:00 p.m., one of the treated larvae had again been brought out of the nest, and a worker was preparing to drop it on the midden located 45" from the entrance. By 5:00 p.m. both treated larvae were on this midden. Burying of the oleic acid squares continued but they were not moved toward the middens.