

Light-colored workers carried a higher proportion of egg clusters than did medium—or dark—colored workers ( $p < 0.01$ , test for differences between proportions, Zar 1984), but the proportions of small larvae, large larvae, and pupae carried did not vary significantly ( $p > 0.05$ ) between worker color (age) classes. Other emigration experiments in which size classes were distinguished showed that small workers (head width 0.56 mm or less), regardless of their coloration, carried egg clusters more often than larger ants ( $p < 0.05$ ). Adult transport usually involved darkly pigmented workers transporting light (callow) individuals.

## DISCUSSION

Because of the absence of information on *Proatta*, there has been uncertainty as to whether these ants, like the attines (WEBER, 1972), might raise fungus for food. My observations indicate they do not. Captive ants did not feed on fungi, and even ignored pieces of fungus garden from an *Atta sexdens* colony dropped into their nest chambers.

*Proatta*, with its predatory behavior, polygyny, and lack of worker desecration between colonies, seems to have little behavior in common with the attines. Yet *Proatta* accumulate prey remains and other inedible refuse within nest chambers, and fungus commonly grew on this refuse (at least in the nests of captive colonies). This suggests a hypothesis much like that of Von IHERING (1894): if the ancestor of the attines had a similar tendency to keep refuse in the nest, perhaps fungus gardening arose when the ants began to feed on fungus growing on the refuse (other hypotheses on the origin of gardening are reviewed by GARLING 1979). Indeed, most "primitive" attines (such as *Mycocepurus* and *Myrmicocrypta*) raise fungi on bits of insect and plant matter (see WILSON, 1971). GARLING (1979) proposed that the first attines fed on fungi growing on roots; this remains a possibility, but *Proatta* nests are much more often associated with dead roots than living rootlet systems.

A striking feature of the *Proatta* foraging strategy at least in my disturbed study sites, was the limited foraging area used by the ants, and the high density of foragers within much of this area. This strategy requires a dependable influx of arthropods and other food from surrounding regions. An important advantage of the foraging pattern is the rapid exploitation of any large food finds. Whenever an ant discovered an intractable food item, a nest entrance or a cluster of workers on the ground surface was usually close by. Clusters of ants represent an easily accessible reservoir of workers that could rapidly reach nearby food finds. The presence of clustered inactive foragers has also been reported for *Eurhopalothrix heliscata* (WILSON and BROWN, 1984), where they apparently serve a similar function. Small *Proatta* colonies, which lacked