Results (*table III*) show that callow minor workers perform queen-associated behaviors and brood care tasks at rates that are 3.2 and 2.7 times greater, respectively, than the performance frequency predicted from the number of callows present in the colonies observed. Mature minor workers perform these same tasks at rates of 0.73 and 0.78 of their expected frequencies, respectively, and therefore participate in queen-associated acts and brood care significantly less than callows. There are also significant differences between young and old workers in the relative performance of foraging-related tasks and nest maintenance. Mature workers engage in these behaviors at 0.92 and 0.87 times their expected frequencies, respectively, whereas callow minors are unusually active in the performance of these tasks, contributing 1.6 and 2.0 times more labor, respectively, than predicted from the number of callows present in *A. simoni* colonies.

## DISCUSSION

Few species of ants are of equal importance to *Aneuretus* for the study of social evolution in the Formicidae, yet the behavior of *A. simoni* has been known only from scant observations. Wilson *et al.* (1956) described the morphology and ecology of *A. simoni* based on a collection of 20 colonies, of which only two were queenright. Behavioral notes were restricted to foraging habits, larval provisioning and trophallaxis. Our present study represents the first quantitative analysis of social organization in *A. simoni,* and several features of its social behavior revealed in this study merit discussion in light of social evolution in ants, and the common reference to *Aneuretus* as a primitive ant.

Perhaps the most singularly striking finding is that social structure in *A. simoni* is surprisingly similar to that of ants in the higher subfamilies. The observed repertory of *A. simoni* includes 35 behavioral acts that are common in ants, and ant repertory size is similar to that obtained for other species (Fresneau *et al.*, 1982 ; reviewed in Calabi *et al.*, 1983 ; Herbers, 1983). Minor workers of *A. simoni* exhibited 31 acts, and although this represents a large repertory size, it is not unusual in light of the results of studies on other polymorphic species (e.g. Wilson, 1976 a, b). Moreover, the types of acts in the minor worker repertory in *A. simoni* overlap considerably with those of other species of ants such as *Pheidole, Solenopsis, Leptothorax, Formica,* and *Zacryptocerus* (reviewed in Oster and Wilson, 1978 ; Fresneau *et al.*, 1982 ; Herbers, 1983 ; Calabi *et al.*, 1983).

Social behavior in *A. simoni* is comprised of a number of behaviors which, like other primitive ant species, represent a blend of advanced