

A behavioral repertoire of the workers was compiled during 14 hours within a four day period beginning five weeks after the colony was collected. Estimates of total repertory size were made by fitting the observed behavioral frequencies to a lognormal Poisson distribution as described by Fagen and Goldman (1977), using a computer program supplied by R. M. Fagen. Additional behavioral data was gathered during roughly 25 hours of observations before the repertoire study.

While collecting the repertoire data, light-colored (callow) minors, which were uniformly golden-yellow to light brownish yellow, were distinguished from more darkly pigmented minors (varying from yellowish brown to brown, with antennae, legs and gaster lighter). In addition, the non-callows were subdivided into "repletes," which had their gasters moderately expanded with yellowish fluid, and non-repletes, which had small, contracted gasters. (By this criterion, all major workers and all callow minor workers were judged to be "replete.")

Voucher specimens from the study colony have been deposited in the Museum of Comparative Zoology (Harvard University).

RESULTS

Nesting habits: The workers, queen and brood were tightly massed together between two small adjacent pieces of superficial bark. No food was seen within the nest. The nest area was originally estimated to contain about 400 workers, but upon return to the United States for study, 31 majors and about 180 minors remained. The original proportion of major workers probably approached ten percent.

Repertoire: The complete behavioral repertoire of the worker castes and subcastes is presented in Table 1. During the period in which the worker data was collected, 27 behavioral acts were observed for the queen, including 19 instances of nipping at immatures (described below), five self-grooming events and three instances of licking large larvae. The total repertoire size is estimated to be between 32–36 for the minor caste (data from all subcastes combined), and between 6–11 for the majors (95% confidence intervals).