pects, however, *Basiceros* are as advanced as other members of the tribe, possessing deep antennal scrobes, peculiar wedge-shaped or disciform heads with posteriorly positioned compound eyes, bizarre pilosity, and (sometimes) serially arranged subpetiolar spines. They are altogether among the strangest-looking of all ants.

Despite their relative scarcity and cryptobiotic habits, some knowledge of the natural history of basicerotine ants has begun to accumulate. Studies of *Eurhopalothrix biroi* (WILSON, 1957) and *E. heliscata* (WILSON and BROWN, 1984) have revealed the workers to be predators on soft-bodied arthropods, with *heliscata* appearing to take termites preferentially. Their anatomy and behavior suit them very well to ferreting out and seizing prey in the tight spaces of the soil and litter where they live. The behavioral repertory and social organization of *E. heliscata* are rather simple, at least relative to most other myrmicine tribes examined to date. The workers have an elementary temporal division of labor, chemical recruitment, and chemotactic recognition of nest area, while trophallaxis and adult transport are rare or absent.

Because of their large size and relatively primitive anatomy (as well as the still unknown phylogenetic position of the Basicerotini), the species of *Basiceros* are especially deserving of study. Yet almost nothing has hitherto been learned about them, beyond several nest site and two prey records (WEBER, 1950; BROWN and KEMPF, 1960; BROWN, 1974). In fact the genus has proved difficult to find and is represented in museums by only a handful of nest series and solitary workers. Recently we succeeded in locating three queenright colonies in primary rain forest near Puerto Viejo, Costa Rica, and were able to study them under laboratory conditions for a month thereafter.

METHODS

The colonies were housed at first in simple laboratory nests consisting of shallow dishes 20 × 10 cm by 7 cm deep. Later they were placed in test tubes with 2.5 cm inner diameter in the bottom of which water had been trapped by a tight cotton wad, leaving a chamber 8 cm long for the ants to occupy. The ants were then allowed access to a 20 × 10 cm foraging chamber. The colonies were studied with the aid of a dissecting microscope at 10-12X magnification. The surface structure of the ants was investigated with the aid of an AMR 1000A scanning electron microscope.

The total number of behavioral categories (*tables I, II*) was estimated by the method of FAGEN and GOLDMAN (1977), in which the frequency distribution of the categories is fitted to a lognormal Poisson distribution.

RESULTS

Nest sites and colony populations

Three queenright colonies were located in primary rain forest along the 350-550 m segment of the Holdridge Trail of the La Selva Biological Station operated by the Organization for Tropical Studies. The station is located in Heredia Province, Costa