values of a perfect Poisson distribution and the significance of the differences in the two distributions estimated by the Chi-square test).

The clumping was caused by the brief attraction of workers to each other during casual encounters. The attraction rarely persisted for more than a few seconds and seldom resulted in more than four workers occupying the same 10×10 cm quadrat.

The density of foragers depended greatly on the state of hunger of the colony. During a period of several weeks, when food recruitment was being studied in one particular colony, the number of foragers in the arena at the morning activity peak varied over a factor of more than ten times in correspondence to the feeding schedule. When the colony was fed a moderate amount, once every two or three days, the number of workers in the arena usually ranged between 30 and 50. When the colony had been starved for a week, the number rose to 60–80. After saturation feeding with honey water over a period of several days, the number fell to below ten.

Regardless of the state of colony nutrition and the density of foraging workers, the foragers deployed randomly or in slightly clumped patterns as just described. However, when food masses or enemy ants were discovered in the arenas the behavior of the foragers changed dramatically. The ants then showed a strong tendency to clump, while new foragers were recruited to the vicinity.

7. Territorial and Predatory Behavior

a) Evidence of Territoriality. In favorable African habitats *Oecophylla longinoda* populations are more or less evenly distributed. Each colony occupies one to several trees, over which it maintains exclusive possession. Members of alien *Oecophylla* colonies, as well as those belonging to other larger, aggressive species, are attacked and cleared from an extensive area around the leaf nests. The interactions are so intense that 'no-ant's' zones clear of foraging workers sometimes separate adjacent territories in the field (Way, 1954; Leston, 1969). Leston found that when *Oecophylla* colonies were extirpated by mechanical or chemical means from selected plots in Ghana, new colonies saturated the area to about the same density within one year.

This clearcut evidence of territorial behavior is easily duplicated in the laboratory. Workers of our captive colonies restlessly patrolled their nest trees and adjacent arenas. They attacked and killed members of alien *Oecophylla* colonies as well as those belonging to other ant species and carried them to the leaf nests, where the victims were apparently eaten. When members of two colonies were given access to the same arena they fought viciously, inflicting heavy mortality on each other until we separated them. Because of the unusual sharpness and rapidity of the action, we decided to undertake a systematic study of territoriality and predation under laboratory conditions.

b) Reaction to Intruders. When a human observer walked around the foraging arenas, or a hand or other large object was waved within a meter or two of the foraging workers, the ants typically halted, and many assumed the alert