

in the all-glass observation nest have shown that the queen also moves around in the brood chambers on her own, while being heavily attended by major workers.

6. The Deployment of Foragers

Once the *Oecophylla* workers occupied a new space, they dispersed throughout it each day during their foraging excursions. The ants moved in such a way that at each given moment a weak gradient of declining concentration extended from the tree nest outward, while in local areas the foragers approached a seemingly random distribution. The randomness of distribution can be defined more precisely as a Poisson distribution. To test this notion with reference to the *Oecophylla* foragers, we divided the floor of the foraging arena next to the nest tree into 93 marked quadrats 10×10 cm in extent and took counts of the ants in each quadrat at different times of the day and on different days. Our results (see, e.g., Table 5) show that at all times the ants were distributed either in a manner not distinguishable from a Poisson distribution or else very slightly clumped (the actual data were compared with the calculated

Table 5. Spatial distribution of *Oecophylla longinoda* workers in a foraging arena divided into 93 10×10 cm quadrats. Data were taken from the same population of foragers 1 h apart and represent the two extremes in a set of five such samples. (See also the set of similar data in Table 6)

First replicate			Second replicate		
Number of ants in quadrat	Number of quadrats with given number of ants	Number of quadrats expected from Poisson distribution	Number of ants in quadrat	Number of quadrats with given number of ants	Number of quadrats expected from Poisson distribution
0	71	63	0	69	67
1	13	24	1	18	21
2	5	5	2	6	3.4
3	3	0.7	3	0	0.4
4	1	0	4	0	0
5	0	0	5	0	0
6	0	0	6	0	0
7	0	0	7	0	0
8	0	0	8	0	0
$\frac{\text{variance}}{\text{mean}} = 1.724$			$\frac{\text{variance}}{\text{mean}} = 1.076$		
Probability that distribution deviates from the calculated Poisson distribution by chance and hence is not clumped is less than 0.001. Hence distribution is probably clumped			Probability that distribution deviates from the calculated Poisson distribution by chance alone exceeds 0.30. Hence distribution may be Poisson		