

An unusual behavior of the leafcutting ant queen

Acromyrmex octospinosa (Reich)

by

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It is a well known fact that after the mating flight the females of leafcutting ants chew off their wings and seek a suitable place in the ground where each one digs out a cell, establishes herself, and founds a new colony. Queens of some species of leafcutters once they have occupied the cavity in the soil close its opening to the outside. However, the queens of *Acromyrmex octospinosa* (Reich), one of our most common species, leave their cells open to the outside. So far, no queen of a leafcutting ant has been known to come out of her chamber and do some of the foraging that is usually initiated by the first brood of workers, and always done by the members of this caste. The present note describes this unusual behavior observed in the queens of *A. octospinosa*.

The swarming of sexuals of leafcutting ants in Costa Rica takes place every year at the beginning of the rainy season. In 1963, mating flights of *A. octospinosa* in San Josecito de Alajuela, the locality where the observations were made, took place in mid May. On July 22, that is to say, almost ten weeks after the nuptial flight had occurred, one queen of *A. octospinosa* was observed in a sweet potato field carrying a portion of a leaf. The ant was followed until she stopped in a small hole opened in the lower part of one of the sweet potato rows. She left the piece of leaf at the entrance of the hole and went into the ground. Almost immediately, a worker also went into the cavity. A few minutes later the leaf started to be pulled from the inside of the hole; however due to its large size, it covered most of the entrance making it impossible to determine whether it was being pulled by the queen or by the worker. The work continued

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for almost twenty minutes until the leaf was introduced and could no longer be seen from the outside.

After an interval of five minutes the cavity was carefully excavated from the entrance to the interior, and at a depth of five inches the garden was found. The leaf introduced a few minutes before was there, together with a few other partially decomposed leaf portions. The members of the colony were the queen that had been seen carrying the leaf, six medium-sized workers about 5 or 6 mm in length, seven small workers about 3 mm long, and a very scanty brood. The same day the field was searched for more queens behaving as the one previously mentioned. A second queen was observed but was not carrying any leaf. She was also followed but unfortunately entered in an area where no additional observations could be made.

A third queen was observed carrying a portion of a leaf. This one was followed until she reached a cavity in the ground and behaved exactly as the first one. After the leaf had been taken into the chamber a careful excavation was begun from the outside in order to find the nest. However a very heavy rain made the soil difficult to work and the nest could not be reached.

It is important to point out that before reaching their respective colonies, the first and third queens had to walk for about five meters, apparently having no difficulty whatsoever, as if they followed a trail in the same manner of the workers. Since the workers of the first colony observed were presumably capable of doing the foraging, there is no apparent reason why the queen should perform this duty.