

Leafcutter Ants of Cloudbridge

Cloudbridge Nature Reserve - Nature Notes No. 14

When hiking the forest trails of the Cloudbridge Reserve it is common to see small trails with many busy ants carrying leaf material from trees to their nest. The ecology and social dynamics of the leaf-cutter ants (*Atta cephalotes*) is fascinating.

Leafcutter ants tear portions of leaves from trees with their scissor-like jaws and carry the leaves to their nest. Each ant can carry 50 times its own weight. They leave an invisible scent on the trails they use in order to find their way back because sometimes they travel several hundred yards away from the nest. Once in the nest they chew the leaves into a pulp-like material, which soon



sprouts a fungus and the ants grow and cultivate “fungus gardens”. The fungus, in turn, is food for the ants. What is left over is organic matter in the form of leaves, fungus, and waste, which helps to add nutrients to the soil. The nests can be 3,000 to 4,500 square feet and may be 8 feet or more deep. Thousands of chambers will contain the fungus gardens and the nest can house millions of ants.

A colony of leaf-cutting ants is comprised of several castes. Two of the castes include queens and drones, (males, who hatch from unfertilized eggs and die shortly after mating with the queen). Only queens and drones can mate and queens and drones are the only ants in the colony that can fly. Most colonies have only one queen, but sometimes there are two or three, especially in large colonies. Other castes include minors ('nurses'), medians ('workers'), and majors ('soldiers'). These are all essentially workers, but they have specialized jobs and are different sizes.

The queen's main responsibility is to lay eggs and develop new colonies. When a queen wants to start a new colony, she takes a piece of fungal hyphae from one of the gardens and tucks it into a small area in her head. She then flies away in search of a drone. When she finds a drone she mates with it and then looks for a suitable spot to start a colony. She then digs her nest and begins to lay her eggs. A queen is capable of laying thousands of eggs every day. The ants go right to work once hatched. The workers, which are the largest caste in the colony, neatly cut off pieces of leaves off the trees (see picture) and take them back to the nest. Once workers deposit the leaves, the nurse ants chew them up and lay them down. The nurses also tend to the larvae and eggs in the colony. The large soldiers defend the colony and provide protection to the workers from enemy ants and predators.