

Feeding on prey

The elongate mandibles of *Myrmoteras* ants present a problem during feeding. A forager begins to masticate the prey while still holding it far out in her mandibles. She opens her mandibles until they disengage from the corpse, then closes them again, applying enough pressure for the most distal teeth to sink deep into the prey. This laborious 'chewing' behavior is often repeated several times. Finally the ant moves forward until her mouthparts contact the fluids oozing from the new punctures. The worker drinks for several seconds to a minute, and then backs up and repeats the chewing process.

When a *M. toro* worker fed on a large prey (one more than half the size of a worker), one to three other ants often joined the first, drinking and chewing different parts of the corpse (*fig. 4*). Newcomers often pulled the prey free of other ants and carried it to a new location to feed. Because of this, any given ant usually did not feed continuously at a prey item for more than about ten minutes. *M. barbouri* rarely fed in groups, perhaps because most Collembola prey were too small.

As feeding proceeds, soft-bodied prey are reduced to pulpy, amorphous masses. It can become difficult for the ants to extract their mandibles from the corpse. *M. barbouri* workers seem to have found a way around this problem: while chewing the prey, the ants alternatively touch the corpse with the tips of each foretarsus, at the same time drawing the distal tarsal segments of the opposite foreleg through their mouthparts. The ants seem to be transferring fluids from the prey to their mouths, although they sometimes also lick the prey directly. Apparently this is more than a grooming response to soiled tarsi, as workers walking on large, freshly crushed insects did not show the behavior.

After 5-30 minutes of feeding, the prey remains are carried 5-20 cm from the nest site and discarded. Neither species formed a midden, as discarded corpses were not dropped at a consistent location.

Trophallaxis

A recently fed worker frequently approached another ant and solicited regurgitation. The positions adopted by the ants during trophallaxis varied greatly. Both ants could hold their mandibles in any position. However, most often the donor's mandibles were closed, which forced the other individual to crouch down and twist its head and trunk to the side to reach up at the mouthparts of the donor (*fig. 5*). In other cases both workers leaned to the sides, with their heads tilted as much as 90° so that their mouthparts could make contact. The foretarsi of the receiving ant usually were placed on the head or forebody of the donor, while its antennal tips palpated the donor's head and mandibles. A bout of regurgitation usually lasted 5-30 seconds.