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Best regards,
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First European Record of a Queen Ant Carrying a Mealybug During Her Mating Flight

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Queen ants carrying coccid larvae during mating flights have been described on just three occasions, and only in southeast Asia and South America. Here we report the first observation from southern Europe of such behavior, indicating that this remarkable trophobiotic relationship between ants and plant-lice is apparently more widespread than previously assumed.

Many ant species have close trophobiotic relationships to various plant-sucking insects – plant-lice, scale-insects, tree-hoppers etc. – from which they receive honeydew as a major food source. Often the worker ants carry their “cattle” to appropriate parts of the food plants or to safety when disturbed; they defend them against enemies, build shelters around them, or harbor root-aphids and root-coccids in their nests in the soil [1, 2].

The remarkable behavior of young queen ants carrying coccid larvae from the mother nest when they leave for mating flight means that, when founding her own colony, the queen ant immediately has a foundress for a coccid colony to produce honeydew for the young ant society. This behavior has been recorded for a *Cladomyrma* sp. in Sumatra in 1930 [3], for *Acropyga pa-*

ramaribensis in Surinam 1937 [4], and for another ant, presumably an *Acropyga*, in China 1945 [5]. These ants belong to the formicine tribe Plagiolepidini (*Acropyga*) or the related tribe Myrmelachistini (*Cladomyrma*).

Recently, we observed this behavior for the first time in Europe. On 7 October

1985, in the afternoon, several swarms of a *Plagiolepis* species were seen in a shady pine forest close to Perachora, southern Greece, not far from Loutraki and Korinthos. The male and female ants were flying and crawling around some low, rocky outcrops on the forest floor; actual mating took place on top



Fig. 1. Dealate young queen of *Plagiolepis* sp. (Hymenoptera, Formicidae) after mating, carrying a mealybug larva (*Eumyrmococcus* sp.) in her mandibles. The queen released the mealybug when put into alcohol. For the photograph the specimens have been mounted in approx. natural posture

of the rocks. Each female carried a mealybug larva in her mandibles (Fig. 1) during flight, after mating, and after dealation, when the females tried to crawl into the soil.

A number of specimens were collected and preserved; however, we were unable to find a nest which might have revealed other developmental instars of the coccid and the worker ants. The ant clearly represents a *Plagiolepis* species although we were unable to identify it with certainty. It is, perhaps, undescribed since all known *Plagiolepis* species of Europe swarm much earlier

in the year. The coccid belongs to a genus *Eumyrmococcus*, and presumably also represents a new species (D.J. Williams, in litt.).

The ant species concerned are quite closely related. Thus, it is possible that the behavior of the queens has a monophyletic origin. If so, this behavior must be very old, and it may be of interest with respect to the zoogeography of the species groups involved.

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