

Long-term co-evolution stability studied

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U.S. biologists say the world's fungus-farming ants cultivate essentially the same fungus and aren't as critical to fungi reproduction as had been thought.

The University of Texas-Austin scientists say fungus-farming ants are dependent on cultivating fungus gardens for food, and it has been widely believed the fungi also evolved dependence on the ants for their dispersal and reproduction. When young ant queens establish new colonies, they take a start-up crop of fungi with them from their parental garden.

UT graduate student Alexander Mikheyev and Biology Professor Ulrich Mueller say the fungi reproduce sexually and disperse widely without the aid of their ant farmers. That finding provides a new perspective on co-evolutionary processes -- such as that between honeybees and the flowers they pollinate -- when two or more species influence each other's evolution over time.

"This shows co-evolution can proceed without specificity at the species level," said Mikheyev. "It has been believed mutualistic interactions, as well as parasitic ones, are very specific and one-to-one. We are beginning to realize this is not necessary for long-term co-evolutionary stability ..."

The research appears in the current issue of the Proceedings of the National Academy of Sciences.

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