# Ant has given up sex completely – Radiocápsula RCP/CPR [1]

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## Calificación:

Eurekalert — Most social insects—the wasps, ants and bees—are relatively used to daily life without males. Their colonies are well run by swarms of sterile sisters lorded over by an egg-laying queen. But, eventually, all social insect species have the ability to produce a crop of males who go forth in the world to fertilize new queens and propagate. Queens of the ant Mycocepurus smithii reproduce without fertilization and males appear to be completely absent, report Christian Rabeling, Ulrich Mueller and their Brazilian colleagues in PLoS ONE this week. "Animals that are completely asexual are relatively rare, which makes this is a very interesting ant," says Rabeling, an ecology, evolution and behavior graduate student at The University of Texas at Austin. "Asexual species don't mix their genes through recombination, so you expect harmful mutations to accumulate over time and for the species to go extinct more quickly than others. They don't generally persist for very long over evolutionary time." Previous studies of the ants from Puerto Rico and Panama have pointed toward the ants being completely asexual. One study in particular, by Mueller and former graduate student Anna Himler (now at Arizona State University), showed that the ants reproduced in the lab without males, and that no amount of stress induced the production of males. Scientists believed that specimens of male ants previously collected in Brazil in the 1960s could be males of M. smithii. If males of the species existed, it would suggest that—at least from time to time—the ants reproduce sexually. Rabeling analyzed the males in question and discovered that they belonged to another closely related (sexually reproducing)

species of fungus-farmer, Mycocepurus obsoletus, thus establishing that no males are known to exist for M. smithii. He also dissected reproducing M. smithii queens from Brazil and found that their sperm storage organs were empty. Taken together with the previous studies of the ants, Rabeling and his colleagues have concluded that the species is very likely to be totally asexual across its entire range, from Northern Mexico through Central America to Brazil, including some Caribbean islands. As for the age of the species, the scientists estimate the ants could have first evolved within the last one to two million years, a very young species given that the fungus-farming ants evolved 50 million years ago. Rabeling says he is using genetic markers to study the evolution and systematics of the fungus-gardening ants and this will help determine the date of the appearance and genetic mechanism of asexual reproduction more precisely in the near future. Contact information: Lee Clippard, Media Relations 512-232-0675 lclippard@mail.utexas.edu [2] Christian Rabeling rabeling@mail.utexas.edu [3] 512-471-7619 University of Texas at Austin

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