

Public release date: 5:00 pm EST April 18, 2012

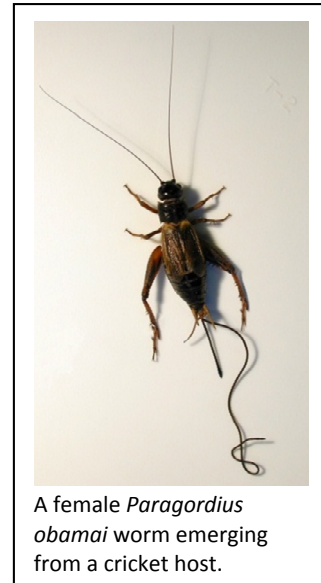
Contact: Ben Hanelt
bhanelt@unm.edu
505-277-3174

Researchers Find When Mates Are Hard to Find, Males Are First to Go

New all-female species of parasitic worm discovered in Africa

Albuquerque, NM - Hairworms are unique parasites often encountered by the public. Hairworms infect crickets and grow within their host's body cavity to lengths of 15-30 centimeters. Infected crickets often invade homes and release worms into toilets, hot tubs, pet water bowls and fish tanks, unduly alarming the public since hairworms are not parasites of humans.

When hairworms complete their development, they manipulate the cricket's behavior forcing them to commit suicide by jumping into water. Here the worms emerge from the host and begin the free-living part of their adult lives. Free-living male and female worms pair up, mate, and females lay eggs. Since hairworms naturally occur singly in crickets, they must overcome the problem of finding the opposite sex for mating.



A female *Paragordius obamai* worm emerging from a cricket host.

Recently, a new species of hairworm was discovered from the Lake Victoria region of Kenya, Africa. The new species was named *Paragordius obamai*, in honor of President Barack Obama, because it was discovered near where the President's father was raised and paternal step-grandmother resides.

The study, by Dr. Ben Hanelt of the Center for Evolutionary and Theoretical Immunology at the University of New Mexico, Dr. Matthew Bolek from Oklahoma State University, and Dr. Andreas Schmidt-Rhaesa from Hamburg University, Germany, is being sponsored by the National Science Foundation (NSF), and was published recently in the journal, PLoS ONE and can be accessed at <http://dx.plos.org/10.1371/journal.pone.0034472>.

The researchers investigated this new species and found that it had come up with an ingenious solution to the problem of finding mates by getting rid of males.

"Our results show that this species consists only of females and that these females alone produce viable eggs," Hanelt said. "In other species males are killed by bacteria, but we have shown that this is not the case for this hairworm, but rather it is very likely an evolutionary solution to the difficulty of finding a partner in nature."

Results from this study and future research could advance the work of scientists who are investigating the reasons why some animals reproduce asexually.

The discovery "is of considerable interest to biologists because the new parthenogenetic species is very closely related to another species, found in the United States, which contains both male and female worms," said Bolek. "Since we have both of these species in culture, we can now test various hypotheses about the advantages and disadvantages of sex, especially in parasites, and this work may eventually allow us to probe the genetic determinants of reproductive strategies in parasites."

For more information, see www.nematomorpha.net or contact Hanelt at (505) 277-3174 or by email at bhanelt@unm.edu.