

Nature collides with James Bond: Newly discovered ant species hides in plain sight

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Left: *Crematogaster ampla*; Right: *Cephalotes specularis*. Credit: Dr. Scott Powell

Researchers plan and plot every considerable aspect of their work, but sometimes it's something unexpected and seemingly insignificant that leads to the real discovery. That was the case for Scott Powell, assistant professor of biology at the George Washington University.

While conducting field research on turtle ants in the savannah region of Brazil, Dr. Powell noticed something peculiar: a species of ant infiltrating the region of a [host](#) ant, *Crematogaster ampla*. The *C. ampla* is known for its hyper-aggressiveness, but did not attack the invading species, which was Dr. Powell's first clue that something was amiss. The invading [ant species](#) acted very similarly to *C. ampla* but looked slightly different.

"I did a true double-take when I first saw this new species," said Dr. Powell. "As I turned away, after seeing what appeared to be large numbers of host foragers, it registered that a couple of the ants I

had just laid eyes on were not quite like the others. Turning back around, I managed to re-find the few peculiar ants in the masses of host ants, and everything followed from there."

After nearly two years of research and consultations with fellow biologists and trained taxonomists, Dr. Powell officially had a [new species](#) of ant: *Cephalotes specularis*, commonly known as the mirror turtle ant. Mirror turtle ants are the first-known ant species to use visual mimicry to parasitize another ant species. *C. specularis* have mastered the movements of *C. ampla* and are careful to dodge the host ants to avoid them detecting *C. specularis*' scent. By mimicking *C. ampla*, the mirror turtle ants can access their food and follow their foraging trails to food sources. In spy terms, this new form of social parasitism allows ants to steal food from an enemy.

Additional research conducted after the initial discovery revealed that 89 percent of host territories were parasitized. Dr. Powell calls the discovery one of his most exciting finds and sees this as an opportunity to learn more about the evolution of parasitism.

"Beyond the fascinating biology of this new ant, we appear to have a rare window into the early stages of the evolution of social parasitism, before the parasite has lost much of its free-living biology," said Dr. Powell. "This promises to help us better understand the general pressures that tip a species towards a parasitic lifestyle."

Dr. Powell's paper was recently published in *The American Naturalist*. He will return to Brazil to conduct more research in summer 2015.

More information: *The American Naturalist*, www.jstor.org/stable/10.1086/677927

Provided by George Washington University

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