Worker ants paralyze and kill termites from afar

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Worker ants from a particular species of African ants have potent venom that can paralyze and kill termites from a distance, according to a study published Dec. 14 in the online journal *PLoS ONE*.

The research, conducted using a species called Crematogaster striatula, showed that chemicals the worker ants emit from their stinger have three functions: they attract nearby nestmates; repel alien ants; and paralyze and kill termites. While the first two effects require the ants to come into direct contact with the chemical, it appears that the termite effect can occur from a distance, without direct contact. This is important because, while alien ants competing for sugary food sources will retreat upon sensing the chemical, termites remain and defend their territory.

The long-range activity of the ant venom protects them from the termites without having to come into direct contact. The researchers, led by Angelique Vetillard of the University of Toulouse in France, also characterized the specific chemicals in the venom, providing initial clues about the source of the venom toxicity.

The implications of this research "are promising because they provide a basis from which further studies can be conducted in the search for natural insecticides, including new molecules effective against insects resistant to currently-used insecticides", says Dr. Vetillard.

More information: Rifflet A, Tene N, Orivel J, Treilhou M, Dejean A, et al. (2011) Paralyzing Action from a Distance in an Arboreal

African Ant Species. PLoS ONE 6(12):e28571.
doi:10.1371/journal.pone.0028571