Comments on Invited Review

Seeing the forest and the trees

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Moffett (2012) misrepresents the position of Gordon, Heller, and others on supercolonies. We recognize the existence of Argentine ant supercolonies, populations of colonies all descended from common ancestors. A substantial body of work shows the common origins of certain Argentine ant populations of colonies, or supercolonies (e.g., Vogel et al. 2010).

We consider that a colony, unlike a supercolony, involves functional ecological interactions among the ants. A group of ants functions as a colony when it shares resources and reproduction. Heller et al. (2008) showed that nests share resources only at scales of about 100 m. Ingram and Gordon (2003) showed that there is isolation by distance, demonstrating limited genetic mixing, also at scales of 100 m. These results indicate that there are colonies on the scale of 100 m at the study site in northern California. Ants that belong to the same supercolony have a shared ancestry, but if the supercolony spans many kilometers, or regions that ants cannot cross, then it includes ants that cannot possibly meet and thus cannot possibly share resources or interact ecologically.

Many studies of Argentine ants show that ants from different locations are unlikely to fight (e.g., van Wilgenburg, Clemencet, et al. 2010). For ants, the absence of fighting is not equivalent to belonging to the same colony. It is not the case, as Moffett says, that “in a healthy society, ants invariably avoid or kill alien ants with different cues.” In fact, ants of different colonies do not always fight. Many studies of nestmate recognition show variation, in trials with ants of the same colony or in repeated trials with the same individual, in the extent of fighting or avoidance. Species differ in propensity to fight, and within a species, whether ants fight depends on context. For example, Roulston et al. (2003) showed that whether Argentine ants fight in bioassays depends on the number of ants. As the recent work of Moffett now makes sense of the complex of seemingly conflicting assays depends on the number of ants. As the recent work of Moffett now makes sense of the complex of seemingly conflicting

REFERENCES


The logic of hypersocial colonies

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It is no wonder that we are transfixed with fascination when we stand in the midst of an ocean of flowing ants within a single extensive society of one of the invasive species. Normal terms do not fit anymore: this is not just a colony, but a “supercolony.” The iconic supercolonal species is the Argentine ant, infamous as a pest and now very well studied, all the way from having its genome sequenced to its global distribution mapped. As the Argentine ant can be the key to understanding other supercolonial and/or invasive ants, it is very timely that Moffett’s review (2012) focuses on how we interpret recent studies on social organization in this species. For more than a decade, this field of research has been hampered by misunderstandings due to