

OR030

How do polydomous ant colonies correct nutritional imbalances between nests?

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Many important and well-studied behaviours in social insects are directed towards collecting food from the environment, returning it to the nest and, ultimately, transferring the nutriment to brood and reproductive individuals. Less well studied, is how this complex system of nutritional transfer is affected by a single colony nesting in several different spatially separated, but still socially connected, locations. This distributed nesting system is called polydomy and is found in many ant species. A distributed nesting system means that one part of the colony may have more food than other parts of the colony at any particular time. Understanding the behaviour which is used to correct these within-colony nutritional imbalances is important to understanding how the colony as a whole functions. We observed and marked workers travelling on the trails between nests in the wood ant *Formica lugubris*, to investigate the flow of resources between nests and how it is mediated by the behaviour of individual workers. We found that there is a class of workers consistently travelling without food to neighbouring nests, taking food from that nest and then returning to their home nest carrying food. In effect, the workers are treating other nests of the colony as food sources. In the stable nutritional environment of wood ant colonies this is likely to be an efficient and reliable way to move resources through the colony. This mechanism demonstrates how a simple self-organising behaviour can solve the complex task of correcting within-colony nutritional imbalances in a complex nesting system.