Keep quiet and scurry on: how ants construct megaprojects

Posted at: 24/01/2019

Scientists say leaf-cutters can build food trails without communicating

- Leaf-cutter ants build super highways to transfer food and building materials hundreds of metres without communicating with each other, scientists said, in findings that could prompt a rethink about how some insect communities organise themselves.
- Each leaf-cutter colony can carve out nearly three kilometres of trails from the forest floor every year, investing an average of 11,000 hours into constructing and maintaining them.
- It had long been thought that these ants, which are native to south and central America, organise megaprojects by communicating with one another, assigning specialists to remove debris and retrieve leaf matter.
- But an international team of researchers made a startling discovery while investigating the behaviour of one of nature's most impressive engineers.
- Far from communicating individual tasks as part of an overall plan, the ants appear to manage large-scale infrastructure projects with no coordination at all.
- In other words: each ant seems to act alone, solving environmental problems such as removing obstructions as they are encountered.
- The behaviour of social insects such as ants, bees and termites is usually considered to be governed by stigmergy — self-organisation through direct or indirect communication among individuals.
- The notion that some collective behaviours — even the kilometre-long ant highways — can be achieved without any communication is relatively new, and study in the journal Proceedings of Royal Society B lends it weight.
- Trail clearing, while costly in terms of time, has been proven to be "energy-cheap" for ants as it greatly reduces the future costs of obtaining food.


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