

Big and mean seems to beat small and green, at least among ants

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(PhysOrg.com) -- Small ants may use fewer resources, but energy-hogging big ants tend to win evolution's turf wars, according to a study by Yale scientists.

Scientists had believed that, at the population level at least, the body size of individuals made no difference in the amount of energy used. Small individuals use less energy, but they tend to be more numerous than large individuals, who generally use more. The theory held that, at the population level, energy use is the same because size and abundance cancel each other out.

But when actually tested, this energy equivalence rule proved wrong — at least with insect colonies, according to the study published in the

March 2 issue of [Biology Letters](#).

Colonies of large [ants](#) use more energy as measured in metabolic rates than colonies made up of smaller ants, giving larger species an ecological and evolutionary leg up, said John P. DeLong of Yale's Department of Ecology and Evolutionary Biology and author of the study

"The process seems to be that as individuals get bigger, they are more successful at obtaining resources, which creates a positive feedback that allows for colony expansion," DeLong said.

In other words, bigger body size — and increased energy use — seems to confer an evolutionary advantage, DeLong said.

But ants don't drill for oil or decide to whether to drive a Prius or a Hummer, he noted.

"Fundamentally, we don't understand what drives us to use what we use," DeLong said. "If we allow ourselves to think of energy use as a long-term evolutionary phenomenon, then the hope is we can get a better handle on how to manage our energy future."

Provided by Yale University

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