

# Ants said to use 'odometers'

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SPECIAL TO THE SUN

Scientists have made a discovery that can change our ideas of how ants find their ways — in strides.

Ants have always had the image of being industrious insects able to walk long distances in order to find food. It has also been surprising that once they find the food, they rarely go back to their nest the same way they came out searching for their food; they go back walking the shortest distance they can. That phenomenon is known as path migration. How can they accomplish that?

Matthias Wittlinger and Harald Wolf from the University of Ulm in Germany and Rüdiger Wehner of the University of Zürich in Switzerland studied a Saharan desert ant, known scientifically by its Latin name of *Cataglyphis fortis*, and came out with outstanding conclusions.

Because the desert has virtually no landmarks, these

scientists proved that these ants use a celestial compass and an "odometer" in their legs that allow them to measure the distance traveled.

Although it has been known that ants can use celestial clues to figure out their position, the discovery of them having an "odometer" came through a clever experiment. The researchers found out that when the legs of these ants were manipulated, these insects missed the correct distance on their way back to their nests.

In short, the ants were able to count how many strides they needed to move from the feeding site back to their nest; if they had their legs elongated by attaching a stilt, they overwalked back because they were walking the same number of strides to go back only that with longer legs. If they had their legs shortened, they never reached the nest because despite walking the same number of strides, those strides were shorter.

Ants are one of the most di-

versified and ecologically important groups of insects with more than 8,800 species known so far.

They are found everywhere except in the polar regions and the highest mountaintops. There are approximately 580 species in North America, of which 88 occur in Arkansas. Many more species have yet been described, especially in the tropics. They are very territorial and can use their strong jaws and stings to attack and defend themselves.

Together with bees, ants have some of the most complex social behaviors. They live in groups with clear subdivisions of castes consisting of workers, soldiers, queens and males.

Each caste differs in size and appearance. Reproductive individuals have wings and they swarm during the mating season. Some ant colonies can have up to tens of thousands of individuals. Ants are considered the insects most commonly found by humans.

Researchers at Arkansas



Tanja McKay | Special to The Sun

**Lasius alienus** — one of many ant species found in Arkansas.

State University are conducting a series of experiments to establish whether poultry litter affects the biodiversity and abundance of ground-dwelling organisms.

Ants are among the organisms that are being studied.

For more information contact the ASU Department of Biological Sciences at [biology@astate.edu](mailto:biology@astate.edu).

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