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SERVING JONESBORO AND NORTHEAST ARKANSAS

Tiger beetles common during summer months

EDITOR'S NOTE: The following article is part of a continuing science series written by Arkansas State University staff members and published periodically in *The Sun*.

BY TANJA MCKAY
AND ALDEMARO ROMERO
SPECIAL TO THE SUN

Some of the fastest animals on earth are not cheetahs or birds but beetles — tiger beetles to be precise. They run at a speed of 1.2 mph. That might not sound impressive but if they were the size of a human being they would be running at about 230 mph. And they are probably running in most people's backyards.

They run so fast that a few years ago, researchers from Cornell University discovered that when in pursuit of their prey, they have to stop to give enough time to their brains to process the images they perceive from their surroundings.

The approximately 2,600

species of tiger beetles are found all over the world (except for Antarctica). They range up to 1 inch in length, and their coloration ranges from brown to black to green iridescent. Many have spots and bars that remind one of the markings of a tiger. They are commonly found in sandy areas, along pathways and in open grassy meadows, and besides running they can also fly.

But beware — some can administer a painful bite. Tiger beetles are very aggressive predators. With their large, prominent eyes and strong mandibles, they eat just about anything they can capture.

They are particularly active from mid-April to October after hibernating in the soil. In some species, the larvae produced by these adults build deep holes in the ground and completely fill the entrance with their well-developed mouthparts, which they use to grab hapless insects passing by. New adults emerge in late



Tanja McKay | Special to the Sun

The fast-running tiger beetle is a common sight during summer months.

summer or early fall, but they do not reach sexual maturity until the following spring.

Other species of tiger beetles pass the winter either in the larval or pupal stage. They emerge from the pupal stage in late spring and early summer, mate, lay their eggs, and die before the next winter.

Since poultry litter is commonly used as a fertilizer on agricultural fields, researchers, including Carolyn Dowl-

PLEASE SEE BEETLES, A9

BEETLES: Despite their speed, some species endangered

FROM PAGE A8

ing from the Department of Chemistry and Physics at ASU, have been examining the effects of poultry litter application on tiger beetle and ground beetle populations.

Tiger beetles and other ground-dwelling beetles are always challenging to collect because of their fast running and stop-and-go behavior. But by using pitfall traps, ASU researchers have been able to collect many beetles this summer on their research plot located on the Farm Complex at ASU.

These pitfall traps are usually plastic containers that are sunken into the soil so that their mouths are level with the soil surface.

Any ground-dwelling insect that falls into the trap is unable to escape.

Despite their aggressiveness and speed, some species, such as the puritan tiger beetle, are endangered because they must live under very specific environmental conditions, conditions that are now

being disturbed by human activities.

With funding from the Arkansas Biosciences Institute and the United States Geological Survey, researchers are also investigating metal accumulation by these insects.

Since poultry litter contains many metals that are released into the environment, a series of experiments is being conducted to establish whether or

not plants and beetles are affected by the accumulation of metals in the soils.

For more information contact the Department of Biological Sciences at Arkansas State at: biology@astate.edu.

Dr. Tanja McKay is an assistant professor of entomology and Dr. Aldemaro Romero is chairman and professor of the Department of Biological Sciences at ASU.