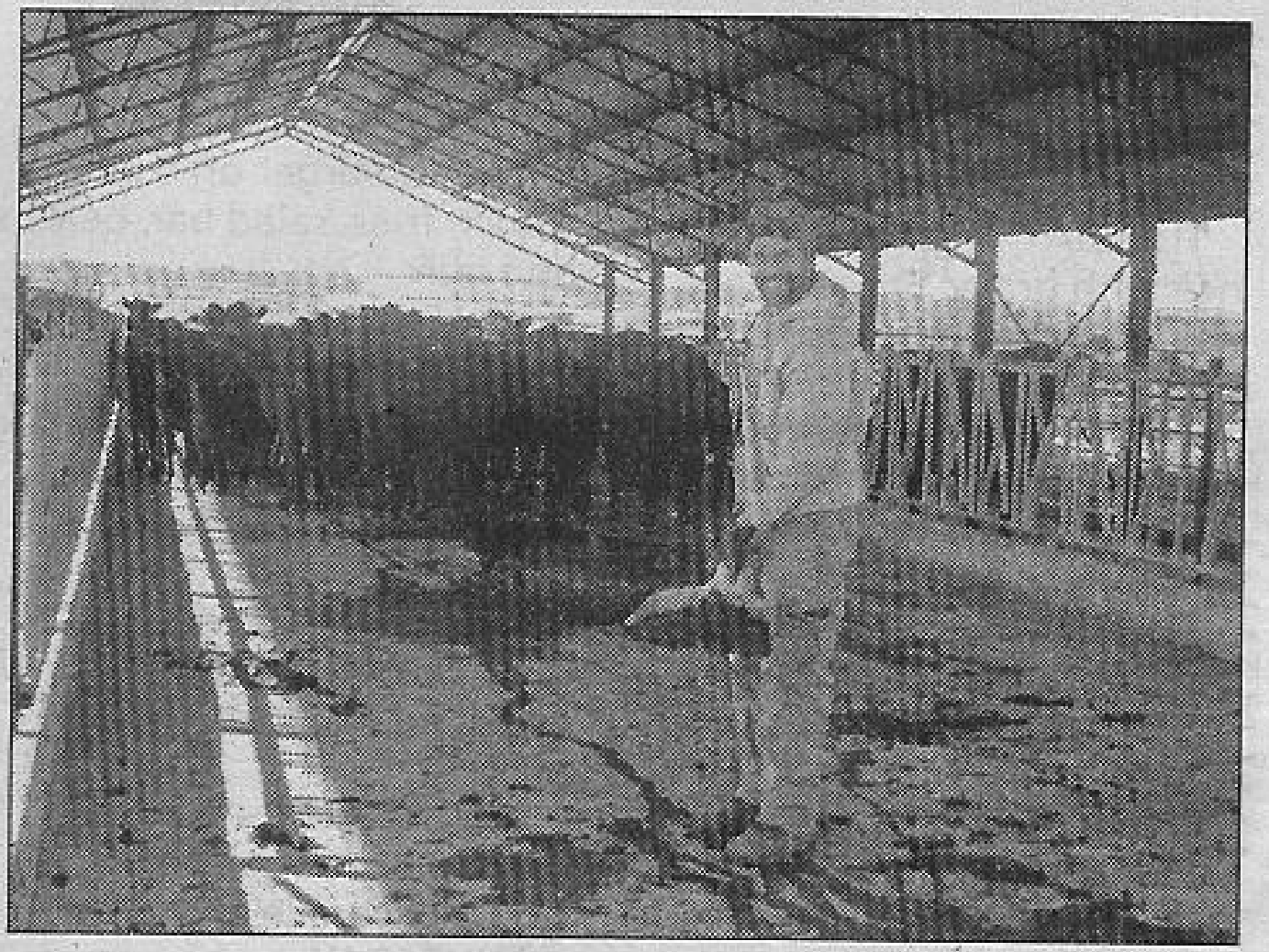

Tanja McKay | Special to The Sun

Justin Fiene collects dung for his project.

ASU student awarded at scientific meeting

BY TANJA MCKAY
SPECIAL TO THE SUN

Justin Fiene, a master's degree student in the Department of Biological Sciences at Arkansas State University, placed second in a student competition for the President's Prize at the annual meeting of the Entomological Society of America in November.

Fiene presented a paper titled "Seasonal Activity and Species Composition of Dung Beetles Inhabiting Cattle Pastures in Arkansas with Notes on the Mass Occurrence of Labarrus Pseudolividus." This was a national competition with Fiene competing against nine students from entomology departments across the United States. Some of the students he competed against were in doctoral programs.

For the past two years Fiene has worked on dung-inhabiting beetles at the Arkansas State University Farm Complex in Jonesboro. Dung beetles are very important in pasture ecosystems and perform a number of significant functions. Many dung-inhabiting beetles will remove dung from the surface and bury the fecal material in tunnels, providing food for their young. This is important since dung that remains on the pasture surface provides breeding sites for pests such as horn flies and face flies and parasitic nematodes (worms) that can be problematic for livestock. Dung beetles also help to aerate the soil and bring in organic nutrients — those improve the water-carrying capacity of the soil, benefiting plants.

To get a better understanding of what species of dung-inhabiting beetles occur in Arkansas, Fiene has been extensively sampling for dung beetles using a technique called pitfall trapping. The method uses a bucket, chicken wire and a small amount of manure wrapped in cheese cloth that is suspended over the bucket. Dung beetles fly in and get trapped. To date, Fiene has collected 22 species of dung-inhabiting beetles, mostly of the family Scarabaeidae. One species in particular, Labarrus pseudolividus, which is a very small dung beetle, was extremely abundant in 2007. Over three summer months Fiene collected more than 211,485 beetles in only 10 pitfall traps.

Since little is known about Arkansas dung beetles, the main objective of Fiene's research is to assess the diversity of these insects in pastures in Northeast Arkansas. This project will help local farmers assess what species occur in their pastures and will provide educational resources to promote and optimize these beneficial insects in the pasture ecosystem.

For more information, contact the ASU Department of Biological Sciences at biology@astate.edu.

Fiene is advised by Dr. Tanja McKay, an assistant professor of biology at ASU.