



# Alabama Vector Management Society

www.alabamavms.org

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## AVMS President ready to tackle new year

I hope this message finds all of the membership of the Alabama Vector Management Society doing well. It seems just like yesterday we were at the beach enjoying good food, fellowship and outstanding presentations. Among the several goals mentioned in the preamble to the Code of Ethics of the AVMS, you will find one calling for the promotion and exchange of information among our members, which then should be disseminated to others, in order to develop public awareness and interest in the discipline of public health. To that end I relied heavily on Leigh Salter, Kelly Stevens, Steven McDaniel, Drew Lockhart, Fudd Graham, Dee Jones, Jennifer Wroten and Jason Carlee to make sure we had a balanced, informative and current program. Many thanks to all of them. I can't begin to describe the amount of time they put forth in making our meeting such a success.

I consider it an honor to serve as your president this year. Following in the footsteps of Dr. Graham is a little intimidating, but if needed, I will not hesitate to ask for advice and assistance from him or our new board of directors and officers. We are indeed fortunate to have such capable people willing to donate their time for the betterment of our society and State.

As Dr. Graham indicated last year, there are many challenges ahead for already strapped budgets. Fortunately my predecessors have managed our resources well, and while we still need to maintain vigilance with the budget, we are in sound financial shape as a society. Dr. Graham, Kelly Stevens, Steven McDaniel and Leigh Salter have done a superb job overseeing our finances and various related issues. Because of the economic conditions and reduced budgets, our ability to function as a cohesive group of professionals will be essential in providing the public with the necessary information to safeguard public health. With that in mind, I urge all of our members to encourage other professionals that are not members to join. The newsletter alone is worth the \$10.00 for membership. Jason Carlee has already begun to organize next year's meeting and has leads on several new speakers and topics. We are unsure of the location, but we will begin the planning process at our next Board of Directors meeting in June.

In closing there are a couple of things I would like to mention. First is a big "THANK YOU" to our vendor liaison Drew Lockhart. Without the support of industry, through sustaining memberships and sponsorships, we could not afford to hold our meetings. All of our sponsors deserve many thanks. The new NPDES Permit is no longer a concept, it is here. Dale Mapp with ADEM has graciously allowed us to add his contact information to our newsletter. He can be reached by phone @ 334-394-4399 or by e-mail dpm@adem.state.al.us.

Thank you for the opportunity to serve. I hope you have a safe and productive year and will be able to attend our next annual meeting. —**Mark L. Tow, AVMS President 2012**

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### Dates To Remember:

**June 24-30, 2012** National Mosquito Control Awareness Week

**July 22-27, 2012** Wildlife Disease Association International Conference, Lyon, France

**November 11-14, 2012** 60th Annual Meeting of the Entomological Society of America, Knoxville, TN



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**CODE OF ETHICS FOR MEMBERS OF THE ALABAMA VECTOR MANAGEMENT SOCIETY**

Preamble: The purpose of the Alabama Vector Management Society is to promote the management of public health pests and arthropod vectors of disease, provide for the educational and scientific advancement of members, encourage scientific research in vector management and public health pests, promote an exchange of information among members, and to extend and develop public awareness and interest in the discipline.

Public health pest and vector management provides services that are extremely important to the health, welfare and progress of society. Those employed in the public health pest and vector management profession have the responsibility to render effective and professional service to humanity, in keeping with high standards of ethical conduct. Therefore, in striving to advance and maintain the honor and dignity of the profession, the Alabama Vector Management Society (AVMS) has established the following code to define the conduct and ethics due the profession. This code is binding on the membership of the AVMS.

AVMS members will use their knowledge and skill

for the betterment of human welfare.

- Members will, at all times, strive to maintain the public trust, and advance the standards and principles established by the AVMS.
- Members will cooperate in the exchange of information and technology for the growth and progress of the public health and vector management profession and the AVMS.
- Members will not cause dishonor to the Society through their actions while representing the AVMS.
- Members will comply with all laws and regulations that apply to our science and profession.
- Members will promote solidarity, harmony and support among members and fellow workers. They will not undermine, vilify, berate or otherwise intentionally injure the work, accomplishments, efforts or professional reputation of another.
- Members will not conduct or in any way participate in a fallacious review of the work of a fellow worker or other member.



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# Tick disease and ecology research at Jacksonville State University

By Robert Carter

Associate Professor

Jacksonville State University

Tick-borne diseases are of increasing concern throughout the southeastern US. In addition to Lyme disease (*Borrelia burgdorferi*), Southern tick associated rash illness (*B. lonestari*), Rocky Mountain spotted fever (*Rickettsia rickettsii*) and human monocytotropic ehrlichiosis (*Ehrlichia chaffeensis*) can affect humans and animals. Listening to people on television or through the internet, the public will hear many different opinions concerning the habitats preferred by ticks. In reality, tick habits and habitats are still not well understood. To address this issue, graduate student Damien Willis collected ticks in various habitats in Calhoun, Cleburne, and Cherokee counties. Habitats investigated included various burning intervals (recently burned, two years after a burn, and unburned), urban interface sites, the Jacksonville State University campus, and an unmanaged forest.

The lonestar tick (*Amblyomma americanum*) dominated the tick population while deer ticks (*Ixodes scapularis*) were not detected. There also were a small number of dog ticks detected (*Dermacentor variabilis*). After prescribed burning, the tick population size was small but quickly increased in the second year. An increase in white-tailed deer (*Odocoileus virginianus*) foraging in recently burned sites likely is responsible for this phenomenon. Urban interface areas had the largest tick populations. These areas consisted of buildings interspersed with small forest patches and grassy areas. Again, white-tailed deer activity is the likely reason for this phenomenon. Small forest patches provide cover while grassy areas and shrubs around buildings provide food. JSU campus sites and the unmanaged forests had relatively low tick populations. Thus, it is possible that the likelihood of humans coming in contact with ticks and tick-borne diseases is greater in urban interface areas than in forested areas. Currently, tick populations are being surveyed on the former Fort McClellan in Anniston and Oak Mountain State Park near Birmingham. All ticks collected will be screened for Lyme disease, Southern tick associated rash illness, and Rocky Mountain spotted fever.

A study of blood samples taken from dogs is currently being funded by the Alabama Department of Public Health. Dr. Dee Jones is collecting blood from animal shelters throughout Alabama and shipping them to JSU. Under the guidance of Drs. Chris Murdock and Benjie Blair, graduate students Bryan Ayres and Andrew Dotson are extracting DNA from the blood and testing the DNA for the presence of (*Borrelia burgdorferi*), Southern tick associated rash illness (*B. lonestari*), and Rocky Mountain spotted fever (*Rickettsia rickettsii*). Although the research is in the early stages, disease has been detected in some of the blood samples. It is expected that most testing should be completed by December of this year. Future plans include testing the dog blood extractions for *Ehrlichia chaffeensis*. If you have any questions regarding ticks or tick-borne diseases, you can contact me at [rcarter@jsu.edu](mailto:rcarter@jsu.edu) or 256-782-5144. Unfortunately, I have had several tick diseases and can offer insight on treatment and recovery.

## Is your phone smart?

Check out these apps available in android, blackberry and iphone marketplaces:

- HealthMap: Outbreaks Near Me
- Bedbugs 101
- Insects HD
- Arachnophilia HD
- Insect Noises
- Bugs and Insects
- Butterflies & Moths of North America
- Entomology Dictionary





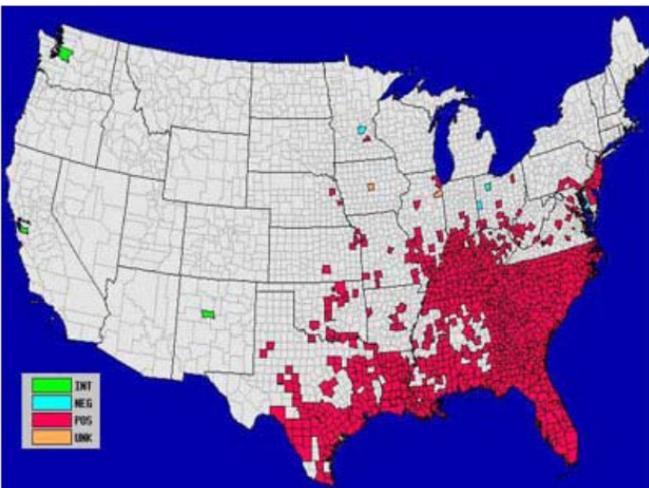
# Vector Spotlight: Asian Tiger Mosquito

By Rosemarie Kelly  
Public Health Entomologist  
Georgia Department of Public Health

The Asian tiger or forest day mosquito, *Aedes albopictus*, is characterized by its black and white striped legs, and small black and white striped body. It is native to the tropical and subtropical areas of Southeast Asia; however, in the past couple of decades this species has invaded many countries throughout the world through the transport of goods and increasing international travel. This mosquito has become a significant pest in many communities because it closely associates with humans, and typically flies and feeds in the daytime.

After entering the United States almost twenty years ago, *Aedes albopictus* has spread throughout much of the eastern states. The mosquito was most likely transported along highways and other major roadways in shipments of used tires imported from other countries for retreading. On January 1988, the U.S. Public Health Service required all used tires entering the U.S. from known endemic countries be dry, clean and treated with fumigants. Surveillance for *Ae albopictus* was initiated in 1986 and this species continues to be monitored by public health agencies.

*Aedes albopictus* was first documented in the United States in Texas in 1985. A year later, the Asian tiger mosquito was found in Florida at a tire dump site near Jacksonville. Since that time, this species has spread rapidly throughout the eastern states, including all of Georgia's 159 counties. The arrival of *Aedes albopictus* has been correlated with the decline in the abundance and distribution of the yellow fever mosquito, *Aedes aegypti*. There are a number of possible explanations for the competitive exclusion of *Ae aegypti* by *Ae albopictus*. The decline is likely due to a combination of (a) sterility of offspring from interspecific matings; (b) reduced fitness of *Ae aegypti* from parasites brought in with *Ae albopictus* and; (c) superiority of *Ae albopictus* in larval resource competition. The distribution of *Ae aegypti* is currently limited to the southeastern quadrant of the US, and to small areas in New York and Arizona.



U.S. distribution, 2007



World-wide distribution, 2007

*Aedes albopictus* is a competent laboratory vector of many viruses including dengue fever and Eastern equine encephalitis virus. Its life cycle is closely associated with human habitat, and it breeds in containers with standing water, often tires or other containers. It is a daytime feeder and can be found in shady areas where it rests in shrubs near the ground. *Aedes albopictus* feeding peaks in the early morning and late afternoon; it is an opportunistic and aggressive biter with a wide host range including man, domestic and wild animals.

Management of adult populations is more complicated than for other species due primarily to its daytime biting behavior. In many suburban areas, complaints to health departments are more frequently due to *Ae albopictus* than in former years when *Ae aegypti* was the most commonly reported nuisance mosquito. Source reduction is an effective way for people in the community to manage the populations of many mosquitoes, especially container breeding species such as the Asian tiger. The removal of mosquito breeding habitat can be an effective method for mosquito control.

Eliminate any standing water on the property, change pet watering dishes, overflow dishes for potted plants, and bird bath water frequently. Do not allow water to accumulate in tires, flower pots, buckets, rain barrels, gutters etc. Use personal protection to avoid mosquito bites. Long sleeves and insect repellent such as DEET will reduce exposure to bites. The Asian tiger mosquito is a day biter with feeding peaks early morning and late afternoon, so by limiting outdoor activities during crepuscular periods (dawn and dusk) when mosquitoes are generally most active, bites can be avoided.

This species is currently moving into other areas of the US, leading to such headlines as:

Rare, Dangerous **Mosquito** in Southern California

New **mosquito** species in Rockland likes humans, can spread diseases

'Aggressive human biter' heightens **mosquito** fears

Spread of the **Asian tiger mosquito** feared



## New species of trapdoor spider discovered in Auburn, named after Aubie

By **Candis Birchfield**, Auburn University  
College of Science and Mathematics

Researchers at Auburn University reported the discovery a new trapdoor spider species from a well-developed housing subdivision in the heart of the city of Auburn, Ala. *Myrmekiaphila tigris*, affectionately referred to as the Auburn Tiger Trapdoor spider, is named in honor of Auburn University's costumed Tiger mascot, Aubie.

The research team, directed by Biological Sciences professor Jason Bond, lead investigator and director of the Auburn University Museum of Natural History, and Charles Ray, a research fellow in the Department of Entomology and Plant Pathology, was excited at the prospect of such a remarkable find just underfoot. Bond and Ray actually live in the neighborhood where the new species was discovered.

*Myrmekiaphila tigris* belongs to a genus that contains 11 other species of trapdoor spider found throughout the eastern U.S. and includes the now-famous species *Myrmekiaphila neilyoungi*, from Birmingham, Ala., named for Canadian rocker Neil Young.

Trapdoor spiders, related to tarantulas, funnel web spiders, and their kin, construct subterranean burrows that they cover with a hinged door made of a mixture of silk and soil. Female spiders spend nearly their entire lives in a single silk-lined burrow from which they forage as sit-and-wait predators. Prey are captured, usually at night, when an insect or other animal causes a vibration, provoking the spider to leap from the burrow entrance, bite and envenomate the unsuspecting victim, and then return to the bottom of the burrow to feast on its prize.

Due to superficial similarities, *Myrmekiaphila tigris* was previously believed to be a different species, *M. foliata*, according to a taxonomic study of the group that was published a few years ago. However, closer examination revealed considerable differences in appearance, particularly in their genitalia, that were supported by additional DNA studies.

"Despite the physical uniqueness of these specimens, the use of DNA as an alternate, less subjective line of evidence for

recognizing the species was warranted, given our excitement with discovering a new species literally in our own backyards," Bond said.

Members of the species are rarely encountered individually. However, once males reach sexual maturity at around 5 or 6 years old, they emerge from their burrows to find a female with which to mate. Wandering males can be found in relatively large numbers on neighborhood sidewalks, in swimming pools and even in homeowners' garages for a brief time during the months of November and December. Females, on the other hand, are much more secretive, living relatively long, 15 to 20-year lives in their below-ground burrows. They often have more intricate burrows that include side chambers with additional underground trapdoors. Burrows can be found along the banks in relatively young, secondary growth forests in neighborhood natural areas.

Bond said, "The discovery of a new species in a well-developed area like this further demonstrates the amount of biodiversity on our planet that remains unknown; we know so little about our home planet and the other organisms that inhabit it with us."

According to some estimates, scientists have managed over the course of the past 250 years to describe only a few million of the 10 to 30 million species on the planet.

The study describing the Auburn Tiger Trapdoor Spider, *Myrmekiaphila tigris*, was published in the open access journal [Zookeys](#), with an accompanying description of the spider in the online pages of the Encyclopedia of Life. For more information, contact Bond at 334.844.8713 or by email at [jb0037@auburn.edu](mailto:jb0037@auburn.edu). Bond's website is <http://www.auburn.edu/academic/cosam/faculty/biology/bond/>.

### Attention Industry Representatives!

If you have a new product that you'd like to appear in this newsletter, please forward the product name and a brief description of it to Ashley Lovell ([Ashley.R.Lovell@aphis.usda.gov](mailto:Ashley.R.Lovell@aphis.usda.gov)). We don't have room to publish press releases, but we will include it in a special section called "New Products" Thanks!

### New Product Corner

**Zenivex E4**, adulticide spray by Central Life Sciences

**FFAST Bti**, larvacide spray by Bayer Environmental Science

# ALABAMA VECTOR MANAGEMENT SOCIETY MEMBERSHIP FORM

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