



Phaëton

The Official Newsletter of the
Maryland Entomological Society

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FACULTY SPONSORS: Frank E. Hanson and Austin P. (Bob) Platt
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Meeting Announcement

The Maryland Entomological Society's 278th regular meeting will be held **Friday, February 18, 2011**, beginning at **8:00 p.m.**, in **Room 004** (one floor below the street level), **Biological Sciences Building**, University of Maryland Baltimore County (UMBC). Bring a friend and specimens/observations to share. Refreshments will be provided. Presentations are scheduled to begin at 8:15 p.m.

Speaker: James D. Young, Ph.D. – Entomologist Identifier
United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS),
Plant Protection and Quarantine (PPQ), Baltimore, MD

Title: "The Exotic Pests Knocking on Maryland's Door"

Maryland has an active maritime port, several military bases and thousands of international travelers. Any of these pathways could bring the next "Big Pest" to the USA. Dr. Young will give a photo rich presentation that will focus on PPQ's role in the detection of pests and introduce those pests that are more than casually intercepted at the ports throughout the Mid-Atlantic region.

Dr. Young completed his Bachelor of Science with a concentration in Forest Pathology at The State University of New York (SUNY) College of Environmental Science and Forestry, Syracuse and then went on to earn his doctorate in Entomology at the University of Georgia, Athens. After graduating, he took an Extension position at Oregon State University (OSU) running the OSU Insect ID Clinic, as well as teaching at OSU and the University of Oregon. In late 2009, Dr. Young was hired to his current position with APHIS-PPQ.

His current responsibilities include the identification of the snails, mites, and insects intercepted in Maryland and Virginia and providing identification support for the Maryland and Virginia Cooperative Agriculture Pest Survey (CAPS) programs. In 2010 this translated to approximately 3200 identifications.

In the latest issue of *The Maryland Entomologist*, Dr. Young authored the note entitled "Interception of a *Stenhomalus* White, Longhorned Beetle (Coleoptera: Cerambycidae: Cerambycinae: Stenhomalini) in Baltimore, Maryland."

Meet for Dinner before the Lecture

If you are interested in meeting for dinner before the lecture, you are invited to join the guest speaker and your fellow MES members at **Kibby's Restaurant and Lounge**, "Home of Baltimore's Best Shrimp Salad Sandwich." Kibby's is located inside the Baltimore Beltway at 3450 Wilkins Avenue, just 15 minutes from UMBC. Coupon specials can be printed online at <http://kibbysrestaurant.net>. We meet at the restaurant at 6:00 p.m.

For more information concerning this meeting, please contact one of the following people:

Annapolis Area:	Harold Harlan	(410) 923-0173 (Home)	haroldharlan@comcast.net
Baltimore Area:	Fred Paras	(410) 374-0425 (Home)	bugandrockman@msn.com
	Phil Kean	(410) 944-4630 (Home)	
	Frank Hanson	(410) 455-2265 (Biological Sciences, UMBC)	hanson@umbc.edu
Southern MD:	Bob Platt	(410) 586-8750 (Home)	platt@umbc.edu

NOVEMBER 19, 2010 MES MEETING MINUTES

The 277th general meeting of the Maryland Entomological Society was held on Friday, November 19, 2010 at UMBC and began at 8:28 p.m. with a welcome by President Fred Paras. Due to the public health significance of the main program, over 30 students were in attendance from biological science courses that Fred teaches at Baltimore City Community College. Thus, we launched immediately into the presentation, which is summarized below. After the program and a period of refreshments and conversation, a short business meeting was held. The October MES minutes were read and approved. The treasurer's report was given, showing total funds of \$1922.74. There were no other business items. Under announcements, Dr. Frank Hanson mentioned that a UMBC Biological Sciences faculty member suggested that MES may find it interesting to launch an insect species survey at Chino Farms, a grassland and bird conservation area near Chestertown, Queen Anne's County, MD. Gene Scarpulla noted an article in *American Entomologist* documenting >107 million spiders occupying the sand filtration building at the City of Baltimore's Back River Wastewater Treatment Plant in Baltimore County.

Respectfully submitted,
Richard H. Smith, MES Secretary

NOVEMBER 19, 2010 MES LECTURE

"Bed Bugs, Their Public Health Impact and Some Things You Can Do" – Speaker: Harold J. Harlan, Ph.D., B.C.E. – Entomologist, Information Services Division, Armed Forces Pest Management Board, Forest Glen Annex, Silver Spring, MD

The main program for the meeting was presented by longtime MES member and past *Phaëton* editor, Dr. Harold J. Harlan. Dr. Harlan started by describing rashes that bed bugs cause by feeding. Feeding can last from three to ten minutes as they pierce the skin and feed along capillaries. Their salivary proteins cause a reddish rash 1-3 days after feeding. A delayed-reaction secondary rash often develops 3-20 days after feeding and can last 24 hours to 3 days. As part of his studies, Dr. Harlan has kept a bed bug colony going for many years, feeding from his own blood; and he has experienced only the minor initial reaction, which is treatable with hydrocortisone cream. A sign of infestation on bedding and furniture are rust-colored spots from partially-digested blood in bed bug feces. Bed bugs will travel 5-20 feet to reach a blood source. Under 5 feet of distance from a potential blood source, they are attracted by body heat; at greater distances they are able to home in on sources of CO₂. Bed bugs typically only feed every 3-5 days. The Common Bed Bug (*Cimex lectularius*) is the species most responsible for outbreaks in North America although there are 84 species known worldwide in the family Cimicidae. Experiments have shown that *C. lectularius* prefers humans over pets and other small animals. Other

Cimicids commonly encountered in North America include the Tropical Bed Bug (*Cimex hemipterus*), the Eastern Bat Bug (*Cimex adjunctus*), the Swallow Bug (*Oeciacus vicarius*), and the Poultry Bug (*Haematosiphon inodorus*). Thirty human pathogens have been found in bed bugs, but there is no evidence that bed bugs actually transmit any of these. Their bites can however lead to secondary infections, a more virulent one being the staph infection, methicillin-resistant *Staphylococcus aureus* (MRSA). Other potentially severe complications include worsening of asthma conditions, bullous skin eruptions, anaphylaxis, and anemia. Maintenance, repair and emergency workers can contract bed bugs in infested dwellings during brief visits. Dr. Harlan passed around a netted container of live specimens so we could experience their so-called musty, sweetish odor. Bed bugs possess only wing pads, not wings, and so cannot fly. Females, which can oviposit 200-500 eggs at a time, will cease to lay eggs if they are unable to feed at least every 14 days. Males are able to generate sperm if fed at least every 12 days and can mate with females up to 5 times a day. Mating, lasting only 2-5 seconds, is by so-called "traumatic insemination" whereby the male pierces the female's cuticle in an existing soft-tissue body-cavity area. Hemocytes in the female's hemolymph escort sperm to the primary female reproductive organs for fertilization. There are five nymphal instars, each requiring blood for nutrition. Adults can survive for over 1 year without feeding; the record from deprivation studies is 546 days. Nymphs require feeding at least every 3-4 months. Bed bugs can remain active in temperatures under 45° F and can withstand being frozen for over 3 days. Five days of freezing will usually kill them. On the other hand, exposure to elevated heat, as from a hair-dryer, will usually kill them instantly. Dr. Harlan mentioned some effective measures to prevent bed bugs, that may possibly be encountered in hotels and motels, from being transported back to one's home. They tend to congregate around suitcase and baggage openings and seals; thus, such areas should be swabbed with alcohol or blown with a hot hair dryer just before checking out of a room. Dr. Harlan listed several general measures that will help to curtail bed bug transport and infestation. They are 1) maintain surveillance for signs of infestation (trained dogs can even be enlisted to detect bed bug presence); 2) identify suspected insects accurately; 3) educate property owners and tenants on the potential problem; 4) administer appropriate control actions (such as heat, barriers, and chemicals); 5) if found and treated, monitor for recurrence; and 6) persevere in adjusting and adapting control measures. Infested areas often need to be retreated. About 60% of the time, bed bugs will be found in dwelling units adjacent to units where infestation is positive. Other physical controls for bed bugs include using protective covers on mattresses and box springs, vacuuming walls and crevices, applying sticky barriers, and applying steam treatments to walls and furniture (although this can have the drawback of encouraging growths of the noxious *Stachybotrys* molds). Severe chemical fumigation treatments are also available, although currently permitted fumigants may not be strong

enough to kill all existing bed bugs in a dwelling. Fumes of Zyklon B, a commercial form of hydrocyanic acid, were originally used in the 1930s and 1940s to rid barracks of bed bugs, but the bugs eventually developed immunity to it. People wonder why bed bugs have returned as a domestic problem in the 21st century. In truth, they were always present, but we had lost our vigilance to prevent their re-emergence. Also, many more people are traveling to distant parts of the world now, and transporting bed bugs back home is much more likely. People switched from residue or residual insecticides to baits for pests, which are ineffective for bed bugs. Lastly, the bed bugs have developed resistance to many current spray insecticides, and the chemicals found to be effective years ago, at least temporarily, are no longer available. A handout entitled "Bed Bug Prevention Methods" by Dr. Dini Miller of Virginia Tech and a live exhibit of bedbugs were on display as part of Dr. Harlan's presentation.

Respectfully submitted,
Richard H. Smith, MES Secretary

HONORING MEMBER DONORS

The Maryland Entomological Society wishes to honor the members who made charitable donations to MES along with their recent membership renewals. The Society thanks the following honorees:

Jennifer A. Frye
Frank G. Guarnieri
George H. Harman
George M. Jett
Steven W. Lingafelter
Eugene J. Scarpulla
Theodore W. Suman
June L. Tveekrem

A total of \$345 was donated to MES to assist with the publication costs of *The Maryland Entomologist*. These donations are greatly appreciated.

****DON'T FORGET TO RENEW YOUR MES MEMBERSHIP****

Membership renewal notes for the October 2010 through September 2011 membership year were sent out with the September 2010 issue of *The Maryland Entomologist*. If you have not renewed as yet, please take the time to renew your MES membership as soon as possible. Yearly dues are **\$10** (individuals), **\$15** (household), or **\$5** (fulltime students). Please send your check (made out to Maryland Entomological Society) and any address or other changes to:

Edgar A. Cohen, Jr., MES Treasurer
5454 Marsh Hawk Way
Columbia, MD 21045

A Conservation Easement to Preserve Wetland Habitat in Southern Garrett County for State-Listed Butterflies

By Pat Durkin

As rare butterfly species decline throughout the Mid-Atlantic, conservation efforts in Maryland have increasingly focused on preservation of existing colonies and the habitat that supports them. However, long-term preservation of critical habitat is always challenging, particularly if the land is privately owned. Funds are rarely available for land purchases, and landowners are often unwilling to sell. A conservation easement provides perpetual protection without a land purchase. This was the approach Vlad Dupre selected to preserve Woodhill, his home on 15 acres in a rural section of southern Garrett County.

For more than three decades, the property had served as the Dupre family retreat. The Dupres had developed impressive gardens on the property that are surrounded by natural areas: a pond, meadow, woodlands, and an open rocky wetland that is habitat for at least five Maryland-listed butterfly species, including the Baltimore Checkerspot *Euphydryas phaeton*, the official State Insect. (See accompanying article.) The mountaintop parcel overlooks the Potomac Gorge. Widowed and nearing the age of 90, Dupre was fully aware that he would not control the property for many more years. While he was still alive, Dupre wanted assurance that his beloved estate and its conservation attributes would be forever preserved. He decided to donate a conservation easement to the Maryland Environmental Trust (MET) (<http://www.dnr.state.md.us/met/>).

MET is the State-sanctioned nonprofit under the auspices of the Maryland Department of Natural Resources that accepts and holds conservation easement donations, and periodically monitors the properties to assure that the land and buildings are being maintained as their easements require. A conservation easement typically restricts subdivision or development of the property, and includes a habitat maintenance agreement. Owners are not required to open their land to the public and the land can be sold. However, all current and subsequent landowners are bound by the easement provisions and maintenance agreement. MET's 1,000-plus conservation easements currently protect more than 125,000 acres statewide.

Dupre was briefed on the application process and easement requirements. Subsequently, he initiated the application process, thus beginning a year-long qualifying process. A MET representative surveyed the property and took a series of photographs to document the land features and the buildings. Data vouching for the butterfly habitat was provided. Based on this collected information, a case for the easement was developed. At its next monthly meeting, the MET board approved the easement in concept, based on Woodhill's butterfly habitat, the open space that would be preserved, and the property's proximity to major swaths of parkland. The board also granted a size exception for

Woodhill. MET's minimum for a conservation easement is 25 acres, 10 acres larger than Woodhill.

The next phase focused on making sure the title to the land was entirely free and clear. MET required a formal property survey to determine the property's legal boundaries and a title search, which turned up an unexpected challenge. The property's mineral rights were owned by another party, according to a deed recorded in the 1950s. To clear the title, MET required that Dupre purchase the mineral rights from this owner or obtain an agreement from him to never exercise those rights.

Finding that person would prove to be problematic. No data on his whereabouts was given in the deed. Although his surname was the same as at least a dozen people currently living in Garrett County; none knew him. Someone of the same name was listed as a 1959 graduate of the local high school, but he was now living in South Carolina. However, it was found that this man was not the owner of the mineral rights. The search came to a dead end.

Prospects for resolving the mineral rights issue looked dim until MET offered an alternative: a survey performed by a certified mineral right expert finding that mineral extraction from the property would be financially infeasible. An expert with the required qualifications was hired and the survey performed. The analysis, which determined that the mineral extraction on the property would not be cost-effective, allowed the stalled application process to go forward.

The final task was developing a habitat management plan. The plan obligated landowners to a mowing regime to keep the butterfly habitat open and called for cutting a corridor through a wooded area that would channel the butterflies to a meadow that would be seeded with native nectar-producing plants. This meadow would become an alternate to the one the butterflies currently use, which is located off the Woodhill property.

The Allegheny Highlands Conservancy (<http://alleghenyhighlandsconservancy.org/>), the local nonprofit that would co-hold the easement, approved the easement. The new deed, finalizing the easement, was recorded only days before Dupre sold Woodhill to a former neighbor. The new owner is bound, as are all subsequent owners, by the conservation easement and its habitat maintenance plan. The Woodhill conservation easement is Maryland's first to protect butterfly habitat.

NOTE TO READERS: Woodhill Sanctuary is not open to the public. At the request of the landowners, this article does not contain specific information about its location.

The Critical Butterfly Species of Woodhill Sanctuary, Garrett County, Maryland and Why They Are There

By Richard H. (Dick) Smith

We have seen at Woodhill at least five butterfly species

listed or considered for listing by Maryland Department of Natural Resources Natural Heritage Program (MNHP) (http://www.dnr.state.md.us/wildlife/Plants_Wildlife/rte/pdfs/rte_Animal_List.pdf). The butterfly species are Silvery Checkerspot, *Chlosyne nycteis*; Gray Comma, *Polytonia progne*; Long Dash, *Polites mystic*; Baltimore Checkerspot, *Euphydryas phaëton*; and Harris' Checkerspot, *Chlosyne harrisii*. The advent in the past two decades of dwindling populations of the Baltimore Checkerspot, Maryland's official State Insect, has qualified its recent ranking as "State Rare" in Maryland by the MNHP. Even more, the exceedingly local distribution of Harris' Checkerspot has won it the status designation of "Threatened" in Maryland, which provides statewide legal protection for this species. We strongly suspect that Woodhill is home to more butterfly species of limited distribution and MNHP interest in Maryland, such as the Indian Skipper, *Hesperia sassacus*; Delaware Skipper, *Anatrytone logan*; and Appalachian Azure, *Celastrina neglectamajor*. We simply have not had time yet to survey Woodhill throughout the flight seasons for these potential species. We do know that less rare Western Maryland butterflies, such as the Appalachian Tiger Swallowtail, *Papilio appalachiensis*; Pipevine Swallowtail, *Battus philenor*; and Aphrodite Fritillary, *Speyeria aphrodite*, populate the area well in the spring and summer. Why is Woodhill such a prime habitat for these seldom seen butterflies? The reason, and we have no doubt, is that Woodhill is unique. For one thing, it harbors several rocky subsurface, spring-fed marshes. These support bounteous growths of larval host plants: white turtlehead, *Chelone glabra*, for the Baltimore Checkerspot and parasol whitetop, *Doellingeria umbellata*, for Harris' Checkerspot. Furthermore, nearby meadows are flush with milkweeds, dogbanes, and native fleabanes and ragworts, which provide ample nectar nutrition for active adult butterflies. However, the most unique feature of this habitat, particularly the marsh, is that it has not been disturbed by human activity for probably the past century. Although a portion of the upland survives from a mining operation decades ago, the meadows have only been touched, and probably preserved, by occasional pasturing. The property is so buried at a road end in the expansive rural countryside of southern Garrett County, MD that few people ever visit; and with all this surrounding land, even deer are not inclined to take a side trip and nibble from the property's important butterfly plants. It is truly a unique remnant of a century's-old natural world we cannot lose.

SUBMITTAL DEADLINES

MAR 2011 issue of *Phaëton*:

Please send member news items by 4 March 2011.

SEP 2011 issue of *The Maryland Entomologist*:

Please send first drafts of articles and notes by 1 April 2011.

Send drafts for both publications to ejscarp@comcast.net.