



Phaëton

The Official Newsletter of the
Maryland Entomological Society

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March 2015

EDITOR: **Eugene J. Scarpulla** – ejscarp@comcast.net
FACULTY SPONSORS: **Frank E. Hanson** and **Austin P. (Bob) Platt**
Department of Biological Sciences
University of Maryland Baltimore County (UMBC)
1000 Hilltop Circle
Baltimore, MD 21250
WEBSITE: <http://www.mdentsoc.org/>

Meeting Announcement

The Maryland Entomological Society's 303rd regular meeting will be held **Friday, 20 March 2015, 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, and books to share. Refreshments will be provided. Presentations are scheduled to begin at 8:15 p.m.

Speaker: Gary F. Hevel – Public Information Officer (Emeritus), Department of Entomology, National Museum of Natural History, Smithsonian Institution, Washington, DC

Title: “A Yard of Insects: Local Entomological Biodiversity”



Gary Hevel with periodical cicadas (*Magicicada Davis* spp.)

Since the year 2000, Gary Hevel has engaged in an entomological survey in his backyard in Silver Spring, Maryland. This effort has both revealed an unexpected biodiversity and contributed to scientific knowledge. During the presentation, he explains the genesis of the project, and highlights the methods and results of this ambitious activity.

Gary Hevel has always been fond of the beauty, details, and lessons of the natural world. He worked at the Smithsonian Institution for 42 years, and has lead or participated in field work in some thirty countries and territories. Besides insects, his interests include collecting postcards, magazines, and piggy banks. He participates annually in the National BioBlitz, sponsored by the National Geographic Society and the National Park Service, and volunteers at the National Museum of Natural History several days each week.

Meet for Dinner before the Lectures

If you are interested in meeting for dinner before the lectures, 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 Wilkens Avenue, Baltimore, MD 21229, just 15 minutes from UMBC. Meet at the restaurant **promptly at 6:00 p.m.**

WELCOME TO NEW MEMBERS

MES welcomes the following new members to the Society:

| | |
|---------------------------------|--------------------------|
| Kelly A. Hamby | Beltsville, MD |
| Travis Lauchman | Baltimore, MD |
| William R. Morrison, III | Kearneysville, WV |

HONORING MEMBER DONORS

MES wishes to honor the following members who made charitable donations along with their recent membership renewals. These donations help with the printing and mailing of *The Maryland Entomologist*.

William A. Andersen
Travis Lauchman
William R. Morrison, III
Andrew W. Ulsamer

20 FEBRUARY 2015 MES MEETING MINUTES

The 302nd general meeting of the Maryland Entomological Society was held on Friday, 20 February 2015 in Room 004 of the Biological Sciences Building at UMBC and began at 8:30 p.m. with a welcome by Co-President **Fred Paras**. The MES business meeting preceded the program presentation and began with a reading (by Secretary **Dick Smith**) and approval of the November 2014 MES meeting minutes, kindly taken and prepared by Vice President **Phil Kean** since Dick was unable to attend that meeting. Treasurer **Ed Cohen** then delivered the Treasurer's report which quoted a current society General Funds total of \$3623.38. There was no old business. The only new business was a motion from Publications Editor **Gene Scarpulla** to change the date of the May 2015 MES meeting from 15 May to 8 May, the second Friday of May, because the original 15 May meeting time conflicted with the scheduled opening activities of the Maryland Ornithological Society Annual Conference. This motion was seconded, voted on, and approved. In addition to college-age speakers, **Mike Turell** suggested that our meetings should include opportunities for youth speakers (junior high and high school age) to present some of their entomology projects too. Attendees were very supportive of this notion, and Mike plans to announce this opportunity at the next Frederick 4-H Club meeting, for which Mike leads their entomology program. Mike also showed and took orders (after the meeting) for spectacularly designed, colorful, and accurately depicted wildlife (including insects) T-shirts, mugs, tote bags, etc., from Wild Cotton as a fundraiser for his 4-H group. The meeting continued with several announcements. Dick Smith brought in, briefly showed, and provided for examination after the meeting the four fascicles from the expertly detailed series, *The Moths of America North of Mexico* (MONA), which were kindly donated to the MES for fundraising by founding member Dr. **William Andersen**. The issues contain full species descriptions and exceptional plates of moth species. For a modest donation to the MES General Fund, these documents are being made available for an interested MES member to include in his/her library. Please see the November and December 2014 issues of *Phaëton* for details on the titles

(which list the included moth groups), authors, and publication dates. Contact Dick Smith at Richard.Smith@jhuapl.edu if interested in acquiring these documents. Dick also announced that a butterfly survey being conducted in Howard County, MD is yielding several important and unexpected findings on uncommon butterfly occurrences in the county. This survey is sponsored by the Howard County Bird Club and has been contributed to, and conducted season-long, since 2013 by several survey leaders at a variety of Howard County parks and natural areas. The findings include multiple colonies of Harvester, *Feniseca tarquinius* (Fabricius), butterflies and clear and consistent scientific brood peak and gap data for most butterfly species. Please contact the survey coordinator Linda Hunt at raven10322@hotmail.com or butterfly identification coordinator Dick Smith (e-mail above) for more details or survey participation.

MES member and Maryland Department of Natural Resources (MD DNR) Wildlife and Heritage Service Invertebrate Ecologist **Jennifer Frye** announced the 2015 revision of the Maryland State Wildlife Action Plan (SWAP), first published in 2005. The plan identifies species of Greatest Conservation Need, conservation priorities, threats, and conservation actions for wildlife species and their habitats in Maryland. Of interest to MES members, the new plan will include a more substantial emphasis on invertebrates. Interested MES members are asked to read through the 2005 SWAP (text available at http://www.dnr.maryland.gov/wildlife/Plants_Wildlife/SWAP/index.asp) and contact MD DNR with information and data on your own past and intended wildlife conservation projects for possible inclusion in the SWAP and on any ideas for SWAP improvements. More details and a schedule of future SWAP meetings may be obtained from SWAP Coordinator Ingrid Brofman at ingrid.brofman@maryland.gov. Exhibits at the MES meeting included a Cornell drawer displaying New and Old World Parnassian (Lepidoptera: Papilionidae: Parnassiinae) species. Ed Cohen displayed a collection box including several Lepidoptera species (one was the Baltimore Checkerspot, *Euphydryas phaeton* (Drury), including an aberrant form) obtained during his field trip to New Hampshire. Refreshments and discussion were enjoyed by all after the meeting.

Respectfully submitted, Richard H. Smith, MES Secretary.

20 February 2015 MES LECTURE

Speaker: Kelly A. Hamby, Ph.D. (Assistant Professor/ Extension Specialist, Department of Entomology, University of Maryland, College Park, Maryland)

Title: "Exploiting Insect-Microbe Interactions for Sustainable Insect Pest Management"

Dr. Hamby's current research is devoted to a study of ecological associations between insect pests, primarily the Spotted Wing Drosophila (SWD), *Drosophila suzukii* (Matsumura), and species of yeast, which are thought to be an important insect food resource. *Drosophila suzukii* is a fruit crop pest and a serious economic threat to soft summer fruit; mainly cherries, blueberries, raspberries, and blackberries. Although capable of

utilizing overripe fruit, SWD is a devastating pest because it prefers undamaged ripening marketable fruit. It is native to Southeast Asia and was widely observed throughout parts of Japan, Korea, and China in the early 1930s. By the 1980s, it was seen in Hawaii and first appeared in North America in central California in August 2008 and is now widespread throughout California, western Oregon, western Washington, and parts of British Columbia and Florida. In 2009, California lost 30% of its cherry crop to this pest. During 2010, the fly was discovered for the first time in South Carolina, North Carolina, Mississippi, Utah, Michigan, and Wisconsin. In 2011, it was found infesting blackberry and raspberry crops in Maryland. The pest also occurs in Europe, including the countries of Belgium, Italy, France, and Spain, and in South America in Brazil.

Adult-to-adult development can be as short as 10-15 days, and adults can live from one to three months (with longer lifespans in adults that overwinter) and lay eggs during any active period. Females are capable of generating up to about 250 eggs. Yeast vegetative cells are digested by the fruit flies and larvae. However, the spores survive without damage, and new yeast colonies sprout later from the feces. Experiments have shown that yeast nutrition contributes to *Drosophila* fitness and that feeding upon certain yeast species enables a stronger response among the fly's "immune cells" that encapsulates and immobilizes eggs and larvae of parasitic wasps. Yeasts also detoxify plant chemicals such as those in cacti and allow consumption by certain fruit fly species that consume and reproduce in necrotic cacti tissue. Although sugars are required for yeast development, experiments have shown that *D. suzukii* is attracted to yeast in the absence of rotting fruit. At the University of California Davis in 2011, Dr. Hamby and other researchers isolated yeast species from larval frass, adult midguts, and fruit hosts of *D. suzukii*. Terminal restriction fragment length polymorphism (TRFLP) technology and decimal dilution plating were used to identify and determine the relative abundance of yeast species present in fruit juice samples that were either infested with *D. suzukii* or not infested. Yeasts were less abundant in uninfested than infested samples. A total of 126 independent yeast isolates were cultivated from these sources, representing 28 species of yeasts, including *Hanseniaspora uvarum* (Niehaus) Shehata et al., *Metschnikowia pulcherrima* Pitt & M.W. Mill., *Pichia terricola* Van Der Walt, and *P. kluyveri* Bedford ex Kudryavtsev, with *H. uvarum* predominating. This suggests an association between *D. suzukii* and *H. uvarum* that could be utilized for pest management. An effective measure could be to reduce the incidence of this yeast species in crop areas.

Dr. Hamby next discussed an analysis procedure employed in her collaborator Dr. Zain Syed's laboratory at the University of Notre Dame to determine which yeast volatiles provide greatest stimulus for attraction of *D. suzukii* females for oviposition. The process is called coupled gas chromatography-electroantennographic detection (GC-EAD). An ultra-fine wire probe is placed in a single sensilla, the fruit fly's olfactory

antennal receptor, and neuron voltage is measured when the insect is exposed to volatiles generated by a small gas chromatography machine. Volatiles generating high neuron voltages may indicate strong attractants. A goal of this research is to determine if there are yeast compounds that are more of an attractant to *D. suzukii* than to other *Drosophila*. GC-EAD was also applied to *Drosophila melanogaster* Meigen for comparison. If successful, the research would provide the basis for fruit fly trap chemical composition to significantly reduce the incidence of *D. suzukii* in fruit crop areas while having a minimal effect on non-target insect species. Strong responses in *D. suzukii* from yeast volatiles have been detected in the laboratory with this process, but behavioral data must still be accumulated to separate attractant from possible repellent volatiles. This research is motivated by the fact that spinosad-based fruit fly bait has recently been developed as a primary tool for the area-wide control and eradication of tephritid fruit flies.

Respectfully submitted, **Richard H. Smith**, MES Secretary.

IN MEMORIAM:

DOUGLAS W. S. SUTHERLAND, PH.D.

16 September 1933 – 8 January 2015

Former MES member, Dr. **Douglas W. S. Sutherland**, was born in Brooklyn, New York in 1933 to two Scottish immigrants. Doug always was very proud of his Scottish heritage and the wistful strains of bagpipes were to be heard at his recent memorial celebration. Doug attended Wellesley High School in Wellesley, Massachusetts, and early on developed an interest in the living things and the outdoors. His college education began with a BS (agriculture) from the University of Vermont. He then worked as a graduate assistant at the University Nebraska. At this university his work included Wheat Curl Mite (*Aceria tosichella* Keifer) culture on various hosts; grasshopper surveys, rearing wireworms; the effect of Honey Bees (*Apis mellifera* Linnaeus) pollinating alfalfa blooms on seed production, and studies on the impact of systemic insecticides on the nymphs of the Potato Psyllid (*Bactericera cockerelli* [Šulc]). Doug then served in the military with the United States Army Chemical Corps. He earned a Masters degree from the University of Delaware; his thesis subject was the detection of resistance to DDT and BHC among the Saltmarsh Mosquito (*Aedes sollicitans* [Walker]) and the Northern House Mosquito (*Culex pipiens* Linnaeus). Doug then earned his Ph.D. from Cornell, with a dissertation entitled: Biological Investigations of *Trichoplusia ni* (Hübner) and Other Lepidoptera Damaging Cruciferous Crops on Long Island, New York. Doug also worked on the European Corn Borer (*Ostrinia nubilalis* [Hübner]) and the Corn Earworm (*Helicoverpa zea* [Boddie]). He went on to work as an extension entomologist at the University of New Hampshire and later in Idaho (where he investigated the impact of black flies upon sheep). A few publications authored by Doug include:

Darsie, R.F., Jr., and D.W.S. Sutherland. 1959. Evidence of resistance to BHC in adults and larvae of *Aedes sollicitans* in Delaware during 1956. *Proceedings of the 46th Annual Meeting of the New Jersey Mosquito Extermination Association* 84-94.

Sutherland, D.W.S., and R.F. Darsie, Jr. 1960. A report on the blackflies [sic] (Simuliidae) of Delaware. Part I. Record of Delaware species and an introduction to a survey in the western branches of the Christiana River, New Castle County. *Bulletin of the Brooklyn Entomological Society* 55(2):46-52.

Sutherland, D.W.S. and R.F. Darsie, Jr. 1960. A report on the blackflies [sic] (Simuliidae) of Delaware. Part II. Description and discussion of blackfly [sic] habitats. *Bulletin of the Brooklyn Entomological Society* 55(3):53-61.

Sutherland, D.W.S., and R.F. Darsie, Jr. 1960. Toxicity of organosphorous insecticides to larvae of *Culex pipiens* tolerant to DDT and lindane in New Castle County, Delaware, 1959. *Proceedings of the 47th Annual Meeting of the New Jersey Mosquito Extermination Association* 139-145.

In 1972 Doug joined the Environment Protection Agency, in the year of its founding. He rose to become the Senior Entomologist in the Science Support Branch of BEAD (Biological and Economic Analysis Branch) OPP (Office of Pesticide Programs). Doug dealt with the entomological aspects of pesticide usage for both home and agricultural use, Special Use Permits, and misuse situations. He served as a consultant in Niger, West Africa. Doug is remembered as a colorful character, noted for his strongly-held views and pursuit of excellence. He received several awards from the Agency in recognition for his efforts.

Doug was active in the Entomological Society of America (ESA) and in the American Registry of Professional Entomologists (ARPE [later taken over by ESA to become the Certification Board program]). He was a strong believer in the need for entomology to have a professional society with a credentialed system to ensure upkeep of standards and recognition of its members. Doug held several positions with both organizations and was the recipient of several meritorious awards.

For many years, Doug worked, along with others, to have the Monarch Butterfly (*Danaus plexippus* [Linnaeus]) declared as the National Insect. These efforts were ultimately unsuccessful.

Doug was generous with his time. He often judged science fairs at several local elementary schools and at the County Kids for Science Fair, and gave class presentations for school career days. He was the inspiration for several of today's entomologists.

Entomology was by no means Doug's only interest. His hobbies (passions might be a better term given his enthusiasm) included spelunking, hiking, rock climbing, camping, photography, gardening, Gilbert & Sullivan operas, folk dancing, and hammered aluminum ware.

For many years, Doug actively promoted competitive swimming in Prince George's County, Maryland, public schools, despite being only a so-so swimmer himself. He was a race starter and worked tirelessly to organize the sport, first at the club level and then at the varsity level. He was the Swimming Coordinator for Prince George's County for 10 years.

Doug leaves behind three daughters, a son, and several grandchildren. But he will also be missed by many others who were fortunate enough to have known him.

Contributed by MES member **Robin G. Todd**, Executive Director, i2LResearch USA Inc

[Editor's Note: The *Washington Post* obituary can be found at: <http://www.legacy.com/obituaries/washingtonpost/obituary.aspx?pid=174114377>.]

PHILADELPHIA CBP INTERCEPTS FIRST IN PORT DESTRUCTIVE TERMITE SPECIES

A 3 March 2015 U.S. Customs and Border Protection (CBP) news release reports that a U.S. Department of Agriculture (USDA) - Animal and Plant Health Inspection Service (APHIS) - Plant Protection and Quarantine (PPQ) identifier confirmed that on 10 February 2015, CBP agriculture specialists in Philadelphia, discovered 20 live specimens of a drywood termite, *Cryptotermes Banks* sp. (Blattodea: Kalotermitidae), inside the wood packaging material used to secure a shipment of pineapples from the Dominican Republic.



A drywood termite, *Cryptotermes Banks* sp. (Blattodea: Kalotermitidae). (Image courtesy of CBP)

The full news release can be accessed at:

<http://www.cbp.gov/newsroom/local-media-release/2015-03-03-000000/philly-cbp-intercepts-new-destructive-termite-species>.

UNIVERSITY OF MARYLAND DEPARTMENT OF ENTOMOLOGY COLLOQUIA

Fri, 13 March 2015, 12:00 p.m.

“Symbiotic Evolution and Species Discovery in Fungus-farming Ants”

Ted Schultz, Ph.D. (Research Entomologist, Curator of Hymenoptera [Ants], Department of Entomology, National Museum of Natural History, Smithsonian Institution Washington, DC)

Fri, 27 March 2015, 12:00 p.m.

“The Challenges of Optional Sex: The Case of Reproductive Polyphenism in Aphids”

Gregory K. Davis, Ph.D. (Associate Professor, Department of Biology, Bryn Mawr College, Bryn Mawr, Pennsylvania)

Fri, 3 April 2015, 12:00 p.m.

“Interactions between Insects and Two Perennial Native US Crops: Connecting Basics and Applied Research”

Cesar Rodriguez-Saona, Ph.D. (Associate Extension Specialist in Entomology, Philip E. Marucci Center for Blueberry and Cranberry Research and Extension, Department of Entomology, Rutgers University, Chatsworth, New Jersey)

Fri, 10 April 2015, 12:00 p.m.

“Wasps, Worms and Plants: On the Way to Speculation”

Karen Kester, Ph.D. (Entomologist, Department of Biology, Virginia Commonwealth University, Richmond, Virginia)

Entomology colloquia take place in 1130 Plant Sciences Building, College Park, MD. For additional information, go to: <http://entomology.umd.edu/calendar.html>.

**ENTOMOLOGICAL SOCIETY OF AMERICA
EASTERN BRANCH ANNUAL MEETING**

Sat-Tue, 14-17 March 2015

Atlantic Sands Hotel & Conference Center, (101 North Boardwalk) 1 Baltimore Avenue, Rehoboth, Delaware 19971.

An encapsulated program is available at: <http://entsoc.org/PDF/Eastern/EB2015Program1.pdf>.

Additional information can be found at: <http://entsoc.org/eastern/2015-eastern-branch-annual-meeting>.

**AMERICAN ENTOMOLOGICAL SOCIETY
PUBLIC MEETING**

Wed, 25 March 2015; 7:00 p.m.

“Phthiraptera and Bird Host Specificity”

Jason D. Weckstein, Ph.D. (Associate Curator of Ornithology, Academy of Natural Sciences of Drexel University; Associate Professor, Department of Biodiversity, Earth & Environmental Science, Drexel University, Philadelphia, Pennsylvania)

Wed, 22 April 2015; 7:00 p.m.

Speaker: TBA
Topic: TBA

The Academy of Natural Sciences of Drexel University, Ewell Sale Stewart Library, Second Floor, 1900 Benjamin Franklin Parkway, Philadelphia, Pennsylvania
<http://darwin.ansp.org/hosted/aes/mtgSched.htm>.

**TWO-DAY “BEGINNERS BEEKEEPING COURSE”
UNIVERSITY OF MARYLAND**

Sat & Sun, 28-29 March 2015

Do you want to learn the skills to succeed in beekeeping? Come join us 28-29 March 2015 for the “Beginners Beekeeping Course” at the University of Maryland, College Park.

Who we are:

You will be learning from honey bee researcher and UMD professor, Dennis vanEngelsdorp. Bee Informed Partnership Executive Director Karen Rennich, Maryland State Beekeeping Association President Toni Burnham, Maryland State Apiarist Cybel Preston, Honey bee writer and researcher Kirsten

Traynor, and several other dedicated honey bee researchers.

What you’ll get:

An entire weekend of lessons by experienced beekeepers teaching you how to:

- obtain bees;
- what beekeeping equipment is necessary;
- how to install your new colony into your own equipment; and
- how to bring your bees successfully through the first year.

In addition to meeting local bee researchers and instructors, you will also be introduced to your local bee clubs, and have facilitated discussions and Q&A. Lunch and coffee breaks will be provided both days. Vendors will be on hand to sell and place orders for equipment.

For more information or to register visit our website at:

<https://app.certain.com/profile/form/index.cfm?PKformID=0x1988997b8e8>.

ATTENTION: If you are an experienced beekeeper and would like to register for free as a “Bee Ambassador” for your local bee group, please contact us for a special registration link and more information.

Or contact: Grace Kunkel at GKunkelUMD@gmail.com.

**ENTOMOLOGICAL SOCIETY OF WASHINGTON
PUBLIC MEETING**

Thu, 2 April 2015; 7:00 p.m.

Topic: TBA

Speaker: TBA

National Museum of Natural History, Smithsonian Institution, Washington, DC

<http://entsocwash.org/>.



Central Maryland Beekeepers Association

Supporting and promoting beekeepers and the viability of honeybees in central Maryland

MEMBERS MEETINGS

Tue, 7 April 2015; 7:00 p.m.

“Purdue University’s Varroa Mite Leg-Biter Queens”

Mark Gingrich

Tue, 5 May 2015; 7:00 p.m.

Speaker: TBA

Tue, 2 June 2015; 7:00 p.m.

“The Ecological Value of Plants for Pollinators”

Deborah A. Delaney, Ph.D. (Assistant Professor of Entomology, Department of Entomology and Wildlife Ecology, University of Delaware, Newark, Delaware)

Members meetings are held at the Oregon Ridge Nature Center, 13555 Beaver Dam Road, Cockeysville, Maryland. Additional information can be found at:

<http://www.centralmarylandbees.org/meetings-3/membership-meeting-schedule/>.

2014/2015 PROPOSED MES EVENT SCHEDULE

Regular MES lecture/meetings are held at UMBC on the 3rd Friday of each of 6 months coinciding with UMBC's academic year. Proposed events for the upcoming MES membership year are:

| <u>Date</u> | <u>Speaker</u> | <u>Topic</u> |
|-------------|---|--|
| Oct 17 | Jeffrey Shultz | Diversity & Sex Lives of Daddy Longlegs |
| Nov 21 | William Cooper | The Butterflies of Iguazú Falls, Argentina |
| Feb 20 | Kelly Hamby | Exploiting Insect-Microbe Interactions |
| Mar 20 | Gary Hevel | A Yard of Insects: Local Ent Biodiversity |
| Apr 17 | Floyd Shockley | Four Families: Handsome Fungus Beetles |
| May 8 | Members' & Students' Presentations & Elections | |
| TBA | Survey/Field Trip | |
| Sep 20 | Crab Feast/Meet-&-Greet at J. KING'S Restaurant | |

OCT 2014 – SEP 2015 MES MEMBERSHIP YEAR OFFICERS

| | |
|---------------------|-----------------------------------|
| Co-Presidents | Timothy Foard & Frederick Paras |
| Vice President | Philip J. Kean |
| Secretary | Richard H. Smith |
| Treasurer | Edgar A. Cohen, Jr. |
| Historian | (vacant) |
| Faculty Sponsors | Frank E. Hanson & Austin P. Platt |
| Publications Editor | Eugene J. Scarpulla |

SUBMITTAL DEADLINES

APR 2015 issue of the *Phaëton*:

Please send member news items by 3 April 2015.

SEP 2015 issue of *The Maryland Entomologist*:

Please send first drafts of articles and notes by 1 April 2015.

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