



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 295th regular meeting will be held **Friday, 15 November 2013, 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: Sam Droege – Wildlife Biologist, Bee Inventory and Monitoring Laboratory (BIML), Patuxent Wildlife Research Center (PWRC), United States Geological Survey (USGS), Beltsville, MD

Title: “Taking High Resolution Photos of Insects with Your Macro (or Even Your Regular) Lens!”

Sam Droege will discuss how he takes very high resolution, completely-in-focus photos of insects using off-the-shelf camera equipment. He will demonstrate how anyone with a digital single-lens reflex camera (DSLR, or sometimes just called an SLR) with a lens that can be put on manual focus can take these pictures. Sam will have a PowerPoint presentation about the process and have his camera set up for a live demonstration.

Sam Droege grew up in Hyattsville, Maryland, and received a Bachelor of Science in biology at the University of Maryland and a Master of Science in wildlife management at the State University of New York – Syracuse. Most of his career has been spent at the USGS Patuxent Wildlife Research Center. Sam has coordinated the North American Breeding Bird Survey Program, developed the [North American Amphibian Monitoring Program](#), the [BioBlitz](#), [Cricket Crawl](#), and [FrogwatchUSA](#) programs and worked on the design and evaluation of monitoring programs. Currently he is developing an inventory and monitoring program for native bees and online identification guides for North American bees at <http://www.discoverlife.org>. Additionally, Sam, along with Jessica Zelt (Program Coordinator), is reviving the [North American Bird Phenology Program](#).

Some resources that people may want to look at prior the talk include:

- USGS-BIML photo site: <http://www.flickr.com/photos/usgsbiml/>
- Best pictures at USGS-BIML (eye candy set): <http://www.flickr.com/photos/usgsbiml/sets/72157630468783226/>
- Specimens taken in hand sanitizer: <http://www.flickr.com/photos/usgsbiml/sets/72157631861396270/>
- Perhaps the best technical forum on macrophotography: <http://www.photomacrography.net/>
- YouTube on basic USGS-BIML set up: http://www.youtube.com/watch?v=S-_yvIsucOY
- USGS-BIML Photoshopping technique (Note that we now have added using the burn tool at 50 opacity to clean up the halos that bleed into the black background from “hot” color sections of the picture using “shadows” mode.): http://www.youtube.com/watch?v=Bdmx_8zqvN4
- PDF of basic USGS-BIML photography set up: <ftp://ftpext.usgs.gov/pub/er/md/laurel/Droege/How%20to%20Take%20MacroPhotographs%20of%20Insects%20BIML%20Lab2.pdf>
- Google Hangout demonstration of techniques: <https://plus.google.com/events/c5569losvskrv2nu606ltof8odo> or: <http://www.youtube.com/watch?v=4c15neFttoU>

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 Wilkins Avenue, Baltimore, MD 21229, just 15 minutes from UMBC. Meet at the restaurant **promptly at 6:00 p.m.**

*****DON'T FORGET TO RENEW***
IT'S MEMBERSHIP RENEWAL TIME
OCT 2013 – SEP 2014 MEMBERSHIP YEAR**

Membership renewal forms were inserted in the front of the September 2013 issue of *The Maryland Entomologist* that was mailed out in September. If the date on your address label reads 2013, it is time for you to renew for the “October 2013 – September 2014” membership year. Please check that your contact information is correct and return the form along with your check (made out to Maryland Entomological Society) to: **Edgar A. Cohen, Jr.** (MES Treasurer), 5454 Marsh Hawk Way, Columbia, MD 21045.

18 OCTOBER 2013 MES MEETING MINUTES

The 294th general meeting of the Maryland Entomological Society was held on Friday, 18 October 2013 at UMBC and began at 8:24 p.m. with a welcome by Co-President **Fred Paras** and then led immediately into the main program which is summarized below. (This year, the role of president is being shared by Fred Paras and Co-President **Tim Foard**.) Attendees broke for a period of refreshments and discussion after the talks, and then a business meeting was convened. The minutes of the May 2013 meeting were read by the Secretary **Dick Smith** and approved, and Treasurer **Ed Cohen**'s report cited a General Funds total of \$2336.82. Some discussion ensued regarding the MES meeting schedule. Member **Mike Turell** offered additional speaker possibilities in the coming year and noted that we may wish to consider scheduling January and September general meetings in order to accommodate unexpected speaker opportunities over and above speakers already scheduled. Mike also proposed a motion that we send courtesy copies of the *Phaëton* to the biology departments at University of Maryland College Park, Johns Hopkins University, and Towson University with a note to post them on bulletin boards, partly to serve as meeting announcements as well as advertisements of Society activities. Member **Marcia Watson** recommended that we request posting the newsletters in the biology department graduate student lounges for these universities. Fred Paras also proposed sending courtesy copies of the *Phaëton* and the Society journal to the Department of Biological Sciences Department at UMBC. These motions were seconded and approved. We welcomed two new members in attendance, **Jonathan Haas** and **Ikumi Kayama**. Under announcements, Bob Bryant's moth and butterfly collection, acquired by the Natural History Society of Maryland (NHSM) last winter, was showcased on the front page of the NHSM's Spring 2013 Newsletter. MES member **Jim Young** is their arthropod curator. Publications Editor **Gene Scarpulla** reminded us that the MES website (<http://www.mdentsoc.org/>), which will include a link to past MES newsletters over the history of the Society, is up and running. Thanks were expressed to MES member **Elizabeth Hill** who created the website. Gene also brought in a box of entomology books that were available to members in exchange for their small donations to MES. The books raised \$22 in donations. We all were saddened to learn of

the passing of member and past MES Secretary, Treasurer, Journal Editor, and Historian **Bob Bryant** in August 2013. We also were saddened to learn of the passing of member and past President **Stephen Harrison** in September 2013. Co-President Fred Paras led us in a moment of silence for the memory of their presences at the MES over many past years and in recognition of their individual contributions to the MES. Finally, for displays, Fred Paras brought in a Cornell drawer of a large number of rare and unusual eastern United States butterflies and forms from his archive collection. Ed Cohen displayed a Schmitt Box of selected moth species from the collection of member **John Glaser**.

Respectfully submitted, Richard H. Smith, MES Secretary

18 OCTOBER 2013 MES LECTURE

Speaker: Harold J. Harlan, Ph.D., B.C.E. (recently-retired Entomologist, Information Services Division, Armed Forces Pest Management Board, Forest Glen Annex, Silver Spring, Maryland)

Title: “Some Newer and Novel Mosquito Control Options”

Harold began the lecture by mentioning why we wish to control mosquitoes (Diptera: Culicidae). Mosquitoes are vectors for a variety of diseases such as malaria, Dengue fever, and yellow fever, now mostly in tropical areas. Of course, areas in North America have seen outbreaks of West Nile virus. The bites themselves can be of serious medical concern to people with strong reactions. Only female mosquitoes bite and the blood is used for egg development. Actually adult female and male mosquitoes utilize only nectar and plant juices for nutrition and can delay feeding up to three days. Sugars are stored in the abdominal crop. Adults can live from one to three months. Historical mosquito control options included source reduction (draining, eliminating, or modifying habitat), treatment of habitats (methods may be chemical, biological, or physical), use of personal protective measures (PPM) (screens, treated bed nets, repellants, wearing light clothing covering most exposed areas, staying indoors while inactive), and public education. Detailed examples of source reduction include: (1) eliminating standing water and dumping containers, (2) eliminating cracks and crevices in walls, (3) eliminating area clutter that promotes mosquito breeding or attraction of alternate pathogen host animals, and (4) cutting vegetation (used by mosquitoes for resting, hiding, and mating activity) near buildings. The more general strategies employed for mosquito control have not changed much in recent years. However, there has been an increase in our understanding of mosquito behavior and in the variety of available control devices and active control agents. Studies in the field of Integrated Pest Management (IPM) have better identified species that spread particular diseases, have established threshold levels for stages of control activity, have employed multiple control methods in affected areas, and have included follow-up evaluations as standard practice. Active controls can include predatory animals such as certain surface-feeding topminnows (*Gambusia* spp. [Poeciliidae]), and predatory mosquitoes (*Toxorhynchites* spp.), but these are costly

to introduce and only effective near large bodies of water. Bats (Chiroptera) are not effective because they do not concentrate on mosquitoes for food, and dragonflies (Odonata: Anisoptera) are not effective because they rarely hunt mosquitoes near human habitations. Some bacterial agents, such as *Bacillus thuringiensis israelensis* (*Bti*) and *Bacillus sphaericus*, and even internal parasites such as nematodes (Nemata) are effective in the control of mosquito larvae. Insect growth regulators (IGRs) such as methoprene mimic the natural juvenile hormones of insects, which must be absent for a pupa to molt to an adult. Thus, methoprene-treated larvae will not be able to reach the adult stage. Many of these agents are available to the public in briquette form. Biodegradable surfactants applied to water surfaces are also effective in killing larvae. On the other hand, chemical pesticides should still be an option in mosquito control in many cases, e.g., when non-chemical actions prove insufficient, after certain natural disasters (hurricanes, floods), and if costs and operational practicality impose restrictions. Human health risks of the treatment must of course be considered, and application procedures must of course adhere to label directions. Ultra-low volume (ULV) spraying of adulticides is applied from truck-based foggers and from aircraft. Mosquito residual sprays applied manually with pump sprayers are used to treat adult resting sites in vegetation.

Some recent novel integrated mosquito management (IMM) techniques are also coming into practice. The sterile insect technique (SIT) works by releasing sterile male mosquitoes of a target species. The sterile males compete with the wild males for female insects. If a female mates with a sterile male then she will have no offspring, thus reducing the next generation's population. Another method is genetic modification by gene silencing. A double-stranded (ds) RNA molecule capable of triggering specific gene silencing is introduced to mosquito larvae through their food. The dsRNA can also be introduced to adult mosquitoes by ULV mists. The gene silencing process may kill the developing mosquitoes or make them more susceptible to pesticides. A third technique introduces lethal genes during the larval stage. As wild female mosquitoes mate with the engineered adult male, the progeny inherit the lethal gene and eventually die before reaching maturity. Another control method is attractive toxic sugar bait (ATSB). Sugar-feeding female and male mosquitoes attracted to ATSB solutions, either sprayed on plants or in bait stations, ingest an incorporated low-risk toxin such as boric acid and are killed. IGRs can also be fed to mosquitoes through sugar baits. Special weave clothing has been invented through which mosquitoes cannot bite. Several forms of adult removal mosquito traps have been invented, but many simply draw in mosquitoes and do not kill them. Sonic pulse devices have been designed to kill larvae or pupae in water pools, but they have limited range and are less effective in debris-filled areas. There are even laser zappers that detect and target mosquitoes and destroy their wings in flight. Lethal ovitraps attract egg-laying females to lay eggs in a small container of water with an ovicide or larvicide strip. Strips have also been developed that either dispense an IGR, kill females alighting on the strip, or sterilize the female mosquito or

her next male mate or offspring. Autodissemination stations have been developed that are activated by rainwater. Spatial repellent dispensers may be mounted on surfaces or worn. One such repellent agent is metofluthrin which contains a pyrethroid insecticide. Another is transfluthrin, which Harold stated was more effective, but not yet approved for public use. Harold noted that electrical zappers are ineffective at killing mosquitoes, and ultrasonic devices, garlic, and cedar oil have very little repellent benefit.

Respectfully submitted, Richard H. Smith, MES Secretary

WELCOME TO NEW MEMBERS

MES welcomes the following new members to the Society:

Robert E. Gardner	Baltimore, MD
Jonathan T. Haas	Bowie, MD
Tamara Heiselmeyer	Frederick, MD
Ikumi Kayama	College Park, MD

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*.

Ralph O. Cullison, III
Samuel W. Droege
Frank G. Guarnieri
George H. Harman
Tamara Heiselmeyer
Eugene J. Scarpulla
William H. Wymer

“HOW TO PACK AND SHIP PINNED INSECT SPECIMENS”

MES member **Ted MacRae** (Senior Research Entomologist, Monsanto Company, Chesterfield, Missouri) has created an excellent tutorial on his website “[Beetles in the Bush](http://beetlesinthebush.wordpress.com/2013/11/01/how-to-pack-and-ship-pinned-insect-specimens/)” detailing how to pack and ship pinned insect specimens. This highly informative tutorial can be accessed at: <http://beetlesinthebush.wordpress.com/2013/11/01/how-to-pack-and-ship-pinned-insect-specimens/>.

“TRACKING THE BROWN MARMORATED STINK BUG – PART 10: BIOLOGICAL CONTROL”

MES member **Paula Shrewsbury** (Associate Professor, Extension Specialist, and Graduate Director, Department of Entomology, University of Maryland) is featured in the video “Tracking The Brown Marmorated Stink Bug – Part 10: Biological Control” produced by James Monahan for the Northeastern IPM Center. The video also features additional University of Maryland entomology faculty and graduate students. In the film, various methods of biological control of the BMSB are discussed. Some are occurring naturally; others are being researched for possible deployment. To view the video, go to: <http://www.stopbmsb.org/more-resources/video-series/>.

ORGANIC DARK CHOCOLATE BUG BITES ORGANIC MILK CHOCOLATE BUG BITES

Get your dark chocolate or milk chocolate infusion the arthropod way! Each 2"-square bar called Bug Bites has the picture of an insect on a collectible card. Each educational trading card includes the insect's order, family, and a paragraph on its behavior. Find Bug Bites at your local drug or grocery store.

For more information about Bug Bites, go to:
<http://chocolatebar.com/categories.php?category=Chocolate-Bars-%26-Squares/.35oz.-Organic-Chocolate-Squares>.

Submitted by MES member Joann Alexander

A NEW FIREFLY SPECIES DISCOVERED ON THE DELMARVA PENINSULA

Christopher M. Heckscher (Associate Professor of Environmental Science, Department of Agriculture and Natural Resources, Delaware State University) has discovered a new species of firefly from the peatland floodplain forests of the Delmarva Peninsula. The species has been named *Photuris mysticalampas* (Coleoptera: Lampyridae). The species description was published in a 2013 issue of *Entomological News* 123(2):93-100. An abstract of the article can be accessed at: <http://www.bioone.org/doi/abs/10.3157/021.123.0202>. A video interview with Dr. Heckscher can be viewed at: <http://www.youtube.com/watch?v=Yyyrv3ZTcec>. A DelawareOnline article can be accessed at: <http://www.delawareonline.com/article/20131010/NEWS08/310100048/Delaware-State-University-professor-discovers-new-species-firefly>.

BOOK REVIEW

FIELD GUIDE TO THE JEWEL BEETLES (COLEOPTERA: BUPRESTIDAE) OF NORTHEASTERN NORTH AMERICA

Steven M. Paiero, Morgan D. Jackson, Adam Jewiss-Gaines, Troy Kimoto, Bruce D. Gill, and Stephen A. Marshall. 2012. Canadian Food Inspection Agency. 411 pp.

The other day it was my great pleasure to receive the long anticipated jewel beetle (Coleoptera: Buprestidae) guide by Steven M. Paiero et al., published in collaboration with the University of Guelph, the Invasive Species Center, the Ontario Ministry of Natural Resources, and the Canadian Food Inspection Agency.

"Jewel beetle" is a somewhat newer moniker for a family also known as the "flatheaded borers" or "metallic wood boring beetles" and derives from the fact that many members of the group are quite aesthetically attractive with a streamlined body habitus and usually with some degree of, often quite spectacular, iridescent coloration. Species within the family Buprestidae typically mine under the bark of numerous species of trees and shrubs and many have significant economic importance including a newly introduced Asian species, the Emerald Ash Borer, *Agilus planipennis* Fairmaire.

This beetle was likely transported from Asia to the Midwest United States via infested wooden shipping containers in a fashion very similar to that of the Asian Longhorned Beetle, *Anoplophora glabripennis* (Motschulsky) (Cerambycidae). However, unlike outbreaks of the Asian Longhorned Beetle which so far have been very local and thus far contained in Northeast North America, the Emerald Ash Borer has spread rapidly over our area resulting in the deaths of countless ash (*Fraxinus* spp.) trees.

The Emerald Ash Borer epidemic has in part been documented through a fascinating biological monitoring program using the wasp *Cerceris fumipennis* Say (Hymenoptera: Crabronidae). These wasps specialize in hunting jewel beetles which are used to feed larvae in underground burrows. It was found that the local presence of the Emerald Ash Borer could be quickly detected by sorting through the various species of jewel beetles occurring at *C. fumipennis* colonies. Intensive surveys have been conducted throughout the region as an Emerald Ash Borer "early warning detection system" but it also became apparent that numerous other species, including many that were seldom encountered through traditional collecting, were being caught by these wasps as well.

I have had the opportunity to observe a *C. fumipennis* colony near my house in Belgrade, Maine and it is amazing to watch them fly out from their nests and then return, invariably carrying a jewel beetle, sometimes quite larger than themselves. All of this is done with clockwork efficiency; clearly the wasps "know" some trick to catching these beetles that far outclasses our abilities to do the same!

The typical (human) strategies for collecting jewel beetles includes beating and sweeping along wood margins or hand-picking individual specimens from the trunks of dead or dying trees (always on the sunny side). Pine-feeding species show a particular affinity for newly installed telephone poles. Anyone who has ever chased these beetles in the field is well aware that they are extremely wary, quick to take flight, and a true challenge to catch or photograph.

Whether you are a forester, landscaper, beetle collector or photographer, or anyone with a general interest in field biology and ecology, there has not been an easy way for the non-specialist to identify jewel beetles. Somehow, the fact that they tend to be shiny and beautiful makes the difficulty in assigning a scientific name to specimens particularly galling. I remember finding a specimen of *Buprestis rufipes* Olivier on a dead ornamental cherry tree in Baltimore, Maryland back in 1984 (I was only 16 at the time). I was incredulous that I could not identify what one could describe as a Scarlet Tanager (*Piranga olivacea* [Gmelin]) or Indigo Bunting (*Passerina cyanea* [Linnaeus]) of the beetle world despite having all the insect and beetle field guides (Peterson [Borror and White 1970; White 1983], Audubon [Milne and Milne 1980], Simon and Schuster [Arnett and Jacques 1981], etc.) that were present at the time. Even the vaunted Dillon and Dillon (1961), the most comprehensive general source back then, did not include this species. I had to take the beetle to Joe Cavey and the late

Everett Ford at the local USDA Animal and Plant Health Inspection Service office to have it identified!

So I must say that I was tickled to see a beautiful photograph of a living *Buprestis rufipes* (taken by [MES member] **Ted MacRae**) gracing the front cover of the new field guide by Paiero et al. Produced in Canada, the guide covers all species of Buprestidae that are known to occur from “Ontario to Nova Scotia and south to Ohio and New Jersey.” However, the guide is significantly enhanced by also including species that might potentially occur in this region as well. Thus, the authors expanded their coverage to include species from Manitoba and most of the eastern United States. Practically speaking, I think this guide should work well, at least as far south as Virginia and Missouri, for the vast majority of jewel beetles that would be encountered over this geographically and biologically diverse region.

All told there are nearly 170 species included in the guide; an exact number is problematic due to systematic complexities, particularly within the genera *Agrilus* and *Chrysobothris* (i.e., the presence of species complexes and/or several species that may or may not turn out to be conspecific).

The book begins with a key to genus that does require some familiarity with beetle anatomy although beginners should not be overly intimidated as there is plenty of supporting material (diagrams, photographs, and a glossary) so that I think that just about anyone could easily assign any specimen in hand to genus level. There is also a “field key” to genus that should probably work in most instances for specimens that were photographed or otherwise observed in the field.

After the keys to genus, the guide is then arranged like any contemporary field guide that one might find in the neighborhood bookstore for birds or butterflies. All species within each genus are listed alphabetically and each is given two pages containing multiple beautiful and sharp high resolution photos, detailed morphological descriptions, geographic range maps, and some brief comments concerning the beetle’s natural history. Size range is given in millimeters but there are also two very handy icons that show life-sized silhouettes of the smallest and largest known size that would prove useful for field use. A special notation is also made as to which beetles are known prey species of *Cerceris fumipennis*.

Unfortunately the morphological descriptions tend to be overly technical and might prove difficult to understand for those without formal entomology training. In the case of more difficult determinations, there are comments under the heading “Similar Species” that are extremely helpful. There were several instances when it was unclear to me which species was being described in this section although that usually became obvious by comparing the text to the accompanying photos. Still, the reader should be aware that some jewel beetles (particularly a few within the genera *Agrilus*, *Chrysobothris*, and *Dicerca*) cannot be reliably identified to species level using this format. However, many species can be identified and for those that cannot, I believe it is still highly useful to see all of the possibilities in one source and then at least to be able to

narrow things down to a handful of choices.

This species level ambiguity is nothing new, even for unprofessional entomologists. But it might prove frustrating, for example, to birdwatchers who have expectations for a “Roger Tory Peterson”-style guide book complete with arrows showing obvious field marks that allow for quick and 99% accurate determinations. Unfortunately this is not always the case with jewel beetles, not through any fault of the authors, but rather that some of these beetles are even harder to identify than they are to catch.

Ranges are shown on a political map of northeastern North America in which certain states and provinces are highlighted. Personally I don’t like this format as it tends to give an overly broad impression of a beetle’s range. For example, one might conclude that a beetle collected once in southern Ontario can be found up to the shore of the Hudson Bay. The authors did address this issue and added a feature where the maps (through the use of crosshatching) also show a theoretical range based on the host plant’s (if known) range. I think these modified range maps can be overly speculative (to be specific: I doubt that *Texania campestris* (Say) or *Buprestis rufipes* occur in Maine or New Brunswick, or that *B. maculativentris* Say occurs in the Deep South United States, or that *B. confluenta* Say occurs along the Atlantic Coast) but still they remain an overall nice addition to the guide. I did notice an error in that no species of *Chalcophora* and only two species of *Dicerca* are listed from Tennessee. This is obviously incorrect but it may be that the authors were less conscientious searching for records that were approaching the geographic periphery of the guide’s range and I doubt that this represents any systemic problem with the maps. Overall, based on my personal experience collecting “macro” Buprestidae (e.g., *Buprestis*, *Chalcophora*, *Chrysobothris*, and *Dicerca*) in Maine and Maryland, I would say that the range maps appear to be on target.

There are some minor (mostly typographical) errors and the book comes with an errata sheet to address these. The only other thing that I can find fault with is that the image shown for *Buprestis salisburyensis* Herbst is actually an image of *B. decora* Fabricius. However, this is a minor issue and is, as both species are quite rare, unlikely to affect most readers. Lastly, I would have liked to see *Chrysobothris chrysoela* (Illiger) included in the guide as this is an uncommon but conspicuous species that has been found in Virginia.

In summary, I find this be an excellent guide that will appeal to a broad clientele. The photos are striking and do credit to these gorgeous beetles. Those unfamiliar with the group will immediately see where the name “jewel beetle” comes from. Clearly a great deal of work was done by the authors to prepare this book, and a comparative field guide for another group of organisms would easily cost somewhere between \$50 and \$100. Yet, incredibly the book is FREE. Copies may be acquired by calling 1-800-442-2342.

Literature Cited

Arnett, R.H., Jr., and R.L. Jacques, Jr. 1981. *Simon &*

- Schuster's Guide to Insects*. Fireside Books, New York, NY. 512 pp.
- Borror, D.J., and R.E. White. 1970. *A Field Guide to Insects, America north of Mexico*. Peterson Field Guide Series. Houghton Mifflin Company, Boston, MA. 404 pp.
- Dillon, E.S., and L.S. Dillon. 1961. *A Manual of Common Beetles of Eastern North America*, Volume 1:1-434; Volume 2:435-894. Dover Publications Inc. (1972), New York, NY.
- Milne, L., and M. Milne. 1980. *The Audubon Society Field Guide to North American Insects and Spiders*. Alfred A. Knopf, New York, NY. 989 pp.
- White, R.E. 1983. *A Field Guide to the Beetles of North America*. Peterson Field Guide Series. Houghton Mifflin Company, Boston. 368 pp.

Submitted by MES member **Frank Guarnieri**, Belgrade, ME
 Addendum from coauthor **Morgan D. Jackson's website**

If you live in North America, there are still some hard copies available, which can be ordered by calling 1-800-442-2342 and placing your order with Service Canada. United States orders might take a little longer to ship as they will be waiting for a critical mass to ship copies out rather than one at a time. However, here's a consolation prize for anyone who's missing out on the hardcopy: you can now download a complete PDF of the book, in either English or French! It may not be quite as nice as a copy on your shelf, but it comes with other perks, like being easily searchable and with high resolution photographs throughout! Since the files are so large, I recommend right clicking on the link and selecting "Save Link As", which will download the PDF to your computer rather than try and open it in your browser.

http://www.biodiversityinfocus.com/pdfs/Jewel_Beetle_Field_Guide_English.pdf

http://www.biodiversityinfocus.com/pdfs/Jewel_Beetle_Field_Guide_French.pdf

UNIVERSITY OF MARYLAND DEPARTMENT OF ENTOMOLOGY EVENTS

Fri, 8 November 2013, 12:00 p.m.

"How to use a fungus to fight malaria"

Entomology Colloquium by Dr. Raymond St. Leger, UMD

Fri, 15 November 2013, 12:00 p.m.

"Molecular Mechanisms Underlying Neuron Development and JH Action"

Entomology Colloquium by Dr. Jian Wang, UMD

Wed, 20 November 2013, 12:00 p.m.

"Indigenous natural enemies of the brown marmorated stink bug"

Entomology Colloquium by Ashley Jones, UMD

Fri, 6 December 2013, 12:00 p.m.

"Non-Target Effects of Transgenic Corn Debris in Streams: The Changing Picture of Risk Assessment"

Entomology Colloquium by Dr. William Lamp, UMD

Entomology colloquia take place in 1130 Plant Sciences

Building, College Park, MD. For additional information, go to:

<http://entomology.umd.edu/news/events>.

AMERICAN ENTOMOLOGICAL SOCIETY PUBLIC MEETING

Wed, 20 November 2013; 7:00 p.m.

"Eat This, Not That: nectar foraging behavior of *Hemaris* (Sphingidae) on co-occurring native *Cirsium* and non-native *Centaurea* (Asteraceae) inflorescences"

Speaker: Elena Tartaglia, Ph.D. (Assistant Professor, Department of Biology & Horticulture, Bergen Community College, Paramus, NJ)

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>.

THE GEORGE WASHINGTON UNIVERSITY ENTOMOLOGY SEMINAR

Fri, 22 November 2013, 3:00 p.m.

Topic: TBA

Speaker: Dr. Seán Brady (Chair, Department of Entomology, National Museum of Natural History, Smithsonian Institution)

The George Washington University, Corcoran Hall 106, 2023 G St. NW, Washington DC

<http://departments.columbian.gwu.edu/biology/about/seminars>.

ENTOMOLOGICAL SOCIETY OF WASHINGTON PUBLIC MEETING

Thu, 5 December 2013; 7:00 p.m.

Topic: TBA

Speaker: TBA

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

<http://entsocwash.org/>.

2013/2014 PROPOSED MES EVENT SCHEDULE

Regular MES lecture/meetings are held at UMBC on the 3rd Friday of each of the 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>
Sep 8	Crab Feast/Meet-&-Greet at J. KING'S Restaurant	
Oct 18	Harold Harlan	New & Novel Mosquito Control Options
Nov 15	Sam Droegge	High Resolution Insect Photography
Feb 21	Lecture	TBA
Mar 21	Hal White	Dragonflies & Damselflies of Delmarva
Apr 18	Lecture	TBA
May 16	Members' Potpourri Presentations & Elections	
TBA	Survey/Field Trip	TBA