Phaëton

The Official Newsletter of the
Maryland Entomological Society

Volume 38, Number 2 **November 2017**

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Meeting Announcement

The **M**aryland **E**ntomological **S**ociety's **319th** regular meeting will be held **Friday, 17 Nov. 2017**, at **8:00 pm**, in **Room 004** (one floor below the street level), **Biological Sciences Building**, University of Maryland Baltimore County (UMBC). Bring a friend, specimens, observations, or books to share. Refreshments will be provided. Presentations are scheduled to begin at **8:15 pm.**

Speaker: Matthew L. Buffington, PhD, Hymenoptera Unit, Systematic Entomology Lab, USDA c/o National Museum of Natural History, Smithsonian Institution, Washington D.C.
Title: "Understanding gall wasp evolution in the age of genomics"

Gall wasps are a lineage of phytophagous Hymenoptera whose closest living relatives are endoparasites of other insects. But more than that, gallwasps are themselves parasitic, inducing curious growths called 'galls' on plants. My research delves into the origin of the gall wasps, including their morphology, biology, and distribution. Previous phylogenetic hypotheses were either limited by the number of species, or the number of characters, included in the analysis. Using recently developed techniques, we are using ultra-conserved elements of the genome (UCE's) to gather a great deal of data for a large number of species, sometimes from specimens decades old. The resultant trees are beginning to provide us the clearest field of view into the early evolution of gall wasps, cynipoid wasps, and Hymenoptera in general. This talk will update the audience with where we are in this project, and what our research goals are currently focused on.

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 the Chef Paolino Café located at **726 Frederick Rd, Catonsville**, MD 21228. If you plan to go to dinner, please email Fred Paras at bugandrockman@msn.com by noon on the day of the lecture. Fred will make a reservation for the group. Please meet at the restaurant promptly at **6:00 p.m**.

MINUTES OF THE 318TH MEETING OF THE MARYLAND ENTOMOLOGICAL SOCIETY

The meeting convened at 8:00 PM on Friday, October 20, 2017 with a welcome from President Fred Paraskevoudakis. The lecture by Dale E. Greenwalt, Ph.D. is summarized below. An abstract appeared in the October 2017 *Phaeton*, volume 38, number 1. In attendance were 10 members, and 6 guests. In the absence of Treasurer Ed Cohen, the treasurer's report was provided by Gene Scarpulla. The Society's account balance is $4,607.98. Numerous members made charitable donations to the Society for the printing and mailing of *The Maryland Entomologist.* They are acknowledged in the October 2017 issue of the *Phaeton*.

Gene Scarpulla discussed upcoming entomology meetings. He has received a draft copy of "Moths of Maryland", and discussed options for publication. Members made suggestions, and a special publication seems to be the consensus. More information will be forthcoming.

20 OCTOBER 2017 MES LECTURE

Speaker: Dale E. Greenwalt, Ph.D., President of and Program Director for the Paleontological Society of Washington & Research Associate, Department of Paleobiology, National Museum of Natural History (NMNH), Washington, D.C.
Title: "Why can't neontologists and paleoentomologists play nice: The status of paleoentomology today with descriptions of spectacular new fossils from the Eocene of Montana"

Dr. Greenwalt collects Eocene era fossil insects from the Kishenehn Formation in northwest Montana. He does this as a volunteer with the NMNH, and is accompanied by student interns provided by the Montana State University.

Dr. Greenwalt started his lecture by showing a map image of the Eocene era topography superimposed over a modern day map of that area of Montana. He collects at the southwest boundary of present-day Glacier National Park, along the Flathead River. Pre-historically, the collection site was part of a 46 million year old lake about 100 miles in length, which extended from present day Canada to the Bob Marshall Wilderness. The present day remnant of that lake is Flathead Lake. Forty-six million years ago the climate in that area was tropical, being about 17°C warmer than today. A fossil jaw of the primate Tarsier has been recovered in this area. Today, this family is only found in Indonesia.

Fossils in this region are preserved in a unique fashion not found elsewhere. Although they are shale based, they appear to be embedded, an appearance reminiscent of amber. Most are preserved in the shallow part of the lake.

The speaker has found 17 orders of insects in the Kishenehn Formation. The genitalia, very important to identification and classification, are well preserved.

This region of Montana may contain the best preserved fossils in the world. The formation was discovered by a vacationing Whitefish, MT family about 30 years ago.

Many of the original biomolecular components are preserved. The speaker showed a slide of a fossilized, blood engorged mosquito. He then showed a slide of the spectral composition of the silicate encasing the fossil.

The fossilized male and female mosquitoes contained different amounts of iron; the male containing about 10% of the amount found in the female. He then employed time of flight secondary ion mass spectroscopy to demonstrate the presence of porphyrin and globin molecules in the fossilized, blood engorged mosquito. The fossilized male mosquito served as a negative control and hemoglobin obtained from a scientific supply house served as a positive control. Spectra of the fossilized female mosquito hemoglobin and the positive control samples were essentially identical. He then discussed additional spectral analysis of the porphyrin found in the fossilized female mosquito. The fingerprint pattern of the sample and the positive control were essentially identical, demonstrating definitively, the presence of porphyrin in the female mosquito fossil.

Many of the Kishenehn Formation fossils are pigmented. A friend of the speaker, located in Sweden is investigating whether pigments other than hemoglobin, such as carotenoids, are present.

After hearing at a Smithsonian seminar that ants incorporate metal into their mandibles in order to strengthen them, the speaker searched for the presence of metals in insect fossils. He showed a slide of the staphylinid fossil that was studied.

Scanning electron microscopy of the fossil mandible revealed zinc on the edge of the jaw, mostly at its points, and carbon in on the head.

Dr. Greenwalt described collecting conditions in the Kishenehn Formation region and studies of the composition of the materials encasing fossils. They indicate that the shallow lake surface was covered with a cyanobacterial mat. Insects fell in, were preserved, compressed, and fossilized.

The speaker discussed the fossil record of the evolution of *Aenigmatias* spp., a parasite of ants. The modern day insect lives in ant colony tunnels, parasitizing ant pupae. It has lost its wings, has few setae, and a flat head. The fossilized species shows a differentiated body. In 46 million year old Montana, this was a flying insect. In 34 to 38 million year old Baltic amber, the body appeared modified, showing a flat head, reduced setae, and the abdomen beginning to flatten. The modern day insect's simpler body is ideally suited for ant colony parasitization.

Dr. Greenwalt discussed the fact that many fossilized insects are incorrectly identified. Modern researchers seeking information by mining databases are obtaining erroneous information.

The speaker ended his talk by discussing the differences and problems between paleoentomologists and neontologists. Paleoentomology is not respected by entomologists due to errors, the lack of morphological detail, and the fact that many entomologists only work with amber. Neontologists specialize; paleoentomologists examine many genera, thus increasing the possibility of errors.

His final slide showed a fossilized insect caught in an algal mass, trying to escape, and losing setae in its attempted escape. The insect and its setae are fossilized. The algal layer was not deep, evidenced by the fact that it contained fossilized bird footprints. It is possible that bacteria caused anoxia, preventing decomposition, and enabling fossilization to occur. Dr. Greenwalt wishes to experimentally reproduce this process in algal mats occurring in Florida, near a Smithsonian Institution Marine Biology Laboratory in Ft. Pierce.

Submitted:,Janet A. Lydon, Secretary

WELCOME TO NEW MEMBERS

MES welcomes the following new members to the Society:

George A. Foster	**Columbia, MD**
Dale E. Greenwalt	**Washington D.C.**

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*.

George A. Foster
George H. Harman
Heloise Morgan
Harry H. Pavulaan
Eugene J. Scarpulla
Jennifer A. Selfridge

MES MEMBERS WINS AWARD AT ESA 2017

Congratulations to **Dr. Kelly Hamby,** who was presented the **Early Career Professional Extension Award** for 2017 at the national meeting in Denver, Colorado.

2018 ADVANCED LANDSCAPE IPM PHC SHORT COURSE

Mon-Thurs, 8-11, January 2018
Entomology Department, Plant Sciences Building, University of Maryland, College Park, MD

The annual Advanced Landscape IPM PHC Short Course is a recertification short course for arborists, landscape supervisors, IPM monitors, advanced gardeners, and others responsible for urban plant management.

Each day, the course will include a lecture from 8:00 am to 3:00 pm and an optional lecture from 3.30 pm to 5.30 pm.

To find additional information and register, visit http://landscapeipmphc.weebly.com/

29TH USDA INTERAGENCY RESEARCH FORUM ON INVASIVE SPECIES

Tue-Fri, 9-12 January 2018
Loews Annapolis Hotel, 126 West Street, Annapolis, MD

Keynote Speakers –
Kenneth Raffa, University of Wisconsin, Madison, WI
It's about time: Applying variable and changing temperatures to the management of two naturalized invasive pests, oak wilt fungus and gypsy moth
Helen Roy, Natural Environment Research Council, Centre for Ecology and Hydrology, Oxfordshire, UK
Engaging people in unraveling the ecology of biological

invasions

General Session Topics – Wednesday - Friday
• Chemical ecology of Cerambycids
• Evolution and invasive species
• Ecological aftermath: why biological invasions are real problems
• Managing invasive forest pests with biological control: an update on recent progress.
In addition to the General Sessions, this year's program will include several invited and offered presentations on topics that are relevant to the issue of non-native invasive species:
• Invasive organisms and invasive fires: reciprocal effects, management options
• Laurel wilt disease. What we know and what we fear
• Etiology of thousand cankers disease in the eastern US
• Factors affecting catches of ambrosia beetles and wood borers
• Effects of rising CO2 and climate change on invasive species
• Restoration of the American elm across the urban to rural gradient
• The recent gypsy moth outbreak in New England: the role of rainfall, *Entomophaga maimaiga*, and Nuclear Polyhedrosis Virus
• Which of the 1000 bark beetles indigenous to Asia is the greatest threat to American forests?
• Updates on spotted lanternfly
Poster displays on invasive species and related topics are always welcome. Please contact Vince D'Amico (vincedamico@gmail.com) regarding guidelines and space availability.
A limited number of openings are available on the Program for research presentations. Please contact Michael McManus at mmcmanus0121@comcast.net as soon as possible if you are interested in giving a presentation.

Additional information can be found at: https://www.nrs.fs.fed.us/disturbance/invasive_species/interagency_forum/

INTERSTATE PEST MANAGEMENT CONFERENCE

Wed-Thu, 31 January – 1 February, 2018

Maritime Institute of Technology - Training and Conference Center, 692 Maritime Boulevard, Linthicum, MD
The Maryland State Pest Control Association presents the 37th Annual Interstate Pest Management Conference. The Conference attracts hundreds of professionals in urban and structural pest management each year for comprehensive training by leading experts from industry, government, and academia.

Additional Information can be found at: http://ipmc.umd.edu/

Central Maryland Beekeepers Association

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

MEMBERS MEETINGS

Sat, 2 December, 2017; 6:00-9:00 p.m.
Holiday Potluck Dinner: Last names starting with A-G bring a dessert. Last names starting with H-R bring a main dish or salad. Last names starting with S-Z bring an appetizer.
Please RSVP to sondra1205@gmail.com.

Tues, 2 January, 2018; 7:00 p.m.
Member Bob Stanhope presents "45 Years of Beekeeping in Nature Centers and in Greece" with a sweet treat–a taste of Greek wild thyme honey at the end of his presentation.

Members meetings are held at the Oregon Ridge Nature Center, 13555 Beaver Dam Road, Cockeysville, MD. Additional information can be found at: http://www.centralmarylandbees.org/meetings-3/membership-meeting-schedule/

AMERICAN ENTOMOLOGICAL SOCIETY PUBLIC MEETING

Wed, 22 November; 7:00 p.m.
Topic: TBA
Speaker: TBA

The Academy of Natural Sciences of Drexel University, Ewell Sale Stewart Library, Second Floor, 1900 Benjamin Franklin Parkway, Philadelphia, Pennsylvania

For additional information, go to: http://darwin.ansp.org/hosted/aes/mtgSched.htm

UNIVERSITY OF MARYLAND DEPARTMENT OF ENTOMOLOGY COLLOQUIA

Fri, 17 November, 12:00 p.m. – 1:00 p.m.
Crystal Cooke, UMD Entomology

Fri, 1 December, 12:00 p.m. – 1:00 p.m.
Hanna Kahl, UMD Entomology

Fri, 8 December, 12:00 p.m. – 1:00 p.m.
Nathalie Steinhauer, UMD Entomology

Entomology colloquia take place in 1130 Plant Sciences Building, College Park, MD from 12:00 pm to 1:00 pm. For additional information, go to: http://entomology.umd.edu/colloquium-schedule.html.

OCT 2017-SEP 2018 MES MEMBERSHIP YEAR OFFICERS

President	Frederick Paras
Vice President	Philip J. Kean
Secretary	Janet A. Lydon
Treasurer	Edgar A. Cohen, Jr.
Historian	(vacant)
Faculty Sponsors	Frank E. Hanson & Austin P. Platt
Journal Editor	Eugene J. Scarpulla
E-newsletter Editors	Aditi Dubey & Hanna Kahl

2017/2018 PROPOSED MES EVENT SCHEDULE

Regular MES lecture/meetings are held at the University of Maryland Baltimore County (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:

Date	Speaker Topic
Sep 17	Crab Feast/Meet-&-Greet at J. KING'S Restaurant
Oct 20	Dale E. Greenwalt
Nov 17	Dr. Matthew L. Buffington
Feb 16	TBD Lecture
Mar 16	TBD Lecture
Apr 20	TBD Lecture
May 18	Members' & Students' Presentations & Elections
TBD	Survey/Field Trip

SUBMITTAL DEADLINES

NOV 2017 issue of the ***Phaëton***:
Please send member news items by 3 November 2017.
Send e-newsletter drafts to Aditi at aditid26@gmail.com and/or Hanna at hkahl@umd.edu.

SEP 2018 issue of ***The Maryland Entomologist***:
Please send first drafts of articles and notes by 1 April 2018.

Send journal drafts to Gene at ejscarp@comcast.net.

MOTH

By Katha Pollit

Come bumble-footed ones
dust squigglers, furry ripplers,

inchers and squirmers
humble in gray and brown,

find out our secret places,
devour our hearts,
measure us, geometer, with your curved teeth!
Leaves lick at the window, clouds

Stream away,
yet we lie here,

perfect,
locked in our dark chambers

when we could rise in you
brief, splendid

twenty-plume, gold-
spotted ghost, pink scavenger,

luna whose pale-green wings
glow with moons and planets

at one with the burning world
whose one desire is to escape itself