



# Phaëton

The Official Newsletter of the  
Maryland Entomological Society

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## MARYLAND ENTOMOLOGICAL SOCIETY APRIL 2021 MEETING

**Title: What makes a vector a vector and why is that important?**

**Speaker: Michael J. Turell, Principal Investigator (retired), United States Army Medical Research Institute for Infectious Diseases**

**Abstract:** Mosquitoes and other arthropods can transmit pathogens that currently cause millions of cases of illness and over 700,000 deaths annually. For most of these, the most efficient prevention is mosquito (or vector) control. However, only a small number of mosquito species are responsible for pathogen transmission, and different species are important for different pathogens. Because mosquito (vector) control tends to be focused on specific species, it is critical to ensure that the control efforts are directed at the species that are actually involved in pathogen transmission in the real world. Control directed at the most annoying mosquitoes may actually increase the amount of disease that occurs during an outbreak. Therefore, it is important to understand what makes a vector a vector and the various factors that affect the ability of a potential “vector” to actually transmit a pathogen so that control can be directed at the appropriate species at the appropriate time.



**Speaker Bio:** Michael Turell recently retired as a principal investigator at USAMRIID where he served for more than 30 years. He has more than 200 referred publications and has given over 175 presentations at national and international meetings. In addition, Mike serves as an editor for PLoS Neglected Tropical Diseases and serves as a reviewer for numerous journals. His principal interest has been the study of factors affecting the ability of mosquitoes to transmit various arboviruses. He has evaluated the potential of selected arthropods to transmit pathogens such as Rift Valley fever, eastern equine encephalitis, Venezuelan equine encephalitis, Japanese encephalitis, and West Nile viruses. These involve both field studies (Peru, Ecuador, Honduras etc.) and laboratory studies. In addition, he has conducted research on the development of vaccines for several mosquito-borne viruses and the development and evaluation of antigen and RNA detection assays.

**When:** April 16<sup>th</sup>, 7:00 PM

**Where:** <https://us02web.zoom.us/j/84906557903?pwd=OTZwa3UyZnRyNG5qWW85T0t0cGEyZz09>

Meeting ID: 849 0655 7903

Passcode: 483194

Dial in: +1 301 715 8592 US (Washington DC)

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**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*.

**David Adamski  
Mark F. Feldlaufer  
Frank E. Hanson  
Linda Hunt**

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**MINUTES OF THE 336th MEETING OF THE  
MARYLAND ENTOMOLOGICAL SOCIETY**

**19 MARCH 2021**

The 336th meeting of the Maryland Entomological Society convened via 'ZOOM' on March 19, 2021. There were at least 48 attendees according to 'ZOOM' count. At least 17 MES members attended.

The speaker's biography and lecture abstract appear in the March 2021 issue of the *Phaëton*.

Maryland Entomologist editor Gene Scarpulla reported receiving the maximum number of submissions for the upcoming issue, and is accepting submissions for the 2022 edition. Treasure Ed Cohen reported a balance of \$6,192.67 in the Society's account. The meeting started at **7:10 PM and ended at 9:47 PM**.

**19 MARCH 2021 MES LECTURE**

**Title: Return of the periodical cicadas: fear, fascination, and fun in 2021**

**Speaker: Dr. Mike Raupp, Researcher, Professor Emeritus, Department of Entomology, University of Maryland College Park**

Dr. Mike Raupp, our speaker for the March 2021 meeting, opened his talk by displaying copies of, and citing historical accounts about cicadas. References were made to writings of Governor William Bradford of the Massachusetts Bay Colony in 1633, the first published account of cicadas by Oldenburg of the Royal Society of London in 1666, and an April 3, 1751 account in the *Maryland Gazette*. He showed maps depicting the geographic areas in which various broods are found. Eastern North America is the only part of the planet inhabited by periodical cicadas.

Dr. Raupp contrasted annual and periodical cicadas and proceeded to discuss periodical cicadas. There are 3 species of 17 year cicadas, and 4 species of 13 year cicadas. He discussed differences between the species of both 17 and 13 year periodical cicadas, and played songs of the 17 year species. He also discussed 'stragglers' - individuals who emerge off schedule with the rest of the brood. In 2017, there was a major straggler emergence in Columbia, MD.

The speaker described predator satiation as a survival mechanism for the periodical cicadas; i.e. the emergent

population is so large in number, that the predator population cannot consume all of them. Predator satiation is unique to periodical, as opposed to annual cicadas, and also unique in the animal kingdom.

He discussed the biology of the long life cycle. The nymphs, while underground, feed on xylem which is nutrient poor. The longer growth period equates to larger adult size and greater numbers of eggs produced. The lengthy life cycle also confounds the predator-prey cycles. Dr. Raupp displayed a fascinating slide illustrating the evolutionary advantage of a prime number life cycle.

The nymphs emerge when the soil temperature is about 64°F at an eight inch depth, typically emerge after dark, and seek vertical substrates. They undergo ecdysis, move to treetops, and mate. There are density records of 1.5 million individuals per acre. The adults live for two to four weeks, and also feed on xylem. Only the males sing. The songs are distinct to the species and are loudest on sunny days. There is eye color variation among the population. He described mating behavior and displayed a slide of a female ovipositing on a twig. The nymphs hatch, drop to the ground, burrow, and feed.

Cicadas are preyed upon by vertebrates and invertebrates. Dr. Raupp's slides showed birds capturing adult cicadas and ants preying upon nymphs. He discussed a pathogen, *Massospora cicadina*, a fungus, which destroys the genitalia, and showed photographs of afflicted individuals. Transmission between individuals occurs when an infected male mates with a female, and infects her. The fungus also acts to feminize the male, other males will attempt mating, and become infected.

Two to four weeks after emergence, the adult cicadas die, decompose, and return nutrients to the soil. The emergent holes remain for 2 to 3 years, aerating the soil, and enabling water penetration.

At the conclusion of his talk, Dr. Raupp described the 'cicada safari' app which enables users to photograph and submit cicada sightings, enabling entomologists to track population numbers and ranges of species. He listed web sites available to the general population:

<https://cicadacrewumd.weebly.com>  
[cicadamania.com](http://cicadamania.com)  
<https://cicadas.uconn.edu>  
<https://friendtocicadas.org>

The lecture ended at 8:10 PM. A brief question and answer session followed.

Respectfully submitted,  
Janet A. Lydon, MES Secretary

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UNIVERSITY OF MARYLAND  
DEPARTMENT OF ENTOMOLOGY COLLOQUIA

Fri, 16 April 2021, 12:00 p.m.

**Sequencing old to very old specimens: Museomics clarify relationships within the morphologically troublesome Tenebrionidae (Coleoptera)**

Dr. Kojun Kanda, Research Associate, Systematic Entomology Lab, NMNH

Fri, 30 April 2021, 12:00 p.m.

TBA

Fri, 7 May 2021, 12:00 p.m.

**Exit Seminars**

Ted Striegel (M.S. Student, Hawthorne Lab) and Serhat Solomaz (M.S. Student, vanEngelsdorp Lab)

Entomology colloquia can be accessed through this zoom link:  
<https://umd.zoom.us/j/92018210735?pwd=L3VWcXZDUXBzNzIzWEVXbjd4RkdLdz09>.

For additional information, go to:  
<http://entomology.umd.edu/seminar-schedule.html>



ESSIG MUSEUM OF ENTOMOLOGY  
ESSIG BRUNCH SEMINARS

Essig Brunch is a weekly virtual seminar series, run by the Graduate Students in Arthropod Science at the University of California-Berkeley, featuring local and visiting researchers presenting a wide range of entomology topics. Seminars are open to the public. Additional information can be found at:  
<https://essig.berkeley.edu/events/essig-brunch/>.

Fri, 16 April 2021, 1:10 p.m. EST

**Squash Bees: Origin, diversification, and ecological interactions**

Dr. Margarita Lopez-Urbe, Penn State University

Fri, 23 April 2021, 1:10 p.m. EST

**Evolution of behavioral and physiological adaptations in Odonata**

Dr. Jessica Ware, American Museum of Natural History

Fri, 30 April 2021, 1:10 p.m. EST

**Interactions between insects, plants, and people in urban gardens**

Azucena Lucatero, PhD Candidate (Philpott Lab), UC Santa Cruz

Fri, 7 May 2021, 1:10 p.m. EST

**What's size got to do with it? Task performance in ants lacking distinct morphological worker subcastes**

Mari West, PhD Candidate (Purcell Lab), UC Riverside

Fri, 14 May 2021, 1:10 p.m. EST

**VectorbiTE RCN: The Vector Behavior in Transmission Ecology Research Coordination Network**

Dr. Senay Yitbarek, University of North Carolina at Chapel Hill

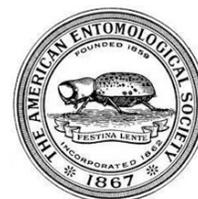


2021 VIRTUAL SUMMER MEETING

In lieu of a 2021 in person meeting, the American Arachnological Society invites you to the second (and hopefully last!) all virtual annual meeting of the American Arachnological Society.

The Society will host a Virtual Conference between Thursday June 24 - Thursday July 1. A Keynote address will open the meeting on the 24th. Events will include oral and poster presentations; announcement of the recipient of the first **Norman Platnick Award**; discussions of dismantling impacts of racism in arachnology; workshops and fun events like a bioblitz, movie night, happy hour; and a festive event at the end.

Please fill out the following brief (2 minute) [pre-registration survey](#) by Friday April 9th so that organizers can assess interest and get data for planning. The registration platform will be available in mid-April and the registration deadline will be Friday, May 7. There will be a small registration fee to support programming, and we will solicit donor support if that fee is prohibitive. Announcements will be sent out primarily to those who complete this survey.



AMERICAN ENTOMOLOGICAL SOCIETY  
VIRTUAL MEETING

Wed, 28 April 2021, 4 PM EST

**Edible Insects: Western Taboo Food or Healthy, Eco-friendly Diet of the Future?**

Sujaya Rao (Professor, Department of Entomology, University of Minnesota)

Worldwide, many cultures embrace entomophagy, the eating

of insects. Grasshoppers, mealworms, giant water bugs, and many other insects are eaten out of choice, not as famine food in times of scarcity. So, why haven't western societies embraced entomophagy? And why should they? Sujaya Rao will share her perspectives, and leave you with 'food for thought', in lieu of food with bugs!

The Calvert Awards for the best entomological science projects in the Philadelphia region junior and high school students will also be presented.

Join Zoom meeting:  
<https://drexel.zoom.us/j/87851260080?pwd=MHpHRlA2azRNcVJBMkkvOGNpNzZz09>

Meeting ID: 878 5126 0080  
 Passcode: 346267

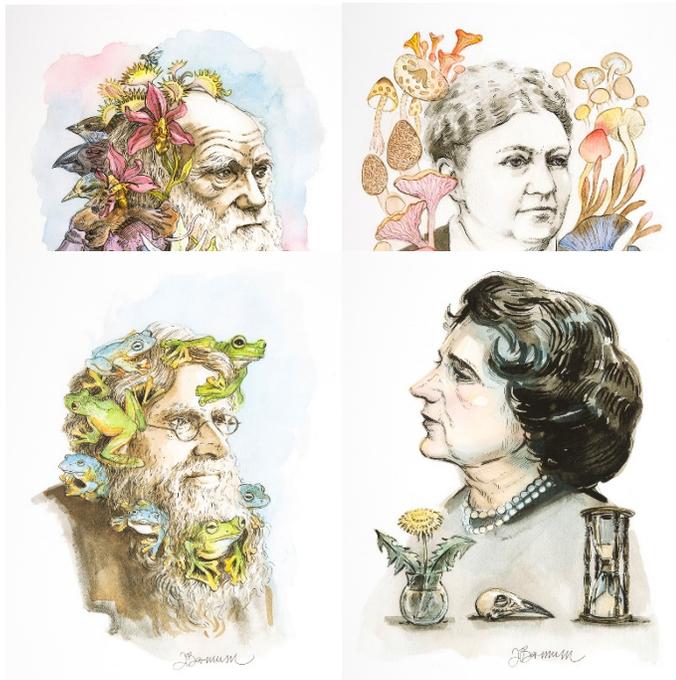
As an NHSM Lifetime Membership (value \$750) member you will receive discounts on many of our programs—from lectures, workshops, and courses offered in our museum—to canoe trips, nature walks, and fossil hunts in the great outdoors.



**NHSM APRIL 2021 RAFFLE**

This month we are raffling an Earth Day bundle AND a Lifetime Membership to NHSM!

This month's raffle prize is a bundle! In honor of Earth Day, we have four prints by artist Joanna Barnum of some of the most famous naturalists of all time: Rachel Carson, Charles Darwin, Mary Banning, and Alfred Russel Wallace. In addition, we have an exclusive outing for six with Wild Edible Expert Nick Spero. Plus, as always, a lifetime membership to the Natural History Society of Maryland!



Tickets are \$5 and buying more than one ticket increases your chances of winning. Only 1000 tickets will be sold to benefit the Natural History Society of Maryland. Cut-off date to be entered is March 31, 2021 at noon.

Get more information and purchase your tickets [here](#).

**2020/2021 PROPOSED MES EVENT SCHEDULE**

Due to the COVID-19 pandemic, regular MES lecture/meetings are currently being held virtually on Zoom at 7:00 p.m. on the 3rd Friday of each of 6 months coinciding with UMBC's academic year. Proposed events for the current MES membership year are:

Date	Speaker	Topic
Oct 16	Warren Steiner	Insects Associated with Local Milkweed
Nov 20	Sam Droege	State of Wild Native Bee Populations in MD
Feb 19	Samuel Ramsey	Despicable Mites: Recent Findings in the study of <i>Tropilaelaps mercedesae</i> and <i>Varroa destructor</i>
Mar 19	Mike Raupp	Cicadas-Brood X
Apr 16	Mike Turell	What Makes a Mosquito a Good Vector
May 21	Members Presentations	

**OCT 2020-SEP 2021 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
Journal Editor	Eugene J. Scarpulla
E-newsletter Editors	Aditi Dubey

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**SUBMITTAL DEADLINES**

May 2021 issue of the *Phaëton*:

Please send member news items by 14<sup>th</sup> May 2021.

Send e-newsletter drafts to Addie at [aditid26@gmail.com](mailto:aditid26@gmail.com).

September 2021 issue of *The Maryland Entomologist*:

Please send first drafts of articles and notes ASAP

Send drafts to Gene Scarpulla at [ejscarp@comcast.net](mailto:ejscarp@comcast.net).

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**NATURAL HISTORY**

**EB White**

The spider, dropping down from twig  
Unwinds a thread of her devising:  
A thin, premeditated rig  
To use in rising.

And all the journey down through space,  
In cool descent, and loyal-hearted,  
She builds a ladder to the place  
From which she started.

This I, gone forth, as spiders do,  
In spider's web a truth discerning,  
Attach one silken strand to you  
For my returning.