

Phaëton

The Official Newsletter of the
Maryland Entomological Society

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Meeting Announcement

The Maryland Entomological Society's 273rd regular meeting will be held **Friday, March 19, 2010**; beginning at 8:00 P.M., in the new "home" of the Natural History Society of Maryland. Bring a friend and specimens/ observations to share. Refreshments will be provided. The MES business meeting and tour are scheduled to begin about 8:15 P.M.

There will be No Designated "Speaker" for this meeting. The meeting will be held at the Maryland Naturalist Center, the new facility housing the Natural History Society of Maryland. Please use the following link for exact directions: <http://www.marylandnature.org/auDirections.htm> . It is easy to find and has ample parking space.

The Maryland Entomological Society (MES) will be holding its March 19th meeting at the Maryland Naturalist Center at the NHSM at 8:00pm. After the usual MES business meeting, the plan is to have someone from NHSM present the mission, goals and current plans to MES members, and follow with a tour of the NHSM building and various collections. MES members may also present relevant society information to those unfamiliar with the organization in an effort to attract interest among those from the East side of Baltimore. We will then do some organizational work on the NHSM entomology collection which has 10 large cabinets of cornell drawers. Though no speaker is scheduled, the goal is to bring together enthusiastic, knowledgeable people with similar interests in natural history. Please put it on your calendar and let others know. Please see the minutes of the February 2010 MES meeting (below) for a bit of further information about possible mutually beneficial activities for both the NHSM and the MES during this planned evening.

If you want more information concerning this meeting, contact one of the following people:

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Minutes of the February 2010 MES Meeting

The 272nd general meeting of the Maryland Entomological Society was held Friday, February 19, 2010 at UMBC and was begun at 8:20 p.m. with a welcome by Fred Paras, then immediately launched into the main program, as summarized below. After a period of fine discussion and refreshments, the meeting reconvened with the business segment. The November 2009 meeting minutes were read and approved, and then the treasurer's report was delivered, citing an MES Funds total of \$2039.52. Fred announced that the March 2010 meeting of the MES will be held at the Natural History Soc. of Maryland headquarters building in Overlea, a close-in suburb on the northeast side of Baltimore City. We will have a tour of their facility and collections and a chance to examine and curate some of their specimen holdings. The April speaker will be Dr. Michael Raupp from the Maryland Cooperative Extension Service. MES Journal Editor Gene Scarpulla reported that three articles are already in hand for the next journal issue, including one article on Cerambycids and another on mosquitoes. Ed Cohen noted an article in the latest issue (Winter, 2009) of the *News of the Lepidopterists' Society* on the butterflies of Rondonia in Brazil's western Amazon Basin, a place he and Joy visited several years ago, and an article in the latest issue of *Natural History* (Dec. 09-Jan. 10) on what is known of the varieties and insect sources of plant galls. Fred also announced the Eastern Branch meeting of the Entomological Soc. of Amer., to be held in Annapolis, March 7-9, 2010. The March 7 afternoon session is open to the general public.

The main program for the meeting, titled "The Sand Flies of Maryland," was presented by Dr. (& LCDR) David A. Florin, Assistant Professor in the Preventive Medicine and Biometrics Department at the USUHS, Bethesda, MD. Some background on leishmaniasis is needed to understand the basis of the research discussed. Leishmaniasis is a parasitic disease that is found in parts of the tropics, subtropics, and southern Europe. It is caused by infection with protozoan parasites in the genus *Leishmania*, which are spread by the bite of infected forest sand flies (Diptera: Psychodidae: Phlebotominae). Sand flies are morphologically

similar to mosquitoes; but they are generally smaller, have larger rounded eyes, and typically fly only short distances (a few feet) at a time. This relatively stationary behavioral characteristic creates isolated populations and the potential for genetic variety. Dr. Florin brought in a small cage containing dozens of live and clean (non-vector) sand fly specimens. Their larvae are terrestrial and live mainly in rodent burrows, feeding on rodent detritus. In the U.S., larvae are also found developing in gopher tortoise (*Gopherus polyphemus*) burrows. In the Old World, leishmaniasis occurs in some parts of Asia, the Middle East, Africa, and southern Europe (but not in Australia or the Pacific Islands) and is transmitted primarily by genus *Phlebotomus* sand flies. In the New World, leishmaniasis occurs in some parts of Mexico, Central America, and South America (except in Chile and Uruguay) and is generally transmitted via sand flies of the genus *Lutzomyia*. Leishmaniasis normally finds a mammalian reservoir in rodents and other small animals such as canids and hyraxes. The female sand fly carries the *Leishmania* protozoa from infected animals after feeding, thus transmitting the disease, while the male feeds on plant nectar. There are two primary forms of leishmaniasis in people: cutaneous leishmaniasis (CL), which causes leprosy-like skin sores, and visceral leishmaniasis (VL), which affects some of the internal organs of the body such as the spleen, liver, and bone marrow and can be fatal. Medications for leishmaniasis are toxic, and military personnel who are eventually cured often retain disabling conditions and must be discharged. As for historical U.S. military operations, in World War II there were 1000-1500 cases of CL and 50-75 cases of VL. Operation Desert Storm had 20 CL cases and 12 VL cases; Operation Iraqi Freedom had 1178 CL cases and 4 VL cases. In the U.S., the sand fly species *Lutzomyia shannoni* (Dyar), a known mammalian feeder, and *Lutzomyia vexator* (Coquillett), that feeds chiefly on herptiles, occur commonly; but neither is known to vector leishmaniasis. These are the only two sand fly species occurring in the eastern U.S. Dr. Florin's research has focused on determining if there is an unknown cryptic or

sibling species of *Lutzomyia* in the U.S. that could alternatively have the capability of transmitting leishmaniasis. Thousands of sand fly specimens, principally *L. shannoni*, were collected at several military bases in the eastern and southeastern U.S and also in wildlife refuges such as at the Patuxent Research Refuge in Maryland and the Lower Suwannee NWF in Florida. Most specimens were collected using the CDC, CO₂ (dry ice)-baited light trap. Occurrences at Patuxent spanned the period from July to early October with a peak in August. Collected specimen numbers were greatest near groundhog burrows. Specimens were studied extensively both morphologically and with molecular techniques. Morphological examination centered on micrometer measurement and counts of anatomical features on the head, within the genitalia (such as spurs on the male gonostylus), and patterns in the wing venation. Differences between *L. shannoni* and *L. vexator* were used to select specific features. A mathematical canonical analysis was performed on all the measurements of features to possibly distinguish trends signifying a cryptic species. No such significant trends were ever detected. Molecular marker methods were also employed. Mitochondrial DNA markers for *L. shannoni*, referred to as COI and ITS2, were examined. Dr. Florin was able to isolate 480 of the known approximately 1500 base pairs in COI. A mathematical canonical analysis was also applied to this data, but again no data clustering or trending that would indicate a cryptic species was discovered. Dr. Florin qualified the research by emphasizing that these results are based on the morphological and DNA molecular features chosen, and future analyses that takes another cross-section of features could obtain different results. However, based on his results, there appears to be no possible sibling species of *L. shannoni* in the eastern and southern U.S that could act as a leishmaniasis vector. Attempts to breed *L. shannoni* in the laboratory, to possibly later infest them with *Leishmania* and to see if the sand fly and protozoan remain viable and capable of disease transmission, have failed so far because

broods of lab-reared *L. shannoni* will only persist for time periods that are too short for the experiment to be successful.

Respectfully submitted,
Richard H. Smith
MES Secretary

Announcements

1. Thanks to Phil Kean for manning the MES display tables at the Eastern Branch, ESA meetings' public outreach session "It's a Bug's World" in the Sheraton Annapolis hotel all afternoon, Sunday, March 7th. Thanks also to Fred Paras for providing some of his excellent display cases of specimens for that same event. My apologies, Phil, for not stepping in to help.
2. The Office of Pesticides Programs (OPP), U.S. EPA has a few "Pollination Equation" posters left from their recent youth educational outreach efforts. They are free, as long as current supplies last. You can request one on-line from their website by going to: "www.epa.gov/pesticides/ecosystem/pollinator-protection.html". They will soon offer a new larger poster called "World of Pollinators". Check their website for more details.
3. The Beckman Institute's Imaging Technology Group at the Univ. of IL, offers a project called "Bugscope" in which they offer free interactive access to a scanning electron microscope for school kids and classes, on a scheduled basis via the internet (since 1999). Go to: <http://bugscope.beckman.illinois.edu/>. It is really high-tech and really neat!! Please pass this on to your local elementary and other teachers.
4. There is an excellent recent report on the history of the use of cochineal red in art, that is derived from several different species of scale insects and their relatives, mainly species of the genera *Porophyrophora* and *Dactylopius* (Hemiptera: Coccoidea). The richest red comes from the American species *Dactylopius coccus*, that occurs naturally and is cultivated on the prickly pear cacti of the genus *Opuntia*. See: Phipps, E. 2010. "Cochineal red, The art history of a color." Bull., The Metropolitan Museum of Art, Vol. LXVII (No. 3): 48 pp. (Winter 2010 issue). New York, NY.
5. Distributing this newsletter by e-mail saves costs of printing and mailing, and allows rapid distribution of information. Members with no current e-mail address will still be sent hard-copies for the foreseeable future. For questions, please contact any person listed at the bottom of the first page. **Also** please provide your

current e-mail address. Dues for 1 Oct. 2009 through 30 Sep. 2010, are still only **\$10.00/year**. Please send dues & any address or other corrections to:

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6. Regular MES meetings are held the 3rd Friday of each of 6 months each year: Oct., Nov., Feb., Mar., Apr. & May (parallel to UMBC's academic year). The remaining meetings for the 2010 "MES year" include:

month	date	speaker (if known)	topic
Mar.	19 th , '10	None	(See Front Page)
Apr.	16 th , '10	Dr. Raupp	TBA
May	21 st , '10	TBA	members' "pot-pourri"

7. The Audubon Naturalist Society (ANS) will hold their 30th annual special educational and fund raising "Blooming Birdathon" currently scheduled for April 16th to May 16th, 2010. They are also beginning registration for 2010 youth summer Nature camps, school programs and other Nature activities for all ages. You can sign up for a Nature Escape for the whole family to Costa Rica July 10-19. Some of their programs and events are free, but many require a fee, and nearly all require pre-registration. For more, or to pre-register, call: (301) 652-9188, ext. 10, or go to their website at: "www.AudubonNaturalist.org"

8. The National Zoo, at 3001 Connecticut Ave., NW, Washington, DC, has a lot more to offer than the recently departed locally born giant panda, Tai Shan. Their rare Andean bear recently bore twin cubs, and so did one of their clouded leopards. They have had much success maintaining and breeding other threatened and endangered species, including several other mammal species, strawberry dart frogs, octopi, etc. Their website: www.nationalzoo.si.edu has many research articles, reports, live "web cams", and offers for the public to participate in Eco-tourism events, and a range of volunteer functions. There is a very good article on Edible Insects by Alison Fromme, and youth events. Go to their website or call: (202) 673-4717

9. **Patuxent Wildlife Research Refuge**, on Powder Mill Road, between the B-W Parkway & Route 197, Laurel, MD; offers a wide range of Nature events all year. Most are free, but you must pre-register. Go to: www.fws.gov/northeast/patuxent/vcdefault.html for current events details, or to register, call their National Wildlife Visitor Center at: (301) 497-5898.

10. The "other" national aquarium (in Washington, DC) is in Rm. B-077 of the Commerce Bldg., at the corner of 14th St. and Constitution Ave., NW, Washington, DC. It is open daily 9 A.M. to 5 P.M. (w/ the last admission at 4:30 P.M.). It is near the Federal Triangle Metro Station (on the Orange or Blue Lines). This aquarium does not accept credit cards (cash or a check only). Feedings are daily at 2 P.M. Self-guided tours take 45 min. to 1 hr. You can schedule birthday parties or other events. For more details, admission prices, or to make reservations, you can call: (202) 482-2825, or send a FAX to: (202) 482-4946, or send an e-mail message to: info@nationalaquarium.com.

11. Additional websites and Natural History or Biological information sources worth checking:

- the USDA website, <http://soils.usda.gov/education>
- the National Aquarium (in Balto.), "www.aqua.org"
- for details on Maryland DNR programs, licenses, training, news, volunteer opportunities, and parks & recreations resources, go to: www.dnr.state.md.us
- the National Aquarium (in Balto.), "www.aqua.org"
- the Maryland Science Center, "www.mdsci.org"
- The U.S. Centers for Disease Control and Prevention (CDC) www.cdc.gov (then search by topic)
- The Jug Bay Nature Center, at Jug Bay, Lothian, MD. at: www.jugbay.org, or call (410) 741-9930.

12. For details on a range of current topics in central Maryland & DC; sports, restaurants, & special events, check out the "What's Up? Annapolis" magazine. For a free subscription mailed to your home (limited to Annapolis & nearby areas), or for further information, contact them at: What's Up?, Inc., 929 West St., Suite 208A, Annapolis, MD 21401; by phone: (410) 267-9390; or via their website: www.whatsupmag.com.

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