



Wisconsin Entomological Society

Newsletter

Volume 42, Number 3

October 2015



[Editor's Note — This cover reproduces an original painting by artist Melissa Pierson that was commissioned by botanist Linda Curtis. It features the tussock sedge, *Carex stricta*, Blanding's Turtle that nests within it, and the Ctenucha Moth, *Ctenucha virginica*, which sometimes lays its eggs upon it. Former *WES Newsletter* editor Janice Steifel first told Linda about the moth's host plant. Our thanks go to Linda for her support of this color illustration. Her comments appear at the top of the next page.]

The Ctenucha Moth (*Ctenucha virginica* (Esper))

If a moth has panache, this is it. A black cape, orange turtle-neck and face cap, and a turquoise body make this 2-inch moth remarkable. What else? The caterpillars overwinter in the bases of grasses and sedges. Of course, they have a bristly fur overcoat to accomplish that while other moths are snug in their cocoons. Anything else? Yes, they are day fliers. Ctenucha (ten-ook-ka) moths fly by day and on bright moonlit nights. Sensing the precarious nature of a moth knowing the difference between full moonlight and daylight, I wrote a poem entitled, "Is it time?" for the last issue of the *WES Newsletter*. What a marvel to morph.

Linda Curtis: <http://www.curtistothethird.com>

Scientists Chase Elusive Poweshiek Skipperling Butterfly

*By Eric Hamilton, Milwaukee Journal
Sentinel*

[Editor's note — This article was originally published on 20 July 2015 in the *Milwaukee Journal Sentinel*. It has been reproduced with the author's permission.]

Crunching through waist-high prairie grass, the researchers scan ahead with binoculars. Peering out at the black-eyed susans reaching above the prairie dropseed, they are searching for something they do not expect to find — the endangered Poweshiek skipperling.

This short-lived brown butterfly is winking out of existence across Wisconsin, which along with Michigan and Manitoba, is among the last regions to host what used to be a fairly common species spread throughout the northern Midwest. Now, it takes greater resources simply to find the skipperling in its last remaining habitats, and four conservation scientists came out in early July knowing they were more likely to confirm its disappearance than to find this increasingly rare insect.

Asked if he expected to find any Poweshieks that day, U.S. Fish and Wildlife Service endangered species coordinator Phil Delphey said, "To be honest, I don't."

Regardless, he brought two colleagues from

the USFWS to join Sharon Fandel, a conservation biologist with the state Department of Natural Resources, to survey the Scuppernong Prairie State Natural Area in the Southern Unit of the Kettle Moraine State Forest.

It was nearly too cold and too cloudy for butterflies to be active, but after waiting some time in vain for clouds to clear, the scientists decided to conduct an informal survey. So they marched into the dense prairie sandwiched between Wilton Road and County Road N in western Waukesha County.

The skipperlings can normally be found feeding on black-eyed susans, which dot the prairie in small clusters. In their adult form, they live briefly, barely two weeks. Then they lay their eggs, often on clumps of prairie dropseed, which are the caterpillar's preferred food source. The Poweshieks go through only a single life cycle each year, making it harder to adapt to changing environments.

The ongoing conversion of prairie habitat to farmland is the prime suspect in the butterfly's continued decline, but the possible list is long: pesticides; climate change; too many prairie burns, or too few.

As the morning wore on, the biologists' optimism was rewarded with brief breaks in the cloud cover that led to a flurry of increased butterfly activity. Dozens of orange great spangled fritillaries fluttered around, barely stopping to rest. Other butterflies were harder to spot, and cloud cover continued to dampen their flights.

Then Fandel shouted out to the group, "Anyone good at their snakes?"

She had pinned an eastern hognose snake under her clipboard before carefully pinching it behind the head and holding it up for everyone to see. It's harmless, but flattened its head to mimic a cobra in a threatening display.

Shortly after that, Andrew Horton of the USFWS spotted a skipper, but it was a more abundant cousin of the Poweshiek and not the day's target.

The butterfly has been on the state's endangered species list since the late 1980s and was added to the federal list last year. Susan Borkin, an expert on Poweshiek butterflies and curator of invertebrates at the Milwaukee Public Museum, said the endangered status does more than just prohibit killing the Poweshiek.

“It allows people to pool resources and expertise and try and focus and understand what’s going on,” she said. The collaboration between the Fish and Wildlife Service and DNR is part of that resource pooling.

The USFWS is also working with the Minnesota Zoo to try to rear the skipperlings in captivity, with limited success so far.

The four scientists continued to tread slowly through the prairie as the temperature refused to rise, occasionally spotting a crescent or sulfur butterfly floating above the compass plants and milkweed. They identified six species in all, but the Poweshiek was nowhere to be found. Perhaps it was too cold for the skipperling to be active; more likely, it no longer calls this patch of prairie home.

This year, 40 skipperlings were counted in a single day in a northern Michigan prairie, up from the peak of nine a year ago, giving a glimmer of hope for the disappearing butterfly.

But so far, only three have been found in all of Wisconsin, at the Puchyan Prairie two hours to the north.

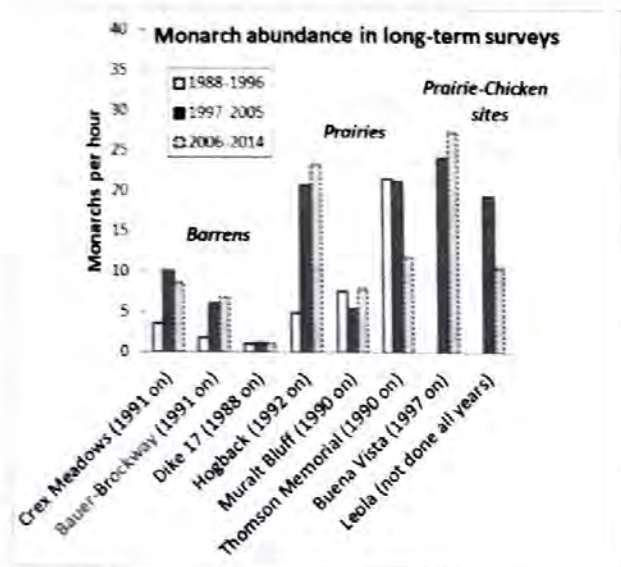
At Scuppernong, no Poweshiek skipperling

has been seen since 2012. If not found this year, it will be considered extinct at this particular site.

Even so, the scientists will continue their surveys, just with less intensity, and a little less hope.



Saving Monarchs. More than 400 adult Monarchs were reared and released this summer by Teri Ragar of Sullivan, WI. Here are a few dozen of the crop that she harvested from eggs near her home. This was one of the final batches slated for release by mid-September. None were tagged. Teri is the daughter of Jim Ebner.



Massive Monarchs: The Prairie-Chicken Effect

By Ann B. Swengel

A recent scientific study provides a reason why my husband Scott and I see so many Monarchs at Buena Vista Grassland. Sandra Fischer, Ernest Williams, Lincoln Brower, and Peter Palmiotto published their findings this year in *American Midland Naturalist* (vol. 173, pp. 229-240). Strips mowed in fields in July provided more suitable habitat for Monarch caterpillars later in the summer than in unmowed controls. The freshly regrowing common milkweed (*Asclepias syriaca*) was much more favorable for munching caterpillars than the senescing milkweeds in the unmowed areas. Of course, Monarch immatures fared better in the unmowed controls when the strips were being mowed, for obvious reasons. Both the

mowed and unmowed areas together were necessary for continuously suitable Monarch breeding habitat.

Most of Buena Vista is unmanaged in any given year. But some bits do get managed each year – a little bit of fire in the cool season, then a few areas get grazed or mowed or hayed (mowed clippings removed) or brush-cut or herbicided to control brush and/or weeds during the summer. This management is remarkably effective at keeping the grassland from becoming a shrubby thicket (not ideal Monarch habitat) and also makes for lots of small-scale variation, not just in milkweed growth but also in types of grassland microhabitat. For example, in the extreme heat and drought of July 2012, Monarchs were clustering within the cooling shelter of isolated shrubs at midday.

Of course, none of this management was designed with the Monarch in mind. Instead, the Greater Prairie-Chicken (a declining grassland bird) has been the focus of decades of conservation effort here and at several other properties in central Wisconsin. These sites are primarily old fields containing a lot of non-native plants,

especially grasses, and some common native species, including milkweeds.

It varies among prairie-chicken sites just how productive they are for Monarchs and how abundance has varied over time. This is also true for our other butterfly survey sites. To make Monarch comparisons, I selected a seasonal period when we would be visiting all the sites (while targeting Regal Fritillary and summer Karner Blues in the native vegetation). That has worked out to be June 18 to August 9 across all years, with variation in climate among years affecting butterfly timing. Except for Leola, we visited each of these sites each year, once we started surveying there at all.

Many of our study sites have abundant Monarchs. There are 13,870 Monarchs recorded in 783 hours of surveying in this graph! But Buena Vista has significantly more Monarchs than our other top long-term sites (Hogback and Thomson). That is based on a calculation comparing our actual Monarch counts at these sites to a hypothetical even distribution of Monarchs in all these sites (that is, an “expected” distribution based on Monarchs found in proportion to survey time spent there; using a Chi-Square test in each time period when

Buena Vista was surveyed, $P < 0.0005$ for both periods). These are rough comparisons that do not account for variation in weather among survey days. But changes up and down over time in single sites do not add up to a consistent pattern one way or the other across all sites. This emphasizes again what the researchers reported in *American Midland Naturalist* — that site-specific choices in management contribute to Monarch breeding outcomes there.

The *Wisconsin Entomological Society Newsletter* is published three times per year. The newsletter is provided to encourage and facilitate the exchange of information by the membership, and to keep members informed of the activities of the organization. Members are encouraged to contribute items for inclusion in the newsletter. Please send all news items, notes, new or interesting insect records, seasonal summaries, and research reports or requests to the editor.

2015 dues notices were sent out in January. Please note that the year through which dues are paid appears on the newsletter’s mailing label after your name.

Membership Dues:

Individual or family: \$10 per year

Sustaining: \$15 per year

Patron: \$25 per year

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Mystery Insects

By Marci Hess

[Editor's Note — I'm pleased to welcome back this regular column, which hereafter will be conducted by Marci Hess. Please send your tentative identifications to her (and not the editor). She can announce the results in the next issue of the *WES Newsletter*.]



This first insect was photographed in Lafayette County, WI on 20 June 2014. It was ca. 7-10 mm long.



The second insect was also photographed in Lafayette County on 14 July 2015. It was ca. 6-9 mm long.

Errata: I wish to correct a misidentification that I made in my list of the fauna collected at Erickson Wetlands on 26 July 2014. The arctiid moth *Phragmatobia assimilians* should instead be *P. fuliginosa*. I thank Les Ferge for discussion of these species.

Books and Websites

By Andrew Khitsun

Monarchs in a Changing World by K. Oberhauser, et al., talks about threats this iconic butterfly is facing in a world filled with heating climate, pesticides, and deforestation. **Bugs in Close Up** by C. Hutton is available on Amazon for preorder and features extreme macrophotos of insects. **Bugged: How Insects Changed History** by S. Albee is yet another of those books filled with curiosities and little known facts from the history of interactions between humans and insects.

You're unlikely to need **Forensic Insect Identification Cards** by J. Castner, et al., but the book is highly praised by forensic investigators. Wanna take the mystery out of some of the "June bugs?" **A Monograph of the Genus *Polyphylla* (Harris) in America North Of Mexico** by R. Young takes care of the "Ten-lined June Beetles" for you with multiple black and white photos and drawings. **Mosquito: The Story Of Man's Deadliest Foe** by A. Spielman, et al., is a reprint of an authoritative work by world-renowned mosquito experts. **The Infested Mind: Why Humans Fear, Loathe, And Love Insects** by J. Lockwood [mentioned

previously in this newsletter – ed.] gives you a new perspective on our psychological perception of insects and why they cause so much more emotions than a cow, for example.

Heading out into the woods? First read **Insect Repellents Handbook**, 2nd edition, by M. Debboun, et al. It offers a comprehensive work on the development, testing, and use of various repellents and history of their use. If you want to know what destroys foodstuffs in your pantry, it'll cost you (and if you don't, it'll cost you still). While I have mentioned a couple of books in this department, here are two more and they're as expensive as the others: **Stored-Product Insect Resource** by D. Hagstrum, et al., and **Fundamentals Of Stored-Product Entomology** by D. Hagstrum, et al.

If you or your child is just getting interested in collecting insects and other bugs, get **Insects on Display: A Guide to Mounting and Displaying Insects** by C. Zakowski. And if you can't stand looking at insects in boxes, because you have an overwhelming urge to eat them all, several books have appeared on the scene lately, after those that I mentioned in my previous columns. **Eat-**

**A-Bug Cookbook: 40 Ways to Cook
Crickets, Grasshoppers, Ants, Water
Bugs, Spiders, Centipedes and Their Kin**

by D. Gordon is an update to the previous edition called **33 Ways to Cook . . .** Also, **Let's Eat Bugs!: A Thought-Provoking Introduction to Edible Insects for Adventurous Teens and Adults**, 2nd edition, by M. Grassi will fill any voids left by the previous book. And if you're in the wilderness, and can't really put on a chef's cape and don't have means to sauté, make sure you have **Survival Guide to Edible Insects** by F. Damara with you. And finally, the most comprehensive of them all is: **Eating Insects. Eating Insects as Food: Edible Insects and Bugs, Insect Breeding, Most Popular Insects to Eat, Cooking Ideas, Restaurants and Where to Buy Insects All Covered** by E. Lang takes the cake in this department and speaks for itself.

A couple of new websites have been spotted: **Insects of Alberta** has, among other things, the Canadian Insect News page at:

<http://www.insectsofalberta.com/main.htm>.

Spiders of Ohio is a nice online PDF reference to the group in that state at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/id%20guides/pub5140.pdf>.

If your interest is not only in insects and you're a beginning bird-watcher in Wisconsin, then **Wisconsin Bird Watching** by B. Thompson can be had on Amazon for 1 penny (plus shipping and handling).

**The Latest Cases from the Insect
Diagnostic Lab**

By P.J. Liesch

Whew! Now that fall has arrived, it means that another busy summer in the UW-Madison Insect Diagnostic Lab is officially over. During the summer, the lab saw almost 1,300 cases, from 70 Wisconsin counties. Samples from 19 different orders of hexapods (Insects + Collembola) were identified, with Coleoptera (25%), Hymenoptera (21%), Hemiptera (17%), Lepidoptera (16%), and Diptera (12%) accounting for the bulk of the samples.

With so many cases, there were of course some interesting trends. As spring turned into summer, the tick cases dropped off dramatically, right around the time that the mosquitoes were taking off. Speaking of

blood sucking dipterans, the black flies seemed down this year — at least from the few reports that I received. One of my favorite cases for June was another dipteran: a squirrel bot fly (*Cuterebra emasculator*), which was spotted sunning itself on a patio chair in the La Crosse area.

Being summer, there were the “typical” cases: ants, Japanese beetles, late season orbweavers and yellowjackets, and galls galore. The fireflies seemed to have a great year in many parts of the state, and I speculate that the damp conditions in the past few springs may have helped out their prey (snails and slugs) and thus their own numbers. I kept telling myself to haul out the camera and tripod and take some long-exposure nighttime shots of the hordes of fireflies, but I missed my chance and I’ll have to keep my fingers crossed for next year. Based on my reports and the sightings on Mike Reese’s “Butterflies of Wisconsin” website, it seems like the butterflies also had a good season as well.

One of the biggest stories of the summer was an explosion of scale insects. I can’t put a finger on the exact cause of the high scale populations, but I had many reports of honeydew raining down in yards and even

returned to my car after an outdoor wedding to find it covered in sticky honeydew. (*Thankfully, a rainstorm the next day cleaned it up for me.*) If I had to pick a single insect of the summer, it would have to be the Magnolia Scale (*Neolecanium cornuparvum*). With their fuzzy appearance, these pale-colored creatures look more like fungi than insects, which is why many cases first went through my colleague Brian Hudelson at the Plant Disease Diagnostic Clinic. In July, it seemed like every other phone call was about magnolias with magnolia scale.

Perhaps the most interesting story of the summer involved a young couple that had recently moved into a home in the Stoughton area (just south of Madison in Dane County). After they corresponded with me about a spider, I felt it best to examine a physical specimen. As soon as I observed the spider on the glue board under the microscope, I realized two things: *first*, that it was a brown recluse spider, and *second*, that it was still alive! Talk about getting your adrenaline fix as an entomologist! After the confirmation, the couple worked with a pest control company to deal with the situation, but it remains a mystery as to how the spiders made it into the house in the first

place. The native range of the brown recluse is from mid-Iowa on south, and we've only had a few cases in the state in the past few decades.



A brown recluse spider. Note the diagnostic “guitar” or “violin” shape on the cephalothorax and the three pairs of eyes. Brown recluse spiders possess only six eyes, unlike most of our common spiders that possess eight.

Never a dull moment around the insect
diagnostic lab!

Forgiven

By A. A. Milne

I found a little beetle; so that Beetle was his
name,

And I called him Alexander and he
answered just the same.

I put him in a match-box, and I kept him all
the day . . .

And Nanny let me beetle out –

Yes, Nanny let my beetle out –
She went and let my beetle out –
And Beetle ran away.

She said she didn't mean it, and I never said
she did,

She said she wanted matches and she just
took off the lid,

She said that she was sorry, but it's difficult
to catch

An excited sort of beetle you've mistaken
for a match.

She said that she was sorry, and I really
mustn't mind,

As there's lots and lots of beetles which
she's certain we could find,

If we looked about the garden for the holes
where beetles hid –

And we'd get another match-box and write
BEETLE on the lid.

We went to all the places which a beetle
might be near,

And we made the sort of noises which a
beetle likes to hear,

And I saw a kind of something, and I gave a
sort of shout:

“A beetle-house and Alexander Beetle
coming out!”

It was Alexander Beetle I'm as certain as
can be,
And he had a sort of look as if he thought it
must be Me,
And he had a sort of look as if he thought he
ought to say:
"I'm very very sorry that I tried to run
away."

And Nanny's very sorry too for you-know-
what-she-did,
And she's writing ALEXANDER very
blackly on the lid,
So Nan and Me are friends, because it's
difficult to catch
An excited Alexander you've mistaken for a
match.

[Contributed by Linda Curtis; & best read aloud!]

Young Entomologist Wins 4H Grand Champion Award

By Stacy Stewart

With a little bit of luck and a lot of hard work, Sabrina Stewart of Walworth County earned a 4H Grand Champion Award for her Insect Collection at the Walworth County Fair in Elkhorn, Wisconsin for the second consecutive year. She was also invited again to display her insect collection at the

Wisconsin State Fair in 2016.



Sabrina Stewart

Sabrina is passionate about this project and has already begun collecting for next year's fair entry. She will pin her insects through the winter and begin collecting again in the spring. There are a few elusive insects on her wish list - she is hunting for a walking stick and a giant water bug this month, and she hopes to catch some snow fleas this winter. She does not collect anything that is considered endangered, threatened or protected by the Wisconsin DNR and the U.S. Fish and Wildlife Service. On her own, she also decided not to collect any live monarch butterflies, honeybees or bumblebees because those insects are species of concern and important pollinators. She does include monarchs and bees in her collection that were dead-collected.

Sphinx moth expert and fellow member of the Wisconsin Entomological Society, Steve Bransky of Grayslake, Illinois is an avid moth collector and helps encourage Sabrina's interest in entomology. It is a very important science that needs kids to join the race of identifying what insects live around us and what ecosystems they thrive in. This fall, Steve will be speaking at Eagleville Elementary Charter School in Mukwonago Area School District about insects, focusing on moths in particular and collecting with the students and their parents.

Milwaukee Public Museum BioBlitz 2016

— Save the Date

By Ellen J. Censky, MPM

We have decided on a date and place for the 2016 MPM BioBlitz:

June 10th at 3 p.m. to June 11th at 3 p.m.

Grant Park in South Milwaukee

Grant Park is a 381-acre park with northern upland forest, southern mesic forest, old growth American beech forest, clay-bank fens, a small planted prairie, a small woodland stream, section of Oak Creek with lowland hardwoods, a beach along Lake

Michigan, ravine woodlands, mature evergreen plantings, and a golf course.

Please mark your calendars. We hope that you will be able to join us next year. Also, if you know of others that you think we should invite, please let us know.

censky@mpm.org

(414) 278-2786

<http://www.mpm.org>

Two Insect Species Under Review by U.S. Fish & Wildlife Service

WES member Ann Swengel has notified us regarding two insect species (with ranges including Wisconsin) that are currently under review by the U.S. Fish & Wildlife Service. The two species are the Regal Fritillary (*Speyeria idalia*) and the Rusty-patched Bumblebee (*Bombus affinis*). The Service has received independent petitions to determine whether future listings of the species are warranted (as threatened or endangered) under the Endangered Species Act.

A public comment period has been opened and remains in effect until November 17, 2015. Individuals may post comments

electronically at the Federal eRulemaking Portal: <http://www.regulations.gov>. Copies of the petitions submitted for the respective species may also be examined at:

<http://ecos.fws.gov/docs/petitions/92000//462.pdf> (fritillary) and
<http://ecos.fws.gov/docs/petitions/92000//458.pdf> (bumblebee).

An announcement of these actions has been posted on the Sept. 18, 2015 *Federal Register*. You may also contact the U.S. Fish & Wildlife Service at:

www.fws.gov/midwest/es/soc or call (612) 725-3548 for more information.

Fall WES Meeting

Saturday, November 7: 11 a.m. – 4 p.m.

Room 151 in Russell Labs on the UW-Madison campus.

Join us for a day of insect fun! Show up early (or stay late) to mingle with fellow insect enthusiasts or visit the collections. Lunch will be provided around noon (Glass Nickel Pizza Co.), followed by our annual photo salon — you can enter up to five photos. After this will be “Tales from the Field” by WES members, which showcases interesting and unusual discoveries from the

current field season. If you have something you’d like to share — even just a few brief words, pictures, or specimens — please do so! (email Kyle or PJ)

Directions/Parking: Russell Labs is located at 1630 Linden Drive, Madison, WI 53706. Free parking is located in the Steenbock Ramp behind Russell Labs (directly northwest).

Heading west-bound on University Avenue, take the Babcock Drive exit (0.25 miles after the Charter Street intersection) and go straight through the stop sign (Linden Drive) and continue to next stop sign (Observatory Drive). Go left (west) 0.1 mile and turn left again (south) to enter the Steenbock Parking Ramp. Walk to the tall building directly to the southeast (Russell Labs) and look for signs.

Heading east-bound on University Avenue, take the Old University Avenue exit (immediately after the University Bay Drive intersection). Continue 0.4 miles to Walnut Street; go left (north) for 0.3 miles to the round-about. Take the first right (east) off the round-about and continue just over 0.5 miles and turn right (south) to the Steenbock Parking Ramp. Walk to the tall building directly to the southeast (Russell Labs) and look for signs.

Fossilized Flea May Contain Ancient Strain of Bubonic Plague Bacteria

[Adapted from press release, 28 Sept. 2015, by the News and Research Communications Department of Oregon State University.]

A fossilized flea, preserved in roughly 20 million-year-old amber from the Dominican Republic, has been found to contain bacteria that strongly resembles *Yersinia pestis*, the strain responsible for bubonic plague. If the fossil bacteria is indeed related to its modern counterpart, then it demonstrates that this pathogen has been in existence for millions of years and long predates the human race.

George Poinar, Jr., professor-emeritus at Oregon State University in Corvallis, and a leading expert on forms of animal and plant life preserved in amber, recently published a paper on the fossilized flea in the *Journal of Medical Entomology*. Because of anatomical differences, the flea has been assigned to a new genus and species, *Atopopsyllus cionus*, n. gen., n. sp.

The fossil bacteria were present on two places of the flea's body — some in a dried droplet on the flea's proboscis, and the rest compacted in its rectum. These coccobacillus bacteria have both rod and nearly spherical shapes and are similar to

those of *Yersinia pestis*. Of all the pathogenic bacteria transmitted by fleas today, only *Yersinia* has such shapes.

If this is an ancient strain of *Yersinia*, it would be extraordinary," Poinar said. "It would show that plague is actually an ancient disease that no doubt was infecting and possibly causing some extinction of animals long before any humans existed. Plague may have played a larger role in the past that we imagined."

Although human strains of *Yersinia* have seemingly evolved over the past 10,000 to 20,000 years, as indicated by genomic studies, ancient *Yersinia* strains could well have developed as rodent parasites. Rodent hair has been previously identified from Dominican amber. But no other fossilized fleas have yet been reported with associated microorganisms.

Reference:

George Poinar, Jr., "A New Genus of Fleas with Associated Microorganisms in Dominican Amber." *Journal of Medical Entomology*. First published online 15 Sept. 2015.

<http://jme.oxfordjournals.org/content/early/2015/09/12/jme.tjv134>