

THE SKEETER

VOL. 82, No. 3

2022 Fall Newsletter



OFFICIAL NEWSLETTER OF THE VIRGINIA MOSQUITO CONTROL ASSOCIATION

President's Address

October is here and it started with a boom! Hurricane Ian left flooding, destruction, and power failures in its wake for many of our friends in Florida, the Carolinas and Virginia. Low temperatures for the beginning of the month have registered two-day records in many parts of Central and Southern Virginia. Despite these occurrences, much of our coverage area has dealt with rain shortages and hot temperatures throughout the summer resulting in prime mosquito conditions. However, many of these areas have continued to report abnormal mosquito numbers. Albeit odd, the potential for a final mosquito surge should not be overlooked.

As each of you begin to think about this final phase of the season, please keep the VMCA and those who make its impact on our community possible, in mind. Members of the [executive board](#) and [committees](#) have been working diligently to build engaging programs, events, materials, merchandise, courses, and publications that keep us informed and help us be better professionals. These offerings take time, require skill and many volunteer hours to assemble and promote. Membership can show their support and gratitude in a variety of ways including, but not limited to, participation and acknowledgment of those who have worked so hard to make this organization thrive and grow.

Speaking of gratitude, it is with great sadness that I announce to VMCA membership the resignation of Elizabeth "Betsy" Hodson from the Executive Board. Betsy has been a longstanding and very active member of our group for many years. It is my understanding that she will now embrace a new chapter in her life that might finally include some much-deserved R&R. While this news is hard to share, we all wish Betsy the best and hope to see her smiling face at some of our events in the future. Unfortunately, for VMCA, this leaves a big hole to fill. Once again, I find myself calling on membership to fill in the gap. If you or anyone you know would like to learn more about the innerworkings of the Executive Board and the VMCA, feel free to reach out to me about the possibility of an interim spot in one of the officer positions.

Finally, as you dive into this edition of *The Skeeter* remember to take advantage of the [2023 early bird registration special](#) as you prepare for the VMCA Conference. This conference will be held at the Hilton Virginia Beach Oceanfront from February 14-16, 2023. We look forward to seeing you there!



Wes Robertson
2022 VMCA President



ANNOUNCEMENTS

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UPCOMING EVENTS

- Memorial Service for Gerald LaLiberte**
October 27, 2022, Portsmouth VA; [details here](#)
- VMCA Executive Board Meeting**
November 3, 2022; all members welcome; email virginiamosquito@gmail.com to register
- NCMVCA Conference**
November 9-10, 2022, Greenville NC
- ESA/ESC/ESBC Joint Annual Meeting**
November 13-16, 2022, Vancouver BC
- SCC Poster Submission Deadline**
December 2, 2022; [details here](#)
- MAMCA, GMCA, & Florida Fly-In**
January 9-13, 2023, Savannah GA
- VMCA Recertification Course**
January 18, 2023, Hampton VA
- VMCA 76th Annual Conference**
February 14-16, 2023, Hilton VA Beach Oceanfront
- AMCA 89th Annual Meeting**
February 27-March 3, 2023 Reno NV

DID YOU KNOW?

Membership is complimentary when you [register to the annual conference!](#)

Not attending the conference? Renew your membership anytime [online.](#)

VMCA ORGANIZATIONAL MAILING ADDRESS

Virginia Mosquito Control Association
Jay Kiser, Secretary/Treasurer
800 Carolina Road, Suffolk VA 23434
Tel: 757-514-7608
Email: VirginiaMosquito@gmail.com

WHAT'S THAT...?!



Answer on [page 25](#)

WHAT'S ON THE COVER

A female *Aedes albopictus* rests on a leaf floating at the water's surface; photography by Janice Pulver, Biologist for York County Mosquito Control

76TH ANNUAL VMCA CONFERENCE



**2023 Membership
and Conference
Registration
Are Now Open**

The 2023 annual conference will take place at the Hilton Virginia Beach Oceanfront on February 14-17, 2023. Details can be found on our [website](#). As more information is available (including the link to VMCA's hotel room block), this web page will be updated.

VMCA is offering an early bird registration this year and it is open through January 24, 2023. Early bird registration offers a price discount, so be sure to register by this deadline and avoid higher prices. The registration form can be found here: [2023 Conference Registration Form](#)

Honorary members, don't forget you can attend the conference for free. Make sure you still register so we know you are coming. As usual, VMCA membership is complimentary when registering for the annual conference. If you do not plan to attend the conference and would like to be a VMCA member, please sign up here: [2023 VMCA Membership](#)

Sustaining members, you also have an early bird option for sustaining membership/conference registration. Make sure to sign up before January 24, 2023. This form can be found here [2023 VMCA Sustaining Membership](#) or on our website. The form also provides space to show interest in sponsorship opportunities at the conference.

Submitted by Jay Kiser, VMCA Secretary/Treasurer

CALL FOR PRESENTATIONS

The VMCA is seeking inspiring, educational, and interesting presentations for the upcoming meeting!

The 2022 conference survey indicated some members want more presentations on trapping techniques and vectors other than mosquitoes or ticks.

VMCA members, YOU are the solution!

We all do things differently and it's great to learn new perspectives. The conference will be taking place February 14-16 at the Hilton Virginia Beach Oceanfront!

This is your opportunity to share your knowledge with other vector control folks from across the state!

If you would like to present please fill out the [form here](#) or click the link on our [website](#).

Deadline for submissions is November 11, 2022.

Please reach out to President Elect [Carla Caulkins](#) with any questions.

Do you deal with rodents, fleas, or other pests such as wasps, bed bugs, or snakes? What's your IPM strategy?

Present about it!



Don't want duplicate speakers? Make sure at least **ONE** person from **YOUR** jurisdiction signs up to give a talk each year.



QUICK TIP!

Autumn is here and if you're doing fieldwork or walking nature trails (or even walking in your own yard) you're likely running into **ALL THE WEBS**.

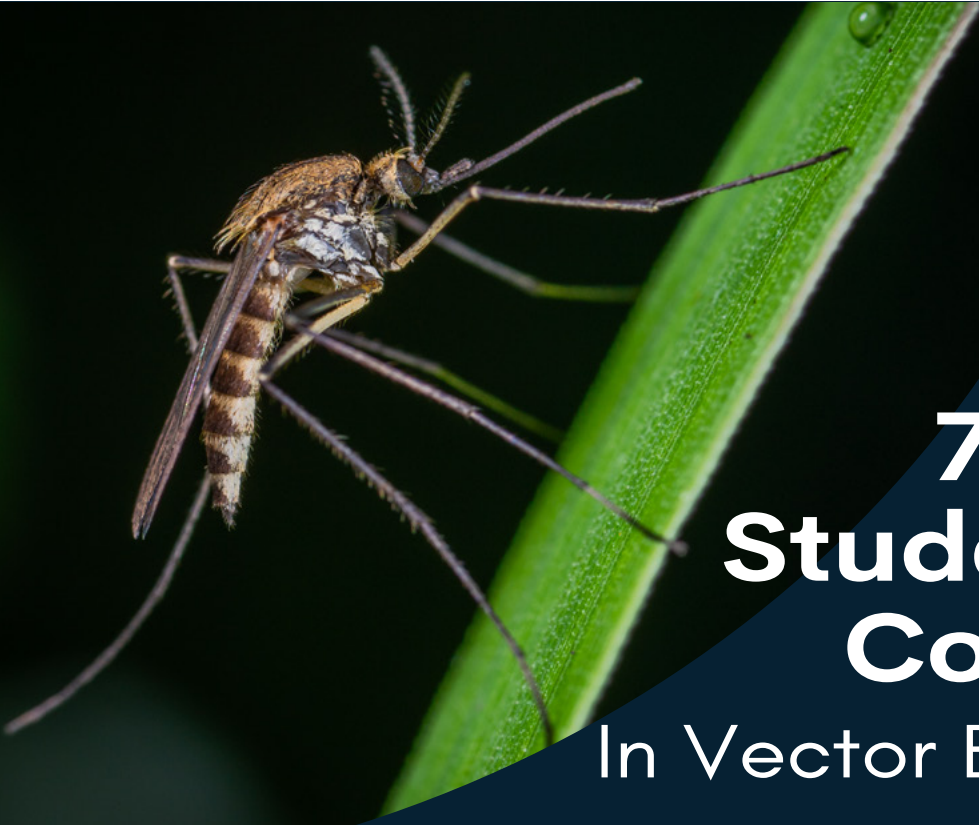
Garden spiders in the genus *Argiope* weave some of the largest webs and usually include a zig-zag or zipper structure, called a stabilimentum, in the center that is thought to attract prey, stabilize the web, or most likely - deter birds from running into them. Though it isn't always obvious enough to us humans!

Well, the [National Park Service](#) has shared some fun tips to "lessen the shock"...



...and we've **[modified]** a couple just a bit:

1. As you walk, use a stick **[mosquito trap or dipper!]** to make first contact with any potential webs. This way you can avoid using your face.
2. Invite a tall person **[your boss or coworker]** to join you and walk behind them. After repeated web encounters, encouragement and compliments may be needed to keep this person in front...
3. Sleep in and let the early risers clear the trail for you. Amateurs.
4. Make the most of the little dance people do when they walk through a spider web and try to get it off!



7th Annual Student Poster Competition

In Vector Borne Sciences

*NOW INVITING STUDENTS FROM:
Virginia, North Carolina, Tennessee, Kentucky, Maryland,
West Virginia and DC*

THE DETAILS



MUST BE ORIGINAL RESEARCH

In areas of vector borne sciences, IE: diseases, surveillance methods, pesticides, arthropod vectors, etc.



POSTER PRIZES

*1st Place: \$500
2nd Place: \$300
3rd Place: \$200*



VMCA CONFERENCE

Opportunity to present research at 2023 Annual Conference

More Info:



**DEADLINE TO SUBMIT:
December 2, 2022**

<https://mosquito-va.org/scc-poster-competition>

Submitted by Kaitlyn Price, SCC

CALL FOR EXECUTIVE BOARD NOMINATIONS

VMCA's Nominating Committee seeks candidates for the 2023 VMCA Executive Board!

Are you or a VMCA member you know interested in being on the VMCA board? If so, please contact Nominating Committee Chair, [Tim DuBois](#), with the name and contact information of your nomination.

We are seeking nominations for three positions on the 2023 Executive Board: president elect, vice president, and first vice president. The member voted into the first vice president position typically moves up the ranks of the executive board each successive year; a 5 year commitment; vice president entails a 4 year commitment; president elect would be a 3 year commitment.

VMCA needs the help of dedicated, enthusiastic individuals to keep our organization running great!

Deadline for submissions is November 2, 2022

CALL FOR AWARD NOMINATIONS

Each year at the annual meeting, VMCA recognizes individuals or a group of individuals who have contributed to making the VMCA the best it can be. The Awards Committee and VMCA Executive Board accept nominations of members and peers who deserve recognition.

Award Descriptions

R.E. Dorer Award: The highest honor award that may be given to a very elite individual that has contributed much to VMCA. Nominations should be submitted in writing to the awards committee and will be brought to the executive board for unanimous approval.

Honorary Membership: An award that may be given to someone that has contributed to VMCA and may be near retirement. Nomination for this honor must be justified in writing and submitted to the executive board for review. The executive board shall be required to vote unanimously to confirm the honorary membership nominee.

Dr. Jorge Arias Student Competition Award: Award given to the winner of each year's student competition.

Dr. Bruce Harrison Mosquito Research Award: Award bestowed on an individual or group of individuals who have contributed greatly to the improvement of mosquito knowledge in or affecting the state of Virginia through the peer-reviewed publication of mosquito research and shown a dedication to the sharing of this knowledge through teaching and training; Written rationale for the nominations must be submitted to the executive board for unanimous approval.

Distinguished Service Award: Awarded for exceptional service with VMCA organizational work

Outstanding Service Award: Awarded for exceptional service in field work

Certificate of Appreciation: Award given to a non-member that did some special service for VMCA

For a list of past award recipients, check out the [Awards Page](#) on the VMCA website.

Please send your nominations and supporting documentation via email to Awards Committee Chair [Jennifer Barritt](#) by December 15th, 2022.

**VIRGINIA MOSQUITO CONTROL
ASSOCIATION**



Silent Auction 2023 PLEASE DONATE

All proceeds benefit the VMCA Student Poster Competition

We are looking for a variety of items, including but not limited to:

- Vector themed items
- Tools
- Artwork
- Antiques/Historical items
- Gift certificates
- Treasures
- Themed Prize baskets
- Apparel

Group donations by committee, agency, or vendors are always appreciated



Please drop off items at meeting registration desk by noon, February 14, 2023.

Items may also be sent/dropped off before the meeting to:

Suffolk Mosquito Control
800 Carolina Road, Suffolk, VA, 23434

VMCA Annual Conference
February 14-16, 2023
Virginia Beach, VA.

Conference information:



What does this support?



For more information contact:

Ann Herring
mherring@suffolkva.us

MAMCA, GMCA, AND THE FLORIDA FLY-IN



C130 demonstration spraying water as a surrogate for aerial adulticide

What is the Fly-In and why should I go?

This year's MAMCA meeting will be held in conjunction with the Georgia Mosquito Control Association and the Florida Fly-In. This means one trip for a total of one week, and you'll get all three in one fell swoop. Many in Virginia have not attended a Fly-In before, so below is an article sent in by Chris Lesser, slightly altered by Tim DuBois with the most up to date information.

The Fly-In provides not only a forum for pilots/aerial application specialists but also training and an avenue for discussions for managers and biologists in the mosquito control profession. This meeting allows government and private mosquito control professionals to come together to share new ideas and concerns that ultimately leads to improved aerial application methods. Also, aircraft from around the region are flown-in and are on display

throughout the 3-day event allowing participants to observe and question what neighboring professionals are doing to their spray platforms.

This year's Fly-In will start on Wednesday, January 11, 2023 at the Chatham County Mosquito Control District in Savannah, Georgia, and will feature talks with pilots, managers, and biologists to discuss topics of common interests. These topics vary year to year but examples include spray cloud dynamics, chemical deposition/penetration and efficacy, GIS in mosquito control, automatic droplet size measuring and disease/nuisance suppression, and more recently, all things drones and UAV's.

continued next page



Experiment being setup: evaluation device collection efficiency for larvacides



Informal group discussion

MAMCA, GMCA, & FLORIDA FLY-IN CONTINUED



Droplet collection and calibration demonstration

“Field demonstrations” are typically held where aircraft are used to graphically illustrate the theoretical discussions that often took place the previous day. Lunches are provided which precede afternoon discussions devoted to further group presentations, an opportunity for industry representatives to give brief updates on products and a “flight-line visit” where pilots/mechanics are available to explain their unique aircraft/spray system setups.

The last morning is usually dedicated to separate breakout sessions, one for pilots/mechanics and the other for managers/biologists. Pilot sessions allow “like-minds” to share ideas, problems, and concerns such as night vision goggle training, aircraft modifications, spray system design, chemical safety, and aircraft maintenance/repair. Typically some sort of hands-on training is offered

to the pilots such as flight simulators, inadvertent instrument meteorological conditions response and water egress procedures. The manager/biologists session usually revolves around industry-relevant issues of legislative and regulatory importance.

The Fly-In is a national/international event with professionals from all over the US as well as England, Canada, Greece, and Cayman Islands plus occasional visitors from Australia, Germany, France, Italy, and Guatemala. The 2023 Fly-In will be held January 11-13, immediately following the business meeting of the joint MAMCA/GMCA Annual Conference scheduled for January 9-11. Registration costs for the Fly-In will (likely) be \$150 and this includes breakfast and lunch (on site) for all 3 days. Daytime temperatures are generally in the 50’s - low 70’s so this is a great opportunity for many of you to escape the snow and ice for a few days of glorious Savannah weather. Annual attendance is about 125 to 150 individuals, we’d like to have your participation this year as well. Registration information will be available soon for the Florida Fly-In on the [FMCA website](#) and for the MAMCA/GMCA conference on the [MAMCA website](#). See you there!

**Submitted by Tim DuBois,
MAMCA Newsletter Editor**

QUICK TIP!

Don't discredit fall surveillance!

This is the time of year to be on the lookout for the two newest species to the state of Virginia.

Look out for specimens with basolateral banding that may look like rubbed *Culex salinarius* (could be *Cx. nigripalpus*, left) or *Culex* with banded legs (could be *Cx. coronator*, right).

Check the Harrison et al. (2016) ID Guide ([order online](#)) for detailed morphology.



2022 TOUR DE SKEETER



2022 TdS group in front of Indian Fields Tavern; Largest attendance to date; Photo credit: Carla Caulkins

After hosting the 2021 Tour de Skeeter (TdS) in scorching hot June temperatures, we decided to host our 2022 event during a cool autumn October. As luck would have it, October gave us fantastic weather; brisk morning temperatures for an early ride, and a beautiful high of 77° afternoon for drinks on the lawn. VMCA's Student Competition Committee (SCC) hosted its 4th annual TdS fundraising event on October 15, 2022. Like the previous 3 years, we all gathered at Indian Fields Tavern off the Virginia Capital Trail in Charles City. Many participants parked at the tavern and walked and biked on the nearby trail, while others parked in Richmond or Jamestown and enjoyed a longer bike ride.

Each year, the TdS event gets bigger and bigger. In 2022, we had our largest event yet with 44 registrations and 4 vendor sponsorships (ADAPCO, Central Life Sciences, Clarke, and Target). During the event itself, we had 37 human attendees and 5 puppies (some were even dressed in TdS apparel). After expenses, this event raised close to \$940. With the steady increase of yearly fundraising, SCC has been able to include additional prizes for our student poster competition. I want to thank everyone that supported our event this year and in years past. We couldn't keep our competition going without you. I also want to thank Karen Akaratovic for putting this event together; fantastic as always!

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Thank you to this year's sponsors!



TOUR DE SKEETER CONTINUED



Left: TdS kids sporting the new children size shirts; Middle: TdS attendees walking their dog (Loki) that is wearing the 2021 TdS shirt; Right: TdS attendees enjoying the 2022 event; Photo credits: Karen Akaratovic and Carla Caulkins

Like the 2021 TdS, we continued the tradition of raffling off a \$200 Amazon gift card. All adult registrations (full or late) were entered into the drawing. After the group photograph, a name was drawn from the bucket; Jim Chamberlain was our winner (Karen's dad). Congratulations, Jim!

The SCC has not chosen a weekend for the 2023 TdS, but we will definitely be shooting for another autumn day. Look for our announcement in the 2023 Skeeters. I hope everyone can join us!

Submitted by Jay Kiser, Student Competition Committee Chair



Above: steps taken to choose a winner for the \$200 Amazon gift card - Middle: the drawing is taking place, Right: Jim holds his winning name and awaits his prize; Below: attendees mingle; photo credits: Ann Herring, Karen Akaratovic, Carla Caulkins



VMCA BOOK CLUB TALKS TICKS

Bat ticks: Should we care about them? How does surveillance of ticks that preferentially feed on animals affect human tick bite risk?

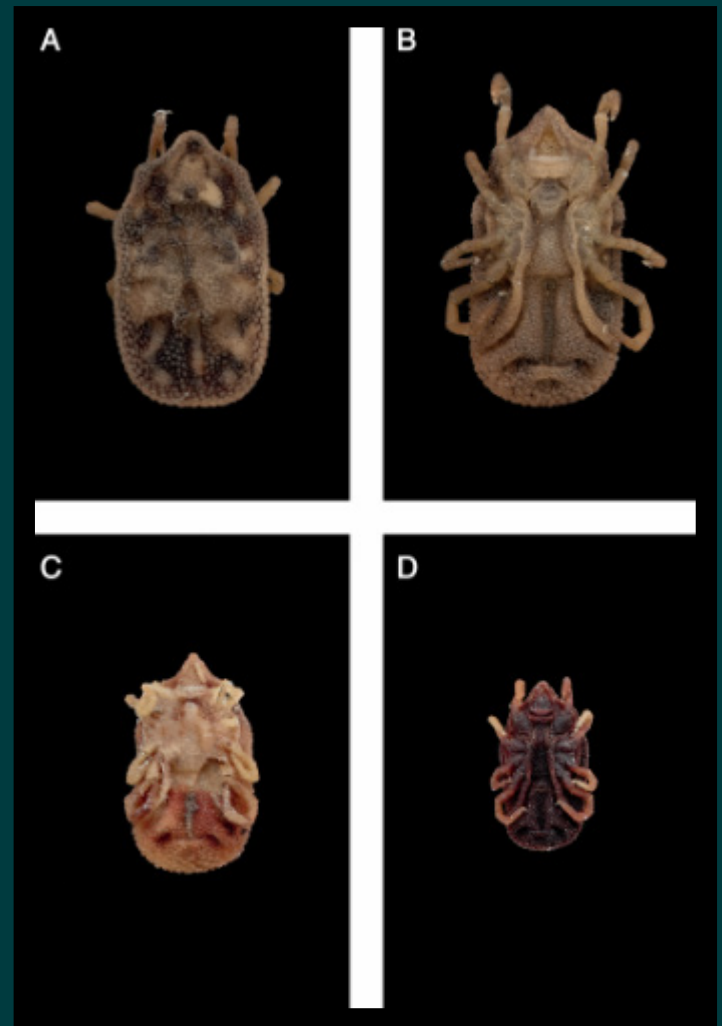
In the August VMCA Book Club, members discussed two papers on *Carios kelleyi*, a tick that primarily feeds on big brown bats. The two papers discussed were:

***Carios kelleyi* (Acari: Ixodida: Argasidae) infected with rickettsial agents documented infesting housing in Kansas, United States.** Nadolny, R.M., Kennedy, A.C., Rodgers, J.M., Vincent, Z.T., Cornman, H., Haynes, S.A., Casal, C., Robbins, R.G., Richards, A.L., Jiang, J. and Farris, C.M., 2021. *Journal of Medical Entomology*, 58(6), pp.2398-2405.

First record of *Carios kelleyi* (Acari: Ixodida: Argasidae) in New Jersey, United States and implications for public health. Occi, J.L., Hall, M., Egizi, A.M., Robbins, R.G. and Fonseca, D.M., 2021. *Journal of Medical Entomology*, 58(2), pp.939-942.

Ticks from genera like *Carios* and *Ornithodoros* are part of the Argasidae family of soft-bodied ticks. These are not typical ticks that you will find biting you or other animals in Virginia. In the eastern US, typical human-tick encounters involve hard-bodied ticks from a variety of genera including *Ixodes*, *Amblyomma*, and *Dermacentor*. In the US, soft-bodied ticks that seek out human blood meals are rare, except species like *Ornithodoros hermsi* and *O. coriaceus* which have been reported to bite humans and even spread pathogens responsible for relapsing fever diseases in the western US.^{1,2,3}

Soft ticks are as the name suggests, acarids that do not possess a hard, outer scutum or shield protecting their body. Most soft tick species are endophilic, often living in nests, burrows, or indoor areas where their host frequents or rests for periods of time.⁴ Soft ticks secrete a special cuticle



Stacking image photographs of *Carios kelleyi* ticks collected from Fort Leavenworth, KS. From left to right: (A) adult female dorsal, (B) adult female ventral, (C) adult male ventral, and (D) nymph ventral. Photos by Graham Snodgrass, Army Public Health Center, Aberdeen Proving Ground, MD. (Nadolny et al. 2021)

around their body allowing them to survive in the environment longer when not feeding on a host. These ticks have longer life cycles than hard-bodied ticks and will take shorter but more frequent blood meals. **Reportedly, because of this behavior and the ability to survive in adverse environmental conditions, some soft ticks can live to be over 25 years old.**⁴

continued next page

BOOK CLUB CONTINUED

The articles that the VMCA Book Club discussed were pertaining to *Carios kelleyi*, a tick that is most often found feeding on bats but can be an opportunistic feeder and seek out other hosts once bats have been removed from a residence. Bats in residential areas which can be found roosting in attics live in peridomestic environments. **Once bats are removed from a property by wildlife control officers, *C. kelleyi* can hang around in the environment and may even seek out other hosts to get its dinner.**

Nadolny et al. described such a situation in two apartments in Kansas with a previous history of bats where *C. kelleyi* were found infesting couches, bedding, counters, and interior walls and floors. None of these ticks were reported to have bitten the human or canine residents, but a previous study in Iowa detected human DNA in *C. kelleyi* collected in a residence where bats had been removed previously.⁵

New Jersey. **Detecting this tick currently in a nearby state is of public health concern** as the primary host of these ticks, the big brown bat, still resides in Virginia and can take residence in peoples' homes. Some key take-aways from the book club discussion were:

(1) soft ticks exist in Virginia and surrounding states and likely still have local populations, and **(2) to be wary when removing wildlife** (especially wildlife that can harbor soft ticks) from your home because you may be leaving behind unwanted ticks intent on seeking out new hosts.

References:

1. Wheeler, C.M., 1938. Relapsing Fever in California. Attempts to transmit Spirochaetes of California Relapsing Fever to Human Subjects by means of the Bite of the Vector, *Ornithodoros hermsi* Wheeler. American Journal of Tropical Medicine, 18(6).
2. Sage, K.M., Johnson, T.L., Teglas, M.B., Nieto, N.C. and Schwan, T.G., 2017. Ecological niche modeling and distribution of *Ornithodoros hermsi* associated with tick-borne relapsing fever in western North America. PLoS neglected tropical diseases, 11(10), p.e0006047.
3. Lane, R.S., 1994. Ticks of California and their public health significance. J. Spirochetal Tick-Borne Dis, 1, pp.74-76.
4. Sonenshine, D.E. Ecology of nidicolous ticks, in: Biology of ticks, Vol. 2. Oxford University Press, New York, 1993, 465 p.
5. Gill, J. S., W. A. Rowley, P. J. Bush, J. P. Viner, and M. J. Gilchrist. 2004. Detection of human blood in the bat tick *Carios (Ornithodoros) kelleyi* (Acari: Argasidae) in Iowa. J. Med. Entomol. 41: 1179–1181.



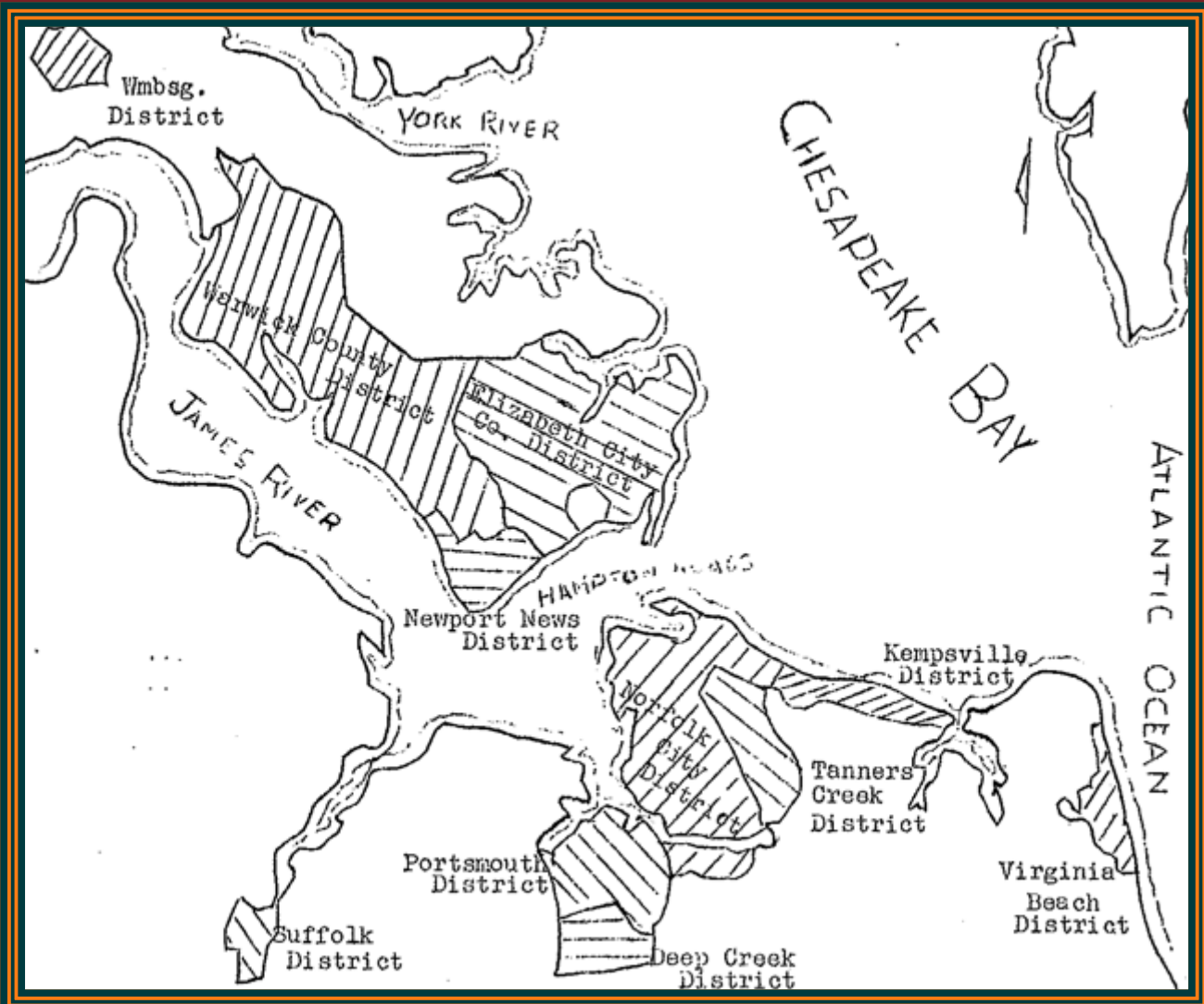
Fig. 1. Mix of dorsal and ventral views of a group of *Carios kelleyi* larvae obtained from New Jersey big brown bats. Notice all specimens are blood-engorged. The scale is in millimeters.

Blood-engorged *C. kelleyi* larvae
(Occi et al. 2021)

Carios kelleyi has been previously detected in Virginia in the 1970s by Dr. Daniel Sonenshine with no additional reports since that time. The second article (Occi et al. 2021) describes the first collection of *C. kelleyi* from big brown bats in

Submitted by Alex Cumbie

HISTORICAL COMMITTEE FLASHBACK



Hand drawn map of the southeastern Virginia mosquito control districts in November 1948. The districts included are: Deep Creek, Elizabeth City Co., Kempsville, Newport News, Norfolk City, Portsmouth, Suffolk, Tanners Creek, Virginia Beach, Warwick County, and Williamsburg.

Elizabeth City County was created in 1634 as Elizabeth River Shire, named for the daughter of King James I, Elizabeth of Bohemia. The town of Hampton (est. 1680) became county seat until it was incorporated as an independent city in 1908. The county and the town of Phoebus merged to form what is the current **City of Hampton** in 1952.

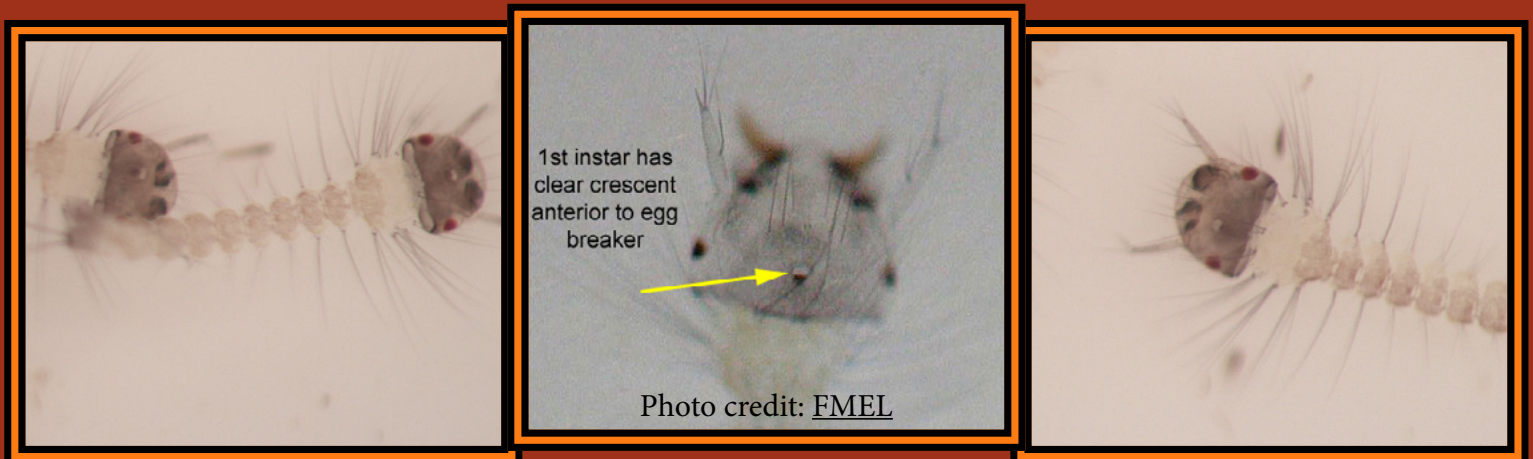
**Submitted by
Carla Caulkins,
Historical
Committee**

Warwick County was created from Warwick River Shire in 1634. The area was mainly farms and unincorporated villages until development of railways and coal piers in the 1800s. The community at the edge of the harbor became the home of the world's largest shipyard in 1896, known as Newport News. It became the independent **City of Newport News** in 1952.

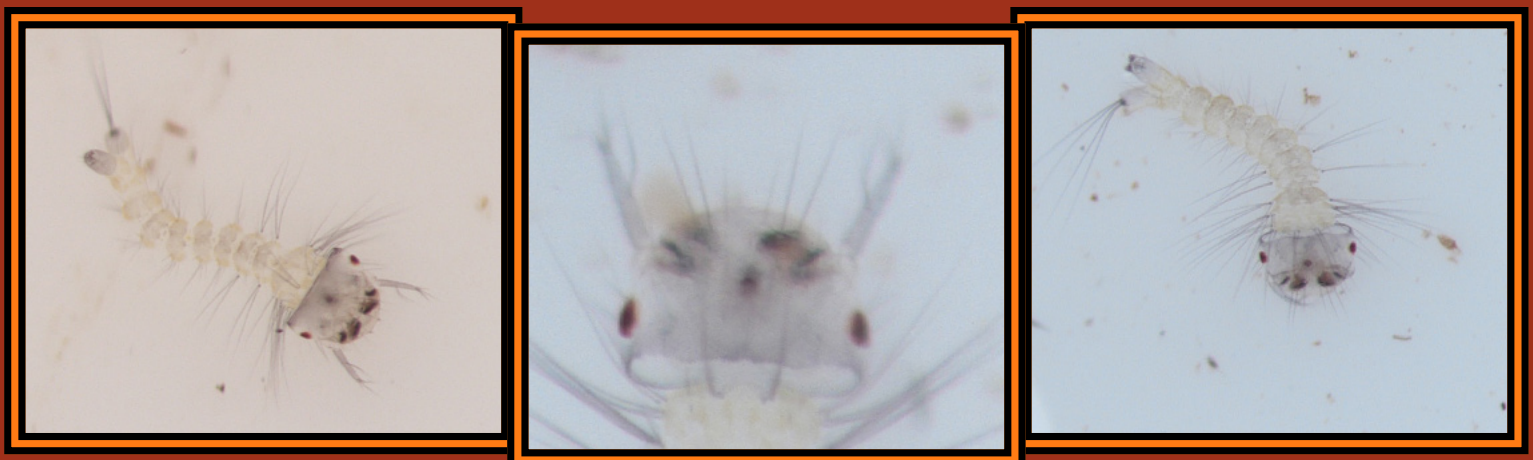
CULEX FIRST INSTAR ID

This year Suffolk Mosquito Control has collected several hundred *Culex* egg rafts and sent almost 200 *Culex pipiens* rafts to [NEVBD's Pesticide Resistance Monitoring Program](#) through Cornell University. Nearly all of the rafts were identified to species in our lab as first instars prior to shipping. We performed this species identification utilizing the key from [Reiter \(1986\)](#) which lists the morphological character commonly referred to as the "window." We, and many others in our geographical area, have used this ID protocol for the last few years and when confirming adult species ID at the end of testing, it has proven reliable.

If you see this window anterior to the egg burster (3 photos below), you can be fairly certain you have identified *Culex restuans*. According to Reiter's key, there are a couple other species that share this morphological feature, but we have never seen one (out of thousands of rafts identified and confirmed over five years) and there are other discernible differences in antennal setae that would make them stand out.



If you do not see this window and instead see a head that appears fully dark, sclerotized, and void of any openings (3 photos below), you almost certainly have identified *Cx. pipiens*. As you might assume, just like *Cx. restuans*, there are several species that share this character of lacking the window but most are species rarely found, even as adults, in our geographical area.



However, one day early-August as I was identifying some rafts, I came across one that I was certain was *Culex territans*. If you've ever seen *Cx. territans* larvae, you know how distinctive they appear with their long antennae, siphon, and color. It was the first raft other than *Cx. pipiens* or *Cx. restuans* I've collected and I thought, "Wow, that's really neat!" but I was in a rush in the office by myself so I didn't dwell on them. But then, the next week, it happened again...

continued next page

CULEX ID CONTINUED

...two rafts this time, though I wasn't sure if they were *Cx. territans* or something else. A few traits jumped out at me with these last two rafts – head shape, overall size of the larvae, antennae coloration/length/robustness, and siphon length/coloration. I showed them to my coworker and fellow biologist, Jay Kiser, and though we had differing opinions on what they could be, the consensus was they were different enough to separate, rear, and ID as 4th instars/adults. As fourths and subsequent adults, there was no question what they were, but you'll have to wait until the VMCA annual conference to hear the conclusion to this story! See if you can spot the differences in the photos that follow.

Submitted by Karen Akaratovic



2023 VMCA RECERTIFICATION COURSE

The Virginia Mosquito Control Association is happy to announce

their sponsorship of a recertification course for:

Registered Technicians (Cat. 60) and Commercial Pesticide Applicators - Category 8.

The course will take place on Wednesday, January 18th, 2023 at Hampton City Library. Additional details such as how to register, registration fees, and directions to the Hampton Library can be found on the [VMCA website](#). The contact information for the course sponsor (Katherine Reutt) and the VMCA Secretary/Treasurer (Jay Kiser) is also available on the website.

Please, feel free to reach out with any questions.

See agenda on next page.

Submitted by Education Committee Chair Katherine Reutt

VMCA RECERTIFICATION COURSE

Hampton City Main Library
4207 Victoria Blvd., Hampton, VA 23669

January 18th, 2023
Start time: 9:00 AM

Meeting called by VMCA Education Committee

Please bring: Pesticide Applicator Certificate/Number

9:00 AM	Registration Coffee & donuts will be available	Jay Kiser <i>VMCA Secretary</i>
9:30 – 9:45	Welcome	Wes Robertson <i>VMCA President</i>
9:45 – 10:30	Legal Aspects Certification categories and procedures, responsibilities of pesticide applicators, EPA approval of pesticide labeling,	Robert Christian <i>Inspector, VDACS</i>
10:30 – 11:00	Vectors, Life Cycle & Control/Surveillance/Environmental Mosquitoes, IPM, sensitive areas, harmful effects on non-target plants and animals	Wes Robertson <i>Environmental & Vector Management Specialist III, Certified Medical Entomologist; Henrico Department of Public Works</i>
11:00 – 11:30	Personal Protective Equipment Chemical resistant protective equipment, protecting your skin, eyes, respiratory tract and properly maintaining personal protective equipment	Lisa Wagenbrenner <i>Director, Chesapeake Mosquito Control Commission</i>
11:30 AM – 12:00 PM	Formulations and Products Liquid Formulations, Dry Formulations, Fumigants and Adjuvants	Jeffrey O'Neill <i>Vector Regional Manager, Products Division of Central Life Sciences</i>
12:00 – 1:00	LUNCH <i>Not provided by the VMCA</i>	
1:00 – 1:30	Applying the Correct Amount Deciding how much to apply, calibration methods, calibrating your equipment and measuring accurately.	Jennifer Barritt <i>Superintendent, City of Virginia Beach Mosquito Control</i>
1:30 – 2:00	Pesticide Handling, Mixing and Loading Personal safety considerations, pre-application decisions, safe mixing and loading practices and applying pesticides safely.	Ann Herring <i>Crew Leader, City of Suffolk Mosquito Control Division</i>

REMEMBERING GERALD LALIBERTE



Gerald Joseph LaLiberte

OCTOBER 11, 1959 - OCTOBER 15, 2022

Gerald "Jerry" LaLiberte, 63, died October 15, 2022. He was the son of the late George Joseph and Ruth G. LaLiberte. Jerry retired from Lipton Tea in Suffolk and was working at the City of Portsmouth as a Mosquito Control Technician. He was a member of the USS Frank E. Evans Association.

Jerry is survived by his wife, Carolyn Bracy LaLiberte; daughter, Brittany Collins (Mike); three sons, Ryan LaLiberte, Jason Hanbury (Amie) and Joshua Ferrell (Wendy); two brothers, Dennis LaLiberte and Richard LaLiberte (Kay); and three grandchildren, Sophia Hanbury, Jeffery Hanbury and Korie Collins.

A memorial service will be held on Thursday, Oct. 27, at 3 PM at Sturtevant Funeral Home, Portsmouth Blvd. Chapel.

COUNTY IN THE SPOTLIGHT: FAIRFAX



DCIP full-time program staff, L-R: Andy Lima, Amanda Taglieri, Rachel Kempf, Josh Smith, Dan Sherwood, Lauren Lochstampfer

The Fairfax County Health Department's (FCHD) Disease Carrying Insects Program (DCIP) was established in 2003 as the County and the country were trying to address the rapid spread of West Nile virus across the continental U.S. In those 19+ years, the program has grown from a single entomologist position hired to provide oversight for contractual work to a well-rounded integrated mosquito management program comprised of 6 full-time staff and up to 16 seasonal staff. Other staff from the Division of Environmental Health assist in some program activities as time permits. The current make-up of full-time program staff [above] is one Environmental Health Supervisor, two Senior Environmental Health Specialists, two Environmental Health Specialists, and one Environmental Technician.

As a part of the Health Department, the program strives to help the agency meet its goals and embody its Vision, Mission, and Values:

Vision: Healthy people in healthy communities

Mission: Protect, promote, and improve health and quality of life for all in our community

Values: Customer service, Respect, Integrity, Making a difference, Excellence

Current mosquito operations in DCIP are built up around the pillars of integrated techniques. We trap mosquitoes weekly from May through early November at 73 sites throughout the County. Gravid traps are placed at all sites and BG Sentinel traps

are placed at 28 of the trap sites. Prior to 2020, CDC light traps were also used at all trap sites. **Between all trap types from 2012 through the present, we have collected between 70,000 and 228,000 mosquitoes per year** (average 144,000 per year). Mosquito testing is performed at the FCHD Public Health Laboratory. *Culex pipiens/restuans* are routinely tested for WNV throughout the season, and other species may also be tested for WNV. From 2012 through the present, we have submitted **between 2,800 to almost 5,100 pools for testing per year** (average 3,500 pools per year). The lab can also test mosquitoes for chikungunya, dengue, and Zika. We are working with the lab to expand capacity to be able to test mosquitoes for Jamestown Canyon virus, LaCrosse encephalitis virus, and St. Louis encephalitis virus.

Our inspection and larviciding program is currently focused on stormwater ponds throughout the County. **Over 1,500 county-maintained ponds are inspected during the season.** The sites have been prioritized based on historical inspections and treatments for immature mosquitoes which leads to more inspections per year for productive sites. DCIP also inspects over 200 VDOT ponds annually. Adult mosquito control operations are limited and would focus on disease intervention. The program does not spray for nuisance mosquitoes.

continued next page

FAIRFAX IN THE SPOTLIGHT CONTINUED

We began resistance testing in-house in 2019 and submitted specimens to the Northeast Center of Excellence this season.

DCIP follows-up on community mosquito complaints and offers guidance to residents who are trying to address mosquito problems around their yards. The complaints and requests are almost exclusively for *Aedes albopictus* concerns. We work closely with the disease investigators for the Health Department and may do entomological follow-ups with human cases of mosquito-borne disease in the County.

The program does some limited tick surveillance, primarily collecting from animals in collaboration with the Animal Shelter, some local veterinarians, and the County Wildlife Management office. We have the capacity for other types of tick surveillance activities (e.g., dragging, flagging, trapping) and perform them when needed. Non-bloodfed blacklegged ticks collected through surveillance activities are tested for *Borrelia burgdorferi* at the public health lab. **DCIP offers a free tick ID service to the public where people can either bring their tick to the Health Department or email pictures of the tick to us.**

Another major component of DCIP is education and outreach. Efforts to educate the public focus on preventing mosquitoes and ticks around the yard and preventing bites. We use a variety of printed materials (brochures, story books, 18-month calendar), multimedia (music videos), and in-person activities (community events and presentations) to provide this prevention information to the community. We have also leveraged our relationships with others, including FCHD programs and external partners, to have them help bring our prevention messages to the diverse communities within the County.

Most of DCIP's operational surveillance activities results in finding species that we would

expect to see in our area. However, we also find some **interesting and sometimes unexpected species**. Over the last several years, we have collected *Aedes aegypti* at various trap sites in the County. This is not surprising given that there is an overwintering population in Washington, DC. We have not yet seen any evidence of overwintering in our County. In 2018, with the heavy mid-summer rains, we saw high numbers of black-legged *Aedes* species in our traps that we usually only get a handful of in a year.

We also collected two *Aedes fulvus pallens* that year—something we had not found in the County since this program has been around. We have collected a few *Culiseta melanura* in recent years. In 2021, we collected our first *Culex nigripalpus* adults at the end of the season. We occasionally collect *Aedes taeniorhynchus* and this year we collected it in 9 different weeks at a few different sites. We have also seen *Haemaphysalis longicornis* in different areas of the County. **Keep a keen eye on those collections because you might be surprised what you find.**

The COVID-19 pandemic has impacted all of us in so many ways. How we work, live and play will forever be affected by the changes that came along with the pandemic. Like the rest of you, our approach to our operational work shifted during the pandemic in several ways as we had to adapt to limited staffing and the operational limitations that came along with it. Those day-to-day impacts on our program are no longer being felt in the way they were before. However, the operational changes that we made are being used as an opportunity to make other changes and adjustments within the program.

Finally, I want to acknowledge the dedicated program staff without whom we could not do the amazing work that we do: **Rachel Kempf, Andy Lima, Lauren Lochstampfer, Dan Sherwood, Amanda Taglieri, and the countless seasonal staff** who have worked with us over the years.

**Submitted by Josh Smith,
FCHD Environmental Health Supervisor**



FIELD FINDS



Broad-nosed weevil; Curculionidae, suspect Entiminae subfamily



Virginia state insect: *Papilio glaucus*, Eastern tiger swallowtail caterpillar



Calopteryx maculata, male ebony jewelwing; broad-winged damselfly



Eumorphia fasciatus, Banded sphinx moth caterpillar

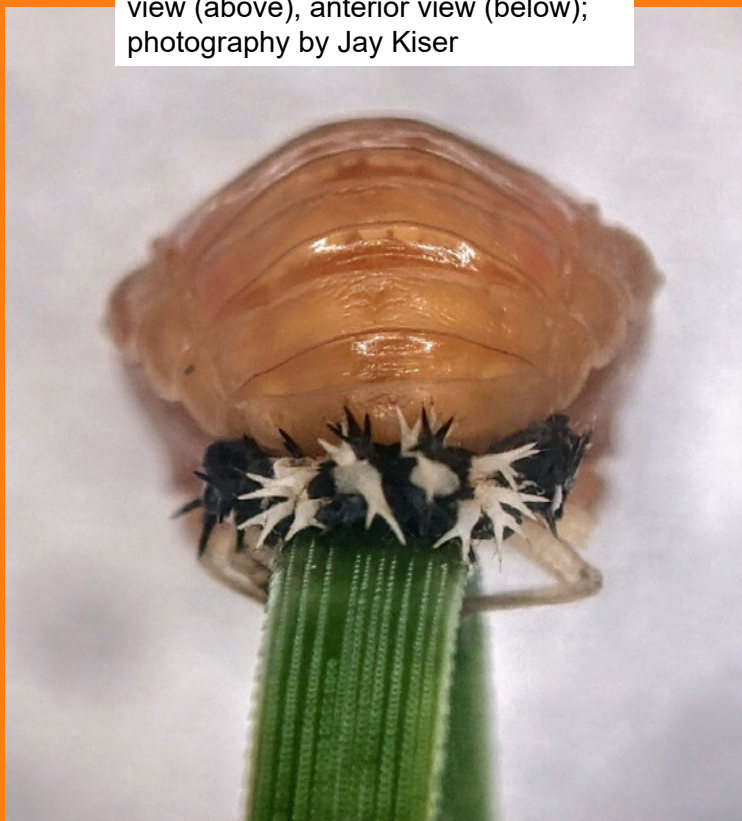


Plestiodon fasciatus; American five-lined skink or blue-tailed skink (juveniles)

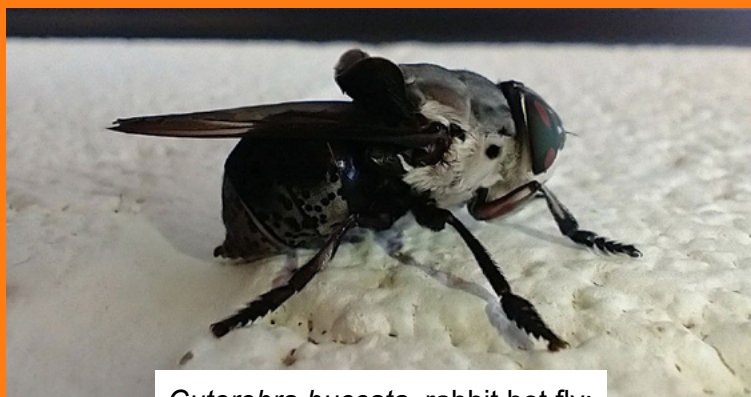
FIELD FINDS CONTINUED



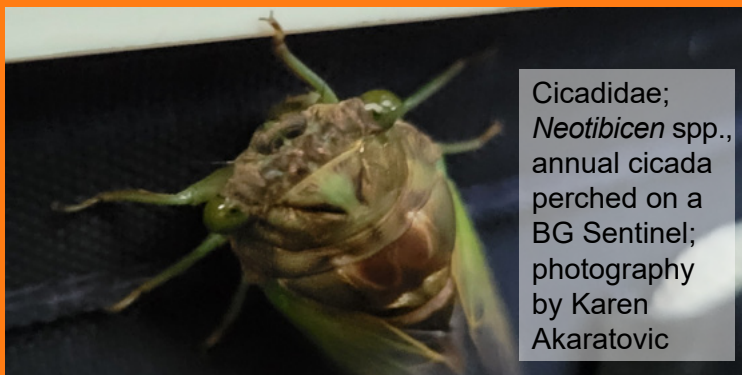
Coccinellidae, ladybug (pupa), lateral view (above), anterior view (below); photography by Jay Kiser



Amphiuma means, two-toed amphiuma; photography by Cassidy McKelvie



Cuterebra buccata, rabbit bot fly; photography by Alex Riley



Cicadidae; *Neotibicen* spp., annual cicada perched on a BG Sentinel; photography by Karen Akaratovic



LEGISLATIVE UPDATE

VIRGINIA ACTS OF ASSEMBLY -- 2022 SESSION

CHAPTER 303

An Act to amend the Code of Virginia by adding sections numbered 10.1-200.01 and 22.1-206.1, relating to Lyme disease; signage; instructional resources and materials.

Approved April 11, 2022

[H 850]

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding sections numbered 10.1-200.01 and 22.1-206.1 as follows:

§ 10.1-200.01. Lyme disease signage.

A. The Department shall develop and post in each state park and interstate park signage addressing the appropriate steps a visitor can take to prevent tick bites, how to identify Lyme disease, and where to seek treatment.

B. The Department shall install such signage first in those areas in the Commonwealth that have been identified as most susceptible to Lyme disease and shall complete the installation of such signage in all state parks and interstate parks by January 1, 2028.

C. Until it completes the installation of all such signage, the Department shall report its progress annually to the House Committee on Agriculture, Chesapeake and Natural Resources and the Senate Committee on Agriculture, Conservation and Natural Resources.

§ 22.1-206.1. Lyme disease; instructional resources and materials.

The Secretary of Education, in collaboration with the Secretary of Health and Human Resources and the Secretary of Natural and Historic Resources, shall develop instructional resources and materials to assist school boards and local and regional public libraries in establishing an education and awareness program to protect children from Lyme disease and other tick-borne infections. Such instructional resources and materials (i) shall be appropriate for individuals of school age; (ii) shall provide information on the identification of ticks, recommended procedures for safe tick removal, and best practices to provide protection from ticks; (iii) may include video productions, pamphlets, and demonstration programs to illustrate the sizes of various ticks, including sizes before and after each variety has become engorged, to assist with the identification of a tick and the reaction on the skin that may result from a tick bite; and (iv) shall be made available to school boards and local and regional public libraries upon request at no charge.

MERCHANDISE COMMITTEE REPORT

Greetings from the Merchandise Committee!

Our annual conference is quickly approaching and that means it's an opportunity to stock up on VMCA merchandise new and old. We would love to get design submissions from our membership. We know there is a lot of talent and creativity out there and we would greatly appreciate it if anyone would like to share a design with the VMCA. If you have a design to offer, please send it to Penelope.smelser@norfolk.gov.

As always, please check the [website](#) to see what merchandise is available and if you see something you like, contact me and we can get it to you.

Submitted by Merchandise Committee Chair Penelope Smelser



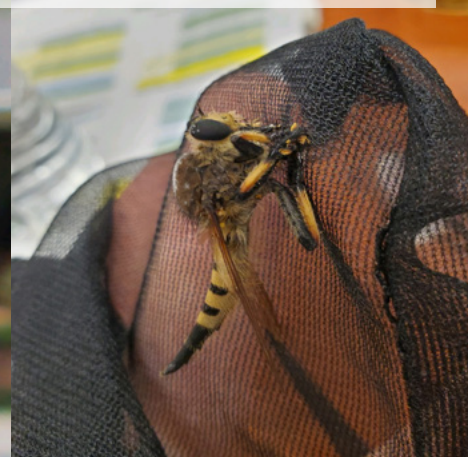
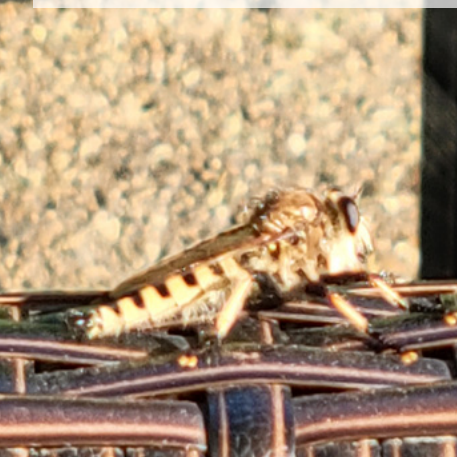
WHAT'S THAT ANSWER



Promachus rufipes perched on a leaf; photography by Alex Riley

THAT is the face of cuteness, scientifically known as *Promachus rufipes*. Commonly referred to as the bee panther or red-footed cannibalfly, they are robber flies (insects in the family Asilidae) and are so named after their aggressive predatory behaviors. They feed primarily on other insects, ambushing midflight, and using their hypopharynx (piercing organ of the proboscis) to puncture any thick integument. They then inject a neurotoxin to paralyze their prey and enzymes to breakdown the internal tissues so that they may easily suck up the liquified nutrients through the labium and maxillae (food canal of the proboscis). YUM! While these fierce (but c'mon, they're adorable, look at those eyes!) predators have been known to feed on anything they can get their tarsi on, including targets even larger than themselves such as dragonflies, moths, wasps, and cicadas, there are some smaller species (e.g. *Psilonyx annulatus*, [Newkirk 1963](#)) that have been shown to feed on mosquitoes!

L: watching and waiting for its prey; M: mating pair; R: caught in a BG Sentinel trap; photography by Karen Akaratovic



VIRGINIA MOSQUITO CONTROL JURISDICTIONS & OTHER RESOURCES

Virginia mosquito control jurisdictions

- [Alexandria Health Department](#)
- [Boykins, Town of](#)
- [Chesapeake Mosquito Control Commission](#)
- [Chincoteague Mosquito Control](#)
- [Fairfax County Health Department](#)
- [Gloucester County Mosquito Control](#)
- [Hampton Environmental Services](#)
- [Henrico County](#)
- [Joint Base Langley-Eustis](#)
- [Newport News Vector Control](#)
- [Norfolk Vector Control](#)
- [Poquoson Mosquito and Drainage](#)
- [Portsmouth Mosquito Control](#)
- [Prince William County Mosquito & Forest Pest Management](#)
- [Suffolk Mosquito Control](#)
- [Virginia Beach Mosquito Control](#)
- [Williamsburg Public Works](#)
- [York County Mosquito Control](#)

Neighboring, regional, & national mosquito control organizations

- [American Mosquito Control Association](#)
- [Mid-Atlantic Mosquito Control Association](#)
- [Delaware Department of Natural Resources and Environmental Control](#)
- [Maryland Department of Agriculture](#)
- [New Jersey Mosquito Control Association](#)
- [North Carolina Mosquito and Vector Control Association](#)
- [Northeastern Mosquito Control Association](#)
- [South Carolina Mosquito Control Association](#)
- [Georgia Mosquito Control Association](#)
- [Florida Mosquito Control Association](#)

Other resources

- [Virginia Department of Health](#)
- [Centers for Disease Control & Prevention](#)
- [Fairfax County Education and Outreach Materials](#)
- [Northeast Regional Center for Excellence in Vector-borne Diseases](#)
- [VMCA Employment Opportunities](#)
- [AMCA Career Center](#)

**Know of another jurisdiction or resource to add?
Please submit them to the [Editor](#).**

SUBMISSIONS WANTED!

Do you have photos of mosquitoes or other insects?

Do you have information you'd like to share with membership?



The Information Committee is always on the hunt for organizational updates, operational news, experimental findings, education/outreach activities, pictures, stories...even the bloopers!

If you have anything remotely vector-related and are willing to share it in an upcoming newsletter or on Facebook/Instagram, please send it in!! You can email *The Skeeter* Editor, Karen Akaratovic at kakaratovic@suffolkva.us or [submit online](#).

2022 SUSTAINING MEMBERS

The VMCA gratefully acknowledges the support of the following sustaining members for 2022. Without their generous contributions, much of what we do would not be possible. Please do not hesitate to contact them. They are here to help you!



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Annual Meeting (Hospitality Room)	Ann Herring mherring@suffolkva.us	Jay Kiser
Annual Meeting (Local Arrangements)	Charles Abadam cabadam@suffolkva.us	Carla Caulkins, Ann Herring, Jay Kiser
Annual Meeting (Program/Agenda)	Carla Caulkins ccaulkins@cityofchesapeake.net	Tim DuBois, Jay Kiser,
Annual Meeting (Vendor Planning)	Kurt Vandock kurt.vandock@bayer.com	
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Elections	Wes Robertson	
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Information	Karen Akaratovic kakaratovic@suffolkva.us	Jay Kiser, Kaitlyn Price, Katherine Reutt
Legislative	Randy Buchanan buc06@henrico.us	
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Merchandise	Penelope Smelser	Katherine Reutt
Nominating	Tim DuBois	
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Public Relations	Ann Herring	
Special Awards	Jennifer Barritt jbarritt@vbgov.com	Karen Akaratovic, Ann Herring
Student Competition	Jay Kiser	Karen Akaratovic, Alex Cumbie, Ann Herring, Kaitlyn Price, George Wojcik
Technical Support	Charles Abadam	Joshua Bernick, Kyle Girone, Janice Pulver
Website	Karen Akaratovic	Alexandra Cumbie

Take the time to volunteer on a committee! An active membership makes for a stronger organization. Contact the chairperson of any committee that interests you or any member of the [VMCA Executive Board](#) to participate. Read about the committees in the [VMCA Book of Guidelines](#).

2022 VMCA EXECUTIVE BOARD

THE SKEETER

OFFICIAL NEWSLETTER
OF THE
VIRGINIA MOSQUITO
CONTROL ASSOCIATION

Skeeter Production Team

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EDITORIAL REVIEW

VMCA Executive Board

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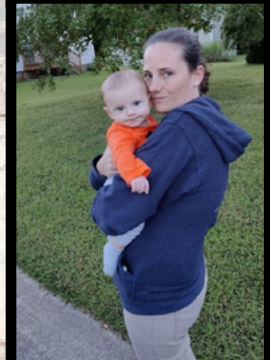
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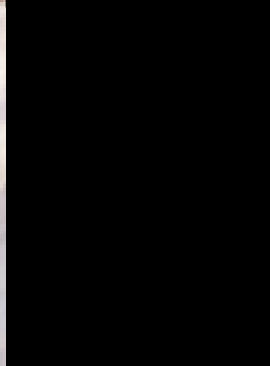
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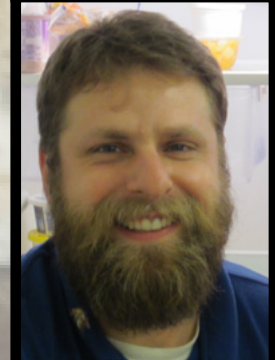


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The Skeeter is the official publication of the Virginia Mosquito Control Association. The VMCA membership is encouraged to submit articles, reviews, photography, and any other interesting facts or tidbits for publication. Submissions can be sent to Karen Akaratovic: kakaratovic@suffolkva.us

