



**TEXAS MOSQUITO CONTROL ASSOCIATION  
NEWSLETTER**

**Volume 49 November 2020**

**Editor - William Sames  
Contributors - Anita Schiller, Heather Gooch,  
Salvador Rico, Sonja Swiger**

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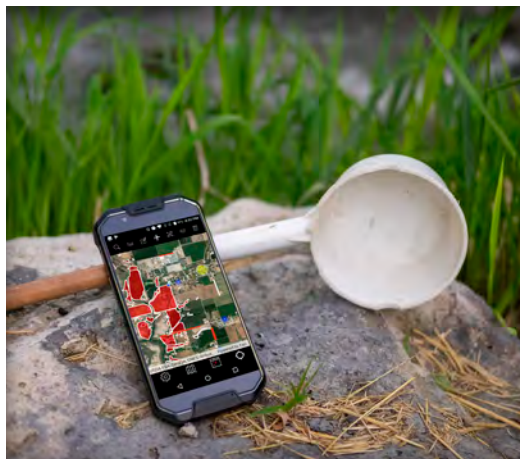
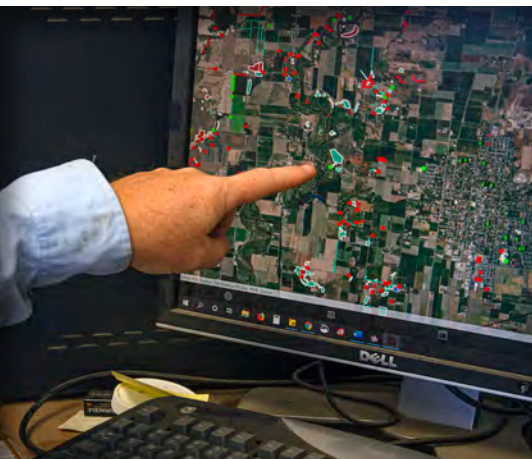
**About the Cover:** On July 17, 2020, former Army Medical Entomologist, Ray Dunton, dipped for *Culex thriambus* larvae along the Guadalupe River near Kerrville, Texas. This site may be within a few hundred yards of where Harrison G. Dyar on August 20, 1920 collected and later described this species. Ray, William Sames, and others are conducting a 13-county mosquito surveillance study west of San Antonio. See related story on page 16. Photo by William Sames IV.



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### Oct 2019-Oct 2020 Texas Mosquito Control Association Board of Directors

<b>President</b>	<b>Salvador Rico</b>	Harris County PHS Mosquito Control Division, Houston, TX
<b>President-elect</b>	<b>Greg Marciniak</b>	Jefferson County Mosquito Control., Beaumont, TX
<b>1<sup>st</sup> Vice-President</b>	<b>Nina Dacko</b>	Tarrant County Public Health, Vector Control, Fort Worth, TX
<b>2<sup>nd</sup> Vice-President</b>	<b>James Garcia</b>	City of Baytown Mosquito Control, Baytown, TX
<b>Director</b>	<b>Patrick Prather</b>	Municipal Mosquito, Richardson, TX
<b>Director</b>	<b>Megan McNairn</b>	The Woodlands Township Environmental Services, The Woodlands, TX
<b>Secretary</b>	<b>Meagan Wise-de Valdez</b>	Texas A&M San Antonio, San Antonio, Texas
<b>Treasurer</b>	<b>Salvador Rico</b>	Harris County PHS Mosquito Control Division, Houston, TX
<b>Past President</b>	<b>Mike Nichols</b>	Target Specialty Products, Houston, TX

To contact a Board member, please send an email to [info@texasmosquito.org](mailto:info@texasmosquito.org) and list the person you are trying to contact, present your question or concern, and provide your name and contact information.

### Oct 2019-Oct 2020 Texas Mosquito Control Association Standing Committees

<b>Legislative</b>	<b>Mike Nichols, Chair</b>	R. Duhrkopf
<b>Membership</b>	<b>Greg Marciniak, Chair</b>	M. Nichols, M. Johnsen, M. Wise-de Valdez
<b>Program</b>	<b>Nina Dacko, Chair</b>	Board of Directors
<b>Publicity/Newsletter/Media</b>	<b>Nina Dacko, Chair</b>	W. Sames (Chair, Newsletter Subcommittee), M. McNairn (Chair, Website Subcommittee), S. Rico (Chair, Social Media Subcommittee)
<b>Scholarship &amp; Awards</b>	<b>Jeff Flosi, Chair</b>	R. Duhrkopf

### Oct 2019-Oct 2020 Texas Mosquito Control Association Special Committees

<b>Auditing</b>	<b>Mike Nichols, Chair</b>	M. Johnsen, P. Beebe, C. Fredregill, W. Sames
<b>Constitution, By-laws &amp; Resolutions</b>	<b>William Sames, Chair</b>	W. Becker, M. Nichols, S. Sawlis
<b>Financial Support</b>	<b>Patrick Beebe, Chair</b>	J. Flosi, M. Nichols
<b>Local Arrangements</b>	<b>Patrick Prather, Chair</b>	S. Swiger, S. Rico
<b>Nominating</b>	<b>Mike Nichols, Chair</b>	R. Duhrkopf, J. Flosi, S. Sawlis
<b>Young Professionals</b>	<b>Van Adams, Chair</b>	E. Chu, K. Dye-Braumuller, K. Haydett, E. Kirkscey, E. Plaisance, S. Peper
<b>Systematics</b>	<b>Jeff Flosi, Chair</b>	R. Duhrkopf, W. Sames
<b>Workshop CEU's</b>	<b>Sonja Swiger, Chair</b>	P. Prather, J. Flosi, M. Nichols



**Salvador Rico**

## **Message from El Presidente Salvador Rico**

### **TMCA: Trust and Public We Serve**

Greetings again to all members of our Texas Mosquito Control Association and to our family, friends, acquaintances, sponsors & vendors! This is my last newsletter communication with you as TMC President. I will still be available to everyone as I will continue to be TMCA's Treasurer. If I am not mistaken, I am only the 3<sup>rd</sup> TMCA Treasurer in its long history (1956) ... following the long stints as Treasurers of Dr. James D. Long & Dr. Richard Duhrkopf. It is an honor and a privilege to hold this position...Both gentlemen also served as TMCA President, so I feel I am following their footsteps.

Today, let us talk about trust. Do you trust your team members? Do you question everything they do? Have they been doing everything

possible to assist the public while serving their employer or have they gotten apprehensive about their approach towards work, towards... YOU? What happened? Your team members are probably the hardest working folks out there but maybe that one little slip that you caught just turned your world upside down because that job just was not quite done to your satisfaction? Before you blow that gasket, or lid, why was everything working out ok until now?

Hiring personnel to fit your job's needs is always difficult but the attitudes can always be adjusted just by being patient, diligent, positive, assertive, and hopeful. But nothing is going to change for the better until/unless you get involved. The old management style of brute force is slowly becoming a thing of the past as companies & corporations are seeking to gain the most out of their team members. Yes, there are exceptions as some folks just are totally resistant to any change. And, unfortunately, those team members are just not what we are looking for as we move in a new direction. But, for the most part people want to do their best!

Once you have that team, it is just a matter of how you treat them. Once you have established your direction & where you see the future, including everyone to get on board to Serve the Residents of your municipality... you see the best come out of your team. But none of it will come to fruition until YOU earn their trust. Looking out for their wellbeing... Believing in their will to go forward & helping people go a long way. Remember the Big Picture? While yes, we are here to draw a paycheck to provide... Our Purpose is to Help Save Lives!

So, what if their quota was not met. Were they close? What happened? Can we assist? In other words, do not give up or harp on what went wrong, ... Let us pick them up and move forward to a new day. When you care, they care. Trust them and they will trust you! They will do their best to serve the public at their pace. Delegate with understanding & trust and it will show in the public view. Not because you demand it... rather because your team members want to!

Working towards this type of leadership does take some time, but it can be done. After many years, I personally have seen/heard more positive feedback from our residents via telephone or email correspondence than I have witnessed in my 10 years as team leader of our Inspection Section since 2006. No, I cannot take all the credit, but it is our team members who strive to do their best. Not because we demand it... rather because, our team members want to be their best because of trust. Keep up the great work everyone!

THANK-YOU for allowing me...a humble field guy from Harris County (Houston, Texas) with 34 years of knowledge & plenty of applied science experience from past & present colleagues & friends...for allowing me to be President of The Texas Mosquito Control Association. Thank-You for indulging me & thanks for your support, wisdom, patience & encouragement! This, no doubt, is an unforgettable experience! As luck would have it during my term as president, we have a most unfortunate memorable experience... COVID-19. Most, if not all of our membership, have been assisting in some form or fashion regarding the corona virus while trying to accomplish their mosquito & vector control service to the residents. To all of you, I tip my hat and say, "Thank-you.

If you're interested in joining a committee please contact us at:  
<https://www.texasmosquito.org/membership-and-committees>)

Yes, it is our turn! Check us out Texas Mosquito Control Association <https://www.texasmosquito.org/> become a member of the best organization in the State of Texas.

Salvador Rico

TMCA President & Treasurer

## TMCA Administrative Notes

**Publishing in the TMCA Newsletter.** The TMCA newsletter is a medium for getting information to TMCA members. Newsletter content is based upon contributions from TMCA officers and members, and the newsletter subcommittee. If you have information of benefit to TMCA members, please submit that information to the TMCA Editor. There are 4 issues per year with each issue coming out shortly after the quarterly Board of Directors meeting. Newsletters are published in January, May, August, and November. Photos and mosquito related humor are also welcomed. Consider submitting artwork for a cover.

**Advertise in the TMCA Newsletter.** Advertising rates are \$50 for 8.5 x 11 inches page ad. Half page ads are \$30 (8.5 x 5.5) Submit copy ready artwork in MS Word or PDF to the TMCA Editor.

**American Mosquito Control Association Annual Meeting.** The AMCA Annual Meeting is scheduled for 1-5 March 2021 as a **Virtual Meeting**. Go to <https://www.mosquito.org/> for more information.

**TMCA Committees.** Interested in serving on a TMCA Committee? If yes, you may contact the Committee Chair **OR** go to the TMCA website and sign up online at <https://www.texasmosquito.org/membership-and-committees>. To join a committee, send a request to [info@texasmosquito.org](mailto:info@texasmosquito.org).

## **AGENDA**

### **Texas Mosquito Control Association – Business Meeting**

December 8, 2020, 1:00pm; Via Conference Call/Video

#### **Call to Order**

1. **Approval of 2019 Business Meeting Minutes:** - Dr. Megan Wise de Valdez
2. **Treasurer’s Report:** - Salvador Rico

#### **Standing Committee Reports**

3. **Legislative:** - Mike Nichols
4. **Membership:** - Greg Marciniak / Dr. Mark Johnsen
5. **Program:** - Nina Dacko
6. **Publicity, Newsletter, and Media:** - Nina Dacko
  - A. **Newsletter Subcommittee:** - Dr. William Sames
  - B. **Social Media Subcommittee:** - Salvador Rico
  - C. **Website Subcommittee:** - Megan McNairn
7. **Scholarship and Awards:** Dr. J Flosi/Dr. R Duhrkopf/Dr. M Wise de Valdez

#### **Special Committee Report**

8. **Auditing:** - Mike Nichols
9. **Constitution, By-Laws, and Resolution:** - Dr. William Sames

VOTE: Members vote on Proposed Changes to Constitution and By-Laws”
10. **Financial Support:** - Patrick Beebe
11. **Nominating:** - Mike Nichols

VOTE: TMCA Members vote on 2020-2021 TMCA BOD Officers and Directors.  
After vote, new Officers take over meeting.
12. **Systematics:** - Dr. Jeff Flosi
13. **TMCA Young Professionals:** - Van Adams
14. **Workshop/Local Arrangements/Workshop CEUs:** - Dr. S Swiger/P Prather

#### **Old Business**

#### **New Business**

15. **Announcements:** Next Business meeting date – October 2021
16. **Adjournment**



# **Texas Mosquito Control Association – Business Meeting Notes Regarding TMCA BOD Positions and Election**

## **Past TMCA Board Structure**

### 8 Year Track

Past President  
President  
President Elect  
1<sup>st</sup> Vice President  
2<sup>nd</sup> Vice President  
Director  
Director  
Secretary

## **New TMCA Board Structure**

### 6 Year Track

Past President  
President  
President Elect  
1<sup>st</sup> Vice President  
2<sup>nd</sup> Vice President  
Secretary

### 2 Year Track

Director  
Director

## **Current TMCA BOD 2019-2020**

### 6 Year Track

**Past President**  
Mike Nichols

### 2 Year Track

**Director**  
Patrick Prather

**President**  
Salvador Rico

**Director**  
Megan McNairn

**President Elect**  
Greg Marciniak

**1<sup>st</sup> Vice President**  
Nina Dacko

**2<sup>nd</sup> Vice President**  
James Garcia

**Secretary**  
Megan Wise de Valdez

Membership Vote is needed for the positions of 1<sup>st</sup> Vice President, 2<sup>nd</sup>. Vice President, Secretary, Treasurer, and both directors' positions. The President-Elect was elected last year and will become President at the transition of officers during the Business Meeting. The Past President leaves the Board and the President automatically becomes the Past President for the following year.



# Protecting Public Health Together

ADAPCO is pleased to provide a full portfolio of permethrin products. The PermaSease® line offers the formulation flexibility you need to meet all your vector control needs. With PermaSease®, you'll achieve quick and consistent knockdown of mosquitoes using one of our six formulations, including two Universal Concentrate (UC) formulations.

## PermaSease®

### PermaSease® 30-30

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- Apply undiluted or dilute with oil

### PermaSease® 31-67

- 31.15% permethrin and 66.85% PBO formulation
- Apply undiluted or dilute with oil
- High synergist content decreases ability of mosquito to detoxify permethrin

### PermaSease® 3-15

- 3% permethrin and 15% PBO formulation
- Ready-to-Use formulation that can be applied undiluted
- High synergist content decreases ability of mosquito to detoxify permethrin

### PermaSease® 4-4

- 4.6% permethrin and 4.6% PBO formulation
- Ready-to-Use formulation that can be applied undiluted or diluted with oil

### Universal Concentrate (UC) Formulations

- Formulations that offer unparalleled flexibility in dilution and application
- Can be diluted with water, oil, or applied undiluted

### PermaSease® UC

- 30% permethrin and 30% PBO formulation

### PermaSease® UC 20-20

- 20% permethrin and 20% PBO formulation

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## TMCA 2020-2021 Board Nominations

### Mike Nichols, Chair Nominating Committee

The Nominating Committee has nominated the following for the 2020-2021 TMCA Board of Directors. The President shall request additional nominations from those attending the meeting. The membership shall then vote on these nominations or any individually contested positions.

Position	2019-2020 Board (Outgoing)	2020-2021 Board (Nominated)
President	Salvador Rico	Greg Marciniak (elected in 2019)
President Elect	Greg Marciniak	Nina Dacko
1 <sup>st</sup> Vice President	Nina Dacko	Jimmy Garcia
2 <sup>nd</sup> Vice President	Jimmy Garcia	Megan Wise de Valdez
Secretary	Megan Wise de Valdez	Patrick Prather
Past President	Mike Nichols	Salvador Rico (normal transition)
Treasurer	Salvador Rico	Salvador Rico
Director, Senior	Patrick Prather	Megan McNairn
Director, Junior	Megan McNairn	Sonja Swiger

## Changes to TMCA Constitution and By-Laws

### William Sames, Chair, Constitution, By-Laws, and Resolution Committee

In accordance with procedures, proposed changes to the TMCA Constitution and By-Laws were posted in the August TMCA Newsletter for member review and comment. No comments were received, so the Committee requests approval of the proposed changes.

### CONSTITUTION - PROPOSED REVISIONS

ARTICLE III, OFFICERS, A. Officers: The officers of the Association shall be those of President, President-Elect, First Vice-President, Second Vice-President, Secretary, and Treasurer. **All officers may vote on Board decisions.**

#### ARTICLE V, BOARD OF DIRECTORS

A. Membership: The Board of Directors shall consist of:

2. The Immediate Past-President: **The Immediate Past President provides advice and leadership to the Board of Directors regarding past practices and other matters to assist the Board in governing the Association. The Immediate Past President supports the President and the President-Elect on an as-needed basis. The Immediate Past President performs the duties of the President in the absence or disability of the President. The Immediate Past President may vote on Board decisions.**

3. Two members at large elected as Directors for a period of two years. **These Directors participate in the planning, decision making, and implementation of projects as determined by the Board of Directors. Each Director may vote on Board decisions.**

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- » Assistance with Field Work and Product Consultation
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- » Assistance with Efficacy Tests and Chemical Trials



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- » Permanone 30-30®
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- » Aqua-Reslin®
- » DeltaGard®
- » Imperium®



### Contact:

Patrick Sutton | 318.254.3330

patrick.sutton@target-specialty.com

[target-specialty.com/tma](http://target-specialty.com/tma)



4. The Regional Director to the American Mosquito Control Association from the Southwest Central Region, who shall serve as an ex-officio member of the Board. **The ex-officio does not vote on Board decisions.** The ex-officio clause does not apply if this person is simultaneously serving as an Officer of the Association, immediate Past-President, or as a Director elected at large.

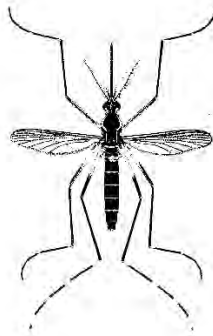
## **BY-LAWS – PROPOSED REVISIONS**

### **B. Special Committees:**

1. The Nominating Committee shall consist of five active members who shall recommend to the Association candidates for election as Officers and Directors. **The Immediate Past President will serve as the Chair of this committee.**
8. **The TMCA Young Professionals Committee shall consist of at least 3 active members who shall create an environment in which young professionals in the mosquito control industry can feel welcome and create contacts with their peers and with seasoned professionals. A Young Professional is any member who is in their early years of the mosquito control industry.**

## **ARTICLE III, RULES OF ORDER**

**B. Officers and all Committees shall prepare a Standard Operating Procedure for their respective position or committee, which shall be passed to successors for continuance in the organization. This SOP shall include procedures on how the committee operates and details on historical elements of the organization. For example, the President’s SOP should have details on recurring and special decisions, and a list of all prior Presidents and the years they served; the Awards and Scholarship Committee should have details about the procedures of announcing, receiving, and processing applications, and a list of all prior Award and Scholarship recipients and the date and the amount of the award or scholarship.**



## **Vendor Recognition for Continued Support**

Normally this issue has a Thank You Section in appreciation of those who supported the TMCA Annual Meeting. Since we did not have an Annual Meeting, the TMCA would like to acknowledge the vendors who supported the TMCA in 2020 through newsletter advertisements, the ADAPCO Key Note Speaker funding (provided even though we did not have a speaker this year), the AMVAC Young Professionals sponsorship, and other contributions.

**ADAPCO**

**FMC**

**AMVAC**

**Frontier Precision**

**Central Life Sciences**

**Target Specialty Products**

**Clarke Mosquito Products**

**Valent BioSciences**

**Co-Diagnostics Inc.**

**VDCI**

## **Upcoming Vector Control Courses**

**Dr. Sonja Swiger**

Follow me on my new blog @ <https://rockerflydoc.blogspot.com/>

Well, COVID continues to interfere with in-person scheduling of Vector Control Courses. Fortunately, we have online capabilities that allow us to train vector control professionals, so they can receive CEUs and meet state requirements. The December 9<sup>th</sup> class is full! If you signed up for this class, don't forget to show up!

However, due to the high number of people that took the ADAPCO course on October 28<sup>th</sup> but only received 3 hours of CEUs, I will have a virtual class on December 15<sup>th</sup> that will provide 1 hour of Laws & Regulations and 1 hour of General CEU (ONLY). Please register at: <https://livestockvetento.tamu.edu/workshop-registration/cue-vector-management-program/>.

For now, Spring CEU classes are being planned with some proposed to be in person and some virtual. Most are not scheduled, but Victoria will be Feb 25<sup>th</sup> and Tyler will be April 16<sup>th</sup>. Tentatively, Grapevine will be March 31<sup>st</sup> and the TMCA Workshop is scheduled for Austin on April 7-8<sup>th</sup>. At this time, these are all in person training sessions.

## In Memoriam: Dean May, BCE

Heather Gooch, October 20, 2020

<https://www.mypmp.net/2020/10/20/in-memoriam-dean-may-bce/>

Dean May, a board-certified entomologist (BCE) and sales manager for [AMVAC Environmental Products](#), died suddenly on Sept. 18, 2020, while on a fishing trip in Colorado. The Plano, Texas, resident was 61.

May graduated from California State Polytechnic University – Pomona in 1982 with a Bachelor of Science degree in agricultural biology, pest management, and entomology. He was a past president of the North Texas Board Certified Entomologists and was a member of the Entomological Society of America, the National Pest Management Association and the Louisiana, Oklahoma, New Mexico, Arizona, California and Texas Pest Control associations.



He taught numerous continuing education training programs at conferences throughout the South-Central and Western U.S. and was slated to be among the speakers at the 75th Texas A&M University Urban Pest Management Conference and Workshop in January 2021.

Prior to joining AMVAC in 2007, May was a regional technical specialist with Whitmire Micro-Gen Research Laboratories of St. Louis, Mo., which is a legacy company of BASF. He was a department manager at Van Waters & Rogers, a legacy company of Vesaris. He started in the industry in the 1980s in the research and development department for the American Cyanamid Co., a legacy company of Solvay.

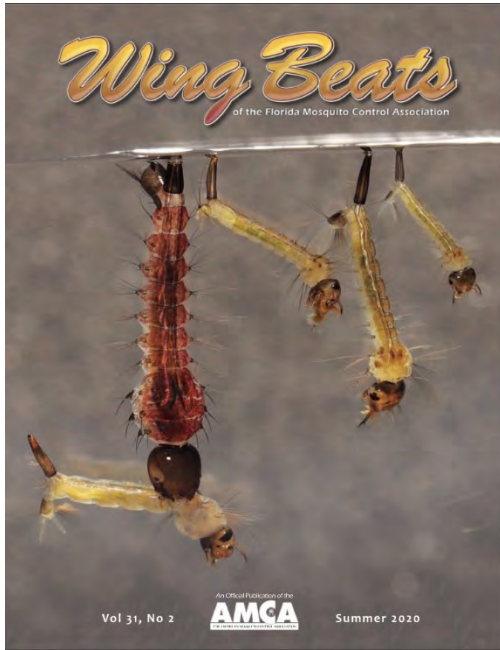
“With a quick mind and a wealth of technical knowledge, Dean was known by his colleagues and customers as a great problem-solver,” an announcement issued by AMVAC noted. “And to many, he was known as a great friend.”

May is survived by his mother, Lisa; brother, Gary; and two sons, Eric and Kevin. His final resting place is Rose Hills Memorial Park in his hometown of Whittier, Calif.

**Editor’s Note:** Dean was a valued member of the Texas Mosquito Control Association and it was always a pleasure to see and visit with him at our Annual Meeting and Spring Workshops. Professional and personal, he was pleasure to be around. He will be missed.

# Texans Publish in Summer and Fall Issue of *Wing Beats* Magazine!

In the *Wing Beats* 2020 Summer Issue, Anita Schiller, Director, Biological Control Initiative, Harris County Precinct 4, Spring, TX, wrote the article “Got Backyard Mosquitoes? We’ve Got an APP for That!” She explained the purpose and direction of their program in Harris County and how they developed an App for homeowners to use to help manage mosquito issues around their home. At the TMCA Newsletter Editor’s request, Anita tells more about the program in an article in this newsletter. See page 18 to read the article!



**The 100th Anniversary of Harrison G. Dyar's Collection of *Culex thriambus* and *Culex coronator* in Texas, USA**  
by William Sames

It was the year 1920 and the world-wide pandemic commonly known as the Spanish Flu was ending. Presuming it was the Spanish Flu, it infected an estimated 500 million and killed 40-50 million people worldwide (Sunderland and Knowl 2016).

Harrison Gray Dyar Jr was in Texas in August of 1920 and had observed the swarms of *Aedes aegypti* and *Culex quinquefasciatus* from the first and second floor of his hotel in Kerrville, Texas (Dyar 1923a). This was the first published record of *Ae. aegypti* in Kerr County and the second published record of *C. quinquefasciatus*. The first record of *C. quinquefasciatus* was May 30, 1906 by Frederick C Pratt (Howard et al 1955).

On August 26, 1920, Dyar collected a new species of mosquito from a small dirt pool along the Gravelly River near Kerrville, which he described and named as *Culex thriambus* (Dyar 1921b). The next day he collected *Culex coronator* larvae from a seep excavation in San Benito for the first record of that species in the United States (Dyar 1921b).

It all seems simple and straightforward. Collect and describe, collect and identify, write the report. However, this was 1920 and transportation was much different than it is today. Kerrville and San Benito are separated by 324 miles and is a 4-hour 42-minute non-stop drive on modern roads and with modern automobiles at 70+ mph – according to Google Maps. Before automobiles, the trip from San Antonio to Kerrville was a 7-day 11-py by animal pulled wagon. As surely, automobiles improved the situation, but they were not perfect. In 1920, the Ford Model T was still in production and roads were not the super paved highways that we have today.

Figure 1: Harrison Gray Dyar, Kerrville, Texas. Photo courtesy of William Sames (www.williamsames.com).

An automobile drive from Kerrville to San Benito would have been an extraordinary event compared to today's expectations.

In search of clues as to why Dyar was in Texas, I purchased the book, *Merch, Myths, and Misadventures: The Iconic Life of Harrison G. Dyar, Jr* by Marc Epstein. The Table of Contents listed "Travels for Mosquitoes: 1916-1924" but the information for Texas stated, "In August Dyar collected at San Juan Capistrano, California, and at Kerrville and San Benito, Texas's only collecting records for 'Beats' (Epstein 2016). That was it, no more.

I contacted the author, Marc Epstein, and learned that Dyar's trip to Texas was a gap in the knowledge of his activities and whereabouts. Marc pointed out that his book described Dyar's normal mode of transportation, taking the railroad for long distances and local transportation as and around a destination. Well, that was Dyar's second wife and it was not unusual for her to make Baha'i Faith presentations on their collection trips (Epstein 2016). However, you will need to read Marc's book to learn more about her and her presentations.

My internet search for 1920s railroad maps revealed extensive maps of railroad systems between Texas and San Juan Capistrano, which was Dyar's base known location in southern California (Epstein 2016). Hypothetically, Dyar's train from California would travel across southern Arizona and New Mexico before entering Texas at El Paso; see Figure 2. The train would travel through Brewster County to Devil's River, a former train stop now submerged under Lake Amistad (Texas Escapes 2007). The main line continued through Slatford to San Antonio where he would take the San Antonio-Amarillo Pass (SAAP) line to Kerrville at the end of the line.

That would put Dyar in Kerrville for his August 20th collection of *C. thriambus*. From Kerrville, he took the SAAP towards Revillo, then took a train south to the Rio Grande Valley (RGV). He could have gone to McAllen with a 50-mile connection to San Benito, or a little further down the line he could have taken a train directly to San Benito. He may have taken either train another 20 miles southeast to Brownsville, leaving the RGV. Dyar may have traveled through Corpus Christi to Victoria, then onto Dallas. From Dallas, he may have traveled through Paris on his way back to Washington DC.

In the *Wing Beats* 2020 Fall Issue, William Sames, Medical Entomologist (US Army retired) wrote the article “The 100<sup>th</sup> Anniversary of Harrison G. Dyar’s Collection of *Culex thriambus* and *Culex coronator* in Texas, USA.” The article discusses Dyar’s discovery and description of the “new” species *Cx. thriambus* in Kerrville and his discovery of *Cx. coronator* in San Benito down in the Rio Grande Valley.

If you did not receive these issues and would like to read digital copies, they are available for free viewing through the American Mosquito Control Association’s website, <https://www.mosquito.org/page/wingbeats>.



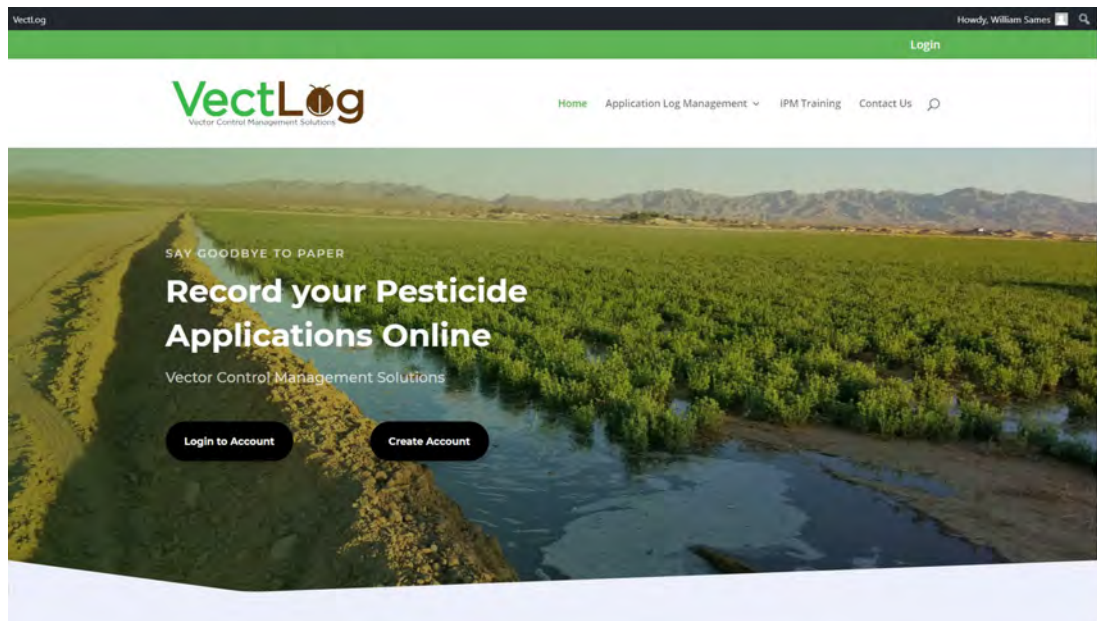
# Vectlog.com a New Mosquito Training and Record Keeping Website



**Editor:** A TMCA member, who wishes to remain anonymous, contacted me about trying to get ideas for a new website he developed for recording pesticide applications online and for mosquito control training. This person spoke with Perry Cervantes, Texas Department of Agriculture, to ensure this would meet TDA compliance. Perry has reviewed Vectlog.com and indicated that it is compliant with TDA record keeping. It does look promising and may help many of our smaller districts keep accurate records and have them available for periodic TDA inspections. All products sold by any TMCA vendor are supposed to be listed in the drop-down list of products. If any products are missing, please contact the website developer at [info@vectlog.com](mailto:info@vectlog.com) so they can be added.

The training sections need additional content, and the developer plans to create videos for each section. Other content or links to other information might be added in the future. Overall, the site structure seems to flow well, and the topics seem like they would be of benefit and interest to our membership.

The program appears easy to use from a desktop or from a smartphone (no flip phones - sorry). **Using the site is free of charge**, but you do have to register to access it. The site does seem to provide a lot of good information for Texas mosquito control personnel. For now, the developer would like to receive comments about the site, what is good, what needs to be improved, and suggestions for other content. Once again, if products are missing or you would like to provide comments contact the developer at [info@vectlog.com](mailto:info@vectlog.com). It is my understanding the site is not vendor sponsored, but the site may eventually allow advertisements to recoup costs.



## The Tale of Mosquito Assassins!

### ***Culex* Killers and Larva Shredders...Meet Some of the Agents of (Mosquito) Doom!**

**Anita Schiller**

**Director, Biological Control Initiative, Precinct 4, Harris County.**

Located at the transition of East Texas Piney Woods, tallgrass prairie and coastal marshes, Harris County covers 1,777 square miles, 34 municipalities including the City of Houston, and the governing of the county itself is divided among four Commissioner precincts.

Commissioner R. Jack Cagle established Harris County Precinct 4's Biological Control Initiative (HCP4-BCI) in 2012 to find and develop natural mosquito control methods for use in the precinct's combined 10 thousand acres of public lands. Biological control expands the arsenal in the fight against mosquito-borne diseases by enlisting organisms that prey upon the mosquito and can be applied in areas where pesticide applications are limited by scope or regulation. Led by Anita Schiller, dedicated technicians and scientists investigate, produce, and select-apply biological controls within Precinct 4. The Initiative's efforts extend toward the conservation of healthy, balanced freshwater environments that promote robust dragonfly communities. Dragonfly and damselfly larvae feed on mosquitoes as juveniles and adults, making these insects leading natural predators of disease-spreading mosquitoes.

Over the years, the HCP4-BCI program developed novel protocols to produce large numbers of native mosquito assassins, *Toxorhynchites rutilus*, and is currently researching varying release methods. A published version is available via the open-access *Journal of Insect Science*, Volume 19, Issue 2, March 2019, 8, <https://doi.org/10.1093/jisesa/iez011>

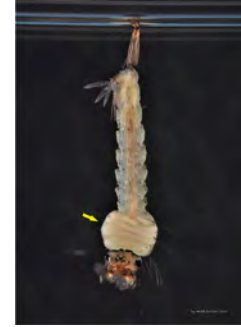
The following provides a short overview of some of the agents in development at HCP4-BCI:

**Native Mosquito Assassin, *Toxorhynchites rutilus*.** The brilliantly colored native mosquito assassin females oviposit into all sorts of rain-filled containers, where their larvae are especially fond of consuming other dipterans including the pugnacious Asian Tiger mosquito, *Aedes albopictus*, the yellow fever mosquito, *Aedes aegypti*,

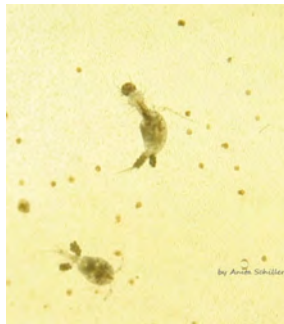


and southern house mosquito, *Culex quinquefasciatus*. From local wild phenotypes, HCP4-BCI developed several domesticated production cultures each with an oviposition potential of a conservative 3,000-5,000 eggs per week, 17,000 eggs per month or 200,000 eggs per annum. The non-maintenance material is used in studies, releases, and outreach projects.

Dubbed **Culex Killer**, *Romanomermis culicivorax* is an entomopathogenic roundworm -it exclusively infects and kills mosquito larvae before they become biting adults. Although locally isolated and restricted to a handful of semi-permanent bodies of water, they are native to the southern United States. The southern house mosquito *Culex quinquefasciatus*, Harris County's primary vector of the West Nile virus, is highly susceptible to the *Culex* Killer.



In addition, *Anopheles* mosquitoes that can harbor and transmit malaria are vulnerable to *R. culicivorax*. At the HCP4-BCI insectary, units of 1000 *Aedes aegypti* serve as production host for *R. culicivorax* and yield an average of 0.7mL post-parasites, which translates into circa 1,250 females with an average of 2,400 eggs laid each and a combined egg potential of close to 3 million eggs (per unit). An infection rate calculated at 2:1 would infect and kill over one and half million mosquito larvae. Of course, in the natural environment those numbers are much reduced, however establishing sustaining populations to reduce biting pressures of certain species in flood-prone forested habitat show high potential.



**Cyclopoid Copepods**, *Mesocyclops longisetus* though considered zooplankton, these tiny freshwater crustacea are ferocious predators of small-sized aquatic life. *M. longisetus* inhabit subtropical regions in still, freshwaters such as small ponds and roadside ditches where it happily feeds on freshly hatched mosquito larvae. HCP4-BCI culture units of circa 100 adult “copes” routinely destroy 800 first instar *Aedes aegypti* larvae in 48 hours and would decimate more if they were provided.

The 1980s and 90s saw much energy directed toward the use of cyclopoid copepods, yet few mosquito control districts still use them today. As is the case with other biocontrol agents, their use and application require rearing them in high enough quantities to make a measurable impact and takes resources and logistics many districts find prohibitive. At HCP4-BCI we do not claim to eliminate all mosquitoes with our biocontrol agents, but we are applying them in areas where no other applied controls are feasible or are ineffective. We are cognizant the work we do is limited and integrating biocontrol with standard control measures increases desired outcomes, however, we operate from the standpoint of “nothing ventured nothing gained” and that success can be measured from different angles. For more information visit the website at [www.hcp4.net/bci](http://www.hcp4.net/bci), read up on some of our published works in the Journal of Insect Science; American Mosquito Control Association magazine, Wing Beats or simply google us.

Take care, remain safe, and thank you for your interest.



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# 2020 Mosquito-Borne Disease Update



**TEXAS**  
Health and Human  
Services

Texas Department of State  
Health Services

2020 DSHS Arbovirus Activity Report  
Week #46 (ending November 14, 2020)  
Report Date: Nov 17, 2020

Table 1. 2020 Arbovirus Activity Summary, Texas, Week 46

Arbovirus	Positive Mosquito Pools	Avian	Equine	Sentinel Chicken	Human						TOTAL
					Febrile Illness	Neurologic Illness	Severe Dengue	TOTAL (HUMAN)	Deaths	PVD <sup>2</sup>	
California Serogroup <sup>1</sup>								0			0
Chikungunya					2			2			2
Dengue					21			21			21
Eastern Equine Encephalitis								0			0
St. Louis Encephalitis	16			1				0			17
West Nile	1385	1	3	1	8	50		58	10	30	1448
Zika								0			0
<b>TOTAL REPORTS</b>	<b>1401</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>31</b>	<b>50</b>	<b>0</b>	<b>81</b>	<b>10</b>	<b>30</b>	<b>1488</b>

<sup>1</sup>California Serogroup includes California encephalitis, Jamestown Canyon, Keystone, La Crosse, snowshoe hare, and trivittatus viruses.

<sup>2</sup>PVD - Presumptive viremic blood donors are people who had no symptoms at the time of donating blood through a blood collection agency, but whose blood tested positive when screened for the presence of West Nile virus or Zika virus. Unless they meet the case reporting criteria, they are not counted as a case for official reporting purposes and are not included in the "Total" column.

Table 2. 2020 Aedes-Associated Arbovirus Activity by County†, Week 46

County	CHIKV*		DENV**		ZIKV*			COUNTY TOTAL
	M	H	M	H	M	H	PVD‡	
Bastrop				1				1
Brazos				1				1
Cameron				1				1
Collin				1				1
Ector				1				1
Fort Bend				2				2
Harris				2				2
Hays				1				1
Hidalgo				4				4
Travis				2				2
Webb				5				5
Total Number of Reports	0	2	0	21	0	0	0	23

M - mosquito H- human  
CHIKV - Chikungunya Virus  
DENV - Dengue Virus  
ZIKV - Zika Virus

\*All reported cases are imported.

\*\*Includes a case transmitted by mosquitoes in Texas: Hidalgo County (1).

†County level data is not reported for conditions with <5 cases reported in a year.

‡PVDs are not included in the "County Total" column.

For by-county distribution of cases and more information go to:

<https://dshs.texas.gov/idcu/disease/arboviral/westNile/reports/weekly.aspx?terms=arbovirus%20weekly%20summary>

# Texas Mosquito Control Association

## Membership Application

**Purpose:** To assist in promoting public health and comfort through the control of disease transmitting and pestiferous mosquitoes, to provide for the scientific advancement of Association members, and to stimulate public interest in mosquito control activities.

**Publications:** A Newsletter is published quarterly and emailed to active members. The Association web site is located at <http://www.texasmosquito.org>

**TMCA Annual Fall Meeting:** Held each year during October at an announced site within the state. Papers presented at this meeting are primarily technical reports dealing with new and improved methods of mosquito control, new insecticides, and application techniques. Basic research related to mosquito life cycles, bionomics, diseases, and natural histories are also presented. Distributors are present to display and answer questions about their equipment and chemicals. A registration fee is required to attend.

**TMCA Spring Workshop:** Held each year during February or March at an announced site within the state. This is a basic training workshop on the operational aspects of mosquito control. Topics include general mosquito biology, mosquito borne diseases, sampling and surveillance techniques, methods of mosquito control, public relations, equipment maintenance, chemicals and chemical safety, record keeping, administrative problems, and advanced operational training in calibration, droplet size determination, mosquito identification, and surveillance devices and techniques. Distributors are present to display and demonstrate their products. Registration is free, and several meals are usually provided by the TMCA to help reduce costs to attendees.

**CEU's:** CEU's for the Texas Department of Health Vector Control Certified Applicator License are offered at the Spring Workshop. Fees are \$20 per hour of CEU requested for non-members, free to all TMCA members. A copy of the TDA regulations can be downloaded from the TMCA web site at <http://www.texasmosquito.org>

**Annual Dues:** Dues are payable on a calendar year basis. Active Memberships are \$30 per year, and Supporting Memberships are \$60 per year.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Affiliation: \_\_\_\_\_ Position: \_\_\_\_\_

Work Mailing Address: \_\_\_\_\_

City & State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Membership type applied for: Active (\$30): \_\_\_\_\_ Sustaining (\$60): \_\_\_\_\_

Make check payable to: Texas Mosquito Control Association

Return application & remittance to: Greg Marciniak, Membership Chairman  
Jefferson County Mosquito Control District  
8905 First Street  
Beaumont, Texas 77705

Phone: 409-719-5927 Fax: 409-727-4176 Email: [membership@texasmosquito.org](mailto:membership@texasmosquito.org)