

## **NEW JERSEY MOSQUITO CONTROL ASSOCIATION, INC. NEWSLETTER**

*VOL. XVI NUMBER 2 May, 2004*

### **President`s Message**

I would like to start this my first newsletter by extending my thanks to Bill Zawicki on behalf of NJMCA and all who benefit from it. Bill did an outstanding job as president this past year organizing the affairs of the Association. I have had the personal pleasure of working with Bill for many years. Most recently serving under him during his term as president. Throughout this time he has always shown his commitment to N.J.M.C.A and the mosquito control community. Thank you Bill for your untiring efforts.

Our annual meeting in Atlantic City was once again very successful. The speakers who gave presentations provided everyone in attendance with interesting and valuable information. Vendors offered everyone with information on essential equipment and supplies. I had intended to thank the many people who worked so hard to make this meeting a success, but quickly realized that the list would be quite long, and I would certainly forget someone who deserved recognition. Instead I will reflect to the evening of our banquet. At the banquet, during a quieter time, when dinner was being served, I had a moment to think about what led up to and took place at this the Ninety-first Annual Meeting of the New Jersey Mosquito Control Association. I was taken back by the fact that there was someone at every table in the room that contributed in some way to the success of this event. Many tables with almost every person seated having an important role in the meeting being so successful. I have in the past been a member of other local organizations or clubs. But never have I experienced what is so pronounced in this association. The membership itself. I have never seen so many people in one group with so much to offer each other, and so willing to do so. For those of you who give so much of yourselves to this association, I thank and value you all.

With the 2004 season upon us and the uncertainty of what difficulties we will be faced with, all we can do is our best to perform our goal. To promote, encourage, develop and record safe, effective and environmentally sound mosquito control activities in order to protect the health and welfare of the citizens of New Jersey, and to make this information available to all who may be interested or concerned with mosquito control activities. (Taken from NJMCA bylaws: Article 11 section 1) We are fortunate in New Jersey that our individual programs are all somewhat connected to one another. This close association of everyone in mosquito control Within our state is the foundation for the level of professionalism we all continually strive for.

*Pete Pluchino Jr., President*

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### **Vernal Pools in NJ**

In our line of work, encountering threatened and endangered species and working in areas of high resource value is inevitable. Twenty-five representatives from eleven mosquito control agencies were fortunate to meet with Mr. Brian Zarate, New Jersey Division of Fish and Wildlife Endangered and Nongame Species Program (ENSP) and John Heilferty, NJDEP Land Use on April 14, 2004 to learn about vernal pools and endangered species in New Jersey.

A vernal pool is defined as "a wetland that occurs in a confined basin depression without a permanent flowing outlet". A vernal pool must also retain water for two contiguous months and support either one obligate species (5 species of mole salamanders, spadefoot toad, and wood

frog) or two facultative species (species that often use vernal pools but can complete their life cycle in other wetlands). The size of a vernal pool can vary from a small man-made depression to a several acre wetland complex and anything in between. Along with larval mosquitoes, vernal pools provide habitat for a diverse number of species including state threatened and endangered amphibians (marbled salamander, tiger salamander) and rare invertebrates (fairy shrimp, dragonflies).

In 2000, ENSP initiated the vernal pool project for New Jersey in an attempt to halt the loss of vernal pools and treat them as a valuable resource. In 2001, DEP adopted a rule as part of the NJ Freshwater Wetlands Protection Act to provide protection to vernal pools that meet certain criteria. ENSP biologists and volunteers are working hard to survey, certify and map vernal pools across the state. Mosquito control personnel can help with this important endeavor by looking for signs of obligate and facultative species in known vernal pools and report findings to ENSP. Mr. Zarate has generously offered to supply updated vernal pool shapefiles to counties who request them. Plans are also under way to distribute a copy of "Salamanders Frogs and Turtles of New Jersey's Vernal Pools- A Field Guide" to each NJ mosquito control agency.

If interested in learning more about vernal pools in New Jersey, follow these links: To view vernal pool maps online <http://www.dbcrrsa.rutgers.edu/ims/vernal>

To learn more about NJDEP rules and regulations <http://www.nj.gov/dep/rules>

To find out more about NJ ENSP <http://www.njfishandwildlife.com/ensphome.htm>

*Teresa N. Duckworth, Wetlands Specialist*

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## PEOPLE NEWS

On July 1st , Rod Schmidt, Superintendent of the Middlesex County Mosquito Commission will be retiring after more than 31 years in mosquito control work. Rod accepted the position as Entomologist for the Commission in 1973. After years of hard work, he was eventually promoted to the Assistant Superintendents position and in 1997 was promoted to the position of Superintendent. Rod has served as President of the NJMCA and is the current President of the Associated Executives of Mosquito Control Work in New Jersey. On July 1st the Middlesex County Mosquito Commission is also saying goodbye to Patricia Dreyer. After 35 years with the Commission, Pat has decided it is time to join her husband Bob in relaxing in a nice quiet game of golf. Good luck to both Rod and Pat and may the only thing they have to work on is their tans.

Sean McManus of the N.J. Office of Mosquito Control Coordination has left to accept a position with the Division of Fish and Wildlife Bureau of Law Enforcement. Good luck to Sean in his new endeavor!

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**FROM THE MOSQUITO ARCHIVES.....** When was the New Jersey Pyrethrum Larvicide developed?

According to most records, the insecticidal properties of the pyrethrum flower have been known for centuries (1930. Proc. New Jersey Mosquito Extermination Assoc. 17: 57-73.) While a variety of oils were being used as larvicides in N.J. in the 1920's, their phytotoxicity and negative effects

prompted research on other possible larvicides. Dr. Joseph Ginsberg of the Entomology Department at the New Jersey Agricultural Experiment Station focused on pyrethrum as a suitable candidate, based on its toxicity to insects affecting plants.

Since initial performances of pyrethrum dusts did not perform well as larvicides, Dr. Ginsberg chose to extract the pyrethrum active ingredient, using alcohol and kerosene as solvents. The alcohol extract, when applied to larval habitats, dispersed throughout the depth of the water; therefore, toxicity to larvae present decreased as the depth of habitat increased. Also, the extract as dispersed was toxic to fish. However, the active ingredient was very soluble in kerosene, which when emulsified with soap and water, formed a stock emulsion (cost 1-1/2 gallons, 63 cents), which was further diluted 1:20 with water for application at rates 25-50 gallons/acre.

Pyrethrum cont'd Emulsification reduced the amount of kerosene needed, allowed the extract to rise to the water surface to encounter larvae; but there was no effect on waterfowl or fish. Various N.J. county commissions tried the larvicide with success. In Middlesex County, its use in catch basins eliminated sewer fires frequently caused by petroleum treatment alone (1934. Proc. NJMEA 19: 128-131). Subsequently, Dr. Ginsberg reviewed four years of the use of the "N.J. Pyrethrum Larvicide" and introduced specific formulae for fresh and salt water habitats. (1934. Proc. NJMEA 21: 121-128).

In 1931 the N.J. Pyrethrum Larvicide, undiluted, was evaluated as an adulticide on ten acres in Virginia by the U.S. Public Health Service (1932. Proc. NJMEA 19: 64-70). The recorded discussion following this paper, pp 64-70, is great reading.

Subsequently in 1935, 1936 and 1937 (see Proc. of these years), Dr. Ginsberg reported on the evaluation of pyrethrum as an adulticide in Camden, Atlantic City and also in Cape May, where 13 separate evaluations were conducted. The largest area treated was 16 acres of the Newark Schools Stadium in Essex County, where a concert attracted 15,000 people. Treatment was successful including knock-down (kill) and apparent repellency; this latter property of pyrethrum was first reported in 1930 by Dr. Willems Rudolfs in NJAES Bulletin 496. At that time, Dr. Rudolfs was Chief, Department of Sewage Disposal at NJAES and reported at NJMEA many times regarding habitats and biology of mosquitoes. He was one of the first to describe mosquito autotomy, self rupturing of tissues of the mosquito adult and breaking off of legs, due to materials such as pyrethrum.

Some of the synthetic pyrethroids, e.g. resmethrin, also cause autotomy in the laboratory and under field conditions. The possible balance of toxicity and repellency of the synthetic pyrethroids and their field performance has not yet been studied.

In 1942 with the onset of World War II, Dr. Ginsberg voiced concerns about the reduction in the supplies of imported pyrethrum and petroleum oil (1942. Proc. NJMEA 29: 16) and additives (synergists?) to reduce the amount of pyrethrum in the larvicide were evaluated, including phenothiazine and sesame oil. It was not until 1947 that the synergist piperonyl butoxide was discovered.

*D.J. Sutherland*

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## **Upcoming Events**

2005 AMCA Annual Meeting , Vancouver, British Columbia, Canada – April 1-7 2005

### **What is the Record Catch for a New Jersey Light Trap?**

As reported by T.J. Headlee at the 28th Annual Meeting of the N.J. Mosquito Extermination Association (1941. Proc. NJMEA 28: 7-12). Mr. O.W. Lafferty, Ex. Sec. Cape May MEC in 1940 constructed a very large trap with various lights and an abundant supply of dry ice that caught 18,000 mosquitoes in one night; this was an all time high for N.J. as of 1941. However, Dr. L.A. Stearns and colleagues from Delaware reported that on Sept. 10, 1940 at Fenwick Island, a trap at 100 feet collected 13,555 females in one night, while that same night a trap at ground level (normal height) collected approximately 250,000 females (1941. Proc. NJMEA 28: 40-52). This record was associated with "an enormous flight of mosquitoes."

*D.J. Sutherland*

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### **NJMCA Membership Application**

**Name:** \_\_\_\_\_

**Title: (Dr., Director, Commissioner)** \_\_\_\_\_

**Work**

**Address:** \_\_\_\_\_

\_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Work Phone:** (\_\_\_\_\_) \_\_\_\_\_

**Work E-Mail:** \_\_\_\_\_

**Work Fax:**(\_\_\_\_\_) \_\_\_\_\_

**Home Address:**

\_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Home Phone:**(\_\_\_\_\_) \_\_\_\_\_

**Home EMail:** \_\_\_\_\_

Dues Payment for the Year 2005 Thirty (\$30.00) per Member per Year

Total Number of Memberships \_\_\_\_\_

@ \$30.00 ea. - Total Amount of Invoice \_\_\_\_\_

Make Checks or Voucher Payable to: **New Jersey Mosquito Control Association, Inc.**

and send to:

***New Jersey Mosquito Control Association, Inc.  
c/o Camden County Mosquito Commission  
2311 Egg Harbor Road  
Lindenwold, NJ 08021***