



AMERICAN CHEMICAL SOCIETY KENTUCKY LAKE SECTION

November 2009 Kentucky Lake Section Meeting

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The Hunan Palace

Union City, TN

Tuesday, November 17, 2009

Social @ 5:30, Dinner @ 6:00, Presentation @ 7:00
2010 Officer Election (See Below)

The Hunan Palace is located at 1221 West Reelfoot Avenue

The price is \$10 (Students \$5)
Chinese Buffet

Presentation:

“A Search for Natural Insecticides”

By

Dr. David Wiemer – The University of Iowa

See Reverse Side for Biographical Sketch and Abstract

Comments from the Chair

As the end of the year is fast approaching I would like to remind you of the remaining activities of the local section for the year:

1. The November meeting is November 17th (see above)
2. Officer elections are ongoing, please participate in them!
3. A Science Café discussing aspects of methamphetamine use and its effects on the community is tentatively scheduled for 2:00 PM, December 5th at the Etcetera Coffee Shop, 320 N 6th St in the Lowertown Arts District of Paducah.

If you have any ideas with regard to section programming for the upcoming year, please mention them to a section officer. See you in Union City!

Harry Fannin

Officer Elections for 2010

The election of 2010 KLS-ACS officers will take place at the November meeting. Up for election are the offices of Chair-Elect and Secretary/Treasurer. The Official ballot (Enclosed) may be brought to the November meeting or sent, to be received prior to the November meeting, by US mail to the recipient listed on the reverse side.

Mail ballots to: H.B. Fannin
Dept of Chemistry
1201 Jesse D. Jones Hall
Murray State University
Murray, KY 42071-3300

Biographical Sketch

David F. Wiemer received a B.S. degree in chemistry from Marquette University in 1972, before moving to the University of Illinois at Champaign-Urbana to pursue graduate study in organic chemistry. He received the Ph.D. in 1976 for work in synthetic organic chemistry under the direction of Nelson J. Leonard, and then continued his career with postdoctoral study at Cornell University under the direction of Jerrold Meinwald. He joined the faculty in the Department of Chemistry at the University of Iowa in 1978, and now holds the rank of professor. His honors include a National Institutes of Health postdoctoral fellowship, a fellowship from the Alfred P. Sloan Foundation, a University of Iowa Faculty Scholar Award, and a University of Iowa Collegiate Teaching Award. Dr. Wiemer is interested in the isolation, characterization, and synthesis of biologically active natural products and the field of chemical ecology. His research projects include studies of the chemical basis of host-plant resistance to defoliation by leafcutter ants and of natural insecticides and anti-fungal agents in general. He also is involved in the chemical synthesis of various terpenoids with anti-viral, anti-leukemic, and anti-proliferative properties and in the development of new methodology for organic synthesis based on organophosphorus chemistry.

Abstract

The leafcutter ants (Hymenoptera, Formicidae, Attini) are classed as agricultural pests throughout the tropical Americas, both because of the massive amount of leaf material that they harvest and their special fondness for agriculturally important plants. Colonies whose foraging is restricted to areas of native forest encounter a great variety of potential host plants, but, while the ants are considered polyphagous, they are quite specific in their preferences for some plant species and dislike of others. We have been investigating avoided plants for the presence of natural chemical defenses against this insect. From the leaves of unpalatable plants, we have isolated a number of compounds that function as ant repellents. Representative structures will be presented to illustrate modern techniques for determining the structures of natural products (e.g. 2-D NMR and chemical synthesis). Some speculation on the basis of this ant-repellent activity also will be offered. Application of the strategies developed from studies with leafcutter ants to investigation of other types of insect-plant interactions may be presented as well.