



# THE CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XXXIV

MARCH, 1978

NUMBER 3

## AMERICAN CHEMICAL SOCIETY



For  
Outstanding  
Achievement  
in



Chemistry



man

D.

**STUDENT AWARDS MEETING**

## THE CHAIRMAN'S MESSAGE

The meeting to be held on March 15, 1978, at Eudowood Gardens promises to be a special affair. The Executive Committee last year authorized a new awards program in which outstanding students from the two- and four-year colleges within the area of the Maryland Section would be honored. The awardees will be the guests of the Section at this meeting. More details, including the names of all of the students to be honored, are given on p. 5. It is hoped that this will be an annual affair.

Next, on behalf of the Section, I congratulate Dr. Robert M. McKinney of Westminster who, this year, completed 50 years of membership in the ACS. Dr. McKinney's achievement will be recognized at the March meeting.

The March meeting will feature two talks about the use of isotopes in organic chemistry. At 5:30 p.m. Linda Sweeting, Towson State University, will discuss  $^{13}\text{C}$  nuclear magnetic resonance spectroscopy and its applications. After dinner, a former colleague of mine, Arnold Liebman, Hoffmann-LaRoche, Inc., will describe the synthesis of specifically-labeled radioactive compounds. I hope you will attend the March meeting to hear these informative talks, as well as to join us in honoring the outstanding students, the institutions they represent, and Dr. McKinney.

Because of the 12th MARM to be held April 5-7, 1978, at Hunt Valley, there will not be a meeting of the Maryland Section in April. A fine program, the details of which will be found in the March 6th issue of *C&EN*, has been arranged for the 12th MARM. I urge you to make this meeting a success by your support. The next regularly-scheduled issue of *The Chesapeake Chemist* will be the May issue, which will describe the arrangements for the 1978 Remsen Memorial Lecture, the premier award of the Maryland Section.

James Leslie

### DR. MASSIE APPOINTED AT USNA

Samuel P. Massie has been appointed Chairman of the Chemistry Department at the U. S. Naval Academy effective December 1, 1977. Dr. Massie replaces CDR John M. Hoffmann, USN, who served for one and a half years, and is the third chairman of the department since the Naval Academy reorganization in 1968, Joseph R. Wiebush being the first chairman. Dr. Massie is the first black professor to teach at the Naval Academy and the first black professor to hold a department chairmanship.

### ----- TEAR OUT DINNER RESERVATION FORM -----

Enclosed is \$ \_\_\_\_\_ (\$6.50/\$4.50 per person) for dinner reservations at the Eudowood Gardens Dining Room for

NAME (Please print or type) AFFILIATION

\_\_\_\_\_

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Please make checks payable to Maryland Section, ACS, and mail together with reservation form to James Leslie, 5150 Downwest Ride, Columbia, MD 21044. OR: Phone 528-7440 (9 - 5 weekdays; 730-5761 evenings & weekends).

Return by March 10th



# THE CHESAPEAKE CHEMIST

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Sr. Mary Vincent

COVER: Winners of the Student Achievement Award in Chemistry. See p. 5.

#### COMMITTEE CHAIRPEOPLE - 1978

Awards & National Nominations...  
Joyce J. Kaufman  
The Johns Hopkins University  
338-7417

Chemical Education...Sr. Mary Vincent  
The College of Notre Dame of Maryland  
435-0100

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Remsen Award.....Dean Robinson  
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*The Chesapeake Chemist* is published monthly September through May by the Maryland Section of the American Chemical Society. Address editorial comments to Eli Freedman, 2411 Diana Road, Baltimore, Md. 21209. Send advertising copy and inquires to Kent R. Zeller, McCormick and Co., Inc., 204 Wight Avenue, Hunt Valley, Md. 21081. The Maryland Section is not responsible for opinions expressed herein. Editorials express the opinions only of their authors. The Editor is responsible for all unsigned material.

The NIH/EPA Substructure Search System will be demonstrated, live, in our booth at the ACS 12th Middle Atlantic Regional Meeting April 5-7, 1978 Hunt Valley, MD

The SSS is a computerized interactive retrieval system of chemical information available on a world-wide, publicly accessible computer network. Among its special features are:

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- Molecular Formula
- Name Fragments
- Ring System

At that time we would be pleased to personally demonstrate it to you or let you operate it yourself. In addition, a full tutorial presentation and hands-on session will be held in one of the rooms of the Hunt Valley Inn on Thursday, April 6, 1978. (Inquire at desk for room number.) The morning session will be devoted to a viewgraph presentation, and the attendees may "play" during the afternoon. This presentation will be open to the public, but advance notification for a "reservation" will be required to insure adequate facilities and documentation. Please contact us if you would like to attend.

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## LOCAL STUDENT AWARDS ANNOUNCED

Twelve students from twelve colleges and universities in the geographical area included by the Maryland Section have been selected to receive awards "FOR OUTSTANDING ACHIEVEMENT IN CHEMISTRY." The award consists of a certificate and a subscription to *The Journal of Chemical Education*.

This year's winners and their schools are:

Sarah Hoffman <i>Anne Arundel Community College</i>	Diana Puglisi <i>Howard Community College</i>
Claire I. Skarda <i>The College of Notre Dame</i>	Mohammed Taghikhani <i>Morgan State University</i>
David Yu <i>Community College of Baltimore</i>	Carol Lisek <i>Towson State University</i>
Paul McCormick <i>Essex Community College</i>	Mark D. Seaman <i>United States Naval Academy</i>
Jerry S. Hawks <i>Harford Community College</i>	John DiGrazia <i>University of Maryland Baltimore County</i>
Iris Jones <i>Hood College</i>	Patrick L. Holt <i>Western Maryland College</i>

All of them have been invited to the Awards Meeting on March 15 as the Section's guests.

This program is part of the Maryland Section's effort to promote the study of chemistry by recognizing outstanding achievement early in students' careers. The selection of the recipients is left entirely to the discretion of the individual chemistry departments.

Carl E. Minnier of Essex Community College, who chaired the program this year, invited all eligible colleges and universities to select their outstanding students for the award. St. John's College felt that it was not appropriate for them to participate. No reply was received from eight schools, including The Johns Hopkins University, Goucher College, and Loyola University.

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# MARCH MEETING

LINDA M. SWEETING

Linda M. Sweeting received the B. Sc. in Honours Physics and Chemistry in 1964 and the M.A. in 1965, both from the University of Toronto; research projects were under the supervision of Keith Yates. In 1969 she received the Ph.D. from the University of California, Los Angeles; her doctoral thesis, under the direction of Frank A. L. Anet, involved a successful search for NMR non-equivalence of enantiomers in chiral media. After one year on the faculty at Occidental College, she joined the faculty of Towson State University where she has been very involved in developing the chemistry program and department and in university governance. She spent the 1976-77 academic year on sabbatical at the National Institutes of Health working with Edwin D. Becker on the degree of association of alcohols at low concentration using NMR spin-lattice relaxation times of carbon-13. Her other research interests include triboluminescence (emission of light by crystals upon mechanical deformation) and use of NMR to determine structure and stereochemistry.

*Abstract of Dr. Sweeting's Talk*

## CARBON-13 NMR OF COMPOUNDS OF BIOLOGICAL IMPORTANCE

Carbon-13 NMR is a powerful addend to the chemist's repertoire of structure determination techniques. Because of the large chemical shifts of carbon and the availability of several modes of heteronuclear (i.e.,  $^1\text{H}$ ) decoupling, the resonances of all carbons may be resolved and assigned at relatively low field for medium-sized compounds. However, the relatively low sensitivity of carbon-13 in NMR (1/5800 that of  $^1\text{H}$  in natural abundance) requires the use of Fourier transform methods to permit signal averaging in reasonably short times. The catalogue of chemical shift and coupling constant information is still growing rapidly as these techniques are applied to a wider variety of compounds. This data base facilitates the interpretation of still more complex spectra and the determination of the structure of other compounds. This seminar will illustrate the spectral interpretation and structure determination using isoquinoline alkaloids and their precursors.

## ARNOLD A. LIEBMAN

Arnold A. Liebman was born in St. Paul, Minnesota. After a four-year tour of duty in the US Air Force, he entered the University of Minnesota, where he received a B.S. degree in Pharmacy (1956), and a Ph.D. in Medicinal Chemistry (1961) under the direction of Professor Frank E. DiGangi.

He was an assistant professor of biochemistry in the College of Pharmacy of Loyola University (New Orleans) from 1961 to 1963. He spent the next three years as a postdoctoral fellow with Professor Henry Rapoport at the University of California at Berkeley. He then became an assistant professor of chemistry in the School of Pharmacy of the University of Maryland at Baltimore from 1966 to 1968, when he accepted a position with Hoffman-La Roche Inc., where he is now a research group chief.

He is a member of the ACS and the AAAS, and a Fellow of the American Institute of Chemists and of the New York Academy of Sciences. He has published over 20 papers, most of them dealing with the synthesis of labelled compounds.

## DATE:

Wednesday, March 15, 1978

## PLACE:

Martin's Eudowood Lecture Room  
Eudowood Plaza, Joppa Road near  
Goucher Boulevard

## PROGRAM & SPEAKERS:

5:30 pm  
Linda M. Sweeting  
Department of Chemistry  
Towson State University  
"Carbon-13 Nuclear Magnetic  
Resonance of Compounds of  
Biological Importance"

8:30 pm  
MARYLAND SECTION STUDENT AWARDS

Arnold A. Liebman  
Hoffman-La Roche, Inc.  
"Approaches to Isotopic  
Syntheses"

## SOCIAL HOUR:

There will be a social hour after the meeting. Refreshments will be served.



Dr. ARNOLD A. LIEBMAN

## COCKTAILS & DINNER:

Eudowood Gardens Dining Room  
Cocktails 6:30-7:15

courtesy of *PACKARD INSTRUMENT CO.*

Hot buffet dinner (7:15) \$6.50 per person, EXCEPT: Spouses, retired chemists and students, and their spouses may attend the dinner at \$4.50. Reservations are necessary for the dinner and should be made by the Friday before the meeting with

ACS RESERVATIONS  
c/o James Leslie

## USE THE CONVENIENT COUPON

(Or phone: 528-7440, 9-5 weekdays  
730-5761, evenings &  
weekends)

It is not necessary to be a member of the ACS to attend the dinner or the talks, and the talks may be attended without attending the dinner. You are invited to bring your spouse and friends to both the dinner and the meeting.



Dr. LINDA M. SWEETING

MARCH, 1978



*Abstract of Dr. Liebman's Talk*

### APPROACHES TO ISOTOPIC SYNTHESSES

Legal restrictions, availability and cost of labelled precursors and the necessity of inserting the label at a specific position in the molecule are factors which determine the synthetic route to a given labelled compound. Whenever possible, fundamental sources of carbon-14 and tritium are used, i.e.,  $\text{Ba}^{14}\text{CO}_3$ ,  $^3\text{H}_2$  and  $^3\text{H}_2\text{O}$ . Syntheses of several representative compounds will be presented along with discussion of some additional problems associated with the use of relatively large quantities of radioactive isotopes. These include detection and consequent problems of contamination as well as the relative instability of tritium labelled compounds with high specific activity.

# 12<sup>th</sup> Middle Atlantic Regional Meeting



**April 5 - 7, 1978**

Hunt Valley Inn

Hunt Valley, Maryland

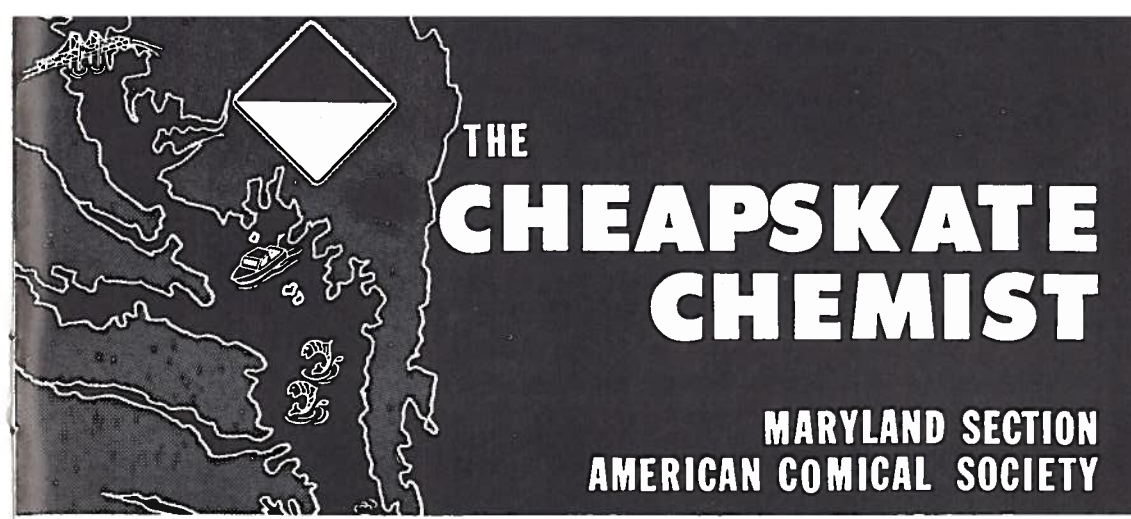
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## SPECIAL SYMPOSIUMS

- Transition Metals in Organic Chemistry
- Isotopes in Analytical Chemistry
- Governmental Regulation and the Chemical Community
- Polymer Characterization
- Extraterrestrial Chemistry

For more information: **PROGRAM CHAIRMAN**

**Alvin Bober**  
US Customs Laboratory  
103 S. Gay Street  
Baltimore, Maryland 21202  
(301) 962-2920



XXXIV

APRIL 1, 1978

NUMBER 4



## SPECIAL MEETING

DATE:

Saturday, April 1, 1978

PLACE:

Druid Ridge Cemetery  
Park Heights Avenue and  
Old Court Road  
Baltimore County, Maryland

SPEAKER & TOPIC:

Henry Frankenstein, M.D., Ph.D., Extraordinary Professor of Experimental Medicine at the Royal Medical Institute und Bier Stube of Liechtenstein: "Recent Experiments on Electrobiological Resuscitation"

COCKTAILS & DINNER:

The cocktail hour will start at noon. The Leadon Turkey Pigments Division will be the host, and has promised to supply enough refreshments for every member to go out and paint the town. Dinner will be on a catch-as-catch can basis. You may catch dinner, or it may catch you.

**POSSIBLE CANCELLATION:** The meeting will be cancelled if there is not a big electrical storm.

**INFORMATION:** For further information, call (301) 844-4445 or (301) 278-5429.

**COVER PICTURE:** Dr. Frankenstein and a graduate student engaged in an electrifying experiment. (Courtesy of Franz R. Lynn)

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## LOCAL NEWS ITEMS

**Goucher College:** An Informant has confirmed that the Goucher College Department of Chemistry was abolished three years ago, although its absence has only recently been noticed. Professors Webb and Houseman have transferred to the newly-formed Department of Domestic Engineering.

**University of Maryland at Baltimore:** The Department of Medicinal Chemistry is busy with new synthetic methods for the development of compounds with exciting physiological properties. They have recently completed the isolation of a substance formed by the coupling of phthalic acid with propellane, using arsenic(III) monosulfide as a catalyst. The new compound, named phallane, has a remarkable structure, and is extremely active. Its activity, however, is inhibited by molecules containing functional groups with oxygen and nitrogen, especially the nitrite group, --ONO, and the nitroso structure, --(NO)(NO)--. Dr. L. Lovelace, one of the workers on this project, has found that the new substance is particularly good as a mouthwash and gargle. *Listerine* and *Scope*, look out!

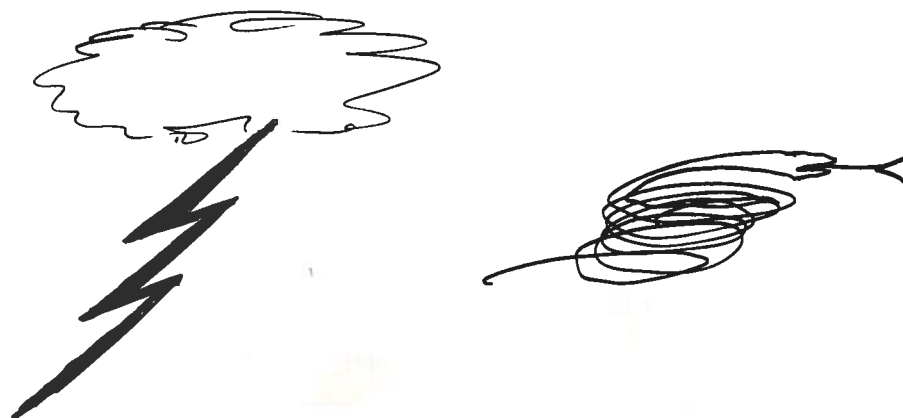
**The Johns Hopkins University (Homewood Campus):** Professor Dean Robinson, Chairman of the Department of Chemistry, has just announced that his Department will offer the Maryland Section of the ACS a large office for its exclusive use, including part-time clerical help. The Departmental Secretary will become the Editorial Assistant for *The Chesapeake Chemist*, effective February 30.

**Aberdeen Proving Ground:** The Headquarters of this large Army Post is in complete chaos resulting from the abolition of Optional Form DD 41, "Routing and Transmittal Slip," better known as the "buck slip." In reply to questions, the Post Commander says only, "No, repeat, no, comment!" with the traditional stiff upper lip. Informed sources, however, report that intermediate echelons are in a state of total confusion now that they can no longer use a buck slip for referring matters to higher headquarters. The official announcement that Form DD 41 was discontinued as an economy move has been received with polite scepticism. The real story, according to the familiar informed sources who declined to be named, is that the Post's Forms Control Office mistakenly received a new Department of the Army directive aimed at over-weight staff officers, and proceeded to implement it with typical bureaucratic mindlessness.

**Basic Research Laboratory:** The US Army's Basic Research Laboratory (BRL) has just announced a breakthrough in gun propellants. The new propellant, which is called BRL-606, has a maximum theoretical performance about 25% greater than conventional U.S. solid gun propellants. Its composition is still classified TOP SECRET, but an Army spokesperson confirmed that BRL-606 is a liquid bipropellant consisting of an oxidizer, code name HAN, and a fuel that is crunchy peanut butter. The oxidizer reacts with the oil in the peanut butter, producing hot propellant gas which ejects the peanuts, much like buck shot. Thus BRL-606 is completely self-contained, so its use will result in substantial logistical savings to the Army. The Quartermaster Corps has also expressed interest in this stunning material. The new propellant was developed jointly by Drs. N. Gross and E. Freudeman. Their supervisor, Mr. R. H. Goer, says that he always had faith that those nutty chemists of his would come up with something. When asked about the future of BRL-606, Mr. Goer expressed some doubt whether his branch would have the fiscal resources (i.e., money) to continue the work. The initial development work was supported by a grant of \$2 million from the peanut division of the National Orchardmen and Society of Independent Hoers (NOSIH). As a natural result, BRL management cut his branch's budget by \$2.5 million for the next fiscal year. Mr. Goer said that he will consider the matter further as soon as he returns from a quick six-month's trip to England, Ireland, Scotland, Wales, France, Belgium, the Netherlands, Denmark, Finland, Norway, Sweden, West Germany, Luxembourg, Italy, Andorra, and Monaco.

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## THE MANAGING DIRECTOR SPEAKS...



...to the Director of Research

...to the bench chemist

The Chesapeake Chemist

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