



# THE CHESAPEAKE CHEMIST

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY



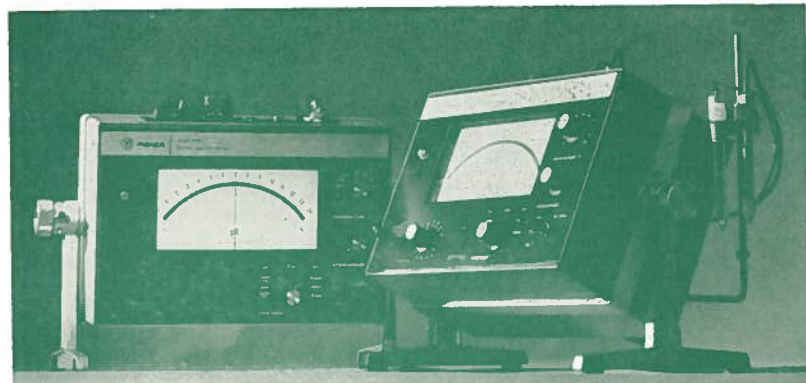


# THE CHESAPEAKE CHEMIST

VOL. XXVI

DECEMBER, 1970

NUMBER 9



ACCUMET 220

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## These new Fisher pH Meters are versatile, adaptable and pHandsome!

The new AccuMET® 320 and 220 pH Meters combine performance with greater convenience, versatility and handsome design. Some features that you will appreciate in both models are:

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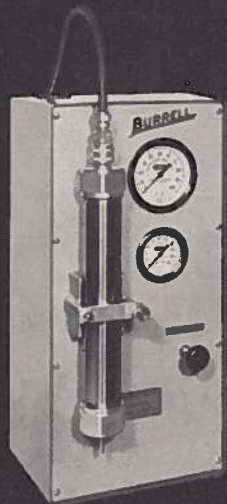
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DECEMBER, 1970

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**DECEMBER MEETING**



**RONALD G. LAWLER**

**DATE:**

**WEDNESDAY, DECEMBER 16,  
1970**

**PLACE:**

**Eudowood Gardens Lecture  
Room, Eudowood Plaza, Joppa  
Road near Goucher Boulevard.**

**SPEAKERS AND TOPICS:**

**5:30 P.M. Dr. Ronald G. Lawler,  
Brown Univ. "Effects of Nuclear  
Spin on Chemical Reactivity".  
8:30 P.M. Dr. P. von Rague  
Schleyer, Princeton Univ.  
"Adamantanes".**

**SOCIAL HOUR:**

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

**COCKTAILS AND DINNER:**

**Eudowood Gardens Dining Room.  
Price is \$4.75 per person for  
cocktails (6:30-7:15, unlimited  
quantity) and hot buffet din-  
ner (7:15). Students and their  
spouses may attend the dinner  
for \$3.00. Reservations are nec-  
essary for the dinner, and should  
be made with Mr. Allen Bednar-  
czyk, McCormick and Co., Inc.,  
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Md. 21030, phone 666-3155, no  
later than December 11. It is  
not necessary to be a member of  
the American Chemical Society  
to attend the dinner or the talks,  
and the talks may be attended  
without attending the dinner.  
You are invited to bring your  
wife and friends to both the  
dinner and the meeting.**



**P. von RAGUE SCHLEYER**



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## DR. R. G. LAWLER

Ronald G. Lawler received his Ph.D. from the University of California at Berkeley in 1964 in the field of physical organic chemistry. From 1963 to 1965 he was a postdoctoral fellow at Columbia University, carrying out research in electron spin resonance spectroscopy. In 1965 he joined the faculty of Brown University where he is presently Associate Professor of Chemistry. He has held National Science Foundation predoctoral and postdoctoral fellowships and is currently a research fellow of the Alfred P. Sloan Foundation. His research interests include electron and nuclear magnetic resonance spectroscopy and theoretical organic chemistry.

### EFFECTS OF NUCLEAR SPINS ON CHEMICAL REACTIVITY

It is usually considered that the weak interactions arising from nuclear magnetic moments have negligible influence on chemical properties. Recently, however, compelling evidence has arisen for observable effects of nuclear spins on the rate constants of reactions of pairs of organic free radicals in liquid solution. These effects, collectively known as Chemically Induced Dynamic Nuclear Polarization (CIDNP), are revealed in the high resolution nmr spectra of protons and other nuclei in the products of rapid reactions proceeding via radical intermediates. The observation of this phenomenon promises to provide a significant tool for probing the microdynamics of liquids and the details of free radical reaction mechanisms. Examples taken from recent work at Brown University will be discussed.

#### COVER PHOTOGRAPH CONTEST

Don't delay—submit your favorite photographs for the cover of future issues to the editor of the *Chesapeake Chemist*.

This month's cover: Jessup Baptist Church, submitted by Mr. Robert F. Perkins.

## DR. P. R. SCHLEYER

Professor Paul R. Schleyer received his Ph.D. from Harvard in 1954 under the direction of P. D. Bartlett. Since then, he has been a member of the faculty at Princeton where he now holds the title of Eugene Higgins Professor of Chemistry. He is well known for his many contributions in physical-organic chemistry. This work includes not only the chemistry of bridged ring systems but also studies of carbonium reactivity and stability as well as spectroscopic studies of hydrogen bonding and conformational analysis. He is the author or co-author of well over a hundred publications in this area.

Professor Schleyer is in high demand as a lecturer. He has been the Glidden Lecturer at the University of Florida, the Sun Oil Lecturer at the University of Ohio, the Merck Lecturer at Bucknell and the Lind Lecturer in Tennessee. He has been a visiting professor at a number of institutions here and abroad and has held Sloan, Guggenheim and Fulbright Fellowships. Currently, he is on the editorial boards of *Chemical Reviews* and the *Journal of the American Chemical Society*.

### RECENT DEVELOPMENTS IN THE CHEMISTRY OF ADAMANTANE, DIAMANTANE, AND DIAMONDOID MOLECULES

The smallest structural unit of the diamond is the molecule adamantane, a beautiful interlocking network of chair-form cyclohexane rings. Adamantane, and other diamondoid molecules, are characterized by unusual chemical, physical, and physiological properties. These molecules, because of their high thermodynamic stability, can often be prepared by rearrangement from readily available starting materials. Furthermore, because of the rigidity of their carbon framework, diamondoid molecules make ideal substrates for testing theories of physical-organic chemistry. Illustrations will be taken from our recent work.

## RESULTS OF SURVEY OF READER INTERESTS

Some 44 members took the trouble to complete and return the survey enclosed in the October issue of the *Chesapeake Chemist*. The approximate percent response to each answer is printed below. Features such as Local Section News, a feature article on a local company, or educational institution, and others rated very high and deserve greater at-

tention. Features such as a quiz and/or a book review section apparently have low reader interest and will not be seriously considered. Nine people indicated a willingness to contribute to the *Chesapeake Chemist* and are presently being contacted. Their interest and cooperation is appreciated.

### Check Appropriate Box

Subject	Normally read in some detail	Skim and read if catches my eye	Glance at it and move on	Ignore completely
Advertisements	8	54	26	10
Biographies of Speakers	62	33	5	—
Local Section News	56	31	13	—
Meeting Announcements	79	18	3	—
Minutes-Executive Committee	33	36	21	10
New Members	23	31	38	8

What do you think about including the following items? ... high <.....Desirability.....> low

1. A few jokes.	33	28	21	18
2. A feature article on a local company, educational institution.	74	12	5	10
3. A quiz or puzzle.	15	41	13	31
4. Photo contest for front page.	23	37	17	23
5. Book review section.	26	28	26	21
6. A "letter to the editor" section.	51	27	11	11

## ACS CHEMICAL TECHNICIAN SCHOLARSHIP PROGRAM

The Maryland Section has just initiated a scholarship program to help promising students to enter the Chemical Technician Training Program at Catonsville Community College. The goal of the program is to seek out students who have a real interest in and aptitude for chemical laboratory work, but who do not wish to enter a four-year college. The financial need of the students is also taken into consideration.

Davison Division of W. R. Grace Co., the H.A.B. Dunning Foundation, Inc. and the Maryland Section of the A.C.S. have contributed funds to this program. Stu-

dents are nominated by advisors and teachers of high schools in Baltimore City. The winners of the first set of scholarships were selected by a committee consisting of Dr. Belle Otto Talbot, Dr. John Gryder, Mr. Joseph Scarlett and Dr. Ernest F. Silversmith (chairman). The committee took into account the high school academic record of the student, letters of recommendation, the student's interest in becoming a chemical technician (as expressed in a brief essay) as well as financial need.

(Continued on Page 9)

## SCHOLARSHIP PROGRAM

(Continued from Page 8)

Mr. David S. Dixon, a 1970 graduate of Dunbar High School, was selected as one of the winners; he is currently pursuing the Chemical Technician Program at Catonsville. A second scholarship was also awarded, but the recipient declined it.

It is hoped that this scholarship program will become a continuing project of the Maryland Section. The Education Committee is indebted to Dr. Richard Kokes, who solicited the funds, and to the many high school advisors and teachers who nominated students and wrote letters of recommendation. Thanks are also due Mrs. Patricia Valentine of Morgan State College for her yeoman effort in carrying out the secretarial work related to the program. If the program is to continue, additional help (both financial and otherwise) will be needed.

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## JANUARY MEETING — CANCELLED

Due to activities associated with the 6th MARM on February 3, 4, and 5, the regularly scheduled January meeting has been cancelled. This will allow everyone to participate fully in the 6th MARM.

## 6th MARM

February 3, 4 & 5

## ACS SHORT COURSES

The following ACS Short Courses are scheduled:

### BUSINESS ASPECTS OF CHEMISTRY

Jan. 15-16, Chicago, Ill. Instructor: Dr. Aimison Jonnard; fee \$80.

### FLUORESCENCE AND PHOSPHORESCENCE SPECTROMETRY

Jan. 21-23, Philadelphia, Pa. Instructor: Dr. G. G. Guilbault; fee, \$115.

### COLUMN SELECTION IN GAS CHROMATOGRAPHY

Feb. 6, Baltimore, Md. Instructors: Dr. Harold M. McNair and Dr. Walter R. Supina; fee \$60; in conjunction with ACS 6th Middle Atlantic Regional Meeting.

This course explores the critical step in gas chromatography, the selection of the proper column, from both a theoretical and practical point of view. Column material, length, diameter, solid support, and per cent liquid phase are discussed. The results obtained with different columns and different operating parameters are shown in chromatograms. Rules are developed to aid in choosing proper conditions.

To register or obtain complete information on the courses and student discounts, write to Education Office, American Chemical Society, 1155—16th St., N.W., Washington, D. C. 20036. During the two-week period prior to a course, registration should be made by telephone: area code 202, 737-3337 ext. 258.

# WELCOME . . .

The following people have recently joined the Maryland Section of the American Chemical Society. The Local Section welcomes each one and invites each member to attend Local Section meetings and to participate in Local Section activities.

James Landes Alderfer, JHU Med. Inst., Baltimore

Dr. Janice Sweeny Barton, JHU, Baltimore

Clinton G. Carlberg, Town & Country Blvd., Ellicott City

Amelia C. Finan, Anne Arundel Comm. Coll., Arnold

Dr. Maria Malachowski Heaton, JHU, Baltimore

Wu Hsiung Huang, JHU, Baltimore

Mr. Robert Edward McCarthy, N. Charles St., Baltimore

1st Lt. Victor Manuel Mendez, Baker Circle, Edgewood

Barry Edward North, Southern Cross Dr., Baltimore

Dr. Douglas Warren Reichard, Edgewood Arsenal

Akshay Dolatrai Vidyarthi, Franklin & Park Sts., Baltimore

Mrs. Theodora Kinderhan Watts, Turnabout Lane, Columbia

## SECTION OFFICERS FOR 1971

The election of officers, councilors, and members-at-large of the executive committee for the Maryland Section for 1971 was held at the November Meeting. Dr. Richard Kokes of Johns Hopkins University will be chairman. The Chairman-elect will be Dr. Joyce J. Kaufman, Johns Hopkins University. Dr. Herbert S. Aaron will continue as secretary, Theodor C. Berenthien will be treasurer. Councilor and alternate councilor will be Joyce J. Kaufman and Leon Weber, respectively. The new Members-at-large will be A. Allen Bednarczyk, Donald E. Jones, Edward J. Poziomek, Ernest F. Silversmith, and Norbert M. Zaczek.

### COPY DEADLINE

Copy for the *Chesapeake Chemist* should be forwarded to the Editor not later than the tenth of the month preceding publication.

IF YOU CHANGE YOUR ADDRESS . . . Please do not notify the Editor of the *Chesapeake Chemist*, but send your new and old addresses to: The American Chemical Society, 1155 Sixteenth Street, N.W., Washington, D. C. 20036. The Maryland Section will then be notified.

## ..... Tear-Out Dinner Reservation Form .....

There is enclosed \$..... (\$4.75 per person)\* for cocktails and dinner at Eudowood Caterers, Eudowood Plaza, on Wednesday, December 16, 1970 for the following persons.\*\*

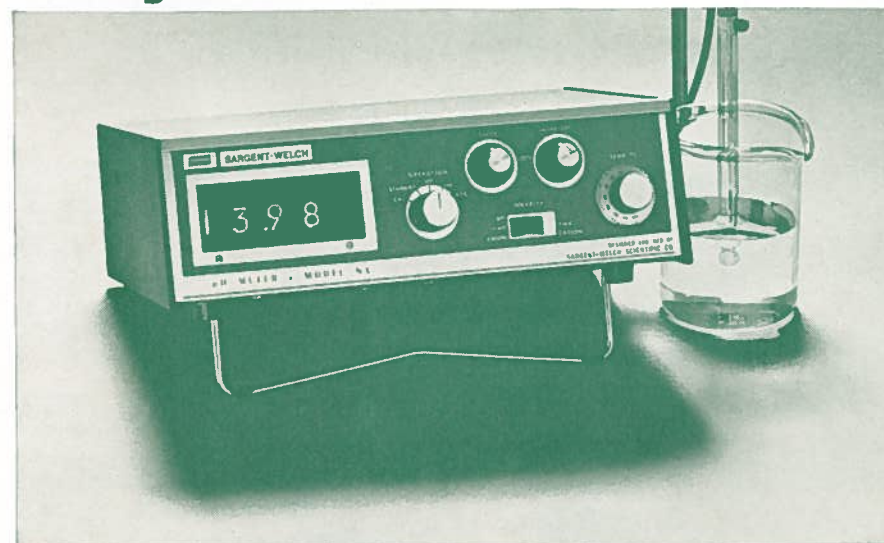
Name	(Please Print or Typewrite.)	Affiliation
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_____	_____	_____

\*Please make checks payable to Maryland Section, ACS and mail together with reservation form to Mr. Allen Bednarczyk, McCormick and Co., Inc., 204 Wight Ave., Cockeysville, Md. 21030, or phone 666-3155.

\*\*Return by December 11.

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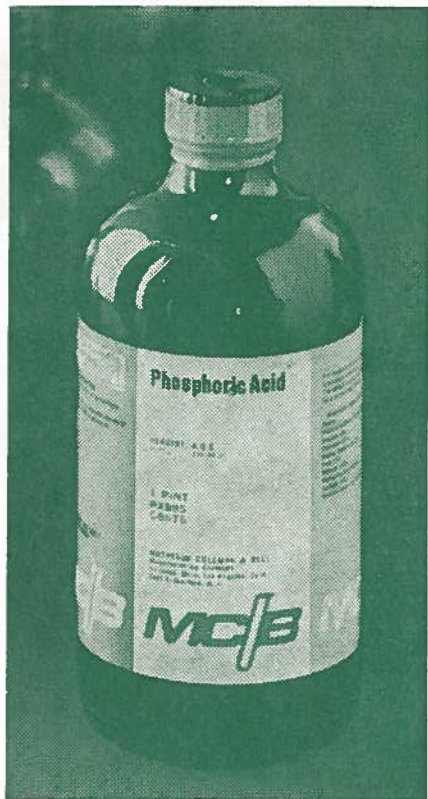
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