



THE **CHESAPEAKE
CHEMIST**

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XXXVI

MAY, 1980

NUMBER 5

Presented to

Roald Hoffmann

on the occasion of his

Remsen Memorial Lecture

sponsored by

*The Maryland Section of the American
Chemical Society*

in memory of

Ira Remsen

*Teacher, Investigator, Author, Administrator
June 11, 1980*

SEASON'S END

This is the last issue of *The Chesapeake Chemist* for the current season. It contains the minutes of the last meeting of the Executive Committee. It also contains a report of our Councilors on the last Council meeting in Houston. Your elected officers would like to hear your ideas. What is this cut-rate membership arrangement the Rubber Division is pushing? Talk to your Councilors. Find out about it. Make your opinion known.

The Chesapeake Chemist is also interested in your opinions. We take pleasure in the fact that we have held our costs in check despite inflation, thanks to a new printer, the continuing professional aid of an anonymous friend, and the fact that we have limited most issues to eight pages, but we will make every effort to publish members' contributions. Remember, however, that our deadline is seven weeks before each meeting date.

The May meeting (June 11) is also the last Maryland Section meeting of the season, and once again the Remsen Award Committee has done an admirable job adding the name of Roald Hoffmann to a list of highly distinguished awardees.

A whole new season begins in September, and we look forward to meeting and hearing the speakers selected by Program Chairman Elwin Penski. The first meeting is scheduled for September 17, and it will feature James R. Griffith of the Naval Research Laboratory speaking on Novel Polymer Synthesis and Applications and Aaron Block of Exxon discussing Polymer Conductors.

Until then, everyone have a pleasant summer.



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Towson State University

FALL 1980 EVENING CHEMISTRY OFFERINGS

CHEM 1905.342 PHYSICAL CHEMISTRY - STRUCTURE AND KINETICS. Meets on Tuesday evenings, 7-10 pm. Prerequisites Chem 1905.102, Math 1701.274, and Phys 1902.222 or 1902.212. (3 credits)

CHEM 1905.350 PRINCIPLES OF BIOCHEMISTRY. Meets on Monday and Wednesday evenings, 7-10 pm. Prerequisites Chem 1905.330 or 1905.332. (5 credits)

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ACS GRANTS AND AWARDS PROGRAM

Prominent, even at a first glance, are ACS Awards and The Petroleum Research Fund grants program. Both are administered at ACS Headquarters by the ACS Department of Research Grants and Awards. ACS and a number of industrial and non-profit sponsors support the Awards Program; PRF is entirely supported from the income from The Petroleum Research Fund Trust, Morgan Guaranty Trust Company, Trustee.

Recognition of outstanding contributors to the advancement of chemistry and chemical engineering is generally regarded as an obligation of a society dedicated to those sciences. Awards serve as media for the presentation of the benefits of chemistry to the public, as well. The ACS, at all levels, national, divisional, and local section, administers awards for scientific achievement, and public and professional service. The Society's leading award, the Priestley Medal, has been awarded, beginning in 1923, "to recognized distinguished services to chemistry". The James T. Grady Award for Interpreting Chemistry for the Public recognizes individuals who, though not chemists, have contributed to increased public understanding of chemistry. Other awards recognize achievement in a number of specialized fields of chemistry, chemical engineering, and education. Awards administered by the national ACS draw upon the scientific knowledge and the voluntary effort of a broad spectrum of members, who serve on canvassing and selection committees. One nomination for any award may be made by any ACS member. ACS Awards are presented by the President of the Society at a public Awards Dinner, a highlight of every spring National Meeting. In 1979, 21 ACS Awards were presented; in 1980 there will be 26.

The PRF grants program, administered by ACS, provides financial assistance to fundamental research projects carried out by faculty scientist at some 280 colleges and universities in the U. S. and several foreign countries. Grants are recommended on the basis of unsolicited formal scientific proposals by a scientific Advisory Board of 24 experts in various fields of pure science appropriate to support by the PRF. Typically, PRF grants are used to support the project of a graduate student or a postdoctoral fellow, working in association with the faculty scientist. Specific programs are directed to beginning investigators (ACS-PRF Starter Grants) and faculty in primarily undergraduate departments, who work with their students in the summer. The PRF program enables the Society to assist educational projects in fundamental research with grants totalling about six million dollars per year. Funds granted under the PRF program are highly flexible and therefore more effective than grants of other organizations which are obliged to restrict the research of investigators. The Society has also been able to draw attention to needs in the academic research community by special PRF programs, such as special graduate or postdoctoral fellowships.

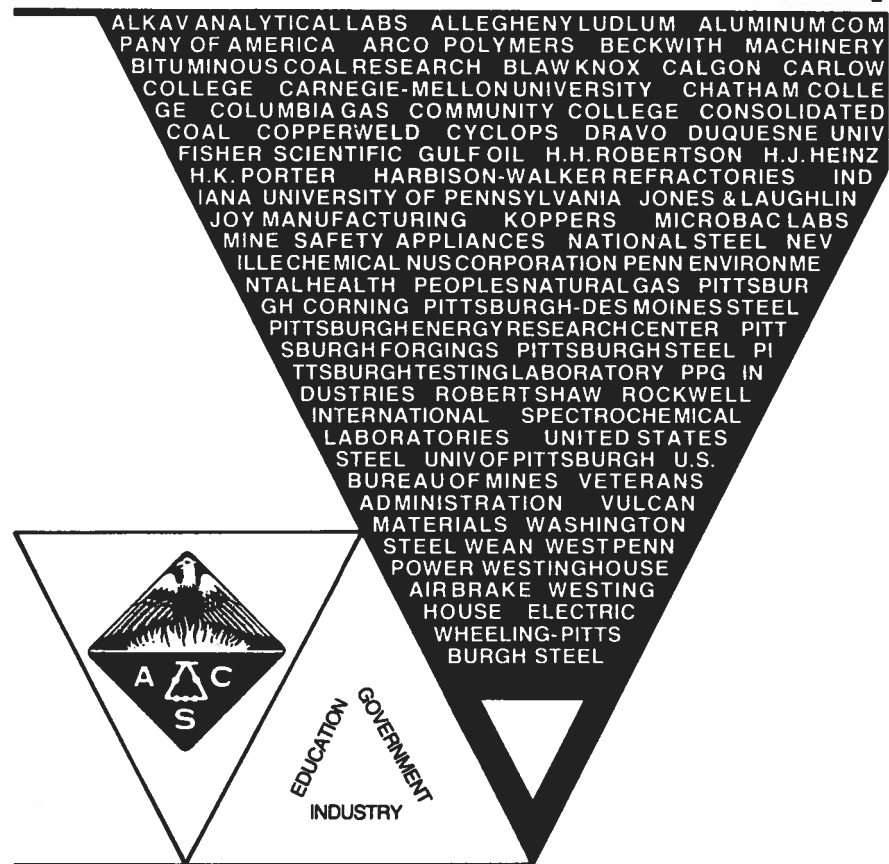
Further information on the Society's grants and awards programs may be obtained from the annual publications "Awards Administered by ACS" (ACS Bulletin 7), and "Annual Report on Research under Sponsorship of The Petroleum Research Fund". Both are available, *gratis*, from the ACS Department of Research Grants and Awards at ACS Headquarters.

Persons wishing to make a nomination for the 1980 MARYLAND CHEMIST AWARD should contact Dr. Joyce J. Kaufman of the Awards Committee.

The Maryland Chemist Award was established to recognize and to honor, each year, a member of the Maryland Section for outstanding achievement in the field of chemistry. The achievement may be in pure or applied chemistry, chemical engineering or chemical education.

Pittsburgh: Triangle of Science

12th Central Regional Meeting of the American Chemical Society



The William Penn Hotel, Pittsburgh, Pennsylvania
November 12, 13, 14, 1980

The Call for Papers will be issued in February, 1980.

For more information, contact: **Carol Knapp or Gerst Gibbon**
U.S. Department of Energy
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ROALD HOFFMANN

Roald Hoffmann was born in Poland in 1937 and came to the United States in 1949. He received his education at Stuyvesant High School, Columbia College and Harvard University, receiving a Ph.D. in chemical physics in 1962. From 1962 to 1965 he was a Junior Fellow of the Society of Fellows of Harvard. During this period he developed semiempirical methods of calculation of the electronic structure of molecules as a direct outgrowth of thesis work on the boron hydrides with W. N. Lipscomb, and through the encouragement of E. J. Corey became interested in structural and mechanistic problems in organic molecules. At the end of his stay at Harvard he began his collaboration with R. B. Woodward on the theory of concerted reactions. He joined the faculty of Cornell University in 1965 and in 1974 became the John A. Newman Professor of Physical Science.

Among many honors, Dr. Hoffmann received the 1969 ACS Award in Pure Chemistry, the 1969 Fresenius Award of Phi Lambda Upsilon, the 1969 Harrison Howe Award of the Rochester Section of the ACS, and the 1970 Award of the International Academy of Quantum Molecular Sciences. In 1973 Dr. Hoffmann, with Dr. Woodward, received the first Arthur C. Cope Award in Organic Chemistry from the ACS. In 1974 he received the Pauling Award of the Puget Sound and Oregon Sections of the ACS and in 1977 he received an honorary Doctor of Technology degree from the Royal Institute of Technology, Stockholm, Sweden. Dr. Hoffmann is a member of the American Academy of Arts and Sciences and of the National Academy of Sciences.

Dr. Hoffmann's research interests are in the electronic structure of stable and unstable molecules, and of transition states of reactions. He applies a variety of computational methods, semiempirical and nonempirical, as well as qualitative arguments to problems of structure and reactivity of both organic and inorganic molecules of medium size. Recently Dr. Hoffmann and his collaborators have been exploring the structure and reactivity of inorganic and organometallic molecules.

THEORETICAL ORGANOMETALLIC CHEMISTRY

When bound in transition metal complexes, organic molecules such as olefins, acetylenes, polyenes, cyclopolyenes and carbenes exhibit a variety of equilibrium geometries. The range of observed barriers to a conformational change as simple as rotation around the metal-ligand coordination axis is impressively large, from 0 to > 40 kcal/mole. Clearly it is electronic factors that are operative in setting the preferred geometries in these molecules and in controlling the magnitude of the conformational barriers. In this lecture several specific examples of the theory of these conformational phenomena will be presented.

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THE 35th REMSEN LECTURE

DATE AND TIME:

Wednesday, June 11, 1980
8:30 pm

PLACE:

Remsen Hall, Room 101
Homewood Campus of
The Johns Hopkins University

SPEAKER:

Dr. Roald Hoffmann
Cornell University

SUBJECT:

"Theoretical Organometallic
Chemistry"

COCKTAILS AND DINNER:

The Johns Hopkins University
Glass Pavilion

Cocktails: 6:00 pm
Dinner: 7:00 pm

Dinner \$9.00 per person, except
spouses, retired chemists and stu-
dents may attend the dinner for \$7.00



DR. ROALD HOFFMANN

Reservations should be made by send-
ing checks to

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before June 6, 1980

It is not necessary to be a member of the American Chemical Society to attend either the dinner or the talk. You may also attend the lecture without attending the dinner.

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EXECUTIVE COMMITTEE MINUTES

The Executive Committee of the Maryland Section, American Chemical Society, was called to order at 7:40 P.M. by the Chairman, Dr. Miller, on Wednesday, April 2, 1980, at the Knott Science Center, Notre Dame College. The following members were present: Alvin Bober, R.L. Caret, Merle Eiss, Donald Hoster, Frances Hummel, Donald Jones, Kristine Kirk, Harold Klapper, Robert Kreps, Melvin Miller, Timothy Parr, Elwin Penski, Ray Petersen, Nolan Phillips, David Roswell, Ernest Silversmith and Sister Mary Vincent. The minutes of the January meeting were read and approved with the following corrections: the September meeting of the Executive Committee will be held on September 24, 1980; Mr. Richard Rebbert is arranging the symposium for high school teachers; the awards at the March meeting were for Maryland college students, not high school students; there are no forms on which the Councilors should submit expenses of national meetings; they should submit a record of the travel expense to the Treasurer after the meeting; he should then submit a claim to the national officer for one-half the amount within thirty days of the national meeting, and reimburse the Councilor immediately.

The Chairman made the following announcements: the grant for the high school teachers symposium was approved, and a check for \$250 was received, one-half the amount requested. The response from the teachers has not been adequate; the conference may be postponed until a more convenient date, and the money returned. Dr. Miller will call everyone who expressed interest in the conference and schedule the meeting for another time.

Program. Mr. Penski distributed a list of the programs which he has arranged for the year 1980-1981; speakers have been obtained for the meetings from September until November, and for January; the Maryland Chemist Award will provide the December speaker. Dates for the other meetings are as follows: February 18, March 18, April 15, and the Remsen Award in either May or June; speakers will be obtained for these meetings.

Treasurer. Mr. Klapper distributed an itemized list of the financial status of the Section. He has received a list of the members who have paid 1980 dues. He has also discovered that the Section has tax-exempt status for certain items; the number is 05440, but the stamp has not been given to him. There is only one bill outstanding at present; the statement for the March dinners was just received. He would like to be authorized to invest some of the Section funds in Treasury bills, which yield more interest than Savings and Loan.

Chemical Education and Safety. Sister Mary Vincent requested dates for publication of *The Chesapeake Chemist*. The April *Chemist* should be in our hands on Monday or Tuesday, April 7 or 8; the deadline for the June 11 meeting is April 11, 1980; Dr. Petersen stated that her list can be published in June if received by that date.

House and By-Laws. Mr. Phillips reported that 123 persons attended the March dinner at Towson State; the estimate for the lecture portion of the meeting was 140.

Public Relations. Dr. Caret reported that letters announcing the March meeting had been sent to the Engineering Society of Baltimore, the Art Museum and other museums in Baltimore. He is working with the press contact at Towson State, in an effort to improve publicity.

Remsen Award. Dr. Robinson could not be present; he sent a report that Dr. Roald Hoffmann of Cornell University has been selected for this award; dinner will be in the Glass Pavilion at Johns Hopkins, since the Faculty Club was previously booked for this date.

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Councilors. Dr. Jones reported that all four Councilors went to Houston for the recent national ACS meeting. There was very little discussion; urgent action was requested for dues allocations to the sections, to be indexed to inflation. This matter will be discussed in August. Two matters were re-committed: 1) privileges of affiliates; the Rubber Division has 4,000 members, half of whom have affiliate status; they wish to have the by-laws changed to permit these affiliates to vote for division officers, but not to hold office; at present, the affiliates may not hold office, be on the Executive Board, or vote for Councilors and Officers of local sections (by-law 11, sections 2 and 3); the Rubber Division wishes to have these sections changed; 2) allocation of dues money to sections and divisions should be changed; the divisions are not requesting new money; they want regular payments which are tied to the Consumer Price Index; some of the money allocated to local sections and divisions comes from dues, and some from meetings and expositions; Dr. Jones asked the Executive Board members to read the discussion of this issue which will appear in *Chemical & Engineering News* between now and the August national meeting.

Other matters discussed by the Council were: nominees for President-elect are Mary Good and Robert Parry; the dues will be increased by \$4.00 in 1981; recommendations for the 1986 meeting were that the spring meeting be held in Atlantic City, N.J., and another joint meeting with the international group in Honolulu in the fall; the Committee on Meetings recommended that the fall meeting in 1986 be in Anaheim, Calif., with the possibility of a third meeting to include international groups that year; a change in the travel allowance for Councilors is being contemplated - the national society may pay half of the travel expenses of all Councilors to all of the meetings; other matters which will soon be discussed include amendments to the by-laws on fair elections and requirements for membership - this will be presented in *C & E News* in August.

Awards Committee. Mr. Cohen sent a report that the Committee has recommended Dr. Donald Jones to be the first recipient of the award for outstanding service to the Maryland Section in September. Dr. Roswell moved that this report be accepted; it was seconded by Dr. Silversmith, and the motion carried unanimously.

Old Business. Dr. Jones reported that he wished suggestions for the 1985 MARM, to be held in Baltimore. He suggested that a place should be selected and arrangements made by this time next year. He will investigate the Convention Center and the Baltimore Hilton Hotel as possibilities. A Program Chairman and a General Chairman will be appointed for this meeting very soon, so that they can begin to work on other arrangements.

New Business. National has started a new program called SAND - Student Affiliates and No Dues, until six months after the student receives his degree.

A booklet has been received from national: *Health and Safety Guidelines for Chemistry Teachers*.

There will be a telephone number for health and safety matters, which will give references whereby answers to questions on this subject may be located.

A booklet has been received with programs for high schools. There is also a newsletter on this subject; high school teachers may be placed on the mailing list upon request. Merle Eiss mentioned that she has entertained students who have never seen Chemical Abstracts. In most colleges, students are given training in the use of this source in the spring semester of their sophomore year.
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Reduced prices for students are recommended for ACS short courses.

Two letters were read: there will be a meeting of local section officers at the MARM in April at Valley Forge; the national office has requested nominations from the sections for Directors-at-large and for various committee appointments.

Mr. Klapper moved that he be given discretionary power to invest a portion of the local section funds in a safe investment which will receive higher interest than we are now receiving. The motion was seconded by Frances Hummel, and carried after a brief discussion.

The meeting was adjourned at 9:00 P.M.

Respectfully submitted,

Frances C. Hummel

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COUNCILORS' REPORT - HOUSTON MEETING

The Maryland Section was well represented with all four of your Councilors present and voting. In all cases for this Council meeting we voted alike. To refresh your memory about the various items which were voted upon, see the March 10 issue of *C. & E. News*, page 43.

The two most controversial proposals were re-committed to the appropriate committees. These were: 1) privileges of affiliates, and 2) yearly allotments to Divisions. These will come up for final action at the San Francisco meeting. Please be sure to let each of us know your feelings about these important matters. We all voted in favor of recommitment. The two are bound together in the thoughts of many Councilors because if the change in privileges of affiliates is passed then non-ACS members would be voting on fund allocations within Divisions which is at least partially derived from member dues. Consider that the Rubber Division has almost half of its membership in affiliates. They also would like to amend the petition so that persons not members of the Society but eligible to be could become affiliates. At present this is not possible nor is it proposed in the change before the Council. Please read these carefully. Your Councilors have ambivalent feelings about these changes.

We voted in favor of the change in the by-law balancing geographic regions, making the Past President an officer of the Society, method of calculating dues, funds apportionment to local sections and waiver of membership dues for student affiliates converting to full membership on graduation. We voted to limit the dues increase for next year to \$4 rather than the \$6 calculated on the CPI. We also voted for having the 1986 meeting in Anaheim rather than Honolulu. Lastly we voted against a request for urgent action on a petition simply because it was not urgent and will be voted on in San Francisco in August.

Respectfully submitted,
Your Councilors

Charles Rowell
David Roswell

Donald E. Jones
F. Timothy Parr

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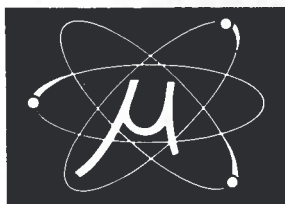
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