



THE CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XXXV

MARCH, 1979

NUMBER 3

AMERICAN CHEMICAL SOCIETY



For
Outstanding
Achievement
in
Chemistry



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STUDENT AWARDS MEETING



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Students from seventeen 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:

Chloe Daffer Anne Arundel Community College	Gayle Stier Howard Community College
Robin Roberson College of Notre Dame	Paul Jager Loyola College
Be Thi Trieu Community College of Baltimore	William Boom Morgan State University
Joseph Griffin Coppin State	Steven Holland St. John's College
George Dobash Essex Community College	Alex Vennos Towson State University
Frederick Community College Stuart Cramer	Midshipman Roger K. Ishii United States Naval Academy
Nancy D. Annan Goucher College	Richard Gough University of Maryland Baltimore County
Chuck Chadwick Harford Community College	Michael J. O'Loughlin Western Maryland College
Cynthia Crouse Hood College	

All of them have been invited to the Awards Meeting on March 28 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 again this year, invited all eligible colleges and universities to select their outstanding students for the award. No reply was received from The Johns Hopkins University.

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DIRECTIONS FOR THE MARCH MEETING AT THE NAVAL ACADEMY

After crossing the old Severn River bridge on MD Route 2, go to the second stop light and turn left onto King George Street. Follow King George to the end (Gate 1). The occupant of the house in the middle of the gate is more of a tourist guide than guard but *stop if he signals you to do so*. Otherwise, proceed straight ahead and follow the road around the sea wall by the following: Field house (on the right), tourist building (on the left), around the series of playing fields and by the sailing center. Turn right just beyond the sailing center and proceed past the yacht basin and the building on the left.

You may park anywhere along the road you are on, in the parking lot to your left just beyond the building or the lot in the far end of the athletic field to your left. This latter is closest to the site of the meeting. The talks will be given in Michelson 117. The Michelson-Chauvenet complex is the building that lies parallel to the road and has two towers on a parapet as its distinguishing feature. The room is at parapet level and should be approached by climbing the stairs at the end near the small parking lot noted above.

NOMINATING COMMITTEE SELECTED

The nominating committee for the 1980 officers, councilors, and executive committee members of the Maryland Section is soliciting nominations for the following positions in 1980: chairperson-elect (who will become chairperson in 1981), secretary, treasurer, councilor, alternate councilor, and 5 members-at-large. Candidates must be members of the Maryland Section and have expressed a willingness to serve if elected. Incumbents (other than the chairperson-elect) are eligible for reelection.

We very much want to have broad participation in the Section's activities, and we are always looking for new ideas and new blood. Therefore, if you have thoughts or ideas about persons who should be considered for offices, please give your suggestions to a member of the nominating committee by April 14, 1979. The members of the committee are:

Harold Klapper, Chemical Systems Lab, APG-EA	671-3863(work)
Raymond Petersen, City of Baltimore	465-8520(home)
Louis Sacchetti, Fisher Scientific Co.	788-3159(home)
Sister Vincent, College of Notre Dame	435-0100(work)
James Leslie, University of Maryland at Baltimore, Chairman	528-7440(work)

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 Merle I. Eiss, McCormick and Co., Inc., 204 Wight Avenue, Hunt Valley, Md. 21031. 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.

B. J. LUBEROFF

B. J. Luberoff is a consultant to the chemical industries and Editor of *CHEMTECH*, the American Chemical Society's polydisciplinary magazine.

For eight years prior to establishing his private practice, he was Manager of Process Research with the Lummus Company who, in 1962, asked him to establish a group to create processes for commodity chemicals. Their work concentrated on catalysis, separation, purification and waste handling, and yielded such processes as ammoxidation to e.g. terephthalic acid; a unique chlorination/alkylation route to "soft" detergents and a physico-chemical process to remove CO₂ from gases (e.g. H₂).

From 1959 to 1962, he was responsible for that part of the Stauffer Chemical Company's Eastern Laboratory that did synthesis and preliminary scale-up for agricultural pesticides and specialty organic and inorganic chemicals. The Analytical Service, which included pesticide residue work, was also under his direction.

Earlier, with American Cyanamid, he developed processes to make and polymerize several monomers based on high pressure acetylene chemistry.

Dr. Luberoff studied chemical engineering at the Cooper Union and physical-organic chemistry at Columbia. He served on the faculty of both institutions and was Director of Continuing Education in Science at Rutgers University during the 1976-1978 academic years.

A licensed engineer, he holds several dozen U.S. and foreign patents and has published in the science literature on reaction mechanisms, catalysis, economics and education. He has been a director of CPS Chemical Company, The New Jersey Council for R & D, the Catalysis Club of N.Y./N.J. and the I and EC Division of ACS. He is a Councilor of ACS and Past Chairman of its largest (North Jersey) Section. He is also a member of AIChE, AIC Societe de Chemie Industrielle, the American Society of Business Press Editors and the American Society of Magazine Editors.

Abstract of Dr. Luberoff's Talk

INNOVATION FOR FUN AND PROFIT

Graduate education of chemists (and often of engineers) stresses discovery and proof to the point that they are often understood to be an ultimate goal in and of themselves. In fact, so far as society is concerned, that goal is innovation, toward which invention is just one step. Furthermore, and surprisingly to some, invention is neither a necessary nor a sufficient condition for innovation. Innovation is here defined as any process that generates a cash flow that didn't previously exist at some specific time and place.

Within this framework the innovative process will be discussed by tracing several chemical case histories - mostly drawn from the speaker's personal experience ... and mostly failures. This route was selected not because in the quest for innovation failure is so common (and not confined to the speaker), but because one can learn a good deal about the chain by examining its weakest links. Particular "weak links" to be discussed are governmental interventions and the relevance of R.G.H. Siu's "Chinese baseball."

MARCH MEETING

DATE:

Wednesday, March 28, 1979

PLACE:

Michelson 117
US Naval Academy
Annapolis, Maryland

PROGRAM & SPEAKERS:

4:00 pm: Tour of the Academy

5:30 pm
B. J. Luberoff
Editor, *Chemtech*
Innovation for Fun and Profit

8:15 pm
MARYLAND SECTION STUDENT AWARDS

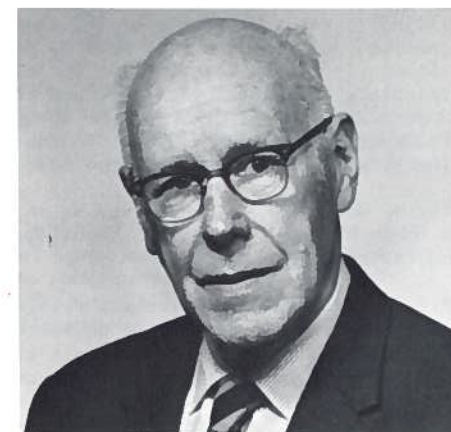
8:30 pm
John C. Bailar, Jr.
University of Illinois
*Some Researches on the Borderline
of Organic and Inorganic Chemistry*

SOCIAL HOUR:

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



Dr. B. J. LUBEROFF



Dr. JOHN C. BAILAR, Jr.

DINNER:

Officers' Club
US Naval Academy

Hot buffet dinner (7:00) \$7.50 per person, EXCEPT: Spouses, retired chemists and students, and their spouses, may attend the dinner at \$5.50.

CALL:

ACS RESERVATIONS
c/o Howard Cohen
633-6400, exts. 7360/7203

Please make your reservations early.

Space is limited.

It is not necessary to be a member of the American Chemical Society to attend the dinner or the talks; the talks may be attended without going to the dinner. You are invited to bring your spouse and friends to both the dinner and the meeting.

JOHN C. BAILAR, JR.

John C. Bailar, Jr., Professor of Inorganic Chemistry at the University of Illinois, has published over 260 chemical articles (50 of them on the stereochemistry of complexes) as well as serving as Editor of ACS Monograph 131, "Chemistry of the Coordination Compounds." He has also been co-author of four textbooks in general chemistry and Editor-in-Chief of Volume IV of *Inorganic Syntheses*. He has directed the work of 90 students who have been awarded the Ph.D. degree and numerous candidates for the bachelor's and master's degrees. Twenty-seven post-doctorate men have worked with him.

During World War II, he served as an Official Investigator for the National Defense Research Committee, devoting his efforts to the study of screening smokes and nerve gases.

His professional education was received at the University of Colorado (B.A., 1924; M.A., 1925) and at the University of Michigan (Ph.D., 1928). He has been at the University of Illinois since 1928. In addition, he has served as a consultant to several industrial companies and government laboratories.

Dr. Bailar has been active in professional societies, and has held numerous offices in them. His work with the American Chemical Society led to his election to the presidency of the society (1959). He has held memberships on a dozen or more committees of the National Research Council. From 1963 until 1971, he was Treasurer of the International Union of Pure and Applied Chemistry, and a member of its Executive Committee. He has served, or is serving, on the editorial boards of *Inorganic Syntheses*, the *Journal of the American Chemical Society*, *Chemical Reviews*, *Journal of Inorganic and Nuclear Chemistry*, *Inorganic Chemistry*, *Revue de Chimie Minerale*, *Inorganic and Nuclear Chemistry Letters*, *Inorganica Chemica Acta Reviews* and *Bioinorganic Chemistry*, and as a member of the Board of Publications of the *Journal of Chemical Education*.

In 1961, Dr. Bailar was given the American Chemical Society Award in Chemical Education (sponsored by the Scientific Apparatus Makers' Association). In 1964, he received the Priestley Medal of the American Chemical Society; in 1965, the Frank P. Dwyer Medal of the Chemical Society of New South Wales; in 1966, the Alfred Werner Gold Medal of the Swiss Chemical Society; in 1968, the Award in the Teaching of Chemistry of the Manufacturing Chemists Association; the Midwest Award in 1971, and the ACS Award for Achievement in the Advancement of Inorganic Chemistry in 1972. In 1978, he was awarded the J. Heyrovsky Medal of the Czechoslovakian Academy of Sciences. He was awarded honorary doctorate degrees by the University of Colorado and the University of Buffalo in 1959, and by Lehigh University in 1973.

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Abstract of Dr. Bailar's Talk

SOME RESEARCHES ON THE BORDERLINE OF INORGANIC AND ORGANIC CHEMISTRY

An example of the Classical Walden Inversion. Walden worked with an asymmetric triangular pyramid. We are attempting to effect a similar inversion using an asymmetric square pyramid -- a five-coordinate cobalt(III) complex with an iodo group at the apex. We hope to "replace" this by a cyano group.

Spanning the trans positions. Werner assumed that a chelate ring must span *cis* positions. This is certainly the usual case, but there is some evidence that a long chain can span *trans* positions. We have synthesized a trans-chelate platinum(II) compound by a new technique. Efforts to put a trans-chelate on each side of the platinum(II) plane have not yet been successful.

The selective hydrogenation of polyolefins. Catalysts of the type $(R_3Q)_2MX_2 + M'X_n$ (R = aliphatic and/or aromatic group; Q = P, As, Sb; M = Pt, Pd, Ni; X = halogen or cyanide; M' = Ge, Sn, Pb) homogeneously catalyze the hydrogenation of polyunsaturated olefins, leaving one double bond unreduced in most cases. The reaction is markedly affected by the nature of the various moieties in the catalyst, the solvent, and the nature of the polyolefin. If the catalyst is made part of an insoluble polymer, an efficient selective heterogeneous catalyst is formed. We are planning, now, to construct platinum(II) complexes containing asymmetric groups, and to test their ability to give asymmetric hydrogenation products.

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