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CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XXXIII

OCTOBER, 1977

NUMBER 7





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M. READY
DR. D. HOFFMAN
and guest speakers when available.

1977 Schedule

- Houston, TX: Oct. 24-25
 New Orleans, LA: Oct. 26-27
 Seattle, WA: Nov. 14-15
 San Francisco, CA: Nov. 16-17
 Washington, DC: Nov. 28-29
 North Jersey Area: Nov. 30-Dec. 1
 St. Louis, MO: Dec. 12-13
 Chicago, IL: Dec. 14-15

*Contact Kontes 1978 schedule preview.

Please address your response to T. Alcott, KONTES, Vineland, NJ 08360



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EDITORIAL STAFF

Eli Freedman.....Editor
2411 Diana Road
Baltimore, MD 21209
Phone: (301) 484-0632 after 7 pm

Raymond C. Petersen..Associate Editor
9329 Joey Drive
Ellicott City, MD 21043
Phone: (301) 465-8520 after 7 pm

CONTRIBUTING EDITORS

Carl E. Minnier, Essex Community
College

Linda M. Sweeting, Towson State
University

SECTION OFFICERS

Ernest L. Silversmith.....Chairman
Chemistry Department
Morgan State University
Baltimore, MD 21239

James Leslie.....Chairman-Elect
University of Maryland
636 W. Lombard Street
Baltimore, MD 21201

Robert Schneider.....Secretary
Beckman Instruments Inc.
1021 St. Michael Road
Mt. Airy, MD 21771

Howard Cohen.....Treasurer
Glidden-Durkee Div. of SCM
3901 Hawkins Point Road
Baltimore, MD 21226

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Finance.....William Stahl
377-8022

BUSINESS MANAGER

Kent Zeller
McCormick & Co., Inc.
Hunt Valley, Maryland 21031
Phone: 667-7432

ALTERNATE COUNCILLORS

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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. 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.

A. C. S. WASHINGTON SECTION

INDUSTRIAL CHEMISTRY MEETING

PLACE: W. R. Grace & Co. Research Center
7379 Md. Route 32
Columbia, Maryland

DATE: Thursday, October 13, 1977

PROGRAM

5:15 pm: Concurrent Topical Sessions, part I

1. Auto Emission Control Catalysts for the 1980's
-- James M. Maselli
2. Zeolites: Composition and Structure
-- David E. W. Vaughan
3. Photopolymerization: A Mechanistic Overview
-- Charles R. Morgan

5:45 pm: SOCIAL HOUR (Compliments of W. R. Grace & Co.)

6:30 pm: DINNER. Price: Members: \$7.00
Students: \$6.00
Student Affiliates: \$5.00

7:30 pm: Concurrent Topical Sessions, part II

4. Corrosion Prevention in Reinforced Concrete
-- Arnold M. Rosenberg
5. Zeolites: Properties and Uses
-- David E. W. Vaughan
6. Photopolymers: Commercial Applications
-- David E. Kramm

8:15 pm: Plenary Session

Antitumor Compounds from Fermentation: A Multidisciplinary Effort
-- Gary J. Calton

RESERVATIONS are necessary for the dinner only.

Call: Nancy Smoot, 727-3900, X 404 or

Margaret Frizzell, 531-5711, X 321

before 2:00 pm Monday, October 10.

DIRECTIONS: The W. R. Grace Research Center is located on the north side of Maryland State Route 32, 2.0 miles west of the intersection of Route 32 and US Route 29.

CALL FOR PAPERS

12th Middle Atlantic Regional Meeting

The 12th MARM will be held April 5-7, 1978, at the Hunt Valley Inn, Hunt Valley, Maryland. It will include the following general sessions and symposiums. Both general and symposium papers are solicited in all areas. Submit abstracts on ACS abstract forms to the PROGRAM CHAIRMAN (address below) before January 6, 1978.

ANALYTICAL CHEMISTRY

Chairman: H. C. Freimuth (Loyola College)

Symposiums:

Isotopes in Analytical Chemistry (J. A. Goleb)
Advances in Analytical Methodology for Clinical & Forensic Toxicology (Yale Caplan)
Atomic Spectroscopy: Biological & Metallurgical Applications (I. Barnes)

CHEMICAL EDUCATION

Chairman: M. H. Gardner (UMCP)

CHEMICAL DOCUMENTATION

Chairman: M. L. Huber (DuPont)

CHEMICAL TECHNOLOGY

Chairman: F. W. Barney (DuPont)

ORGANIC CHEMISTRY

Chairman: Gary Posner (JHU)

Symposiums:

Drug Synthesis (A. Brossi)
Transition Metals in Organic Synthesis
Silicon & Selenium in Organic Chemistry

PHYSICAL CHEMISTRY

Chairman: R. Klein (NBS)

Symposiums:

Energy Storage (G. Pezdirtz)
Eximers & Eximer Lasers (M. Golde)
Lasers in Chemical Reactions (T. Coyle)

EXHIBITORS' SEMINARS

Chairman: J. M. Hamilton (Science Tech)

ENVIRONMENTAL CHEMISTRY

Chairman: T. O. Munson (EPA)

Symposiums:

Toxic Materials in the Estuarine Watershed (Robert Hugget)
Environmental Contaminations of the Mid-Atlantic Region (T. O. Munson)
General Session (G. Heltz, UMCP)

EXTRATERRESTRIAL CHEMISTRY

Chairman: I. Adler (UMCP)

GOVERNMENTAL REGULATIONS & THE CHEMICAL INDUSTRY

Chairman: O. M. Banks (State of Maryland)

INORGANIC CHEMISTRY

Chairman: B. B. Wayland (U. of Pennsylvania)

MEDICINAL & BIOCHEMISTRY

Chairman: N. O. Heindel (Lehigh University)

Symposiums:

Chemistry of Radiopharmaceuticals
Metal Ion Interactions with Nucleic Acids (joint with Inorganic)

POLYMER CHEMISTRY

Chairman: D. D. Bly (DuPont)

Symposiums:

Fluoropolymers & Additives (J. Griffiths)
Polymer Characterization: Physical & Chemical Methods (L. Smith)
Polymer Characterization: Spectroscopic Methods (H. Starkweather)

UNDERGRADUATE RESEARCH

Chairman: K. Lockwood (Lebanon Valley College)

PROGRAM CHAIRMAN: Alvin Bober, US Customs Lab, 103 S. Gay St., Baltimore, MD 21202

ABSTRACT FORMS: Write to the Program Chairman or to the ACS Regional Meetings Department.

REGISTRATION INFORMATION: Write to William Zeiger, McCormick & Co., Hunt Valley, MD 21031

EXHIBITORS' INFORMATION: Write to William Zeiger, McCormick & Co., Hunt Valley, MD 21031

GENERAL CHAIRMAN: Fred Gornick, Chemistry Dept., UMBC, Baltimore, MD 21228

GARY K. ACKERS

Gary K. Ackers received the B.S. degree from Harding College in 1961 and the Ph.D. degree in biochemistry from the Johns Hopkins University in 1964. He was a National Institutes of Health Fellow at the Johns Hopkins University School of Medicine in 1964-65 and an instructor in 1965-66. In 1966 he joined the Department of Biochemistry at the University of Virginia School of Medicine where he was promoted to full professor in 1972. During 1972-73 Dr. Ackers was a Guggenheim Fellow. He has just returned to Hopkins as professor of biology at the Homewood campus.

Dr. Ackers has published numerous papers on his research interests of interacting systems of macromolecules, analytical molecular sieve chromatography, and the subunit structure of proteins.

THOMAS G. SPIRO

Thomas G. Spiro received his B. S. degree from UCLA in 1956 and the Ph.D. from MIT in 1960, with Professor David N. Hume. A postdoctoral year at the University of Copenhagen, with Professor Carl J. Ballhausen, was followed by a year as research chemist at the California Research Corp., LaHabra, California, and another postdoctoral year at the Royal Institute of Technology, Stockholm, with the late Professor Lars Gunnar Sillén. In 1963 he joined the faculty at Princeton University where he is now Professor of Chemistry. His research program has dealt with structural inorganic chemistry and the role of metal ions in biology, and now focuses on applications of Raman spectroscopy to biological systems.

Abstract of Dr. Spiro's talk

RESONANCE RAMAN AND RESONANCE CARS STUDIES OF BIOLOGICAL MOLECULES

Laser sources permit the acquisition of Raman spectra on small samples in any physical state. They also permit tuning of the excitation wavelength to absorption bands of the sample. This produces resonance enhancement of Raman bands arising from vibrations that are coupled to the electronic transition. Raman bands of chromophoric molecules are lifted above the vibrational background of their chemical matrix. Biological active sites are frequently chromophoric, or can be made so, and resonance Raman spectroscopy offers a probe of local structure. Applications to heme proteins will be discussed. A serious obstacle to many Raman studies is fluorescence, which can easily swamp the Raman spectrum. A promising solution is offered by CARS (Coherent Anti-Stokes Raman Scattering) spectroscopy, in which the Raman signal is generated as a coherent beam of light, easily separated spatially from the isotropic fluorescence. Resonance CARS spectra of heme and flavoproteins will be discussed.

When did you last attend an
ACS meeting?

OCTOBER MEETING

DATE:

Wednesday, October 19, 1977

PLACE:

Lecture Hall 1
University of Maryland Baltimore
County
Wilkins Avenue, Baltimore County

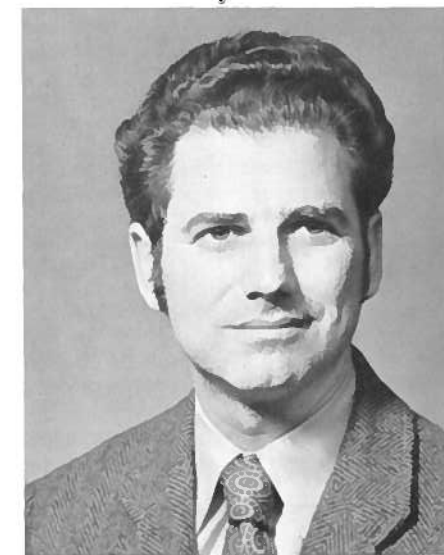
SPEAKERS & TOPICS:

5:30 pm
Thomas G. Spiro
Department of Chemistry
Princeton University
"Resonance Raman & Resonance CARS
Studies of Biological Molecules"

8:30 pm
Gary K. Ackers
Department of Biology
The Johns Hopkins University
"Interacting Systems of
Macromolecules"

SOCIAL HOUR:

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



THOMAS G. SPIRO

COCKTAILS & DINNER:

UMBC Dining Hall III
Hospitality Hour 6:30 - 7:15
Courtesy FISHER SCIENTIFIC CO.

Hot buffet dinner (7:15) \$6.25 per person, EXCEPT: Spouses, retired chemists and students, and their spouses, may attend the dinner at \$4.25. Reservations are necessary for the dinner and should be made with

ACS RESERVATIONS
c/o James Leslie

USE THE CONVENIENT COUPON THAT APPEARS ELSEWHERE IN THIS ISSUE.
(Or phone: 528-7440 (9-5 weekdays)
730-5761 (eves & weekends))

It is not necessary to be a member of the ACS 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 talks and the dinner.

(Picture not available.)

GARY K. ACKERS

ON THE PORCH OF THE ANNUNCIATION

Dear Reader,

Perhaps you noted
that no Councillor's Report from New Orleans
appeared in type herein
Nor will it appear
for your representative went to Russia
and could not afford both delights

And Russia was a delight
and would have been much more so
if I had known that
there is no gum in GUM¹

And that I would be approached

at the Winter Palace
at the Great Catherine Palace

on the Porch of the Annunciation
on the steps of St. Issac's²

while entering the Marinsky
while leaving the Trinity

in the Piskarevsky³

In fact everywhere
except on the steps of His Place⁴
And in the Gardens behind His Place
Where D.J.S.⁵ lies to the right
of Rosenfeld's more modest place
L. B. Kamenev⁶ 1886-1936

But those who desire gum do not
pass by there whispering Kamenev

They have no memories of Rosenfeld -
Kamenev

And will not have any and perhaps
someday there will be gum in GUM.

¹The Large shopping complex on Red Square dating from Tsarist times -
from the Russian for State Department store.

²The Court Church in Leningrad. Built in the 19th century its dome
was gilded using the long-lasting -- but toxic -- mercury amalgam
which cost the lives of many serfs.

³The large cemetery outside Leningrad where the victims of the 900
Days are buried.

⁴The Mausoleum of V.I. Lenin.

⁵D.J.S. _____ - Stalin

⁶L. B. Kamenev (Rosenfeld) - communist politician. Shot in 1936 on
Stalin's orders but now buried in the Kremlin Wall. His tomb is
quite close to Stalin's.

STATISTICAL MECHANICS AND SUICIDE. I.

*I felt a Funeral, in my brain----.
And then a plank in reason broke
And I dropped down and down -
And hit a world, at every plunge,
And finished knowing - then -*

E. Dickinson¹

One of the problems which has fascinated sociologists (Durkheim), psychologists (Schneidman), and philosophers (Camus) is the question of suicide. Indeed Camus has argued that from the existential viewpoint there is only one significant philosophical problem and that is suicide. To begin to think is to become undermined, or life is to be lived, not understood. Even St. Augustine in his *Confessions* states "*Tedium vitae erat in me tremendum et moriendi metus*" - "There was in me a great weariness with life and also a great fear of dying". He of course found refuge in the "City of God". But what of those who have no fortress of hope (or fantasies?) into which to retreat? Specifically what does the excessively introspective scientist do when confronted with the problem of self-alienation?

In his book *States of Matter*, Goodstein² begins his study of the thermodynamics and statistical mechanics of the ideal (perfect?) gas with the following statement: "Ludwig Boltzmann, who spent much of his life studying statistical mechanics, died in 1906, *by his own hand*. Paul Ehrenfest, continuing the work, *died similarly* in 1933. Now it's our turn to study statistical mechanics. Perhaps it will be wise to approach the subject cautiously".

It will be the purpose of this essay to examine the following questions in future issues.

- What were the backgrounds of Boltzmann and Ehrenfest and were there any features of their lives held in common?
- Was there anything in their personalities that would classify them as potentially suicidal?
- Did their role in laying the foundations of statistical mechanics contribute to their suicide?

C. Minnier & J. Zelinsky

¹Dickinson, E. "I felt a funeral in my brain", *Complete Poems of Emily Dickinson*. Boston: Little, Brown (1960).

²Goodstein, David L. *States of Matter*. Prentice-Hall, Inc.

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MESSAGE FROM PROGRAM CHAIRMAN

I cordially invite all of you to our October meeting on Wednesday, October 19, to be held on the campus of the University of Maryland Baltimore County. This month's speakers, Dr. Gary K. Ackers and Dr. Thomas G. Spiro, are well-known for their research in biophysical and bioinorganic chemistry. Details of the speakers and their topics and the arrangements are presented elsewhere in this issue. I wish to acknowledge the cooperation of June Taylor and Robert Steiner of the Chemistry Department at UMBC for their assistance in making the physical arrangements and selecting the speakers; and to extend my thanks to Fisher Scientific Company for their support in sponsoring the cocktail hour.

At a recent meeting of the Executive Committee it was suggested that one meeting be held each year outside the immediate Baltimore area and that the most appropriate month for this would be April. If your company, facility, college or university outside the Baltimore area is interested in hosting a meeting of the Section, I urge you to discuss the matter as soon as possible with the 1978-1979 program chairman who can be identified after the Section's November election.

I look forward to seeing you on October 19.

James Leslie
Program Chairman

CHEMISTRY SEMINARS AT TOWSON STATE

All seminars are at 12:45 p.m. in Room 554, Smith Hall

November 1 - Dr. Donald P. Hollis
Department of Physiological Chemistry - School of Medicine
The Johns Hopkins University
"Phosphorus NMR Studies of Cardiac Physiology"

November 17 - Dr. William M. Egan - Division of Bacterial Products
Bureau of Biologics
Food and Drug Administration
"Carbon 13 NMR Studies of Antigenic Bacterial
Capsular Polysaccharides"

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

Enclosed is \$_____ (\$6.25/\$4.25 per person) for dinner reservations at the UMBC Dining Halls for the following persons:

NAME	(Please print or type)	AFFILIATION
_____	_____	_____
_____	_____	_____

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).

*See note on p. 7.

Return by October 14

LETTER TO THE EDITOR

Sir:

In the February issue, Dr. Linda Sweeting warned that if chemists and their employers, both industrial and academic, don't place more emphasis on laboratory safety, the government and the courts will do it for them, to their great but tardy sorrow.

An unstrapped gas cylinder is at least a fact whose truth can be established readily. There is, however, another area in which government and the courts are intervening where the facts are generally much less clear, the area of academic promotion and tenure.

In Maryland alone, three such cases are before the courts, and there are others elsewhere. The general outlines of all the suits are the same. The complainant says that he or she was denied promotion or tenure (which are often related) *only* because of color or sex or both. The defendant always answers that the disputed decisions were based on the plaintiff's lack of merit, not on color or sex. The court must then decide, among other things, whether the complainant was actually qualified for promotion. None of the Maryland cases involves a chemist, but it requires no rash extrapolation to foresee the day when a court may be asked to decide whether three Brief Communications equal one full paper, or whether two experimental papers are more significant than one theoretical one.

The dismal projections for openings for new college faculty virtually guarantee an increase in such suits if the colleges themselves do not take immediate firm action to improve their decision-making policies. It is completely inadequate for deans and chancellors to proclaim non-discrimination; it is not now even enough that the decisions be made fairly. "Justice must be done and must be seen to be done."

While I have never been discriminated against because of race or sex, I was refused tenure and promotion at a medium-size private urban university, 18 years ago this Spring. I can therefore speak from experience on this aspect. I have been there. I have not forgotten my feelings of hurt and rejection, the pain, the humiliation, of those bitter days. If I live twice 18 years more, I shall not forget. And so long as I do remember, I will not, I cannot, criticize any one in that unhappy position who seeks the nearest and best weapon with which to strike back, and thus siezes upon the courts.

Yes, it is true; I did not. But the courts of 1959 were very much more reluctant to intervene in so-called private actions than are those of 1977. With the advantages of hindsight, I think I could have made a good case on the grounds of lack of due process.

And yet...and yet.... The courts, with their dedication to the adversary system, their endless delays, appeals, more delays, more appeals, although increasingly called on to be the arbiters of every phase of life and death, constitute a poor instrument for the job. Any one who has to resort to legal action for redress of even a valid complaint has lost, no matter what the final verdict. Only lawyers ever win anything in a courtroom.

The time for action is long before a suit is filed, before the need for one arises. College deans and administrators must act to establish fair and open rules for promotion and tenure -- and follow them. It won't be easy but the consequences of failure will be much harder. The time to do something is now. I hope it is not too late.

(Name withheld)

The Chesapeake Chemist
University of Maryland
636 W. Lombard Street
Baltimore, Maryland 21201

Dr. Yale Howard Caplan
8100 Tapscott Court
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