



THE

CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XXVIII

JANUARY, 1972

NUMBER 1





THE CHESAPEAKE CHEMIST

VOL. XXVIII

JANUARY, 1972

NUMBER 1

EDITORIAL STAFF

William G. Galetto.....Editor
McCormick & Co.,
204 Wight Ave.
Hunt Valley, Md. 21031
Phone: 666-3155

Allen Bednarczyk....Assistant Editor
McCormick & Co.
Hunt Valley, Md. 21031

M. J. Albinak....Contributing Editor
Essex Community College
Baltimore, Md.

David Gordon....Contributing Editor
U. S. Food and Drug Adm.
Baltimore, Md.

E. M. Glocker....Contributing Editor
W. R. Grace and Company
Clarksville, Md.

M. F. Switzer....Contributing Editor
The Johns Hopkins University
Baltimore, Md.

SECTION OFFICERS

Joyce J. Kaufman.....Chairman
Chemistry Department
The Johns Hopkins University
Baltimore, Md. 21218

Yale H. Caplan.....Chairman-elect
Medical Examiner's Office
111 Penn Street
Baltimore, Md. 21201

Ernest F. Silversmith.....Secretary
Morgan State College
Baltimore, Md. 21212

Leon Weber.....Treasurer
SCM Corp.
Baltimore, Md. 21226

IN THIS ISSUE

BUSINESS STAFF

Kent R. Zeller.....Business Manager
McCormick & Co.
Industrial Flavor Division
204 Wight Avenue
Hunt Valley, Md. 21031
Phone: 301-666-7400

January Meeting.....5

R.H. Herber and Précis of Talk.....6

T.A. Carlson and Précis of Talk....6

Chairman's Message.....7

Maryland Section News.....9

7th MARM.....11

MEMBERSHIP CHAIRMAN

John L. Kolbe
W. R. Grace & Co.
Clarksville, Md.

SGA

announces a change of company name

from

Scientific Glass Apparatus Co., Inc.

to

SGA SCIENTIFIC INC.

After 53 years, we've changed our name officially from Scientific Glass Apparatus Co., Inc., to SGA SCIENTIFIC Inc. No change has been made in our company-wide operations or in corporate policy. Management and personnel remain the same.

Our name should have been changed many years ago, as the word "glass" is misleading. It was okay back in 1918 when our company was founded because fabricating custom-made glassware was our chief specialty. But today, it is only part of our total sales picture. For many years now, we have been supplying the finest available laboratory instruments, apparatus, chemicals, standard glassware and general lab supplies, requiring a comprehensive catalog to illustrate and describe the more than 30,000 stock items we sell.

Whether you're in the market for an electronic instrument costing thousands of dollars . . . or a cork at a fraction of a cent, we can meet your requirement. We will continue to serve you to the best of our ability, and we will be constantly on the lookout for new developments and designs to aid you in your work. A booklet entitled "This is SGA" will be sent on request.



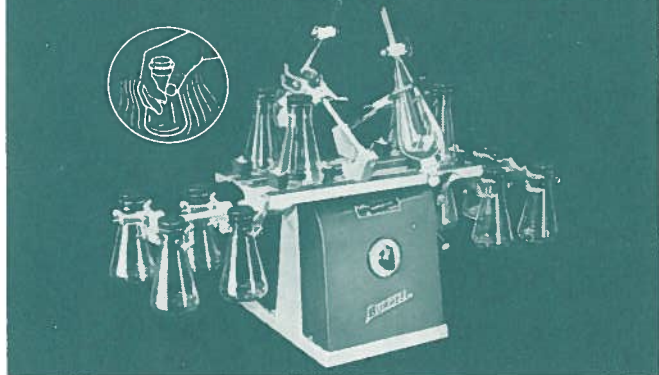
SGA
SCIENTIFIC
BLOOMFIELD, N. J. 07003

**LABORATORY...
♦ APPARATUS
♦ INSTRUMENTS
♦ CHEMICALS
♦ GLASSWARE**

Branches: Boston Mass. • Danbury Conn. • Elk Grove Village Ill. • Fullerton Calif. • Philadelphia Penna. • Silver Spring Md. • Syracuse N. Y.

The Chesapeake Chemist is published monthly September through May by the Maryland Section of the American Chemical Society. Address editorial comments to Dr. William Galetto, McCormick and Co., 204 Wight Ave., Hunt Valley, Md. 21031. Phone 666-3155. Address advertising inquiries and copy to Mr. Kent R. Zeller, McCormick and Company, 204 Wight Ave., Hunt Valley, Md. 21031.

**BURRELL
"WRIST-ACTION"
LABORATORY SHAKERS**



The same complete mixing swirl you get with your own hand and wrist has been copied mechanically in Burrell shakers. Then, superior to human wrist-action, the shaking motion operates at a constant speed—for as long as is required.

You control procedures from gentle agitation to violent swirling and repeat any operation at another time. The degree of shaking is controlled mechanically with an adjustable knob. The full torque of the constant speed motor is always applied to the oscillating mechanism. Loads need not be equalized or balanced. Shaking degrees are set, and repeated exactly at another time, to a scale graduated from 0 to 10. A built-in timer will automatically stop the shaker at any desired time up to 55 minutes or may be set to operate continuously.

BUILD-UP[®] DESIGN

You Build-Up to suit your requirements. Starting with a standard shaker base unit, consisting of motor, oscillator and controls; you add a platform that accommodates Separatory Funnel Clamps or 8 Erlenmeyer flasks; and side-arms for 8, 12 or 16 flasks or bottles. Users may start with any Build-Up size and add or modify later, as all parts are interchangeable.

Burrell Shaker BUILD-UP SIZE BT

Offered as the most versatile arrangement for general laboratory use. Includes standard shaker base unit, platform for up to 8 Erlenmeyer flasks and side arms for up to 8 flasks or bottles.

For more information see your Burrell representative or write for Bulletin No. 307.

BURRELL

BURRELL CORPORATION
SCIENTIFIC INSTRUMENTS AND LABORATORY SUPPLIES
2223 FIFTH AVENUE, PITTSBURGH, PA. 15219

JANUARY MEETING

RECENT INSTRUMENTAL METHODS

DATE:

WEDNESDAY, JANUARY 26, 1972

PLACE:

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

SPEAKERS AND TOPICS:

5:30 P.M.
Professor Rolfe Herber, Rutgers University. "Architecture of Organometallic Compounds from Mossbauer Effect Systematics"

8:30 P.M.
Dr. Thomas Carlson, Oak Ridge National Laboratories. "Recent Developments in the Use of Electron Spectroscopy for Chemical Problems."

SOCIAL HOUR:

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

COCKTAILS AND DINNER:

Eudowood Gardens Dining Room. Price is \$5.25 per person for cocktails (6:30-7:15, unlimited quantity) and hot buffet dinner (7:15). Students and their spouses may attend the dinner for \$3.00. Reservations are necessary for the dinner, and should be made with Mr. Allen Bednarczyk, McCormick and Co., Inc., 204 Wight Avenue, Cockeysville, Md. 21030, phone 666-3155, by Friday preceeding meeting.

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.

7TH MARM — "WORLD FOOD"

FEBRUARY 14-17, 1972

PHILADELPHIA



P L A N
t o
A T T E N D

ROLFE HERBER

R. H. Herber was born in Dortmund, Germany on March 10, 1927. He received his B.S. in Chemistry from U.C.L.A. in 1949 and his Ph.D. in Physical Chemistry from Oregon State University in 1952. After graduation Dr. Herber accepted a position as Research Associate at the Massachusetts Institute of Technology where he stayed until 1955, leaving to become Assistant Professor at the University of Illinois. In 1959, he became an Associate Professor on the Staff of Rutgers University where today he holds the rank of Professor.

During the years 1965-1966, Dr. Herber was an NSF Senior Post Doctoral Fellow (Visiting Professor, Weizmann Institute, Israel) and an ACS tour speaker in 1967 and 1968. Dr. Herber is the author or co-author of three textbooks and over 100 research publications.

ARCHITECTURE OF ORGANOMETALLIC COMPOUNDS FROM MOSSBAUER EFFECT SYSTEMATICS

Mossbauer effect spectroscopy has become a powerful tool in the study of the structure and bonding of organometallic compounds, and can be used to bridge the gap between the structural data obtained on neat solid samples from X-ray diffraction studies, and that obtained as solution samples by infra-red and nuclear magnetic resonance techniques. Such studies, using the 14.4 KeV radiation in ^{57}Fe and the 23.8 KeV radiation of ^{119}Sn , have been used to investigate the structure and bonding, as well as the nature of the inter-molecular forces in a wide range of organometallic compounds. In addition the isomer shift parameter extracted from Mossbauer data can be correlated with the effective group electronegativity of polyatomic ligands and thus clarify the metal-ligands interaction in both sigma and (potentially) pi bonding involvement. Similarly the systematics which have been developed concerning the temperature dependence of the recoil-free fraction and of

the mean square amplitudes of vibration of the metal atoms in such compounds can be used to elucidate the strength of intermolecular forces in these covalent solids. A number of examples of such studies will be discussed in detail to illustrate the type of information which can be extracted from such investigations.

THOMAS CARLSON

Thomas A. Carlson was born in Waterbury, Connecticut in 1928. He received his B.S. in Chemistry from Trinity College in Hartford and his M.A. and Ph.D. at the Johns Hopkins University under the direction of Dr. Walter Koski. After graduation in 1954, he became a research staff member of the Oak Ridge National Laboratory. Presently, he is in charge of the Electron Spectroscopy group at Oak Ridge which is jointly sponsored by the Chemistry and Physics Divisions. In 1967, he spent a year in Sweden on a Guggenheim Fellowship and recently was appointed Joint Editor-in-Chief of the newly created Journal of Electron Spectroscopy.

RECENT DEVELOPMENTS IN THE USE OF ELECTRON SPECTROSCOPY FOR CHEMICAL PROBLEMS

Electron spectroscopy for use in study of chemical problems is a new field that is developing concurrently in both applied and fundamental research. It is probably one of the most useful physical tools for chemical research that has been developed in the past ten years. A brief review of the phenomena and measuring techniques is given. Several new areas of research are then discussed. Besides providing information on basic questions in chemical bonding, the use of electron spectroscopy in applied research will be illustrated for such areas as biological systems, surface studies and environmental analysis.

CHAIRMAN'S MESSAGE

Greetings and best wishes for the New Year!

As I perused the Chairman's Messages for the past seven years, it is obvious that a profound change has taken place in our profession of chemistry. The days when all that had to concern us as chemists was to perform our best scientifically and our rewards would come are over. The anxieties we have felt for the past several years about the cutback in Federal funding for research, the mass layoffs in industry, and the virtual freeze on new scientific hiring by universities and colleges have come to pass with an even more severe effect than we had feared. Now, as never before, chemists need to speak united and with a strong voice. The American Chemical Society has heard, through local section councillors and from individuals, that the chemist wants the Society to be more active in behalf of the well-being of the chemist in addition to the well-being of the science of chemistry. If you have suggestions or opinions on what the ACS should be doing, please communicate them to the Local Section Officers as well as to the National Headquarters. We want to try to make the ACS responsive to the needs of chemists.

The Local Sections are the strongest contact between the individual members and the Society and among the individual members themselves in a geographical location. Our Maryland Section has a diversity of representation: academic, industrial, and government. Yet we share many common interests and have many common goals. We, in the Maryland Section, have always endeavored to present an excellent and balanced program of technical speeches to expand our scientific knowledge and teaching capabilities. This year is no exception. Our program includes leading figures from the Government agencies which sponsor science, outstanding educators, several ACS National award winners and culminates with two Nobel Laureates. To make the programs a success, we need the cooperation of our membership in attending our Local



DR. JOYCE J. KAUFMAN

Section Meetings. Nothing can be more discouraging to a speaker than to address a mere handful of people. Please do try and attend as many of the meetings as possible and bring others with you. One of the most valuable aspects of our monthly meetings is the chance it gives us to get together and discuss our mutual interests.

This year we have established two new Committees: one on Professional Relations, which will also encompass member assistance for any of our members who need advice and help in case of lay-offs; the other, a Government Advisory Liason Committee, to serve to strengthen our input into pressing problems such as ecology and into government science policies on all levels; national, state and city. These committees will be chaired by eminent members of our Section - Professional Relations by Dr. Paul Bachman and Governmental Liason Advisory by Dr. George Braude. But their real success will lie in having other interested members participate actively. If you would like to serve on these committees or on any of the others listed, please contact the Committee Chairman. This year we have listed the phone number of each Chairman to

(Continued on page 9)

Tough & Transparent! Nalgene Large Lexan* Jars.



Here are the unbreakable, economical successors to standard-size glass cylindrical jars. You can safely drill, tap, or apply clamps. Heat resistant to 135°C. Use them as water baths, terraria, aquaria, bell jars, environmental chambers, for freeze-drying and other vacuum applications, and as large transparent, autoclavable containers.

The 1 gallon (6 $\frac{3}{8}$ " x 9 $\frac{1}{4}$ "), 2 gallon (8 $\frac{3}{4}$ " x 10"), 3 $\frac{1}{2}$ gallon (8 $\frac{3}{4}$ " x 18") and 4 $\frac{1}{2}$ gallon (12" x 12") sizes are molded in transparent, distortion-free, unbreakable Lexan polycarbonate (Cat. No. 5300). All come with

autoclavable polypropylene close-fitting covers except the one gallon size which has a polyethylene cover. Another fine product from Nalgene Labware Division, Nalge Company.

*General Electric trademark



MACALASTER BICKNELL CO. OF N. J., INC.

NORTH AND DEPOT STREETS, MILLVILLE, N. J. 08332

Area Code 609—825-3222

(Continued from page 7)

make it easy to contact him directly. If there are new activities which you feel our Section should start, then please contact me or any of our Local Section Officers. We will give these suggestions our prompt consideration.

We are all looking forward to an active and productive year for our Maryland Section. With your help, we shall certainly achieve this.

COMMITTEE CHAIRMEN

- Awards and National Nominations.....Richard Kokes
366-3300
- Chemical Education..Melvin Miller
435-2500
- Governmental Advisory Liason.....George Braude
1-531-5711
- House.....Allen Bednarczyk
666-3155
Theodor C. Berenthien
671-3922
Edward Glocker
489-4110
- Membership.....John Kolbe
1-531-5711
- Professional Relations.....Paul Bachman
1-255-4505
- Program.....Yale Caplan
752-2000
Ext.2618
- Publicity and Public Relations...Carl Minnier
682-6000
- Remsen Award.....Robert G. Parr
366-3300
- Section Historian.....Edward M. Hoshall
329-6424
- CHESAPEAKE CHEMIST.....William Galetto
666-3155
- Special Scholarship..Ernest Silversmith
323-2270
- MARM.....Donald Jones
1-848-7000

COPY DEADLINE

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

MARYLAND SECTION NEWS

J.H.U.

Professor Gary H. Posner presented a lecture entitled "Organocopper Reagents in Synthesis" on November 9, 1971 at the National Institutes of Health, Organic Chemistry Discussion Group (NHLI-NIAMD).

Professor Posner, also, has received a National Institutes of Health Grant entitled "Total Synthesis of a Potential Anti-Tumor Lactone."

LOYOLA COLLEGE

Four Loyola College professors have been selected as Outstanding Educators of America for 1971. They are Dr. Nicholas Varga, professor of history, Dr. Ronald J. Gilgin, director of the master of business administration program, Dr. David F. Roswell, assistant professor of chemistry, and Rev. Felix Malmbert, S.J., professor of theology.



"The Versatile Desiccant" ®

For Drying SOLIDS—LIQUIDS—GASES

Efficient—Dries all organic liquids instantly in liquid or vapor phase. Gases retain only 0.005 mg. H₂O per liter.

Versatile—An all-purpose desiccant.

Non-Wetting—Does not become wet on saturation, nor crystallize to walls of tubes, towers or desiccators.

Neutral—Dries without reacting with either acid or alkaline materials.

Inert—Except toward water. Does not decompose, polymerize, or catalyze organic substances by contact. Insoluble in organic liquids.

Regenerative—repeatedly after any normal use, by dehydration at 200 to 225°C.

Economical—Lowest priced high grade Desiccant. Available in quantity for Industrial Processes.

Granule Size: 4, 6, 8, 10-20 and 20-40 Mesh.

REGULAR OR INDICATING FROM YOUR
LABORATORY SUPPLY DEALER

MANUFACTURED BY
W. A. HAMMOND DRIERITE CO.
XENIA, OHIO



TYGON[®]
Flexible Plastic
TUBING

- Glass-clear
- Tough, flexible
- Chemically inert
- 73 standard sizes

The world over, more laboratories have standardized on Tygon plastic Tubing than on any other brand. For your protection, every foot is permanently branded with the Tygon name and formulation number.

NORTON

PLASTICS & SYNTHETICS DIV.
FORMERLY U.S. STONWARE INC.
AKRON, OHIO 44309

At laboratory supply houses everywhere

32-131

7TH MARM — "WORLD FOOD"

The 1972 MIDDLE ATLANTIC REGIONAL MEETING will be held at the Marriott Motor Hotel, City Line Avenue and Monument Road, Philadelphia, Pa., February 14-17. The program will include more than 300 papers, many of them invited for special symposiums. A particularly significant topic will be the Problem of Food; reviewing both world and domestic situations, the achievements of agricultural and food science, and the special logistics of supplying and encouraging the use of high quality protein.

Special Events include a General Mixer on Monday evening, February 14, a Banquet on Tuesday evening, February 15, and the Middle Atlantic Regional Councillors Meeting and a Student Mixer on Wednesday evening, February 16.

The Banquet speaker will be Dr. Aaron Altschul of Georgetown University, whose topic will be Food Problems and the Limits of Technology.

A Professional Relations Seminar entitled "Employment in the Chemical Profession" will be held on Monday, February 14.

Following the sessions on polymer chemistry, an ACS Short Course on Polymer Engineering will be presented at the City Line Holiday Inn, across the street from the meeting site, on February 17-19. Further information can be obtained from the ACS Education Office, Washington, D.C.

A manufacturers exposition will also be included in the meeting.

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.

ORGANIC MICROANALYSES
GALBRAITH
LABORATORIES, INC.
P. O. Box 4187
Knoxville, Tenn. 37921
(615) 546-1335
HARRY W. GALBRAITH, Ph.D.

-----Tear-Out Dinner Reservation Form-----

There is enclosed \$.....(\$5.25 per person)* for cocktails and dinner at Eudowood Caterers, Eudowood Plaza, for the following persons.**

<u>Name</u>	<u>(Please print or Typewrite)</u>	<u>Affiliation</u>

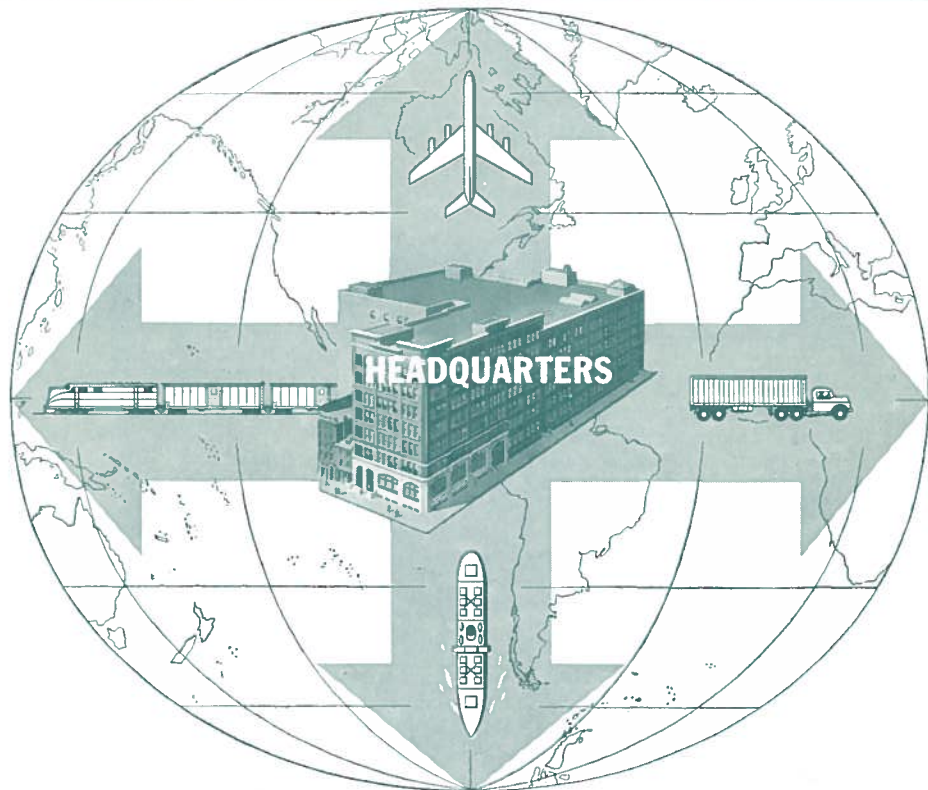
*Please make checks payable to Maryland Section, ACS and mail together with reservation form to Mr. Allen Bednarczyk, McCormick and Co., Inc., 204 Wight Ave., Hunt Valley, Md. 21031, or phone 666-3155.

**Return by Friday preceeding next meeting.

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

Nonprofit Org.
U. S. Postage
PAID
Baltimore, Md.
Permit No. 2917

PLEASE DO NOT DELAY — DATED NOTICE INSIDE



**You save time and money when you order from *Thomas*
because... YOU DEAL WITH HEADQUARTERS**

Ability to fill your needs is not hampered by regionally divided inventory. All orders are processed and shipped from a single, completely stocked, warehouse.

Our modern-as-tomorrow order processing center enables us to ship more than 93% of orders within 2 days after receipt.

Careful packing keeps breakage to less than 1/20 of 1%. Packing lists are complete and accurate. Invoices agree with packing lists.

Our many thousands of stock items are carefully selected before cataloging. They are continually inspected for dependable quality and satisfactory performance.

YOU CAN RELY ON *Thomas*



ARTHUR H. THOMAS COMPANY

Scientific Apparatus and Reagents

VINE STREET AT 3RD • P.O. BOX 779 • PHILADELPHIA, PA. 19105, U.S.A.