



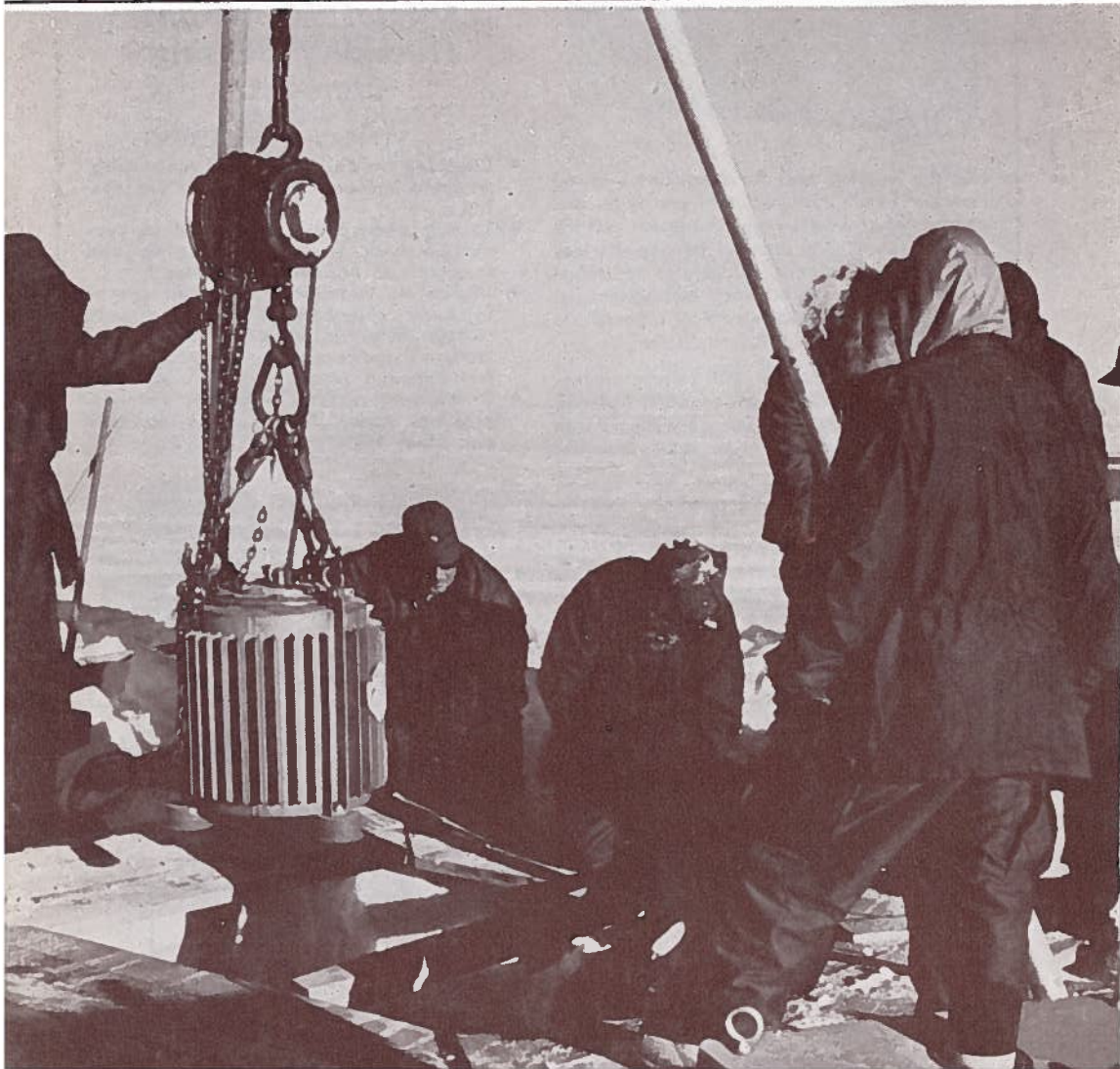
THE CHESAPEAKE CHEMIST

MARYLAND SECTION
AMERICAN CHEMICAL SOCIETY

VOL. XIX

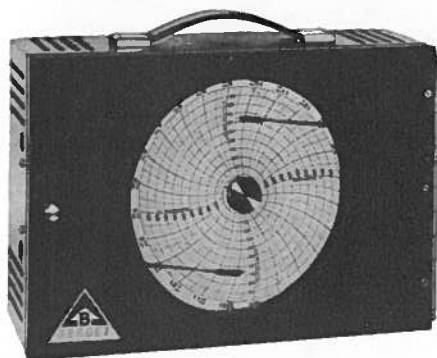
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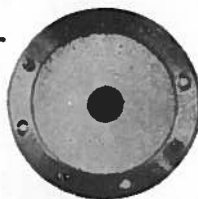
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THE CHESAPEAKE CHEMIST

VOL. XIX

SEPTEMBER 1963

NUMBER 6

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IN THIS ISSUE

September Meeting 5
New Chemistry Award 7
Maryland Section News 9
October Meeting 11
Membership Changes 12
Nominating Committee 14

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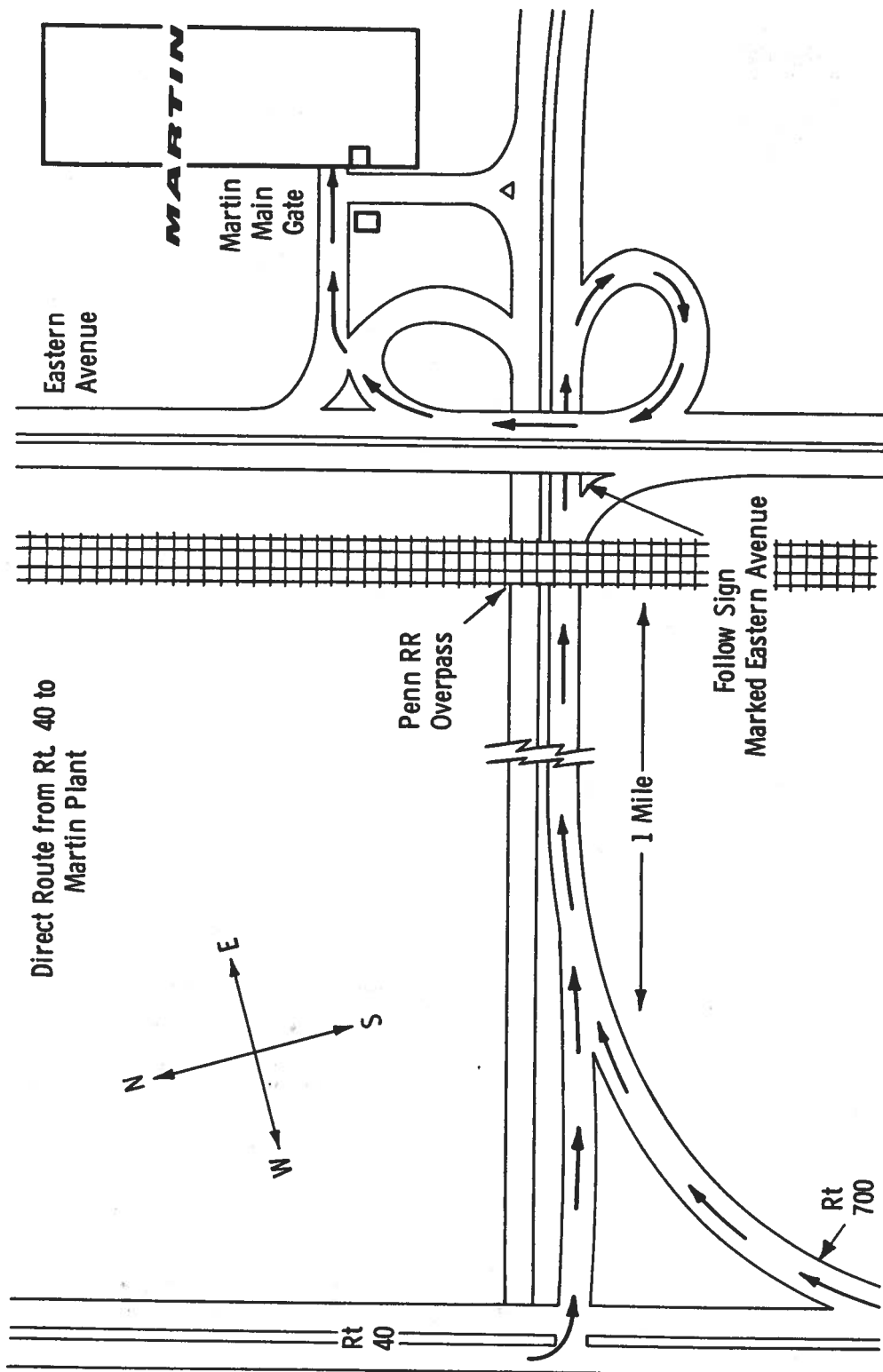
M. P. Miller
Loyola College

THE COVER

Installing the SNAP-7C atomic generator in the ice, 700 miles from the South Pole, on February 8, 1962. The 10-watt generator, developed by Martin Company's Nuclear Division for the U. S. Atomic Energy Commission and the Navy, powers an automatic unmanned weather station.

The station transmits its meteorological data to the McMurdo Sound Naval Air Facility every six hours. It can also be triggered by radio pulses from land or air to transmit more frequently.

The Chesapeake Chemist is published monthly September through May by the Maryland Section of the American Chemical Society. Address editorial comments to Lt. Col. Kenneth S. White, 1220 Glenhaven Road, Baltimore, Md., 21212. Address advertising inquiries and plates to J. M. Maselli, W. R. Grace & Co., Washington Research Center, Clarksville, Maryland.



SEPTEMBER MEETING

DATE AND TIME

Wednesday, September 25, 1963
at 8:30 P.M.

This is Family-Student Night

PLACE

Martin Company Nuclear Division
Middle River
(See map on opposite page for suggested route)

SPEAKER

Dr. Jerome G. Morse

SUBJECT

"Power from Radioactive Isotopes"

Radioisotopes are gaining wide acceptance in medicine, agriculture and industry. One of the rapidly expanding uses of radioisotopes is production of electricity. Development of this area of technology has been pioneered by Martin Company's Nuclear Division where devices have been built to power satellites, remotely located automatic weather stations and various aids to navigation. Dr. Morse will discuss the development of these devices and large-scale processing of radioisotopes such as Strontium-90.

DINNER

Martin Company Cafeteria; dinner at 6:30 P.M.—\$2.50

Reservations must be made by Wednesday, September 18, 1963.

Call Dr. Arthur Emery at PLaza 2-1100, Ext. 201.

SOCIAL HOUR

There will be a social hour after the meeting during which time demonstrations will be on exhibit.

PARKING

Abundant parking facilities are available at the main gate.



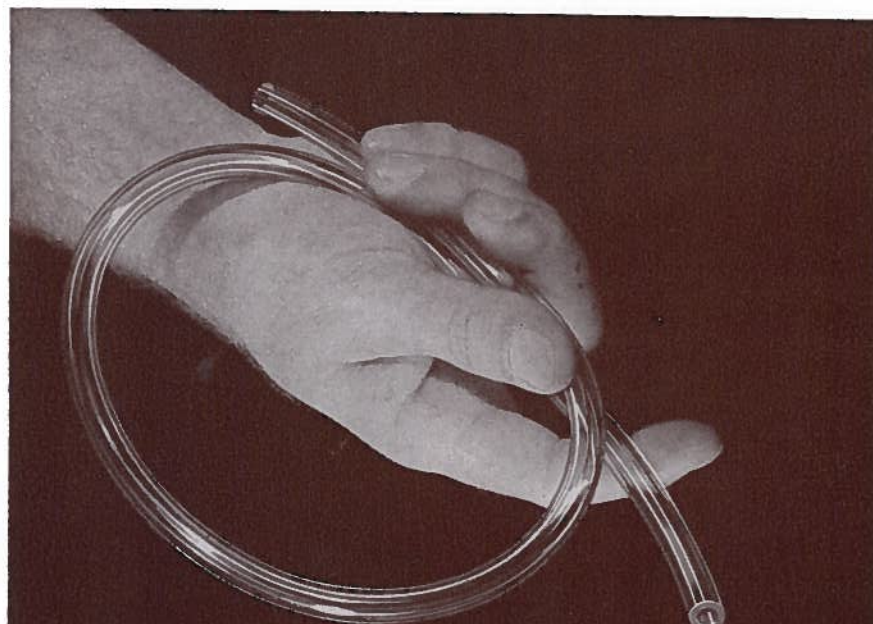
DR. JEROME G. MORSE

Dr. Jerome G. Morse is Director of the Auxiliary Power Systems Department in Martin Marietta Corporation's Aerospace Division—Nuclear. Since 1958, the engineers, scientists and technicians under his supervision have pioneered in the field of radioisotope-fueled generators; and during 1961 his group designed and built the first SNAP systems to become operational on land, undersea and in space. The Martin Company

(Continued on page 7)

IMPORTANT NOTICE

In compliance with security regulations, the Martin Company requires the name of everyone planning to attend the lecture. This list must be received by the Martin Company by September 19. Therefore, it is necessary that those who wish to be admitted to the lecture call Dr. Arthur Emery at Plaza 2-1100, Ext. 201, not later than September 18 in order to have their names entered on this list. Requests for dinner reservations should be made at the same time.



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NEW CHEMISTRY AWARD TO HONOR JAMES FLACK NORRIS

Outstanding research in physical organic chemistry will be recognized by a new \$1,000 annual award administered by the American Chemical Society, it is announced by Dr. Alden H. Emery, executive secretary of the Society. The award, sponsored by the Society's North-eastern Section, will be presented for the first time in 1965.

The award was established by the section to honor the late Dr. James Flack Norris, president of the Society in 1925 and 1926, and will be named the "James Flack Norris Award in Physical Organic Chemistry." Dr. Norris taught chemistry at the Massachusetts Institute of Technology for more than 30 years, and was one of the first American chemists to call attention to the physical aspects of organic chemistry. The first year the award will be given, 1965, is the 25th anniversary of Dr. Norris' death.

In addition to the honorarium, the winner of the award will receive an en-

graved scroll. Both will be provided by the income from a fund left to the section by Mrs. Norris to perpetuate the memory of her husband. Since 1951 the section has sponsored and administered the James Flack Norris Award for outstanding achievements in the teaching of chemistry.

The American Chemical Society administers more than 20 awards in chemistry, but this is the first to be sponsored by one of its 164 local sections.

DR. JEROME G. MORSE

(Continued from page 5)

is the Atomic Energy Commission's principal contractor for these devices.

Dr. Morse was born in New York City on October 22, 1921. He completed his undergraduate studies at the City College of New York in 1942, received his Master of Science degree from the University of Pennsylvania in 1947, and received his doctorate in physical chemistry from the Illinois Institute of Technology in 1951. From 1942 to 1943 he was an infantry officer with the U. S. Army, and between 1943 and 1945 he served as an officer in the Army Air Force.

After working for a year as a research chemist with the General Electric Company in Schenectady, Dr. Morse joined the faculty of the University of Miami in 1952. There he taught chemistry and was Director of the Radioisotopes Laboratory until 1955, when he accepted a post with Martin Marietta.

Dr. Morse is chairman of the Isotopes and Radiation Division of the American Nuclear Society; and also chairman of the Power Supply Sub-committee of the Atomic Industrial Forum's Committee on Communication Satellites. He is a consultant to the Oak Ridge Institute of Nuclear Studies and has lectured at UCLA's annual short course on space power systems.

He is co-editor of a monograph entitled "Effects of Radiation on Materials," and author of a chapter in the book *Nuclear Flight*.

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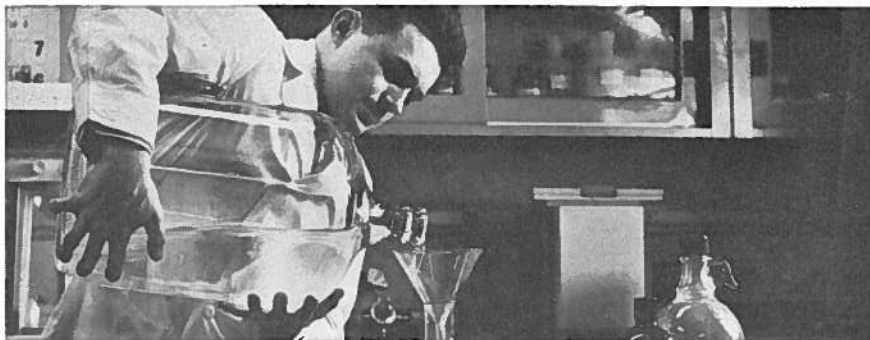
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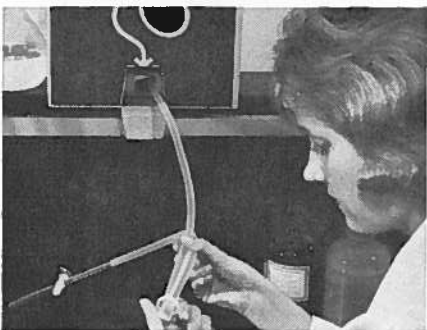
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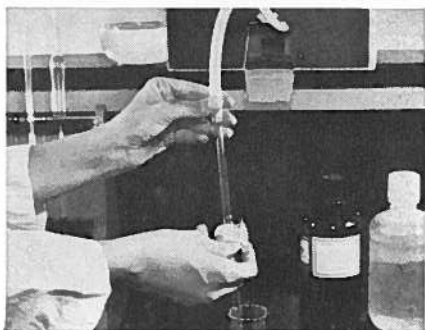
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MARYLAND SECTION NEWS



INDUSTRIAL

W. R. GRACE & COMPANY

Frederick G. Kern, Jr., former manager of the Curtis Bay plant of the Davison Chemical Division, has been advanced to assistant to D. R. Telesca, production manager of Davison's Chemical Division. William B. Davis succeeds Mr. Kern at the Curtis Bay post.

Mr. Kern, a chemical engineering graduate of Bucknell University, came to Davison in 1943 as a control engineer at Curtis Bay. He became production manager of the plant in 1956 and plant manager in 1961.

Mr. Davis, a native of Baltimore, earned his chemical engineering degree from the Johns Hopkins University. He started with Davison as control engineer at Curtis Bay in 1942. After various positions here, Mr. Davis was appointed, in 1956, as plant manager of the Davison Chemical Company, Ltd., at Valleyfield, Que. More recently he has been occupied in special production assignments from the Baltimore office.

Grace's Research Division in Clarks-ville has announced the appointment of Dr. James M. Maselli to the Inorganic Research Department.

Dr. Maselli received an A.B. degree in chemistry at Lafayette College, and his Ph.D. in inorganic chemistry at the University of Pennsylvania. Prior to joining Grace, Dr. Maselli held a post-doctoral research fellowship at Harvard University and was with the Army Chemical Center at Edgewood, Md.

Dr. Maselli will conduct research in the area of phosphorus nitrogen chemistry.

**Japanese Professor Visits
Grace Research Lab.**

Professor Masaaki Yokoyama of the Chemistry Department, Kogakuin College, Tokyo, Japan, visited W. R. Grace & Co.'s Research Division in Clarks-ville, Md., to discuss phosphorus-nitrogen chemistry with Dr. Rip Rice of Grace's scientific staff.

Professor Yokoyama is recognized in this country as the principal Japanese scientist working in the area of phosphonitrilic chloride chemistry. Dr. Rice and his group in Grace's Research Division have been conducting research in this field.

RIAS

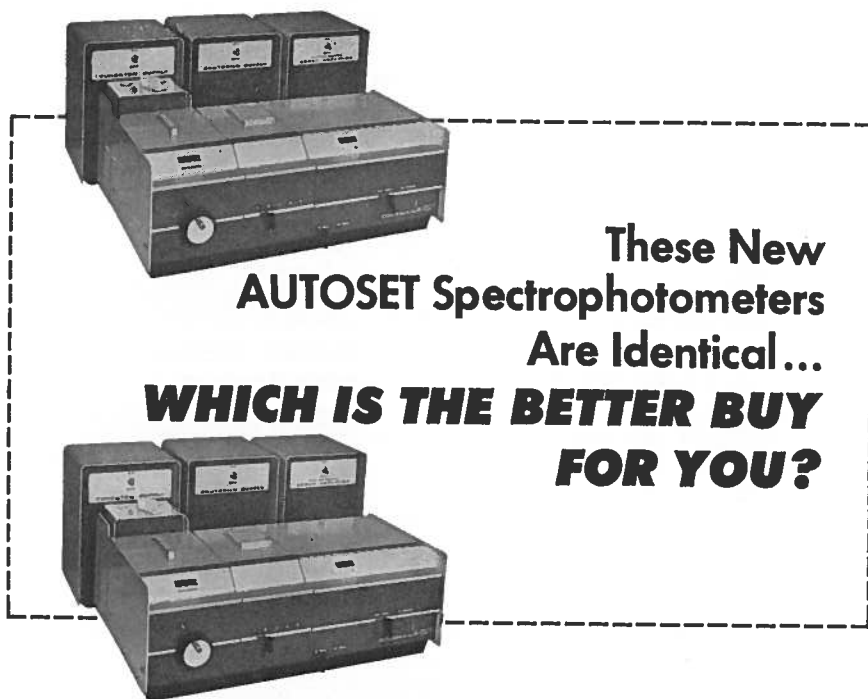
Dr. Joyce J. Kaufman of the theoretical and chemical physics group at Martin Company's Research Institute for Advanced Studies, is back in Baltimore after taking part in a series of international symposia in France and England.

During several weeks of research at the Sorbonne, Dr. Kaufman assisted in arrangements for a NATO Conference on Quantum Chemistry, which was held there July 1-13. While in Paris she also presented lectures in French on "Comparison of Various Techniques for Calculation of Localization Energies" and "New Boron Hydride Molecules, Ions and Derivatives."

Later, in London she addressed a meeting of the International Union of Pure and Applied Chemistry. Her topic was "The Application of Chemical Physics Technique as the Basis of Criteria for the Determination of Aluminum Coordination Numbers."

Dr. Kaufman, who has concentrated her research at RIAS on boron, aluminum and inorganic fluorine compounds, is developing techniques which should make it possible to predict theoretically the thermal stability, chemical and physical properties of new compounds even before they have been produced in the laboratory.

(Continued on page 11)



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MARYLAND SECTION NEWS

(Continued from page 9)



ACADEMIC

HOOD COLLEGE FREDERICK, MD.

Hood College was recently awarded a National Science Foundation Grant for Undergraduate Instructional Scientific Equipment for use in Chemistry. The grant of \$5280, which is to be matched by institutional funds, will be spent to purchase equipment to be used to widen the range of principles and modern techniques that can be included in course and independent study work. Items to be purchased will include an infrared spectrophotometer, a gas-liquid chromatograph and recorder, Mettler balances, a titrimeter, and some ground-glass jointed equipment.

Dr. Phyllida Willis, Whitaker Professor of Chemistry and Chairman of the Department of Physical Sciences at Hood College, was selected to participate in the Conference on Relativity, sponsored by the National Science Foundation and Cornell University, held at the Ithaca Campus of Cornell University August 5 to 23, 1963.

LOYOLA COLLEGE

Dr. Francis J. McGuire, former research chemist in the Elastomers Department at the E. I. duPont Company's Experimental Station in Wilmington has joined the faculty of the chemistry department at Loyola.

A native Baltimorean, Dr. McGuire received his B.S. from Loyola in 1954 before undertaking graduate work at Johns Hopkins University, where he received the master's and doctoral degrees in organic chemistry. His graduate work of preliminary studies on the structure of alpha-caryophyllene alcohol was directed by Dr. Alex Nickon.

Dr. Melvin P. Miller, who joined the faculty of Loyola in 1960, has been promoted to the rank of Assistant Professor of Chemistry. Dr. Miller received the doctorate in physical chemistry from Princeton University. His thesis research involved the measurement of transport properties of molten salts.

**50th ANNIVERSARY OF THE
 MARYLAND SECTION**

Col. Edward S. Hopkins, Chairman, reports that the Anniversary Committee was at work during the summer planning various phases of activities for the celebration. The next meeting of the Committee was scheduled for September. Further information will be published in the October issue.

FUTURE MEETING

The 30th Annual Chemical Engineering Symposium of the ACS Division of Industrial and Engineering Chemistry will be held at the University of Maryland, College Park on Nov. 14-15, 1963. The theme of the meeting is Transfer Phenomena in Fluid-Solid Systems. The program consists of 25 invited papers in four sessions and a banquet. For information contact A. Gomezplata, University of Maryland, College Park, Maryland.

OCTOBER MEETING

The October meeting will be held on October 16. The meeting will include the Maryland Chemists Award Program. Details will be published in the October issue.

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MEMBERSHIP CHANGES

New Members

Bard, James Richard, P. O. Box 913, Edgewood, Maryland.
 Drechsler, Caroline, 3005 Keswick Road, Baltimore 11, Md.
 Egan, C. Francis, Science Department, United States Naval Academy, Annapolis, Maryland.
 Kayser, Sigrid R., 606 Regester Avenue, Baltimore, Md. 21212
 Pentz, Ralph A., Jr., 2811 Rona Road, Baltimore 7, Md.
 Raphael, Everett A., Hq. Co. USA Garr. Fort Detrick, Frederick, Maryland.
 Rozman, Robert S., Department of Pharmacology, University of Maryland, School of Medicine, Baltimore 1, Md.
 Schaller, Carl L., 4251 Darleigh Road, Baltimore 36, Maryland.
 Tartaglione, Nicholas L., Box 1068, Edgewood, Maryland.
 Thomas, George H., 160 Dumbarton Road, Baltimore 12, Maryland.

Transferred in

Berkowitz, Lewis M., Biochem. Brn., Chem. Res. & Dev. Labs. Edgewood Arsenal, Maryland.
 Blackwood, Archie L., 128 Round Bay Road, Severna Park, Md.
 Bowkley, Herbert L., Thiokol Chem. Co., Elkton, Maryland.
 Campbell, Robert J., C. R. D. L., Edgewood Arsenal, Maryland.
 Ciolfi, Norman A., 201 Cherry Road, Edgewood, Maryland.
 Cornthwaite, Arthur B., Jr., St. Agnes Hospital, 1000 S. Caton Avenue, Baltimore 29, Maryland.
 Dahm, Donald B., Martin Marietta, Dept. 2560 Mail-336, Baltimore 3, Maryland.
 Edelson, Robert M., W. R. Grace Co., Res. Div. Washington Res. Center, Clarksville, Maryland.
 Godshall, H. Lynn, 29 N. St. John's Lane, Ellicott City, Md.

Gray, Don N., Res. Department, Aerospace Div.—Martin Company, Baltimore, Maryland.
 Hull, Larry A., Box 1049, Edgewood, Maryland.
 Lantz, William L., 1126 Taney Avenue, Frederick, Maryland.
 Ledbetter, John W., U.S.A. Cm., Res. & Dev. Labs., Edgewood Arsenal, Maryland.
 Mattoon, James R., 1334 Kitmore Road, Baltimore 12, Maryland.
 McGuire, Francis J., Dept. of Chem., Loyola College, Baltimore, Maryland, 21210
 Motsinger, Donald L., U. S. 53-358-835 HW Co. CRDL, Edgewood Arsenal, Maryland.
 Pogell, Burton M., 5701 Ridgedale Road, Baltimore 9, Maryland.
 Polss, Perry, Chem. Dept., Johns Hopkins University, Baltimore 18, Maryland.
 Pomerantz, Seymour, Biolcl. Chem. Dept., University of Maryland, Medical School, Lombard & Greene Sts. Baltimore, Md.
 Schloss, Hans R., Res. & Dev. Thiokol Chem. Co., Elkton, Md.
 Schultz, John E., Box 857, Edgewood, Maryland.
 Shaub, Harold, 3404 Terrapin Road, Baltimore, Maryland 21208
 Snell, Chester A., 1500 Guilford Avenue, Baltimore 2, Maryland.
 Speights, Robert M., Jr., 840 Monroe St. Apt. 202, Annapolis, Maryland.
 Sugita, Edwin T., P. O. Box 31, Edgewood, Maryland.
 Sundberg, Richard J., Box 792, Edgewood, Maryland.
 Talalay, Paul, Johns Hopkins University Medical School, 725 N. Wolfe Street, Baltimore 5, Maryland.
 Volk, Alfred, 107 Willoughby Beach Road, Edgewood, Maryland.
 Whitaker, Milton C., R. D. 2, North East, Maryland.

STUDENT AFFILIATE MEETING

The regional meeting of the Student Affiliate Chapters from the Maryland and Washington Sections of the ACS, held at Dunbarton College last April was a great success. The enthusiasm of the students and faculty sponsors alike was evidenced by the fact that over 120 persons attended sessions at which sixteen papers were presented by students from eight colleges and universities in the two sections.

An excellent program was arranged

by Sister M. Ellen Dolores, associate professor of chemistry at Dunbarton. A highlight of the program was the after-luncheon address by Dr. Samuel P. Massie, Associate Program Director, Undergraduate Science Education, NSF.

Through the financial assistance of the Educational Committees of the Maryland and Washington Sections a number of awards were made available for outstanding student papers. The winners and their awards were:

First Place	Joseph Mockus University of Maryland	\$25 Savings Bond
Second Place	Barbara Gaver St. Joseph College	Journal of Medicinal Chemistry (1 year)
	Martin Lindemann The American University	Journal of Organic Chemistry (1 year)
Third Place	Lester Dolak Johns Hopkins University	Journal of Chemical Education (1 year)

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REFERENCES

- (1) Ind. Eng. Chem. 25-653 (June, 1933). of Research 12-241 (Feb., 1934, R. P. No. 649) Granule Sizes: 4, 8, S, 10-20, and minus 20 mesh.
- (2) Ind. Eng. Chem. 25-1112 (Oct., 1933).
- (3) National Bureau of Standards Journal

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NOMINATIONS FOR SECTION OFFICERS

In compliance with Bylaw VI, Sec. 4 (b) of the Maryland Section of the American Chemical Society, the names of the members of the Nominating Committee for the election of the officers, councilors, and members-at-large of the Executive Committee for the calendar year 1964 are listed below in order that members may suggest suitable candidates to them. A candidate so suggested to the Nominating Committee must first have given consent to such nomination.

The members of the Nominating Committee are:

George L. Braude, Chairman
Wen Chang Stanley Kramer
Forrest R. Hurley Norbert Zaczek

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Research Report Available

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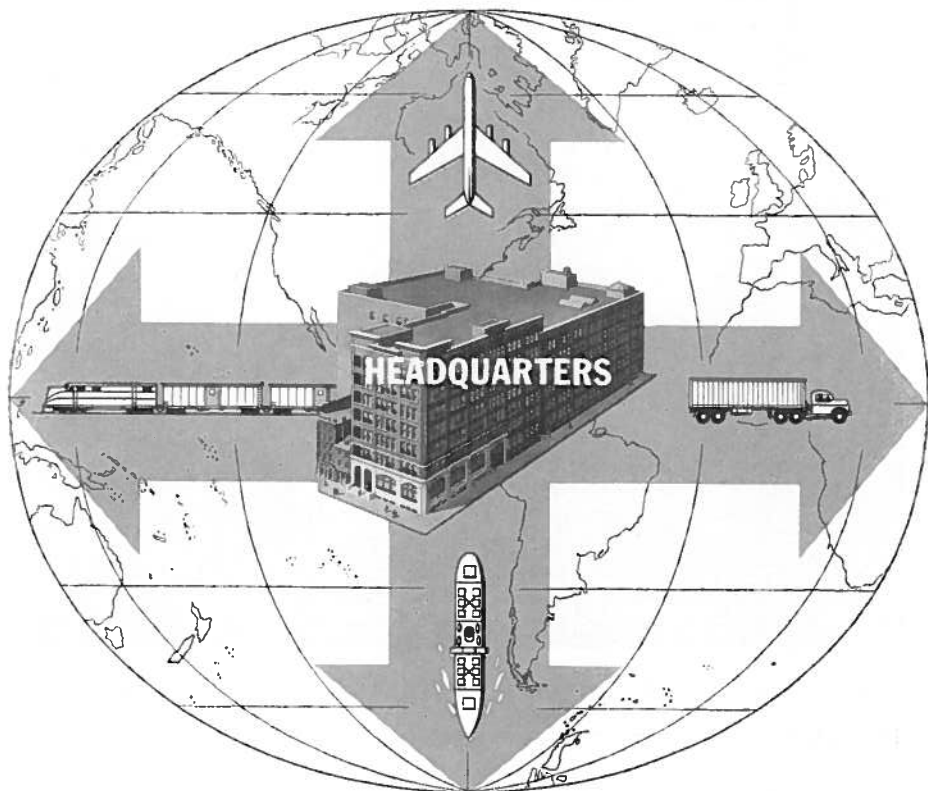
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