



THE **CHESAPEAKE**  
**CHEMIST**

MARYLAND SECTION  
AMERICAN CHEMICAL SOCIETY

VOL. XXII

JANUARY, 1966

NUMBER 1





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# THE CHESAPEAKE CHEMIST

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NUMBER 1

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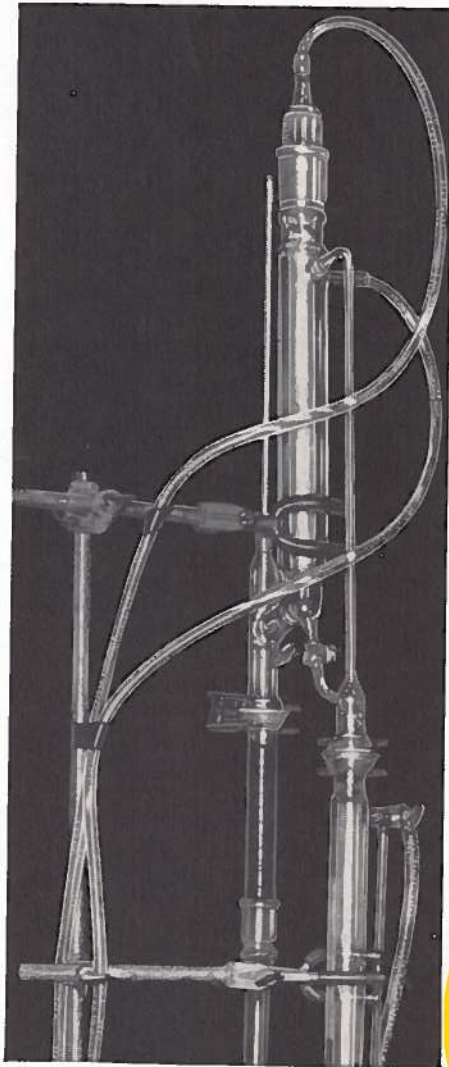
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## JANUARY MEETING



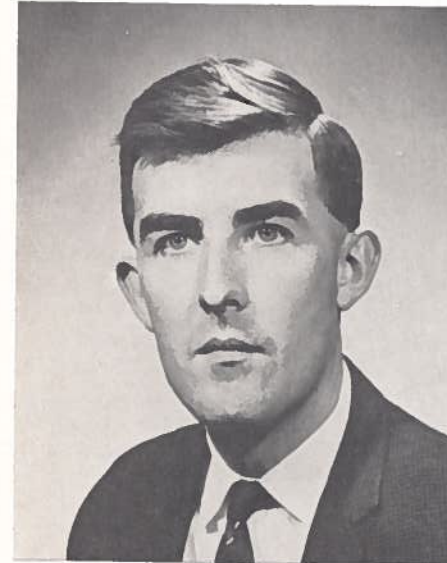
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THE CHESAPEAKE CHEMIST



DR. GEORGE W. A. MILNE



DR. GART WESTERHOUT

**DATE:**

Wednesday, January 19, 1966

**PLACE:**

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

**SPEAKERS AND TOPICS:**

5:30 P.M. ORGANIC CHEMISTRY AND BIOCHEMISTRY GROUPS. Dr George W. A. Milne, National Institutes of Health. "Applications of Mass Spectrometry to Problems of Structure in Biochemistry" (see page 8).

8:30 P.M. Dr. Gart Westerhout, Professor and Director of Astronomy, University of Maryland. "Radio Astronomy, a New Window on the Universe" (see page 11).

Biography of Dr. Milne is on page 8 and that of Dr. Westerhout is on page 11.

**COCKTAILS AND DINNER:**

Eudowood Gardens Dining Room. Price is \$2.75 per person for cocktails (6:30 - 7:15 P.M.) and dinner (7:15 P.M.). Free parking. Reservations must be received no later than January 14. Use reservation form on page 9. We encourage you to bring your wife and friends to both the dinner and the meeting.

**SOCIAL HOUR:**

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

**COVER**

A view of the University of Maryland's Clark Lake radioastronomy observatory in Southern California.

## CHAIRMAN'S MESSAGE



DR. F. M. MILLER

The steadily growing membership of the Maryland Section offers the opportunity, and the challenge, to the Section to provide more services for its members, and for the public, in many areas.

Several excellent programs have been initiated in recent years, and others have been expanded. The arrangement for an outstanding regular meeting facility has provided an attractive feature for the monthly meetings. The basis has been laid for an increasing improvement of the Section's activities.

The program in continuing education whether in the form of a lecture series or a short, intensive course is probably one of the most worthwhile activities which the Section can offer. Efforts in this area also are being made by providing topical group programs in connection with the monthly meetings. Hopefully, these topical groups—in the areas of biochemistry, organic - medicinal

chemistry, physical - inorganic chemistry and analytical chemistry—will flourish, perhaps to the point of separate monthly meetings.

Chemical education programs at the high school and college level have been an integral part of the Section's activities for many years, and provide a needed service to budding scientists and an important public relations function. One possible new direction for effort in this area is a television science quiz program for junior high or high school students.

An important trend in ACS activity across the nation is the regional meeting. The growth of these meetings during the past several years, and the increase in the number of sections participating in each region, has resulted in essentially complete coverage of the country by eight regional meetings. It would seem that the Maryland Section belongs in the Middle Atlantic Regional Meeting which will have its first meeting in Philadelphia on next February 3rd and 4th.

The extent to which the Section can meet its obligations in these and other areas depends on the participation of the membership in attending its meetings, offering suggestions and volunteering to help in its activities. With YOUR assistance, YOUR Section will continue to be able to provide more for YOU.

F. M. MILLER

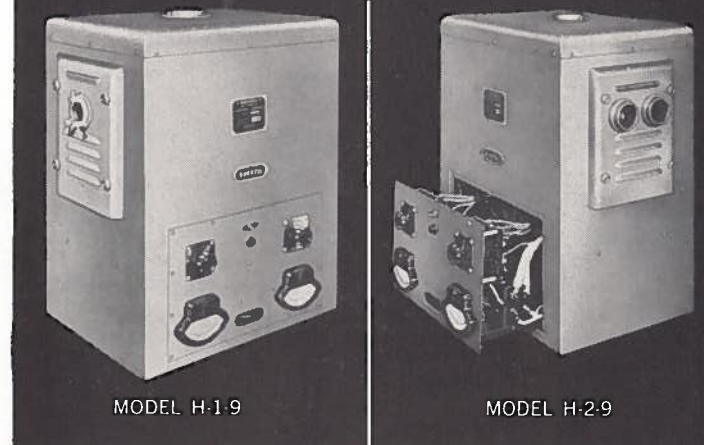
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## DR. GEORGE W. A. MILNE

Dr. Milne was born in Lancashire, England in 1937. After attending Manchester Grammar School he entered the University of Manchester in 1954, and received a B.Sc. (Honours) in 1957, an M.Sc. in 1958, and a Ph.D. in 1960. His graduate research was directed by Dr. A. J. Birch and Dr. H. Smith. In 1960-61, Dr. Milne was a post-doctoral fellow at the University of Wisconsin collaborating with Dr. S. M. Kupchan on studies of 3,4,7-trisubstituted steroids and other projects. He then moved to the National Institute of Arthritis and Metabolic Diseases in Bethesda, Maryland, where he was a Visiting Associate with Dr. L. A. Cohen and Dr. B. Witkop before becoming a Research Associate at the National Heart Institute in September of last year.

Dr. Milne has had experience in the organic chemistry of steroids, terpenes, alkaloids, amino acids, nucleosides, and nucleotides, and has published a number of papers in these areas. His present interest lies in the application of mass spectrometry to the elucidation of the structure of natural products. He is a Fellow of The Chemical Society (London) and is a member of the American Chemical Society.

## APPLICATIONS OF MASS SPECTROMETRY TO PROBLEMS OF STRUCTURE IN BIOCHEMISTRY

In comparison to other routine analytical techniques, mass spectrometry has a number of advantages which give it great potential value in problems of a biochemical nature.

Bombardment of a molecule with electrons of a suitable energy results in ionization and the ionized molecule then proceeds to collapse into fragments which are characteristic of its original structure. These fragments can be analyzed on the basis of their difference in mass to charge ratio and can be used to characterize the original molecule. The commercial double focussing mass spectrometer can be operated comfortably at the microgram level and the mass to charge ratio of the ions formed, including the molecular ion, can be measured to six significant figures, allowing assignment of empirical formulas.

Application of this method to biochemical problems has proved to be successful in several cases, including the two which will be described here. A microbial growth medium may be sampled directly and the various metabolites identified at once from the mass spectrum of the mixture. This enables one to design a rational chemical analysis,

application of which may be followed by re-characterization of each metabolite as it is isolated.

Mass spectrometry is of value in labeling studies in that it permits the use of deuterium in place of, or together with tritium. Use of this technique has resulted in elucidation of the mechanism of the biological reduction of desmosterol to cholesterol.

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Reservations for showings of the film can be made by contacting Mr. Frank Livelli, The Matheson Company, Inc., P. O. Box 85, East Rutherford, New Jersey 07073.

## SHORT COURSE ON GAS CHROMATOGRAPHY

A three-day course in Gas Chromatography will be offered by the Washington Gas Chromatography Discussion Group at the University of Maryland, College Park, on January 27-29, 1966. The course will offer the basic practical

and theoretical aspects of gas chromatography and will include both lecture and laboratory sessions. Instruments of major gas chromatograph manufacturers will be available. The registration fee of \$60.00 includes a textbook and lunches. Registration is limited, and applications will be accepted in the order they are received. Interested members of the Maryland Section are invited to enroll; such members are urged to contact Dr. Irwin Hornstein, U. S. Department of Agriculture, Agricultural Research Service, Plant Industry Section, Beltsville, Maryland 20705.

## LOCAL SECTIONS MEETING

Dr. F. Marion Miller, chairman of the Maryland Section, represented the section at a meeting of Northeastern Sections in Philadelphia on October 21-23. Discussed at this meeting, which was held under the auspices of the ACS Council Committee on Local Section Activities, were the needs and interests of the younger members of the society, recruitment of new members, the work of the ACS Office of International Activities, ACS short courses, local section awards, and the role of the chemical technician in the ACS. Regional meetings (see page 6), and topical groups at local meeting were also discussed. An open session was held at which the delegates considered topics such as section financing, lack of participation by high school teachers, ACS involvement in political matters relating to chemistry, and membership promotion. A more detailed report of the meeting appeared in the *C&E News* of November 22, 1965.

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**DR. GART WESTERHOUT**

Dr. Westerhout was born in 1927 in The Hague, The Netherlands. He received his education at the University of Leiden, from which he received a Doctorate in Astronomy and Physics in 1958. In 1952 he became an assistant at the University of Leiden Observatory, where he was a Chief Scientific Officer from 1956-1962. In 1959 Dr. Westerhout visited radio astronomy installations in the United States under the auspices of a NATO Fellowship. Dr. Westerhout is at present Professor and Director of Astronomy at the University of Maryland.

Dr. Westerhout is a member of a number of professional societies including the Dutch Astronomical Society, the International Astronomical Union, the American Astronomical Society, Astronomical Society of the Pacific, and the International Scientific Radio Union. He is also a member of Sigma Xi. Dr. Westerhout has published over thirty papers in his fields of interest.

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# FIRST MIDDLE ATLANTIC REGIONAL MEETING

Every section of the country, with the exception of the Northeast, is presently participating in or planning a regional meeting. Two such meetings, the Midwest Regional and the Western Regional, were held for the first time last year, and two new ones, the Middle Atlantic and the Great Lakes, will be held this year. The quality of the papers at these regional meetings will be kept high, and there will be a balance between general sessions and symposia.

The Middle Atlantic meeting is of direct interest to members of the Maryland Section, since in future years the section, along with the Washington Section, may participate in this regional meeting. This year the First Middle Atlantic Regional Meeting will be held in Philadelphia on Thursday and Friday, February 3 and 4 at the Sheraton Hotel. Members of the Maryland Section are cordially invited to attend. Over two hundred papers will be presented in the nine scientific divisions during the morning and afternoon sessions of the two days. A social hour and dinner are scheduled for Thursday evening. The after dinner speaker will be Dr. C. A. Vanderwerf, President of Hope College, Michigan, whose subject will be, "Where Are Our Next Chemists Coming From?". Both time and money can be saved by registration in advance. Dinner reservations must be received in advance and will be accepted up to the deadline of January 17. Meeting pre-registration will be accepted up to January 28. Please use registration form below. An outline of the program is given below for interested members. The complete program was published in the *C&E News* of December 27, 1965.

## PROGRAM

### Analytical Chemistry

THURSDAY

- A.M. Gas Chromatography\*  
P.M. Organic Analysis\*

FRIDAY

- A.M. Inorganic Trace Analysis\*  
P.M. General Papers

### Chemical Education

THURSDAY

- A.M. General Papers  
P.M. Laboratory Investigations and Lecture Experiments\*

FRIDAY

- A.M. General Papers  
P.M. Nuclear and Radiochemistry\*

### Industrial and Engineering Chemistry

FRIDAY

- A.M. Research Productivity-Management, Direction, Control.\* (Joint with Chemical Marketing and Economics)  
P.M. General Papers

### Inorganic Chemistry

THURSDAY

- A.M. Cluster Chemistry\*  
P.M. General Session

FRIDAY

- A.M. Metal-Sulfur Chemistry\*  
P.M. General Papers

### Medicinal and Biochemistry

THURSDAY

- A.M. Fine Structure of Proteins\*  
P.M. General Papers

FRIDAY

- P.M. General Papers

### Organic Chemistry

THURSDAY

- A.M. General Papers (Two Sections)  
P.M. General Papers (Two Sections)

FRIDAY

- A.M. General Papers (Two Sections)  
P.M. Elucidation of Molecular Geometry of Organic Molecules by Physical Methods.\*

### Petroleum Chemistry

THURSDAY

- A.M. Recent Advances and Future Trends in Refining Technology\*  
P.M. Recent Advances and Future Trends in Refining Technology\* (cont.)

FRIDAY

- A.M. General Papers  
P.M. General Papers

### Physical Chemistry

THURSDAY

- A.M. General Papers  
P.M. General Papers

FRIDAY

- A.M. Recent Advances in Physical Chemistry

### Polymer Chemistry

THURSDAY

- A.M. General Papers  
P.M. General Papers

FRIDAY

- P.M. General Papers

\* Denotes a Symposium of papers given by invited speakers.

## COPY DEADLINE

Material for publication in the February issue must be received by Editor by January 10.

## FIRST MIDDLE ATLANTIC REGIONAL MEETING

AMERICAN CHEMICAL SOCIETY

February 3 and 4, 1966

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Check here if you wish to receive a hotel reservation form.

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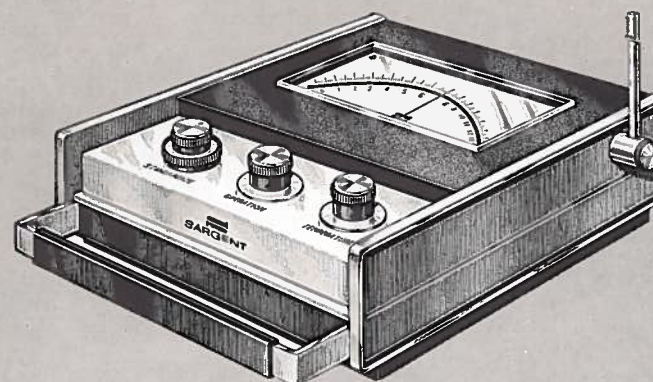
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