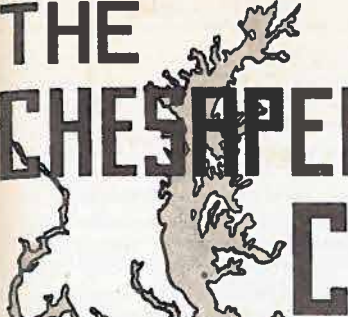


OCTOBER 1949

# THE CHESAPEAKE CHEMIST



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## THE OCTOBER MEETING

The October meeting on Wednesday, October 26, will be devoted to a trip through the laboratories and plant of the Point Breeze Works of the Western Electric Company, manufacturing unit for the Bell System. William E. Medford, an engineer at the plant, will discuss "Chemistry Behind the Scenes at Point Breeze."

Mr. Medford, who is a product of McDonogh and Forest Park High Schools, did his undergraduate work in chemistry at Washington College in Chestertown (B. S. 1940) and his graduate work at the University of Maryland. The next two years were spent with Du Pont establishing field laboratories in newly constructed high explosive and smokeless powder plants. For the last six years he has been in the chemical engineering department at Point Breeze, and he will discuss particularly the work of this department. This involves continuous electroplating of lead and brass on telephone conductors, process development of synthetic and natural rubber insulating compounds, and the development of associated laboratory test equipment and methods.

The Point Breeze Works, established in 1929 as the third major manufacturing unit of the Western Electric Company, was built primarily to meet the increasing demand for lead covered telephone cable. The position of the plant in cable manufacturing became distinctive with the advent of the coaxial cable. Primarily designed as a multi-channel long distance medium, coaxial cable now plays an important part in television networks, since it will handle the ultra-high frequencies necessary for television signals. The Bell System plans to have 12,000 miles of the cable in service by 1950. The Point Breeze Works is the sole manufacturer of this type of coaxial cable in the United States.

Cables for handling long distance telephone communication must be thoroughly dry. The drying process at Point Breeze removes about eight pounds of water from the average size (to page 2



from page 4) Water Pollution Control Commission ations for total, settleable and dissolved solids, turbidity, dissolved oxygen, biochemical oxygen demand, color, pH, temperature, taste and odor, and toxic compounds such as phenolic compounds, cyanides, arsenic and lead. Frequently identification and determination must be made of amounts of oil and grease in the water. The latter determination is necessary in connection with oil discharges in the Baltimore Harbor or Chesapeake Bay areas. In addition to the routine analysis of samples, it is occasionally necessary to determine the amounts of other materials in industrial and municipal waste effluents, such as nitrogen and sulfur compounds, various metals, residual chlorine, hardness, chlorides, calcium, phosphates and compounds of this general nature. In all cases the American Public Health Association Standard Methods for the analysis of water and sewage are rigidly followed.

The Commission now has a mobile unit for chemical and biological analysis of water and waste effluents in the field. This unit is a 16-foot house trailer, equipped with the necessary apparatus to make all the routine determinations in the areas under study. These field determinations include BOD, DO, pH, turbidity, solids, color, temperature, residual chlorine, and some of the toxic compounds. The present practice is to move the laboratory unit into the area under study and park it in a location where both water and electricity are available. The tow car is then used for the collection of samples which are brought back to the trailer for analysis. In this way the unit may be moved about and at present is taking and analysing samples from some 24 stations along the Potomac River from its source in Garrett County downstream to below Washington, D. C.

Research in industrial waste disposal problems to date has been limited, but it is hoped that the waste treatment and disposal problems of those industries lacking laboratory facilities and technical personnel may be undertaken by the Commission's staff and laboratory. There are many applications to research in the field of industrial waste control and treatment, especially since all industries would like to recover some by-product from the treatment methods that would help defray the cost of the treatment installations. There is also considerable need for research in discovering methods of treating some industrial effluents for which methods and techniques are unknown today. The Commission is committed to a program of assisting industry in every way possible in all phases of the attack on water pollution.

Water is of ever-increasing importance in mankind's individual, industrial and community enterprises. The destruction of the natural surface water resources of Maryland which has been taking place for a number of years (and was accentuated by the past war) must be controlled if our cities and industries are to continue to grow and prosper. In Maryland, where all the natural resources for a great vacation and tourist land abound, it is of tremendous importance for the streams to be kept in such a condition that these profitable potentialities can be fully developed.

(Ed. note: Dr. McLain is chairman of the Water Pollution Control Commission and a member of the Maryland Section.)

## Section Officers

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## MARYLAND SECTION ACTIVITIES

The local Section was represented at the meeting of the Council of the ACS by Councillors Carr, Cooke, Otto and Reid, who report that the Council conducted its business smoothly and efficiently. The proceedings of the Council will appear in Chemical and Engineering News in October, and should be read carefully by every chemist who is alert to his privileges and responsibilities as a member of the Society. The Council is the primary means by which our Society functions as a democratic organization, and the Society members should be informed about the action, viewpoints and problems of the Council.

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from page 1) The October Meeting at Western Electric cable 1200 feet long. The cable is then stored in an atmosphere of less than 0.5% relative humidity until it is covered with the lead sheath.

The Rubber Covered Wire Shop, which manufactures the insulated telephone wire used by the Bell System, is the most modern rubber manufacturing shop in the world. Local engineers have developed a revolutionary process for insulating telephone wires by applying rubber at high speeds in a continuous process, a method which has been adopted by many manufacturers in this country. The Point Breeze Works also manufactures over ninety percent of the telephone switchboard and subscriber instrument cords used in this country, and in addition produces a number of other important telephone products.

Transportation and Dinner The Point Breeze Works are located at 2500 Broening Highway in southeast Baltimore. The plant tour will start at 1:40 P.M. promptly because the premises must later be vacated by a fixed hour. Dinner will be served at the plant at 4:15 (note this early hour and eat a light lunch) and will be followed by Mr. Medford's talk. The Section officers plan to arrange transportation at no cost to members for everyone who wishes to go. It is hoped that members who have cars will be able to accommodate all who do not. If your own transportation is provided for, and you cannot take anyone outside your party, DO NOT fill in the transportation section of the reply card. If you can provide transportation for others, or if you wish it provided for you, fill in the card, mail it by October 15, and come to the traffic circle at Charles & 34th Sts. by 12:30 P.M. Return transportation will reach the circle by 7:30. The trip will be conducted rain or shine, since the tour is entirely indoors.





NEXT MEETING                      Wednesday, October 26  
PROJECT              Tour through Western Electric Plant  
PLACE                      2500 Broening Highway  
TIME                      1:40 P.M. at the plant  
                                 or 12:30 at Charles & 34th Streets  
SPEAKER                      William E. Medford  
SUBJECT                      Chemistry Behind the Scenes  
                                 at Point Breeze  
Save Friday evening, November 18, for the next  
meeting.

W. E. Medford

GETTING ACQUAINTED WITH CHESAPEAKE CHEMISTRY  
XX. THE WATER POLLUTION CONTROL COMMISSION  
(Courtesy of Joseph H. McLain)

The State of Maryland has witnessed for a number of years the increasing use of our streams as sources of public and industrial water supplies and the subsequent damaging use of these streams by the introduction of steadily increasing amounts of domestic and industrial wastes. The effect of this pollution upon our water resources was brought to the attention of the 1947 General Assembly, which authorized a Commission to study and control this problem. The Water Pollution Control Commission, appointed by Governor Lane, became effective on June 1 of that year and took over and extended functions previously exercised by several different departments of the state government.

The general policy and procedure governing the activity of the staff is based upon initial solicitation of voluntary compliance with regulations. If the requested cooperation is not forthcoming, then the Commission may and does issue compulsory orders and at its discretion invokes criminal penalties. The existing staff consists of an Executive Secretary, three full-time field men, one of whom is a Sanitary Engineer, and a full-time laboratory chemist in charge of the present laboratory and the mobile laboratory unit. The office of the Commission is located at 2203 North Charles Street, Baltimore 18, Maryland.

Field activities consist mainly of following special problems and investigations which are routine in nature but do include consultation with and recommendations to municipal and industrial officials regarding treatment facilities. Certain field determinations and chemical analyses are carried out by field personnel; however, the more involved determinations are conducted in the laboratory or by laboratory personnel in the mobile unit.

The main laboratory is located in the basement of Whitehead Hall on The Johns Hopkins University Homewood campus, under a grant from the Sanitary Engineering Department of that University. At present the facilities of the laboratory are such that all technical analysis of water and industrial wastes can be made by gravimetric, volumetric or colorimetric means. Facilities are also available for biological and bacteriological examination of water, sewage and industrial or trade wastes. Principally the routine analysis of samples consists of determin-

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