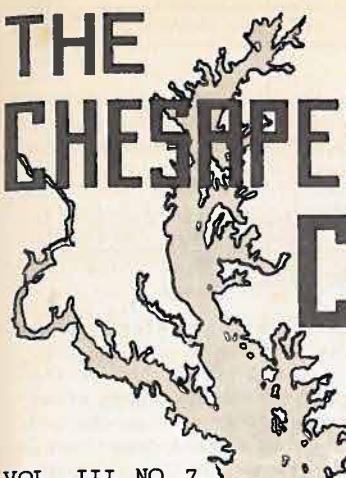


OCTOBER 1947

THE CHESAPEAKE CHEMIST

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THE OCTOBER MEETING

Three separate activities will make up the meeting on October 17—a plant trip, a dinner, and an evening lecture—and members of the Section are urged to participate in any or all of these enterprises. Those who have made reservations for the plant trip or dinner are reminded that buses will leave the Hopkins Circle, Charles and 34th Streets, at 12:30 P.M., and that dinner will be served in Levering Hall on the Johns Hopkins campus at 6:30. The evening meeting at 8:00 will also be held in Levering Hall. At this meeting Dr. Charles H. Herty, Jr., will discuss present-day problems of the steel industry.

The production of pig iron, steel ingots and steel products all involve processes which are replete with chemical reactions and chemical engineering unit operations. Most of these are carried on at high temperatures where experimental work is difficult and fundamental data relatively meager. Dr. Herty will discuss the reactions in the blast furnace, the melting and refining reactions in the open hearth, and some of the chemical processes which accompany the production of the finished products.

Dr. Herty received his undergraduate training at the University of North Carolina, and did his graduate work at Massachusetts Institute of Technology. He was Research Associate in the School of Engineering Practice while at M.I.T., then went to the Lackawanna Plant of Bethlehem Steel Company in 1924. He left Bethlehem Steel in 1926, however, to assume direction of Ferrous Metallurgical Research at the U. S. Bureau of Mines. In 1931 he became Director of Research of the Metallurgical Advisory Board in Pittsburgh, but left in 1934 to return to Bethlehem Steel. Here he served as Research Engineer until 1942, and since 1942 he has been Assistant to the Vice-President in Charge of Operations. Dr. Herty is an active member of various professional organizations in his field, and was one of the few chemists honored this year by election to membership in the National Academy of Sciences.

Section Officers

Chairman Giles B. Cooke, 502 Yarmouth Road, Baltimore 4
 Vice-Chairman J. A. Herculson, 407 Murdock Road, Baltimore 12
 Secretary-Treasurer H. H. Lloyd, Goucher College, Baltimore 18

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 Editor: Belle Otto, Goucher College, Baltimore 18, Maryland.

VOTE ON THE NEW CONSTITUTION

The American Chemical Society has undergone self-examination in the past two years--first through the Hancock Investigation, next through the Hancock Report, then in the decision to rewrite the Constitution of the Society. A painstaking and thorough study of the government of the Society was made by the Committee charged with rewriting the Constitution, then by the Review Committee, and finally by the two groups in collaboration. The Council made final scrutiny and passed the proposals unanimously. The final step, scrutiny and decision by the members, is now before us. Ballots are appearing in Chemical and Engineering News, and your vote should be sent to the Washington office by October 27.

Voting on this Constitution is not a routine matter, nor is it one to be passed by. An affirmative vote of two-thirds of those members who vote is all that is necessary in this last step in the ratification process, so that if 1000 members vote, the decision of 667 will decide the fate of the Constitution. But even the unanimous vote of 1000 should not decide this issue. Whether the new Constitution is accepted or rejected, the decision in so important a matter should indicate the wishes of the whole membership, not that of a small fraction, however active that fraction may be. Hence your vote, yes or no, is important as an indication of your feeling about the ACS. The total vote will be a measure of the true strength and member interest of the Society.

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THE COUNCIL MEETING AT NEW YORK

The Council of the American Chemical Society met on September 13. All Maryland Councillors (Carr, Corwin, Hellerman, MacRae, Otto, Reid) were present. An unofficial report of proceedings (brief and well worth reading) appeared in Chemical and Engineering News for September 22, page 2746. The paragraphs below do not attempt to duplicate this report, but rather present evaluation of the important aspects of the meeting as they impressed your local Councillors.

The Council decided that establishment of a Division on Professional Matters at this time was undesirable, that such matters might better be considered on an all-Society basis. There seemed to be little real controversy on this point.

Much time was devoted to consideration of the proposed amend-

ments to the Constitution and By-Laws. These represent a fundamental reorganization of the Society in an effort to keep the Society democratic and at the same time take account of its very large membership. The Britton and Rossini Committees selected as a guiding principle the policy of making the Constitution an enabling document and the By-Laws a guide to the mechanics of the functioning of the Society. That an instrument of such complexity as the new Constitution could have been constructed, revised, and submitted to Council in a relatively short time is itself worthy of comment, and is a tribute to the very able members of the Britton and Rossini Committees, and to all of the others immediately concerned, especially President Noyes, Secretary Emery and Counsel Hanson.

Your Councillors believe that the affairs of the Society are in able hands and that members may feel assured of the continued healthy growth of the Society.

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from page 4) races down a table several hundred feet long and is directed into a coiler where it is wrapped into tight, neat coils.

Some of the strip is marketed in this form, but the major portion is cold rolled. A large part of the cold rolled strip is finally given a coating of metallic tin. The resulting tin plate is used for containers in the canning industry, and for packing candy, tobacco, gasoline, lubricating oils and numerous other products. The tin mill at Sparrows Point ranks among the largest in the world.

Another interesting operation is the production of rod and wire. Few steel products are better known to the layman than wire, which has numerous applications in daily life as fence and netting, telephone and telegraph wires, bed springs, barbed wire, bailing wire, nails and staples, wire rope and many others. The Sparrows Point plant operates two rod mills and a large number of wire drawing units. One of the mills rolls four strands of rod at one time, the rod coming from the last stand in the mill at a speed of nearly 50 miles per hour.

Both butt-welded and lap-welded pipe are made at Sparrows Point. In such production, a flat piece of steel known as skelp is heated and passed through rolls where it is bent to the shape of pipe and the two ends welded to give a tight joint. The butt-welding mill, which is one of the most modern in existence, is of the continuous type, that is, an endless band of heated skelp is passed through the welding rolls, and the finished pipe is then cut into lengths as it leaves the rolls. A flying saw, which moves at the same speed as the pipe, is used for cutting.

The Sparrows Point plant at present employs over 20,000 persons and has a weekly payroll of approximately one million dollars. A large expansion program is under way, and plans call for new furnaces, a new battery of coke ovens, additional facilities for tin plating and wire production, and an electric power generating station.



Dr. Herty

NEXT MEETING Friday, October 17
TRIP 12:30, Hopkins Circle, Charles & 34 Sts.
DINNER 6:30, Levering Hall, Johns Hopkins,
Charles & 33 Sts.
MEETING 8:00, Levering Hall, Johns Hopkins
SPEAKER Dr. Charles H. Herty, Jr.
SUBJECT Chemistry in the Steel Industry
The meeting is open to any who are interested.
Save Friday, November 21, for the next meeting.

GETTING ACQUAINTED WITH CHESAPEAKE CHEMISTRY

XII. SPARROWS POINT PLANT, BETHLEHEM STEEL COMPANY

The Sparrows Point plant of Bethlehem Steel Company is the only large steel plant in the United States located on tidewater, a location which permits it to receive basic materials and to ship the finished products in ocean-going vessels. In 1886 the site was chosen by Pennsylvania Steel Company as the location for a plant to produce pig iron. Work was begun on four blast furnaces in May, 1887, and the first iron was cast in 1889. All four furnaces were in operation by April, 1893. Construction of a bessemer plant and a rail mill was started in 1890, and the first rails were rolled the following August. Other additions, including shipbuilding and ship repair facilities, followed. The entire plant was acquired by Bethlehem Steel Company in 1916, and it has since become, through reconstruction and extension, one of the largest and most modern steel plants in the country.

Bethlehem Steel Company now owns over 3900 acres of land at Sparrows Point. The plant operates seven blast furnaces, with a yearly capacity of 2,712,000 tons of pig iron; 26 open hearth furnaces and three bessemer converters with a combined yearly capacity of 4,075,000 tons of steel; and 422 by-product coke ovens producing 2,124,000 tons of coke and 12,489,000 gallons of light oils annually. The basic raw materials from the Company's mines and quarries in Chile, Cuba and Mexico are brought in ocean-going vessels directly to a 1200-foot dock and transferred to storage yards with space for about half a million tons of iron ore and limestone. Coal is brought in by rail and barge.

Three large plate mills are in operation at Sparrows Point, producing sheared and universal plate in a wide range of widths and thicknesses. During the war the major part of this production was taken by the shipyards. A flanging shop, operated in conjunction with the plate mills, produces a variety of flanged products required for boilers, tanks, drums and similar products.

One of the most spectacular operations at Sparrows Point is the rolling of sheet and strip on the large, continuous mill. Here a heated slab of steel weighing several tons is passed in rapid succession through a series of powerful roll stands, ten in all. As the strip, a wide thin band of steel, emerges from the last stand at a speed of nearly 25 miles an hour, it (to page 3