Undoubtedly the First All-Union Congress for Mechanics will considerably further the development of the numerous problems in the field of theoretical and applied mechanics, in particular those arising in industrial laboratories.

FIRST ALL-UNION CONFERENCE FOR POLAROGRAPHIC ANALYSIS

Yu. S. Lyalikov

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The First All-Union Conference for Polarographic Analysis was convened by the Committee for Analytical Chemistry of the Academy of Sciences, USSR, the Moldavian Branch of the Academy of Sciences, USSR, the Kishinev State University, and the Moldavian Division of the D. I. Mendeleev All-Union Society.

Eighteen institutes of the Academy of Sciences, USSR and of the academies of sciences of the Union republics, 27 branch scientific research institutes, 25 institutions of higher learning, and 15 industrial laboratories were represented at the conference. Thirty-two papers devoted to problems of polarographic analysis were read at the plenary session; 33 papers were read at the meetings of the section on the polarographic analysis of inorganic substances; 20 papers were read in the section on the polarographic analysis of organic substances. Almost 50 persons participated in the presentation of papers.

A survey paper entitled "Achievements and ways of developing polarographic analysis" was read at the plenary session by S. I. Sinyakova, Yu. I. Usatenko, and Yu. S. Lyalikov.

S. I. Sinyakova, Geochemical Institute (GEOKhI), and E. N. Vinogradova, Moscow State University (MGU), reported on methods of determining microquantities using a stationary drop.

V. G. Sochevanov, All-Union Scientific Research Institute of Metrology and Standardization (VIMS, Moscow), read a paper on the application of polarography to the analysis of mineral ores. The possibility of using a polarographic method in the determination of tungsten, lead, bismuth, and a number of other materials in steels and other alloys was demonstrated in a paper presented by P. Ya. Yakovlev, R. D. Malinina, G. P. Razumova, and M. S. Dymova – workers in the Central Scientific Research Institute of Ferrous Metallurgy (TsNIIChERMETA). Hydrogen sulphide and methyl violet were used for the concentration of the elements being determined and subsequent polarographic measurements of the solutions of the concentrated precipitates were made successfully by the authors. The sensitivity of the determination was within $10^{-4}\%$. In his paper I. L. Abarbarchuk (of the Ukrainian Academy of Agricultural Sciences) showed that it was possible to apply polarographic methods to the determination of manganese, aluminum, and phosphoric acid in soils. The possibility of a method for the analysis of food products was discussed in the papers of B. V. Lipis, Moscow Branch, Academy of Sciences (MFAN, USSR), and G. P. Tikhomirova (Ukrainian Scientific Research Institute of the Food Industry). Polarography has been used for the determination of vitamins B_1, B_2, PP, and C and is being used for rapid control of production in vitamin factories. A method for the determination of dissolved oxygen and sulfurous anhydride, tanning and dyeing substances, acetaldehyde, furfural, malic acid, etc., was offered to the distillation industry. The polarographic method has been used for the identification of heavy metals in their products by confectionery factories.

Questions about oscillographic polarography were widely discussed at the conference. The papers of S. B. Tsfasman of the Central Laboratory of Automation (TsLA) and of R. Sh. Nigmatulin (of the Kazan' Aeronautical Institute) were devoted to new designs of polarographs. Ya. P. Gokhshtein, Geochemical Institute (GEOKhI), read a paper on equations of oscillographic polarography. Oscillographic polarography goes beyond the limits of scientific research establishments and is beginning to be used successfully in the plant laboratories of various industries (the Moscow Electric Lamp Plant). The paper read by V. I. Shapoval of the Ukrainian Academy of Agricultural Sciences, who had used solid electrodes in oscillography, aroused a great deal of interest. The papers of A. G. Stromberg and the Tomsk Polytechnical Institute and A. I. Lopushanskaya of Chernovits University were

on a theory of irreversible polarographic waves. The possibility of determining the mechanism of regeneration and of the composition of discharging ions on the basis of polarographic data was shown by the authors. A paper read by S. G. Mairanovskii of the Institute of Organic Chemistry, Academy of Sciences, USSR was devoted to a theory of catalytic polarographic waves and their use for analytical purposes.

In their papers, M. B. Bardin and N. E. Ezerskaya, of the Institute of General and Inorganic Chemistry (IONKh, USSR), demonstrated the possibility of using polarographic methods on solid electrodes for the analysis of a group of platinic metals.

The papers of Yu. K. Delimarskii and his collaborators were devoted to the application of derivative and oscillographic polarography to fused salts; these papers aroused considerable interest.

The results of a study of the composition of complex compounds, the determination of the constants of instability, and the use of complex compounds for analytical purposes were discussed in the papers presented by I. M. Reibel' of the Kishinev Agricultural Institute, A. A. Popel' of Kazan' University, and P. K. Migal' and collaborators of Kazan' University.

In the section on the polarographic analysis of organic substances, papers were read on the determination of the following: sulfaminic compounds, acetophenone, hydrogen peroxide, and cumene by L. N. Vertyulina, Yu. V. Vodzinskii, and I. A. Korshunov, all of Gorkii University; acrolein in products of the oxidation of propylene by V. P. Latyshev and N. I. Popova of the Eastern Siberian Branch of the Academy of Sciences, USSR, derivatives of 5-nitrofuran and 5-nitroselenophene by S. A. Giller and Ya. P. Stradyn' of the Institute of Organic Synthesis of the Academy of Sciences, Latvian SSR; and others.

The conference adopted a resolution designating the basic directions for the further development of polarography, including theoretical studies in the field of oscillographic polarography, polarography on solid electrodes, on a stationary drop, and recording polarography; the necessity for more extensive development of the polarography of organic compounds was pointed out.

The conference took cognizance of the need for creating a section on polarographic analysis within the Committee for Analytical Chemistry; it would be entrusted with the coordination of efforts and the selection and preparation of bibliographical materials. The conference requested the Presidium of the Academy of Sciences, USSR and the State Scientific and Technical Committee (GNTK) of the Council of Ministers, USSR to organize the manufacture of various models of polarographs: visual, recording, manual, and electronic. The conference participants recognized the need to request the editors of Zavodskaya Laboratoriya (Industrial Laboratory) and Zhurnal Analiticheskoi Khimii (Journal of Analytical Chemistry) to report more extensively on problems of polarographic analysis. It was considered advisable to organize problem laboratories for polarographic analysis in several institutions of higher learning in the Soviet Union. It is intended to hold the next conference in Kazan' in 1962.