CHRONICLES

ON THE OCCASION OF THE 100TH BIRTHDAY OF ACADEMICIAN A. E. PORAI-KOSHITS

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A conference devoted to the 100th birthday of Academican Aleksandr Evgen'evich Porai-Koshits was held in Lensovet Leningrad Institute of Chemical Technology October 5-6, 1977.

This conference was a warm and sincere celebration in memory of this prominent scientist and organic chemist who was the first scientist to work out, at the start of this century, such complex theoretical problems as the theory of chemical reactions and the theory of dyeing; he was also the author of the original dynamic theory of chromaticity, which is justly called the "forerunner of modern theories of chromaticity," and was a prominent technological engineer who founded a school of technological engineers and aniline dye specialists.

Corresponding Member of the Academy of Medical Sciences of the USSR N. V. Khromov-Borisov (also in the name of O. F. Ginzburg and V. V. Perekalin) presented a paper on the topic "Contribution of A. E. Porai-Koshits to the development of organic chemistry in the USSR." The exceptionally interesting research of Porai-Koshits on heterocyclic compounds was noted. His doctoral dissertation (1905) included the study of the reaction of the methyl group of benzimidazole with p-nitrobenzaldehyde, and the subsequent conversion of the condensation product was essentially the specific synthesis of azo dyes. This sort of profound scientific approach permeated the endeavors of Academician Porai-Koshits and his students. He made an extensive study of tautomeric systems that have methyl groups with labile hydrogen atoms, particularly pyrazolones, carried out the specific synthesis of pyrazolone derivatives and studied their structure and properties; this research led to remarkable results of both theoretical and practical value.

He subsequently made a comparative study of the reactivities of the methyl groups of picolines, methylquinolines, 9-methylacridine, methyluracil, etc.

In his discussion of the results of his research in this area Academician Porai-Koshits assumed that the possibility of tautomeric transformations is due to the ability of the carbon—hydrogen bond in methyl and methylene groups to undergo polarization up to the point of separation of the hydrogen atom (in the form of a proton) to give a mesomeric anion.

Academician Porai-Koshits and his students were able to examine most of the reactions under investigation in the chemistry of dyes and intermediates on the basis of theoretical correlations of the properties of tautomeric molecules.

In his speech N. V. Khromov-Borisov emphasized that the idea of specific synthesis was first substantiated scientifically by Porai-Koshits and that 30% of his students currently are engaged in research involving the specific synthesis of active compounds.

The research of Academician Porai-Koshits dealing with the study and practical application of dimethylphenylbenzylammonium chloride (leucotrope O) in synthesis is of great interest. With profound theoretical insight he made a systematic study of benzylation by means of leucotrope O of substances such as phenols, naphthols, alcohols and phenolic alcohols, carboxylic, phenolic carboxylic, and thiophenolic carboxylic acids, amino phenols, hydroxylamines, sodium sulfide, ethyl xanthate, etc. These studies constituted the foundation for the development of the presently well-known method for alkylation with quaternary ammonium salts. In particular, they have found extensive application in the chemistry of heterocyclic compounds (in syntheses by means of gramine, etc.). The research by A. T. Babayan on the chemistry of quaternary ammonium salts, which opens up new synthetic pathways, is of outstanding significance here.

Diazo compounds, the chemistry of which was developed in the research of Academician Porai-Koshits, I. V. Grachev, and co-workers, constituted a part of the traditional areas of chemical research, in addition to heterocyclic and aromatic compounds engaged in by the Porai-Koshits school.

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The conference was held in Porai-Koshits' "native" department in the auditorium in which most of the speakers had heard his remarkable lectures. M. A. Chekalin (Scientific-Research Institute of Organic Intermediates and Dyestuffs, Moscow) spoke on the exceptional role played by Porai-Koshits in the development of industrial dyes and in the creation of the Soviet aniline dye industry. The activity of the many scientific collectives today is the outgrowth of his conclusions and discoveries. A. V. El'tsov (Leningrad Institute of Chemical Technology) presented an interesting paper on the development of the scientific traditions by Academician Porai-Koshits and his students and followers engaged in research in the department of technology of dyes and phototropic compounds. V. V. Perekalin presented a report on the reactions of unsaturated nitro compounds with CH acids, and I. L. Bagal reported the development of concepts regarding the structure and reactions of diazo compounds. O. F. Ginzburg and V. V. Sinev reported that one of the new fields of theoretical research on carbonium ions is now undergoing development with the goal of practical application. L. S. Efros in a paper on the chemistry of benzimidazoles again demonstrated his active creative endeavors in the development of the ideas of Academician Porai-Koshits regarding specific synthesis. Z. V. Pushkareva (S. M. Kirov Ural Polytechnic Institute, Sverdlovsk) in her own name and in the name of her students (V. S. Mokrushin, V. I. Nifontov, and E. F. Golovina) presented a paper on the chemistry of diazo compounds of the heterocyclic series, particularly the synthesis and study of diazo compounds of 5-aminoimidazole-4-carboxamide, on the basis of which the specific synthesis of a number of analogs of AICA was carried out. A paper by A. A. Kharkharov was devoted to the modern state of development of the finishing process in the textile industry, and a paper by V. S. Sominskii was devoted to the economic and organization problems in the development of scientific research in the chemical industry.

Words of cordial recollections of Academician Porai-Koshits as a talented lecturer and teacher and of his wonderful human qualities were also heard in each paper. The program of the anniversary conference concluded with the personal recollections of students of Academician Porai-Koshits. We listened to the speeches by members of his family — his sister N. E. Porai-Koshits and his eldest son E. A. Porai-Koshits — with particularly warm feelings. The remarkable qualities of Academician Porai-Koshits as a teacher not only of young students but also of youngsters in his own family were again pointed out in these speeches.

The entire multifaceted activity of Academician Porai-Koshits was in keeping with the succinct and lucid statement of D. I. Mendeleev: "the goal of science is prediction and the common weal." It is hoped that his students will not abandon this principle in their creative activity.