

FIRST ALL-UNION CONFERENCE ON THE CHEMISTRY  
OF HETEROCYCLIC COMPOUNDS

A. N. Kost

Conferences devoted to one or another aspect of the chemistry of heterocyclic compounds have been held repeatedly in the course of the last two decades in our country; however, all of them were departmental conferences and could not bring together scientists working in all of the ministries and departments of the country. For this reason, the All-Union Conference on the Chemistry of Heterocyclic Compounds, the chief task of which was exposure of the overall front of the development of science in this field, was organized in Moscow from December 24 to 26, 1973, at the initiative of the Scientific Council on Fine Organic Synthesis in affiliation with the Academy of Sciences of the USSR (AS of the USSR). In view of the fact that a very wide circle of specialists are engaged in the chemistry of heterocyclic compounds, the theme of the conference was limited to the chemistry of nitrogen heterocycles. However, even when the theme was narrowed down in this way, although several scientific schools proved to be outside the scope of the activity of the conference, more than 500 applications for papers were, nevertheless, submitted, from which 106 communications were selected and presented (there were more than 350 participants in the conference).

After the opening address by Associated Member of the Academy of Sciences N. K. Kochetkov, who opened the conference, plenary papers were presented by Professor Ya. L. Gol'dfarb (Moscow) and B. V. Ioffe (Leningrad). The first paper examined the historical development of concepts regarding the amination of the pyridine ring, commencing with the research of A. E. Chichibabin (in which the speaker himself had participated) and ending with the data obtained in the laboratory of Ya. L. Gol'dfarb in recent years. The second paper was devoted to the research of B. V. Ioffe and his students on the synthesis, isomerization, and reactions (particularly those involving ring opening) of pyrazolines. The conference also concluded with two plenary papers. Associate Member of the AS of the USSR V. P. Mamaev (Novosibirsk) gave an interesting review of cases involving ring opening and recyclizations in the pyrimidine series while simultaneously giving the physicochemical basis for the reactivity of the molecule. Professor A. N. Kost (Moscow) related new rearrangement of arylhydrazine derivatives that substantially amplify the possibility of the Fischer synthesis (the synthesis of tryptamine and homotryptamines by the method proposed by I. I. Grandberg, the synthesis of 2-aminoindoles from acylarylhydrazines, new syntheses of carbolines, etc.). Three sections — monocyclic heterocycles, condensed systems, and physicochemical methods for the investigation of heterocycles — operated at the conference. We at once note that this sort of division proved to be unfortunate, inasmuch as studies devoted to the synthesis and properties of compounds were saturated with data from physicochemical methods of investigation in those cases in which they were accomplished at a high level. Only the mass spectral studies were distinguished by a certain independent character.

In the first section, the greatest emphasis was upon studies involving the synthesis of heterocyclic structures with the use of carbenes and nitrenes, cycloaddition, particularly 1,3-dipolar addition, and the synthesis, stereochemistry, and reactions of small rings. One should especially note the communications of Academician B. A. Arbuzov on diazacyclobutanes, of B. V. Ioffe on alkoxyaziridines, of Professor S. S. Novikov on diaziridines, and of Associate Member of the AS of the USSR B. M. Mikhailov on rings that include nitrogen and boron atoms.

The second section proved to be more diversified with respect to the subjects covered, although here, as in the first section, the primary attention of the speakers was directed to heterocyclization and, to a lesser degree, to the properties of the structures themselves. A large number of the communications per-

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tained to the chemistry of heteroaromatic systems. The studies of Academician of the AS of the Ukrainian SSR F. S. Babichev (Kiev) on the chemistry of isoindoles, in which shifting reagents were used extensively for the establishment of the structures of substances, the lengthy communication of Associate Member of the AS of the Ukrainian SSR A. V. Bogat-ski on benzodiazepines and their eight- and nine-membered analogs, a group of papers on the synthesis and properties of benzimidazole derivatives, two papers by V. I. Shvedov on new methods for the synthesis of condensed structures with a pyrazine ring, a communication by A. K. Sheinkman on new developments of the hetarylation reaction, a paper by Academician I. Ya. Postovskii on azaaromatic phenanthrenoid compounds, etc., can be singled out from the broad spectrum of the papers presented in this section.

Papers relating to both monocyclic and condensed structures were presented in the section devoted to physicochemical methods. As we stated above, a series of papers on the mass spectrometry of organic compounds was a prominent feature of the conference. Thus this method, the development of which has lagged somewhat in our country, has acquired rather widespread significance. The concrete problems involved in the evaluation of the fine structure and the properties of molecules (conformation, tautomeric equilibrium, kinetic evaluation of reactivities, etc.) with the use of various spectroscopic methods; for example, Fourier  $C^{13}$  spectroscopy in the studies by Professor K. M. Dyumaev and Academician A. S. Sadykov, were solved in a large number of the remaining papers in this section. Several papers were devoted to quantum-chemical calculations.

Although the papers presented at this conference did not have applied-chemistry character, there are however, communications dealing with thermochromic dyes, pesticides, new medicinal substances, anti-oxidants for oils and fuels, additives for polymers, sensitizers extracting agents for rare elements, etc. The prospects for the further development of research on nitrogen heterocyclic substances in quite a number of directions was especially emphasized in a resolution of the conference. The conference was undoubtedly interesting and useful. Unfortunately, only a very small number of copies of the summaries of the papers were reproduced, and this limited the possibility for familiarization with the materials of the conference for those who could not be present.