# SYNTHESIS, STRUCTURE, AND PROPERTIES OF HETEROCYCLIC COMPOUNDS*

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This book contains material from the conference on the synthesis structure, and properties of heterocyclic compounds held in Poznan (Poland) in 1972. Included in it is material from five plenary and 19 sectional papers, and the remaining seven plenary and seven sectional communications are represented only by brief summaries. The larger portion of the papers deal with, in one way or another, nitrogen-containing heterocycles. Of these, one should mention the paper (I. Strogl, Prague) on the electrochemical reduction of thiophene derivatives and two papers on the chemistry of 2-phospholene (R. Bodalsky and M. Petrusewicz) and the stereochemistry of 2-methylthio-2-oxo-1,2,3-dioxaphosphorinane derivatives (Mikolajczik). I. Stirb (Prague) reported data on the synthesis and mass-spectral behavior of methylfurans and methylthiophenes.

Of the 32 papers dealing with nitrogen-containing heterocycles. 13 involved derivatives of pyridine or its condensed analogs, whereas the remaining papers dealt with the chemistry of six-membered heterocycles with two nitrogen atoms (four papers), pyrrole or pyrrolidine derivatives (three papers), as well as analogs of nucleotides (two papers) and heterocycles containing, in addition to nitrogen, oxygen or sulfur in the ring. Approximately half the plenary and sectional papers were devoted to the discussion of problems in the stereochemistry and conformation of heterocycles (six papers), as well as physicochemical aspects (11 papers). Thus a plenary paper (A. Katritzky, England) was devoted to the conformational analysis of saturated six-membered nitrogen heterocycles (only summaries are included in the book).

Problems in the determination of the mutual orientation of heterocyclic and aromatic rings in compounds of the aryl–Y–aryl type (where the Y atom is NH, O, S, $-CH_2-$, or a CO group) by study of their dipole moments and analysis of spectral data were discussed in a paper by A. Kol (Poland).

A Kwajatkowsky (Poland) made a detailed examination of the problem of the use of UV spectroscopic data for the solution of problems of ketone–enol, thione–thiol, and amine–imine tautomerism primarily in a series of pyrimidine derivatives. Many tables and factual data that convey the results of the individual authors are presented.

The same problems were also dealt with in part by G. Varsanil (Hungary), although principal attention was focused on the IR spectra of six-membered heterocycles and their N-oxides rather than on the UV spectra. The effect of substituents on the basicities of six-membered nitrogen heterocycles and the applicability in this case of Hammett correlation equations were analyzed thoroughly in an interesting review paper by P. Tomasika (Poland). Two plenary papers (O. Edwards, Canada) dealt with the chemistry of nitrenium ions and imine radicals, as well as nitrenes and nitrenoids. The large number of literature citations in both papers raises their value.

K. Goljankewicz (Poland) presented a paper entitled "Synthesis, properties, and photochemistry of some nucleotide analogs," and R. Natka-Namirsk (Poland) presented a paper entitled "Special cases of the Graebe–Ullmann reaction." A review of new chemical and photochemical methods in the synthesis of nitrogen-containing heterocycles by A. Latt was not included in this collection (only its title is presented), but this material has apparently been published primarily in our journal (see Khim. Geterotsikl. Soedin., No. 1, 7 (1975).

One should note the interesting communcation of S. Goszinsky et al., (Poland) regarding a new method for the synthesis of quinolines and isoquinolines by cyclization of oximes of $\beta$-phenyl-$\alpha,\beta$-unsaturated carbonyl compounds by the action of acidic dehydrating agents. M. Safran (Poland) in two speeches discussed the synthesis and study of intra- and intermolecular hydrogen bonds in N-oxides of picolinic acids by IR spectroscopy.

*Poznan, 1975.

Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 2, pp. 277, February, 1977.

Three papers by V. Czuba (Poland) devoted to the PMR spectra of isomeric naphthyridines, as well as to amination reactions in the halonaphthyridine and haloquinoxaline series that proceed with the formation of hetarynes also were of interest.

Finally, a paper by A. Fafalsky et al., (Poland) on the analysis of errors that develop during computer processing of PMR spectra obtained with the application of shift reagents will obviously be of interest to radiospectroscopy specialists. The remaining papers are purely preparative in nature or are presented in the collection only in the form of brief summaries and are not of great interest. Soviet chemists did not present any papers.