more readily than the conjugate acids and that the reaction proceeds via a radical-chain mechanism. In the case of condensed systems the degree of shielding of the oxopyridine amide proton has a pronounced effect on the ability to undergo oxidation. The alkylation of 2-oxo-1,2,3,4-tetrahydropyridines, which have three nucleophilic centers, by means of alkyl halides was realized, and it was established that the nitrogen atoms and the carbon atom in the 3 position are more reactive. 2-Aminopyridines and condensed heterocyclic systems, viz., pyrazolo[3,4-b]pyridine and tetrazolo[5,1-a]pyridine, were synthesized through 2-chloropyridines. An original method for the synthesis of γ-butyro- and γ-spirobutyrolactones by bromination of the products of addition of N,N_1-disubstituted diamines to α,β-unsaturated ketones was developed. The synthesized derivatives of 2-oxopyridines and γ-butyrolactones have tranquilizing, hypotensive, and antioxidative activity.

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SYNTHESIS, STRUCTURE, AND SOME PROPERTIES OF HYDRAZONO AND HYDRAZINO DERIVATIVES OF PHTHALAZINE

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This dissertation is devoted to the study of the structures of the products of the reaction of 1-chlorophthalazines with hydrazine and its derivatives and to the synthesis and study of the structures and chemical and biological properties of various types of hydrazones of 2-methylphthalazans and phthalazinylhydrazones. New types of hydrazones, viz., various hydrazones of 2-methylphthalazones and 2H-phthalazones and N-methyl-N-phthalazinylhydrazones, as well as 1-arylazophthalazines, were synthesized. It was established from the set of physical (IR, UV, and PMR spectroscopy and the method of dipole moments) and chemical methods that the products of the reaction of 1-chlorophthalazines with hydrazine (as well as the products of condensation of these compounds with aldehydes and ketones) and nitroarylhydrazines exist in the form of phthalazone hydrazones. Several factors that affect the tautomeric equilibrium of the two forms of N,N-disubstituted derivatives were characterized. Erroneous data on the products of the reaction of hydrazine and methylhydrazine with 1-chlorophthalazines and on some of their derivatives (the medicinal preparation "budralazin") were rectified. It is shown that the transition from hydrazones of 2H-phthalazones to hydrazones of 2-methylphthalazones leads to a change in the geometry of the molecules. It was established that in the acid hydrolysis of N-methyl-N-(4-chloro-1-phthalazinyl)hydrazones a change in the nature of the substituents in the ylidene fragment gives rise to a change in the reaction center; this is explained by the difference in the three-dimensional and electronic structures of their molecules. It was observed that the compounds obtained have antihelminthic and chemosterilizing activity.

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SYNTHESIS OF 9-ALKENYLCARBAZOLES AND SOME ASPECTS OF THEIR REACTIVITIES IN CATIONIC POLYMERIZATION

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Methods for the preparation of new monomers based on carbazole were developed by means of reactions of carbazole with acrolein and the base-catalyzed isomerization of 9-allylcarbazole. In contrast to 9-vinylcarbazole, 9-alkenylcarbazoles that contain β-alkyl substituents attached to the double bond are not capable of forming high-molecular-weight products but give primarily cyclic dimers. The formation of oligomers is explained by the deactivating effect of the β-alkyl substituent; this was proved by a study of the relative