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Ring Compunds from Chloroamines and Amides

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THE USE OF THE SPECTROSCOPE IN CHEMISTRY

F. H. SPEDDING

A discussion was given of the types of spectroscopes with particular attention to the limitations and applications of certain instruments for absorption and emission spectra studies. The difficulties of manipulation in various regions of the spectra were itemized with a discussion of present technics for such regions.

DEPARTMENT OF CHEMISTRY,
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X-RAY DIFFRACTION STUDIES ON NERVE

R. S. BEAR

A summary of the present knowledge of the composition and molecular structure of nerve tissue with particular reference to the application of X-ray technic to the problem.

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RING COMPOUNDS FROM CHLOROAMINES AND AMIDES

GEORGE H. COLEMAN

Substituted pyrrolidines have been prepared in good yields by heating N-chlorine derivatives of secondary amines with a mixture of sulfuric acid and water. Amines such as methyl-n-butylamine, ethyl-n-butylamine, methyl-n-amylamine, and di-n-butylamine have been used. The optimal conditions for ring closure are not the same for all amines. Varying amounts of secondary amines are usually recovered. In this reaction an intermediate compound

is formed with sulfuric acid. The compound from N-chloro-di-n-butylamine has been isolated as a white solid and analysed.

With N-chloro-N-methyl-n-octylamine ring closure apparently occurs with the fifth carbon from nitrogen to form a substituted piperidine. However, complete identification of the compound has not yet been made.

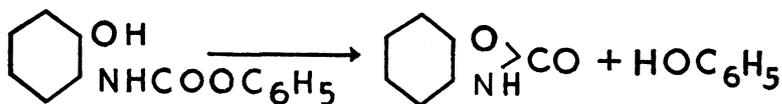
In the application of this method to primary amines n-butylamine was converted to N-chloro-N-n-butyl-p-toluenesulfonamide. Under the usual conditions of ring closure there was formed from this compound a 50% yield of pyrrolidine with a 35% recovery of N-n-butyl-p-toluenesulfonamide.

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PREPARATION AND SOME PROPERTIES OF ISOMERIC CARBOARYLOXYAMINOANILINES

L. CHAS. RAIFORD AND WILLIAM HOMER COPPOCK

Heating 2-aminophenylurethane above its melting point causes loss of alcohol and formation of o-phenyleneurea [Ber., 12, 1296 (1879)]. Attempts to acylate the hydroxyl group of 2-carbophenoxyaminophenol splits off phenol and closes the benzoxazolone ring [J. Am. Chem. Soc., 56, 1590 (1934)], as shown below.



It is now found that when 2-carbophenoxyaminoaniline is heated above its melting point phenol is lost and o-phenyleneurea is formed. If the same aminoaniline derivative is dissolved in caustic alkali solution and the resulting liquid is acidified with dilute mineral acid the cyclic urea indicated above is precipitated. The formation of this urea is favored by the presence of certain substituents in the carbophenoxy radical. Thus, 2-carbo-(2-chlorophenoxy)-aminoaniline decomposes into o-phenyleneurea and 2-chlorophenol in attempts to crystallize the aniline from alcohol. The isomeric meta and para derivatives are much more stable and do not form cyclic ureas under these conditions.