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Identification of Hydrazones and Isomeric Pyrazolines Obtained from α, ß-Unsaturated Ketones

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$$H_2C{:}C{:}O + HOH \rightarrow H_3C\text{-}COOH$$
$$H_2C{:}C{:}O + HCl \rightarrow H_3C + COCl$$

it seemed probable that they would be valuable reagents in the study of the character of the chlorine in monochloroamine and substituted chloroamines.

In the present work monochloroamine has been found to add to diphenyl ketene to form diphenylchloroacetamide, a result which is in agreement with the assumption that a chlorine attached to nitrogen displays an electropositive character in reactions. However the addition of monochloroamine to unsubstituted ketene formed N-chloroacetamide. In order to study the problem further, the reactions of dimethylchloroamine with both ketene and diphenyl ketene have been tried. N-dimethylchloroacetamide and N-dimethyldiphenylchoroacetamide, respectively, were formed in these reactions.

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IDENTIFICATION OF HYDRAZONES AND ISOMERIC PYRAZOLINES OBTAINED FROM α, β-UNSATURATED KETONES

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To date there are but two methods for distinguishing between these compounds. The first involves the reduction of the hydrazone with sodium amalgam to give aniline and the corresponding aliphatic amine. The yields are low and many cases tried have given negative results. The pyrazolines do not suffer this change. The second method is based on the fact that many of these hydrazones are rearranged by boiling acetic acid to the isomeric pyrazolines. If, in this way, the compound in question is converted into a new product, the latter is probably, but not certainly, a pyrazoline. If the latter can be oxidized to benzoic and a pyrazole acid, the pyrazoline is more clearly indicated.

It has now been shown that the differences between the crystalline shapes of these isomers may be utilized in some cases to distinguish them. Likewise, it has been found that reduction by sodium amalgam in the presence of carbon dioxide as directed by Schlenk[1] saturates only the ethylenic linkages, and that the result-

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[1] *J. pr. Chem.* (2) 78, 57 (1908).

ing products can be identified by independent syntheses from a saturated ketone.

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CONDENSATION OF P-DIMETHYLAMINOBENZALDEHYDE WITH VANILLALACETONE SUBSTITUTION PRODUCTS

MARGARET M. COOPER AND L. CHAS. RAIFORD

In previous work[1] it was found that when the hydrazones of unsymmetrical dibenzalacetones rearrange to the isomeric pyrazolines, the closing of the ring involved the unsaturation farthest away from the phenyl nucleus containing the halogen or nitro radical. Since these substituents are often spoken of as "negative" in character, it was decided to test the behavior of compounds containing substituents that might be regarded as "positive."

To this end there has been prepared a series of unsymmetrical ketones in which one of the groups is the p-dimethylaminobenzal radical, and the other is a substituted vanillal residue. These ketones will be converted into the corresponding hydrazones and the direction of rearrangement determined.

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THE ACTION OF HYDROGEN PEROXIDE ON GLYCOLIC ACID

HARRY SHIPLEY FRY AND KENNETH L. MILSTEAD

In a previous paper[2] a new mechanism of reaction termed "Perhydrolysis," was proposed to account for the apparently anomalous reactions which occur when simple organic compounds are treated with hydrogen peroxide. The proposed mechanism has been confirmed by the quantitative data obtained in the case of

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[1] J. Am. Chem. Soc., 55, 1125 (1933).
[2] Fry and Payne, J. Am. Chem. Soc. 53, 1973 (1931).