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Formation and Properties of Some Uretediones

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The chroman-5, 6-quinones have been isolated as such from incipiently rancid vegetable fats by repeated chromatographic adsorption on permutit and silicic acid, followed by saponification in the presence of sodium hydrosulfite. In the absence of this reducing agent, they were rapidly destroyed by alkali. The o-quinones which appear during the autoxidation of hydrogenated vegetable fats are not increased in amount by previous addition of synthetic tocopherol and their presence was never detected in autoxidizing animal fats containing added tocopherol. These o-quinones, their precursors (as acetates) and the chroman-5, 6-quinone prepared from synthetic α -tocopherol by nitric acid oxidation are devoid of vitamin E activity.

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FORMATION AND PROPERTIES OF SOME URETEDIONES

HARLAN B. FREYERMUTH AND L. CHAS. RAIFORD

Hofmann (Ber., 4, 246. 1871.) found that triethylphosphine served as a catalyst to cause the polymerization of phenyl isocyanate to a dimer which he designated as diphenyl diisocyanate. Staudinger ("Die Ketene", Enke, Stuttgart, 1912, p. 126.) regarded this product as a four atomic ring derivative. It has now been found that triethylphosphine polymerizes a number of substituted phenylisocyanates, such as λ - and β -naphthyl isocyanates, and p-xenyl isocyanate. These products which have more recently been listed as derivatives of uretedione, react with aliphatic amines to produce substituted biurets.

In an attempt to prepare the isocyanate of 2-amino-4-methyl-6-bromophenyl p-tolysulfonate, it was found that phosgene reacted with the amine to produce the corresponding uretedione directly. This compound had been previously prepared by Raiford and Shelton (J. Org. Chem., 4, 207. 1939.) by the action of hot pyridine on 2-carbophenoxyamino-4-methyl-6-bromophenyl p-tolysulfonate. The latter method of formation has been confirmed in the present work.

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