1942

Formation and Properties of Some Uretediones

Harlan B. Freyermuth
State University of Iowa

L. Chas. Raiford
State University of Iowa

Recommended Citation
Available at: https://scholarworks.uni.edu/pias/vol49/iss1/42

This Research is brought to you for free and open access by UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.
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 auto­oxidizing animal fats containing added tocopherol. These o-quin­ones, their precursors (as acetates) and the chroman-5, 6-quinone prepare from synthetic a-tocopherol by nitric acid oxidation are devoid of vitamin E activity.

Biochemical Laboratory
State University of Iowa, Iowa City

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-6­bromophenyl 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.

Laboratory of Organic Chemistry
State University of Iowa
Iowa City, Iowa