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The Composition of the Unsaturated Fatty Acids of Animal Tissues

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REACTION OF SOME CARBONYL AND THIOCARBONYL COMPOUNDS WITH PHENYLHYDRAZINE

L. CHAS. RAIFORD AND W. T. DADDOW

When the carbonyl group is joined directly to carbon and hydrogen (aldehydic) or to carbon and carbon (ketonic) it reacts with phenylhydrazine to give the corresponding phenylhydrazone. When the radical is joined directly to nitrogen and hydrogen, as in formanilide, the products are aniline and formylphenylhydrazine. Substitution productions of formanilide behave similarly. If the radical is joined directly to nitrogen and nitrogen, as in diphenylurea, the products are aniline and a semicarbazide. The corresponding thiourea behaves similarly, and gives a thiosemicarbazide. If the reaction with the thioureas is carried out in the presence of a desulphurizing agent, guanidine derivatives are obtained.

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FURTHER OBSERVATIONS ON THE BEHAVIOR OF VANILLIN SUBSTITUTION PRODUCTS; (a) THE PERKIN REACTION; (b) THE PREPARATION OF SUBSTITUTED VANILLIC ACIDS

L. CHAS. RAIFORD, VICTOR S. WEBSTER AND DWIGHT J. POTTER

The chlorine and bromine substitution products of vanillin previously described by Raiford and collaborators [J. Am. Chem. Soc., 52, 4576-86 (1930)] have been converted by the Perkin reaction into the corresponding cinnamic acids. When the latter are oxidized by alkaline permanganate they are converted into the original vanillin derivatives and not into the vanillic acids. To obtain the acids it has been necessary to hydrolyze the nitriles, which in turn were obtained from the oximes.

THE COMPOSITION OF THE UNSATURATED FATTY ACIDS OF ANIMAL TISSUES

H. G. SMITH

Very little information is available as to the composition of the unsaturated fatty acids of animal tissues, especially as regards the location of the double bonds. This is a report of preliminary ex-

periments on the fatty acids of beef heart muscle and liver. The unsaturated acids were separated by two methods, crystallization of the bromine derivatives and fractional distillation of the methyl esters. The method of Armstrong and Hilditch was used for the oxidation of the unsaturated acids and the results obtained up to this time indicate that the first double bond nearest the carboxyl group is in the 9:10 position. Azelaic acid is the only dibasic acid which has been separated from the oxidation products. Evidence of the formation of other dibasic acids has been obtained, but these have not been identified as yet.

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THE MICRO DETERMINATION OF CITRIC ACID BY THE THUNBERG METHYLENE BLUE METHOD

Adrian C. Kuyper

The method depends on the specific property of citric acid as a hydrogen donator in accelerating the decolorization of methylene blue by an enzyme found in cucumber seed. It gives reliable results only when enzyme extracts are prepared in the same way and used at the same age. Sodium, calcium and hexose-diphosphate do not interfere unless present in concentrations higher than those found in the blood. Oxalic acid does interfere because it changes the minimum amount of citrate necessary for maximum speed of decolorization. The sensitivity is directly proportional to the amount of methylene blue present in the reaction tube.

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THE ANTIOXIDANT OF LETTUCE

H. S. Olcovich and H. A. Mattill

The unsaponifiable lipids of lettuce were fractionally crystallized from a number of organic solvents. The distribution of vitamin E was determined by the effects on female rats on a sterility producing ration; that of the antioxidant, by the capacity to prolong the