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The Distribution of Dihydrositosterol in Plant Fats.

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In previous reports from this laboratory it has been shown that a saturated sterol, dihydrositosterol, $C_{27}H_{47}OH$, is a constituent of the unsaponifiable matter obtained from the bran and endosperm of corn[1] and wheat.[2] The present communication supplies some additional information on the method of isolation, its occurrence in other plant fats, and properties.

For the isolation of this saturated sterol the method of Anderson and Nabenhauer[3] has been utilized with certain modifications which result in an increased yield of dihydrositosterol. The most important change, in the method already described, is acetylation of the sterol mixture before treating its carbon tetrachloride solution with acetic anhydride and sulfuric acid. This treatment with acetic anhydride and sulfuric acid is repeated until the carbon tetrachloride layer is colorless and no green color is developed by the addition of a fresh portion of acetic anhydride and sulfuric acid. This acetylation prevents the formation of sterol sulfates or sulfonic acids which not only reduce the yield but cause the formation of troublesome emulsions during subsequent washing of the carbon tetrachloride solution.

During the past two years the unsaponifiable matter prepared from a number of plant fats has been examined and dihydrositosterol was found to be present in appreciable quantity in the oil, bran and endosperm of corn, the bran, endosperm and germ of wheat and the bran from rice.

In the case of corn and wheat a higher concentration of the reduced sterol was found in the outer covering, but a comparison between cottonseed oil and cottonseed meal, or linseed oil and linseed meal showed no such concentration.[4]

The last plant fat studied was that extracted from wheat germ. The crystalline sterol from this oil is generally mentioned in the literature as the best known, and fully described by numerous investigators as a homogeneous sterol—sitosterol.[5] We have found that this crystalline sterol is actually a complex mixture of several sterols, one of which is dihydrositosterol.

The dihydrositosterols obtained from these different sources appear to be identical, although there are some slight variations in their physical properties. The substance melts at 143-4° C. and has a specific rotation in chloroform of +24.00 to +25.82. The acetate melts at 140-141 and its rotation is +14.00 in chloroform.

[1] Anderson, R. J., *J. Am. Chem. Soc.*, 1924, xlvi, 1450.

[2] Anderson, R. J., and Nabenhauer, F. P., *ibid.*, 1924, xlvi, 1717.

[3] Anderson, R. J., and Nabenhauer, F. P., *ibid.*, 1924, xlvi, 1957.

[4] Anderson, R. J., and Moore, *J. Am. Chem. Soc.*, 1923, xlv, 1944.

[5] Burian, R., *Monatsh*, 1897, xviii, 551; Ritter, E., *Z. physiol. chem.*, 1901, xxxiv, 461; Windans, A., and Rahlen, E., *Z. physiol. chem.*, 1918, ci, 223; Windans, A., and Hauth, A., Ber., 1907, xl, 3681; Windans, A., and Brunken, J., *Z. physiol. chem.*, 1924, cxl, 109.

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Hemophilia in Cats After Denervation of the Liver.

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This is to report the occurrence of a phenomenon, resembling hemophilia in cats that have survived an operation in which everything in the hepatic pedicle except the bile duct, hepatic artery and portal vein, is cut. This is spoken of here as "denervation," because the operation was undertaken in connection with some other work in which the function of the hepatic nerves was being investigated. It may be, however, that the severance of the lymphatics from the liver, or some other as yet unsuspected