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thins'', 5.0; ''sphingomyelin'', 11.3, all expressed in moles/100 moles of lipid phosphorus. The presence of glycerol ether phospholipids in milk is also shown and their function discussed. It is suggested that all the glycerol ether lipids of milk are found in the phospholipid fraction. The idea that new, unknown lipids containing spermine or other similar bases, are probably present in milk is discussed. A large proportion of milk lipids was found in the form of proteolipids. New properties for proteolipids are deduced, and an attempt to explain their linkages between lipid and peptide, as well as the role of heavy metals in their formation is made.

MECHANISMS OF LIPID PEROXIDE FORMATION IN TISSUES. ROLE OF METALS AND HAEMATIN PROTEINS IN THE CATALYSTS OF THE OXIDATION OF UNSATURATED FATTY ACIDS. E. D. Willis (Dept. of Biochem., Med. College of St. Bartholomew's Hosp., London, Great Britain). *Biochim. Biophys. Acta* **98**, 238–251 (1965). Oxidation of unsaturated fatty acids such as linoleic acid and linolenic acid is catalysed by metals at 37C in the pH range 4.5–7.5 with the formation of peroxides. Co^{2+} and Mn^{2+} are very active catalysts while Cu^{2+}, Fe^{3+} and Fe^{2+} are weakly active. The catalytic activity of Fe^{3+} can be strongly stimulated by addition of ascorbic acid or cysteine but both these substances delay oxidation catalysed by Co^{2+} or by haematin proteins. The pH optimum for oxidation catalysed by Fe^{3+} and ascorbic acid is 5.5, for Co^{2+} catalysis it is 6.5 but haemoglobin-catalysed oxidation is unaffected by pH over the range 4.5 to 8.0. o-Phenanthroline and 8-hydroxyquinoline powerfully inhibit Co^{2+}-catalysed oxidation but powerfully stimulate Fe^{3+} catalysed oxidation. Co^{2+} catalysed oxidation is unaffected by most amino acids but is strongly inhibited by histidine, by serum albumin and by some other proteins. It is considered that, *in vivo*, lipid peroxide formation is likely to be a result of oxidation of unsaturated lipids catalysed by Fe^{3+} and a reducing agent such as ascorbic acid or by haematin proteins.

A COMPARISON OF THE LIPID COMPOSITION OF BROWN ADIPOSE TISSUE FROM MALE AND FEMALE BATS (MYOTIS LUCIFUGUS) DURING HIBERNATING AND NON-HIBERNATING SEASONS. H. J. Wells, M. Makita, W. W. Wells and P. H. Krutzsch (Depts. of Biochem. and Anatomy, Univ. of Pittsburgh, School of Med., Pittsburgh, Pa.). *Biochim. Biophys. Acta* **98**, 269–277 (1965). The lipids of the interscapular brown fat of bats, *Myotis lucifugus*, have been analyzed by silicic acid column chromatography and anion-exchange chromatography of the mild alkaline hydrolysis products of phosphatides. Brushite ($CaHPO_4$) chromatography has been introduced as an adjunct technique for the convenient separation of neutral from polar lipids and the removal of phosphatodylcholine from other phosphatides. Data from comparative studies of tissue obtained from male and female bats sacrificed during the hibernating and non-hibernating seasons are presented. The fatty acid composition of the cholesterol ester and triglyceride fraction is reported. The triglycerides, the major class of lipid, contain predominantly unsaturated fatty acids. Oleic acid is the principal individual fatty acid of this fraction. All brown fat preparations have high levels of cardiolipid presumably related to the rich content of mitochondria in brown adipose cells.

LINOLEIC ACID ACCUMULATION IN DEPENDENCE OF FEED FAT TYPE. K. H. Niesar (Inst. Physiol., Univ. Munich, Germany). *Fette Seifen Anstrichmittel* **67**, 340–43 (1965). The linoleic acid accumulation in ten organs of fowls, calf and pig was measured after feeding low fat diets containing 0.2 or 1% linoleic acid based the total feed. The same measurements were made after feeding rations containing 15% trilaurin, tripalmitin or tristearin. Linoleic acid concentration in neutral fat and phospholipids decreased after trilaurin feeding. This was not due to an increased amount of higher fatty acids of the linoleic acid family.

INTERACTION OF INDIVIDUAL PHOSPHOLIPIDS BETWEEN RAT PLASMA AND ERYTHROCYTES IN VITRO. T. Sakagami, Osamu Minari and T. Orii (Dept. of Chem. and Biochem., Sapporo Medical College, Sapporo, Japan). *Biochim. Biophys. Acta* **98**, 356–364 (1965). Lecithin, sphingomyelin and lysolecithin in erythrocytes were actively exchanged with these phospholipids in plasma. Individual phospholipids were not always exchanged at the same rate. The extent of exchange was greatest in lysolecithin. The exchanges of lecithin and sphingomyelin were less active, although the former was more active than the latter. The results obtained in experiments *in vitro* suggest that *in vivo* the phospholipids of mature circulating erythrocytes are metabolized predominantly through exchange with the plasma phospholipids rather than by the synthesis and breakdown *in situ*.

• Drying Oils and Paints

GAS CHROMATOGRAPHIC SEPARATION AND DETERMINATION OF PENTAERYTHRITOL SYSTEM BY TRIMETHYLSILYL ETHER DERIVATIVES. R. R. Suchanec (Res. Center, Hercules Powder Co., Wilmington, Del.). *Anal Chem.* **37**, 1361–65 (1965). A new gas chromatographic method for analyzing the complete pentaerythritol system is presented. The method is based on the trimethylsilyl ether derivatives of these polyhydroxy compounds. This procedure is not only shorter and simpler than the best previous method but also makes possible a more detailed analysis of commercial grades of pentaerythritol. Using this method with an internal standard, mono-, di-, tri-, tetra-, and pentapentaerythritol can be detected under easily obtainable conditions with a conventional instrument equipped with a thermal conductivity detector. Other components that have been definitively detected are pentaerythritol dicyclic diformal, pentaerythritol cyclic monoformal, and pentaerythrose. Additional peaks which were detected were tentatively assigned to the following derivatives: bis(pentaerythritol) monoformal, dipentaerythrose hemiacetal, pentaerythritol-dipentaerythritol monoformal, tris(pentaerythritol) diformal, and bis-dipentaerythritol) monoformal.

K. T. Holley Retires After 38 Years' Service

K. T. Holley (1945), head chemist of the Georgia Experiment Station, Experiment, Georgia, has retired after a career of service with the station that has extended over 38 years. His principal research in peanut curing and peanut utilization has resulted in an impressive total of 45 publications in this field. He is a fellow of the American Association for the Advancement of Science, and the American Institute of Chemists; he is a member of the American Chemical Society (Chairman of the Georgia Section), and the New York Academy of Science, in addition to his membership in AOCS.