(Continued from page 534A)

only labeled steroids recovered from oviduct nuclei. The conversion of progesterone to allopregnanedione was shown to take place in magnum nuclei, and this metabolite of progesterone was recovered in significant amounts only in the magnum and shell gland of the oviduct, the comb, and the brain following the intravenous administration of progesterone-1,2-$^3$H. At all times studied progesterone itself is obtained from the magnum, whereas allopregnanedione is the principal radioactive steroid bound to nuclei in the shell gland of the oviduct.

LIPID METABOLISM IN THE PERFUSED CHICKEN LIVER. THE UPTAKE AND METABOLISM OF OLEIC ACID, ELAIDIC ACID, CIS-VACCENIC ACID, TRANS-VACCENIC ACID AND STEARIC ACID. R. Bickerstaffe and E. F. Annison. *Ibid.*, 433–42. Comparative studies were made of the uptake and metabolism of cis- and trans-octadecenoic acids by the perfused chicken liver. No differences were observed in the rates of uptake of the isomers. There was considerable incorporation of radioactivity into triglycerides and phospholipids, and some release of labelled lipid into the perfusate was observed. The cis-fatty acids were more readily incorporated into triglycerides than phospholipids, the reverse being true of the trans-fatty acids. Examination of the intramolecular distribution of fatty acids in triglycerides showed that the trans-fatty acid and stearate mainly occupied the 1- and 3-positions, and cis-fatty acids the 2-position. In the phospholipids phosphatidylcholine and phosphatidylethanolamine the trans-fatty acids again behaved like stearic acid and favoured the 1-position. No evidence was obtained of atypical patterns of uptake or metabolism of the trans-fatty acids.

IMMUNOASSAY OF PLASMA LOW-DENSITY LIPOPROTEINS. R. S. Lees (Clinical Res. Center and Dept. of Nutr. and Food Sci., Mass. Inst. of Technol., Cambridge, Mass. 02139). *Science* 169, 493–95 (1970). An immunoassay was developed for determining the concentration of the protein moiety of the low-density lipoproteins of human plasma. The concentration of this protein in the plasma was variable; it was higher than normal on the average in patients with familial hyperbetalipoproteinemia (type II) and endogenous hyperlipemia (type IV) and lower than normal in patients with fat-induced (type I) and mixed (type V) hyperlipemia. Patients with endogenous hyperlipemia were separable by the immunoassay into those with normal and those with supernormal low-density lipoprotein protein concentration.

PHYSICOCHEMICAL STUDIES ON THE GELATION OF HEN'S EGG YOLK; DELIPIDATION OF YOLK PLASMA BY TREATMENT WITH PHOSPHOLIPASE-C AND EXTRACTION WITH SOLVENTS. S. A. Kumar and S. Mahadevan (Dept. of Biochem., Indian Inst. of Science, Bangalore-12, India). *J. Agr. Food Chem.* 18, 666–70 (1970). A method for the delipidation of egg yolk plasma using phospholipase-C, *n*-heptane and 1-butanol has been described. An aggregating protein fraction and a soluble protein fraction were separated by the action of phospholipase-C. The aggregating protein fraction freed of most of the lipids by treatment with *n*-heptane and 1-butanol was shown to be the apolipoproteins of yolk plasma, whereas the soluble proteins were identified as the livetins. Carbohydrate and the N-terminal amino acid analysis of these protein fractions are reported. A comparison of these protein fractions with the corresponding fractions obtained by formic acid delipidation of yolk plasma has been made. The gelation of yolk plasma by the action of phospholipase-C has been interpreted as an aggregation of lipoproteins caused by ionic interactions. The role of lecithin in maintaining the structural integrity of lipoproteins has been discussed.

NOVEL PREPARATION OF CARDIOLIPIN FROM BEEF HEART. J. Eichberg and J. D. Burham (McLean Hosp., Bilmont, Mass. 02178; Dept. of Biol. Chem., Harvard Med. School, Boston, Mass. 02115). *J. Lipid Res.* 11, 386–88 (1970). A new method is described for the isolation of beef heart cardiolipin. A lipid-protein complex, rich in cardiolipin, is obtained by a one-step solvent fractionation of the tissue total lipid extract. Cardiolipin in the complex is largely freed of protein by salt denaturation and is further purified by gel filtration of Sephadex LH-20 followed by column chromatography on bicarbonate-treated silicic acid. The highly purified product is obtained as the sodium salt in a yield of 85–100 mg/100 g. of fresh tissue.

MEMBRANES OF ANIMAL CELLS. VI. THE GLYCOLIPIDS OF THE L CELL AND ITS SURFACE MEMBRANE. D. B. Weinstein and J. B. Marsh (Dept. of Therapeutic Res., School of Med., Univ. of Penn., Philadelphia, Penn. 19104). *J. Biol. Chem.* 245, 3928–37 (1970). Four glycolipid classes were isolated from mouse fibroblasts (L cells) and accounted for 0.7% of the total cell lipid. Ceramide lactoside was the only neutral glycolipid found and made up 20% of the total glycolipid. Mono- and disialoganglioside accounted for 38% of the cell glycolipid and hematosides containing N-acetylneuraminic and N-glycolylneuraminic acids made up an additional 42%. The L cell glycolipid pattern is similar to that of other fibroblasts but different than that of other extraneural tissues and of brain. Surface membranes of L cells were isolated by the fluorescein-mercuric acetate method. Glycolipids accounted for 0.7% of the total membrane lipid. Only the hematosides and disialoganglioside could be found in the surface membranes. Ceramide lactoside and monosialoganglioside must be located in intracellular membranes. It is suggested that glycolipid content and the specific localization of glycolipids may be useful as criteria for the classification of membranes.

GLYCEROL METABOLISM IN THE NEONATAL RAT. R. G. Vernon and D. G. Walker (Dept. of Biochem., Univ. of Birmingham, P.O. Box 363, Birmingham 15, U.K.). *Biochem. J.* 118, 531–36 (1970). The possible role of glycerol as a precursor in neonatal gluconeogenesis in the rat was investigated by recording the activities of glycerol kinase and L-glycerol 3-phosphate dehydrogenase in the liver, kidney and other tissues around birth and during the neonatal period. Blood glycerol concentrations in the neonatal rat are high. There is a marked increase after birth in the ability of both liver and kidney slices to convert glycerol into glucose plus glycogen that correlates with the increase in glycerol kinase activity. High hepatic and renal L-glycerol 3-phosphate dehydrogenase activities are also found in the neonatal period. The marked capacity for neonatal gluconeogenesis from glycerol is thus demonstrated and the role of glycerol kinase in its control are discussed.

THE SYNTHESIS OF BILE ACIDS IN PERFUSED RAT LIVER SUBJECTED TO CHRONIC BILIARY DRAINAGE. I. W. Percy-Robb and G. S. Boyd (Dept. of Biochem., Med. School, Univ. Edinburgh, Teviot Place, Edinburgh EH8 9AG, U.K.). *Biochem. J.* 118, 519–30 (1970). Isolated rat liver was perfused with heparinized whole blood under physiological pressure resulting in the secretion of bile at about the rate observed *in vivo*. The

(Continued on page 538A)