

*II: The Effect of Varying the Carbohydrate and Insulin Supply on the Glycogen, Free Sugar and Lactic Acid in Mammalian Brain. (Ibid., p. 9.) Kerr, S. E., and Ghantus, M.*

The glycogen content of normal well-fed and fasting dogs lies between 77–150 mgrm. per 100 grm., and between 70–99 mgrm. in rabbits. Fasting, over-feeding, glucose infusion with or without insulin, phloridzin poisoning followed by adrenalin and pancreatectomy all failed to cause significant changes in the brain glycogen. Overdosage with insulin caused a marked decrease in the brain glycogen of dogs and rabbits. The free sugar of brain in the control animals varied from 35–75 mgrm. per 100 grm. in rabbits and from 45–86 mgrm. in dogs. Lowering of the blood sugar by phloridzin poisoning or by insulin caused a corresponding decrease in brain sugar. Hyperglycæmia caused by pancreatectomy or by administering glucose caused a rise of sugar in the brain. The free sugar of the brain was constantly lower than that of blood, except in extreme insulin hypoglycæmia. Neither lactic acid nor phosphocreatine of brain was affected by any of the experimental conditions.

G. W. T. H. FLEMING.

*The Effect of Acetylcholine and other Constituents of the Adrenal Gland upon Blood Sugar and Amino-acids. (Amer. Journ. Physiol., vol. cxvii, pp. 542–52, 1936.) Davis, B. L., jun., and Luck, J. M.*

Acetylcholine induces hyperglycæmia in rabbits if convulsions intervene. In the absence of convulsions it causes a moderate degree of hypoglycæmia. Acetylcholine hyperglycæmia is obtained after destruction of the adrenal medulla. It is, therefore, not due to a discharge of adrenaline. Acetylcholine causes hyper-amino-acidæmia both in normal rabbits and after destruction of the adrenal medulla. Cortin and ascorbic acid are without effect on either blood sugar or amino-acid nitrogen. The minimum hyperglycæmic dose of adrenaline is slightly less than the minimum dose required for the production of hypo-amino-acidæmia.

E. D. WALTER (Chem. Abstr.).

*The Effect of Emotion on the Blood Cholesterol. (Z. Ges. Exptl. Med., vol. xcvi, pp. 428–31, 1936.) Dobreff, M., Peneff, L., and Wittkower, E.*

Anxiety increases the cholesterol contents of serum. Samples taken during hypnosis are usually lower and those just before operation higher than controls.

MILTON LEVY (Chem. Abstr.).

*Fat Metabolism in the Nerve Tissues of Pigeons Affected by B Avitaminosis. (Journ. Biochem. [Japan], vol. xxiv, pp. 153–205, 1936.) Takato, Y.*

Polished rice contains 2.4 grm. total lipide and 0.03 grm. total cholesterol per kgrm. No lecithin or cephalin could be demonstrated. The analytical methods employed could determine gravimetrically 9 mgrm. total fatty acid in 0.2 grm. brain-tissue and 1–2 mgrm. total cholesterol in 0.1 grm. tissue; furthermore, 0.05 mgrm. phosphatide phosphorus could be determined in 0.2 grm. and 0.04–0.08 mgrm. nitrogen in 0.5 grm. lipide material. In fasting pigeons there was a decrease in total fatty acid of the brain as compared with that of normally nourished birds. In pigeons on diets free from vitamin B<sub>1</sub> and B<sub>2</sub> there was also a decrease in total fatty acid content which was due to the fasting, but in the group lacking B<sub>1</sub> the decrease was greater than in ordinary inanition. No differences were observed in the different groups of pigeons so far as total cholesterol, phosphatide phosphorus or amino-nitrogen of the lipide material are concerned. The lipide of the spinal cord was not materially affected by fasting, but a decrease was found in the pigeons lacking B<sub>1</sub> + B<sub>2</sub> or only B<sub>1</sub> in their diets. In the peripheral nerves no marked difference was noted between the starved and normally fed groups of pigeons, but a decrease in total fatty acids was found in the pigeons on a diet lacking E<sub>1</sub> and B<sub>2</sub>, and especially on the B<sub>1</sub>-free diet. Vitamin B<sub>2</sub> stimulates the oxidation of fats and B<sub>2</sub> inhibits it in the nerve tissues.

S. MORGULIS (Chem. Abstr.).