This genetic mechanism is similar to that proposed for β -globulin polymorphism in cattle, sheep and man.

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Structure of Cardiolipin

PANGBORN¹ considered that the glycerylglycerophosphate skeleton of cardiolipin contained three phosphoric acid and four glycerol residues (I), the six available hydroxyl groups in this structure being esterified with unsaturated fatty acids in the intact phospholipid.

Macfarlane and Gray² suggested a simpler structure for cardiolipin of two phosphoric acid, three glycerol and four fatty acid residues, with a free hydroxyl group on one of the glycerol residues. Evidence in favour of this structure has been obtained by oxidative degradation of the deacylated polyglycerophosphate.

Cardiolipin, prepared from ox heart by the method of Faure and Morelec-Coulon³, was saponified in 1 per cent ethanolic potassium hydroxide at 20° for 4 hr. The phosphorus was recovered as the potassium salt, insoluble in ethanol, of the polyglycerophosphate (orthophosphate nil; phosphomonoester by enzymic assay nil). The ester was treated in aqueous solution with 50 per cent excess of sodium periodate at 20° for 30 min., and the formaldehyde produced was estimated colorimetrically with chromotropic acid; found, molar ratio formaldehyde : phosphorus, 1.03 : 1.0. The iodates were removed as the insoluble barium salts and the formaldehyde by repeated evaporation of the solution to dryness in a vacuum desiccator. The phosphorus was recovered as the soluble barium salt of a complex ester (orthophosphate and phosphomonoester, nil). The aldehyde content of the ester was estimated by oxidation with hypiodite by the method of Macleod and Robison⁴; found, 0.87 mole aldehyde/mole phosphorus. The results indicate that the polyglycerophosphate skeleton of cardiolipin consists of three glycerol residues linked by two phosphoric acid residues (II); on oxidation of the terminal glycerol residues with periodate II would give 2 moles of formaldehyde and glyceroldi-(formylmethyl hydrogen phosphate) (III). The ester linkages are assigned arbitrarily to the α position.

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Different Types of Hæmoglobin in Two Strains of Mice

WHILE studying the therapeutic effect of homologous bone marrow transplantation in irradiated mice we needed a simple and sensitive technique to differentiate between the hæmatopoietic activity of the host and that of the graft. The possibility of employing differences between the hæmoglobins of our two strains of mice (*CBA* and *C57BL*) and their hybrid was suggested by the findings of Ranney *et al.*^{1,2}, who demonstrated two different hæmoglobin patterns in eight inbred strains of mice by using paper electrophoresis.

In the present paper the results are described of two kinds of experiments on haemoglobin, namely, electrophoresis in agar gel and denaturation with alkali.

Agar gel electrophoresis was carried out as described by Robinson *et al.*³ with some minor modifications. Glass plates, 82 × 82 mm., were carefully cleaned with chromic acid and provided with a coating by submerging them in 0.3 per cent agar and drying at 60° C.; 9 ml. of a 1 per cent solution of agar in 0.05 *M* citrate buffer pH 6.5 was poured on to each and allowed to solidify. Electrical contact between buffer vessels and the agar layer was made with filter paper strips, saturated with the citrate buffer. The haemoglobin solutions were prepared by lysing the washed erythrocytes of 0.04 ml. of tail blood with 0.05 ml. of glass-distilled water for 15 min. at room temperature. Thereafter 0.05 ml. of citrate buffer was added and the stromata were

Fig. 1. Electrophoretic pattern of CBA, hybrid F_1 , and C57BL mice