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# PROCEEDINGS OF THE FIFTEENTH MEETING OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY, 30th NOVEMBER, 1955

## Alkali Resistant Haemoglobins From Normal and Sickle Cell Bloods,

*by C. G. Anderson (South African Institute for Medical Research, Johannesburg).*

It is well recognised that haemoglobin from patients with sickle cell anaemia contains between 2 and 25 per cent of alkali resistant haemoglobin (Itano, 1953). It is accepted that alkali resistant or foetal haemoglobin, F, has an electrophoretic mobility very close to that of normal adult haemoglobin, A, whilst sickle haemoglobin, S, has a mobility in veronal buffer, pH 8.6, considerably lower than has A. In spite of this, haemoglobin from sickle cell anaemia patients shows only the single slow peak of S and no peak corresponding to F can be seen, in agreement with the original findings of Pauling *et al.* (1949), and with those of Singer *et al.* (1951), and of Bergren *et al.* (1954), although Singer and Fisher (1953) and Motulsky *et al.* (1954) claim that the two can be distringuished.

In an attempt to elucidate this discrepancy alkali resistant haemoglobin was prepared from normal and sickle haemoglobins by the usual treatment with dilute sodium hydroxide solution, precipitation of the denatured haemoglobin with ammonium sulphate and dialysis of the filtrate to remove excess ammonium sulphate. Each alkali resistant haemoglobin had the mobility characteristic of the original haemoglobin from which it was prepared, that is slow from S and fast from A. When alkali resistant haemoglobin from A was mixed with untreated S and submitted to electrophoresis a single S peak was obtained; conversely a mixture of alkali resistant haemoglobin from S with untreated A had the mobility of A. A mixture of alkali resistant haemoglobin from A and S moved as a single peak with an intermediate mobility. European or Bantu cord blood haemoglobins showed a single peak with the mobility of normal adult haemoglobin, as did the alkali resistant fractions prepared from them. However, when alkali resistant haemoglobin from cord blood was mixed with untreated S haemoglobin the mixture had the mobility of S.

These facts suggest that the alkali resistant haemoglobins from S and A are not different substances as the initial observation might indicate, but may be a single compound which is capable of forming complexes (cf. Anderson and Griffiths, 1954) with either normal or sickle haemoglobins and which retain the mobility of the native haemoglobin.

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## E-Amino Groups of Human Dentine Collagen,

*by C. C. Solomons and J. T. Irving Joint Dental Research Unit of the Council for Scientific and Industrial Research and the University of the Witwatersrand, Johannesburg).*

This work describes the change in the number of free $\epsilon$-amino groups of human dentine collagen when treated with demineralizing agents.

0·5 g. samples of root dentine in the form of small cubes were decalcified at 4°C