Table 1. Increase with Age of Tritiated Cytoplasmic Inclusion Bodies in Rabbit Histiocytes

Time (hr.)	Percentage of histiocytes labelled
3	0
24	0
48	4
72	9
96	12

It is suggested that autoradiography could be a useful and sensitive method for detection of cytoplasmic parasites containing deoxyribonucleic acid which are in the latent stage but in which turn-over of deoxyribonucleic acid is occurring.

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HÆMATOLOGY

Fœtal Hæmoglobin in Fanconi Type Anæmia

The persistence of fœtal hæmoglobin formation after infancy is usually taken to indicate an anæmic state existing from early life and is most commonly found in association with hereditary hæmoglobinopathies. Despite an extensive search among other types of anæmia only very slight increases have been found, with the exception of quite large amounts present in acute leukæmia in children[1] and in adolescents[2].

A further example of an anæmia developing long after infancy which is also associated with an increased amount of hæmoglobin *F* has been found in a 9 yr. old boy suffering from Fanconi-type anæmia. This child had been under observation from the age of six months because of his poor physical development and the fact that he had congenital deformities of both thumbs. Before the age of 9 yr. the hæmoglobin was estimated to be 10·4–11 gm./100 ml. on three occasions, but at this age a severe anæmia developed with a hæmoglobin of 5·3 gm./100 ml. which was associated with a fœtal hæmoglobin-level of 14 per cent. The hæmoglobin-level was raised by transfusions and, as a result of treatment with methyl testosterone and prednisone as described in ref. 3, this level was maintained for six months, during which time the level of hæmoglobin *F* fell to 6·4 per cent. At this point the testosterone was discontinued because of its adverse side-effects and this has resulted in a progressive fall in the level of hæmoglobin to 7·4 gm./100 ml. over the last eight months associated with a rise in the level of hæmoglobin *F* to 10·7 per cent.

This apparent variation in levels of hæmoglobin *F* with the total amount of hæmoglobin present suggests that in certain circumstances children, as well as neonates, react to anæmia by the production of hæmoglobin *F*, particularly as it would appear that no significant degree of anæmia was present in this case during the first nine years of life.

There is, however, an alternative possibility that, as production of hæmoglobin *A* is under different genetic control from hæmoglobin *F*, its presence here is due to a genetic abnormality associated with the other genetic abnormalities occurring in this condition. It is interesting to note in regard to the earlier finding of hæmoglobin *F* in acute leukæmias that there are on record three instances of Fanconi's anæmia and leukæmia occurring among different members of the same family[4], a remarkable association in view of the rarity of Fanconi's anæmia.

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Agglutination and the Electrical Surface Potential of Red Blood Cells

The reduction of the electrical surface potential of erythrocytes has been considered for a long time as a possible cause of cell agglutination.

Certain colloids coagulate only after decrease of their surface potential below a certain critical value. The same was found for bacteria, the cause of both clumping and electrical discharge being either antibody or acidification[1,2]. Similarly, erythrocytes have been observed repeatedly to show a reduced surface potential after treatment with antibody or with other agglutinating agents.

This communication reports measurements of the surface potential of erythrocytes after treatment with one of the following agglutinating substances: isoantibodies, immune antibodies, agglomerins[3] (specific proteins in plasma of blood with high sedimentation-rate), certain salts and hæmagglutinating viruses. The effects of non-agglutinating (incomplete) antibodies on the surface potential have also been investigated.

A modified Abramson cell electrophoresis apparatus which was adapted for small volumes of test solution (2·0 ml.) was used. This modification permits investigation of suspensions in either salt solutions or protein solutions.

After applying a current of 10·0 m.amp., the velocities of single cells were observed with the microscope in one of the stationary planes of the electrophoresis cuvette and measured by means of a stopwatch and an ocular micrometer calibrated in microns. 10 determinations were made of each sample and the arithmetic mean calculated. The velocities were corrected for field strength (V./cm.) and viscosity. The mobility values were taken as a measure of the electrical surface potential of the cells.

The buffer for diluting most agglutinating materials was a 0·9 per cent sodium chloride solution which contains 5 volumes per cent of *M*/15 phosphate buffer. The final *p*H was 7·2. The (anodic) mobility of human red blood cells in this buffer was 1·080 ± 0·008 μ/sec./V./cm.

All measurements were carried out directly in the appropriate test solutions, adequate time and temperature for incubation being allowed. By this method, the effect on agglutination and surface potential of the medium itself was taken into account. The erythrocyte concentration was 0·1 per cent.