Neuraminidase activity of myxoviruses has been attributed a role in cell penetration[6,7]. The pathogenicity of *M. gallisepticum* may be attributed to the neuraminidase-like enzyme; this enzyme is absent in the *WR*1 strain and this organism is non-pathogenic for chickens[8]. The ease with which cell receptors to avian mycoplasma are removed by neuraminidase may also be an indication of pathogenicity. It is interesting to note that an antibody response to *M. anatis* in ducks was not stimulated without the presence of an influenza *A* virus[9].

D. H. ROBERTS*

Department of Veterinary and Animal Sciences,
University of Massachusetts,
Amherst.

* On leave from the Central Veterinary Laboratory, Weybridge, England.

[1] Roberts, D. H., *Vet. Rec.*, **76**, 798 (1964).
[2] White, F. H., Wallace, G. I., and Alberts, J. O., *Poultry Sci.*, **33**, 500 (1954).
[3] Fahey, J. E., and Crawley, J. F., *Canad. J. Comp. Med.*, **18**, 264 (1954).
[4] Sampaio, A. A. De C., and Isaacs, A., *Brit. J. Exp. Path.*, **34**, 152 (1953).
[5] Roberts, D. H., *J. Comp. Path.*, **74**, 300 (1964).
[6] Rubin, H., *Virology*, **4**, 533 (1957).
[7] Rubin, H., and Franklin, R. M., *Virology*, **3**, 84 (1957).
[8] Roberts, D. H., *Vet. Rec.*, **75**, 665 (1963).
[9] Roberts, D. H., *Vet. Rec.*, **76**, 470 (1964).

Stability of Dextran during Prolonged Storage

MEASUREMENTS made on clinical dextran solutions after storage at 4° C for 5 years revealed no significant deterioration[1]. These measurements have now been repeated after 10 years. Dextran solutions *A* and *B* were made in the United States and *C* and *D* in Great Britain. Where applicable the methods of testing described in the *British Pharmacopoeia* were used and, as before, the specific optical rotation of each dextran was used in calculating the concentrations of solutions for the viscosity measurements. Table 1 records the intrinsic viscosity measurements. Dextrans *A*, *B* and *C* showed relatively small changes even after 10 years; there was certainly no sign of progressive change. Dextran *D* had given some indication of change at 5 years. Two bottles of this dextran were examined after 10 years. The intrinsic viscosities were 0·352 and 0·356; their mean is entered in Table 1.

The renal excretion of these dextrans in rabbits is shown in Table 2. Two rabbits were used for each determination (1965) and the daily results averaged; Table 2 shows totals for 3 days after injection. After 5 years storage there appeared to have been an increase in the renal excretion of dextran *A*, but this was not corroborated by other measurements made at the time or more recently.

Table 1

Dextran	Intrinsic viscosity at 25° C		
	1954	1959	1965
A	0·249	0·248	0·248
B	0·254	0·251	0·252
C	0·394	0·388	0·394
D	0·362	0·326	0·354

Table 2

Dextran	Percentages of injected dose excreted		
	1954	1959	1965
A	37·2	47·6	43·8
B	43·1	39·1	46·7
C	13·5	14·6	15·0
D	15·9	15·4	21·1

Table 3. PLASMA CONCENTRATION OF DEXTRAN AS A PERCENTAGE OF CONCENTRATION 10 MIN AFTER INJECTION

Dextran		Day 1	2	3	4
A	1954	28·8	11·7	0·4	0·0
	1959	29·6	15·2	2·25	0·8
	1965	28·5	11·3	2·1	0·1
B	1954	29·2	13·8	3·6	0·0
	1959	30·0	14·1	2·0	0·6
	1965	29·4	12·4	2·9	0·1
C	1954	56·8	34·8	12·3	3·8
	1959	61·0	40·9	18·3	10·0
	1965	51·7	33·5	9·2	6·9
D	1954	60·5	40·2	22·8	12·8
	1959	56·5	38·7	22·0	—
	1965	42·0	30·4	20·1	10·3

The retention of each dextran in the plasma was determined by taking the average of daily estimations in the two rabbits. Table 3 shows that little if any change had occurred in the dextrans, apart possibly from dextran solution *D*, affecting their retention in the circulation.

The original and subsequent measurements of intrinsic viscosity, renal excretion, and retention in the plasma of dextran solution *D* may indicate that some hydrolysis occurred.

From our observations we conclude that during the 10 year period there was little, if any, change in the molecular composition, with the possible exception of dextran solution *D*. The change observed in this solution, however, would not be noticeable in clinical use. These results were obtained with 6 per cent dextran in 0·9 per cent sodium chloride in glass bottles with rubber closures and are not necessarily valid for other containers or other solvents, for example, dextran in 5 per cent glucose solution. Probably a dextran of molecular weight intermediate between those tested would be equally stable; measurements have not been made on dextrans of lower molecular weight. Little or no deposit was seen in any of the bottles.

W. D'A. MAYCOCK

Lister Institute,
Elstree.

C. R. RICKETTS

Medical Research Council
Industrial Injuries and Burns Research Unit,
Accident Hospital,
Birmingham.

[1] Maycock, W. d'A., and Ricketts, C. R., *Nature*, **192**, 174 (1961).

HAEMATOLOGY

Inheritance and Sub-unit Composition of Haemoglobin in the Horse, Donkey and their Hybrids

INVESTIGATIONS of mammalian haemoglobins have given much biological information[1–3], but although notable advances, particularly in human haemoglobins, have been made, many aspects of the subject remain obscure or hypothetical. The genetics of haemoglobin is particularly in need of clarification. Valuable genetic information has been acquired from the use of model hybrid systems[4,5], and the findings complement information laboriously obtained from investigation of occasionally suitable human families. We have investigated the pattern of inheritance of haemoglobins in the Equidae and their interspecific hybrids, in which the karyotypes of the individual species have been well defined[6], by electrophoresis, peptide mapping, and separation of globin sub-units.

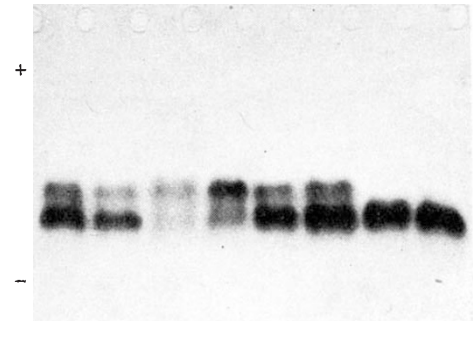

Fig. 1. Electrophoretic patterns on cellulose acetate of whole haemoglobins from the horse, donkey and their hybrids. (1) Female hinny; (2) male hinny; (3) female horse; (4) male horse; (5) female mule; (6) male mule; (7) female donkey; (8) male donkey.