and magnesium sulphate. A typical experiment is shown in Fig. 2.

The fact that the velocity is dependent on the ionic strength of the medium suggests that electrical interactions between globulin molecules or between antibody and cell play some part in the process of sensitization. Accordingly, it may be expected that modification of the *p*H would modify the rate of sensitization and the dependence of this rate on ionic strength. Preliminary experiments have shown that at low values of μ (of the order of 0·003) the sensitization process is highly dependent on the *p*H of the incubating solution.

R. Binaghi
M. Liacopoulos-Briot
B. N. Halpern
P. Liacopoulos

Centre de Recherches Allergiques et Immunologiques de l'Association Claude Bernard, Hôpital Broussais, 96 rue Didot, Paris.

[1] Halpern, B. N., Liacopoulos, P., Liacopoulos-Briot, M., and Binaghi, R., *C.R. Acad. Sci., Paris*, **247**, 1798 (1958).
[2] Halpern, B. N., Liacopoulos, P., Liacopoulos-Briot, M., van Neer, F., and Binaghi, R., *C.R. Soc. Biol., Paris*, **153**, 7 (1959).
[3] Halpern, B. N., Liacopoulos, P., Liacopoulos-Briot, M., Binaghi, R., and van Neer, F., *Immunology*, **2**, 351 (1959).
[4] Binaghi, R., Halpern, N. B., Liacopoulos, P., and Neveu, T., *Nature*, **184**, 1805 (1959).

Use of Diodone in Renal Studies in Sheep

Diodone (3,5-di-iodo-4-pyridone-N-acetic acid), shown by Elsom *et al.*[1], Landis *et al.*[2], and Smith *et al.*[3] to be an effective agent for the estimation of renal plasma flow and tubular function, has been used extensively in physiological studies. In 1945, Smith *et al.*[4] showed that *p*-aminohippuric acid was in some ways superior to diodone for these estimations in man because the urine and plasma blanks are small, and because diodone penetrates human red blood cells whereas *p*-aminohippuric acid does not. The red cells of dogs are permeable to both reagents.

Sheep, unlike the dog and man, normally excrete considerable quantities of hippuric acid in the urine[5]. The possibility that this endogenous hippuric acid may interfere with the estimation of *p*-aminohippuric acid is not remote when sheep are employed as experimental subjects.

A study was made of the permeability of the sheep's red blood cells to diodone by administering to six adult merino ewes, as an initial intravenous priming injection, 1·5 ml. 35 per cent diodone, and following this by a continuous intravenous infusion of 0·7 per cent diodone at the rate of 4 ml./min. over a period of 2 hr. At no time during or after the injection did the animals give any indication of being adversely affected by the diodone. Blood and urine (catheter) samples, taken at 30-min. intervals, were analysed for diodone[6] and *p*-aminohippuric acid[4].

Comparison of concentrations in the whole blood and the plasma indicated the passage of little, if any, diodone into the erythrocytes (Table 1). This was substantiated by the absence of diodone in the separated, saline-washed cells from three sheep subsequent to injection.

Analyses of the blood and urine samples collected during the periods in which diodone was administered failed to detect any reaction indicative of *p*-aminohippuric acid in any of the blood samples. A reaction of the same type as that given by *p*-aminohippuric acid, however, was always detectable in the urine; the concentration of this substance, which varied considerably with animals and with samples from the same animal, indicated excretions, which ranged from 0·2 mgm. to 1·1 mgm. for a 30-min. period. This is of the same order as that found by Smith *et al.*[4] to be excreted in similar circumstances by man and the dog. Thus the blanks arising from this substance are unlikely to interfere with the employment of *p*-aminohippuric acid for the determination of renal clearance tests in sheep.

It has also been established that the red cells of sheep are impermeable to circulating diodone, and thus differ from human red cells and from those of the dog.

B. J. Potter

Division of Biochemistry and General Nutrition, Commonwealth Scientific and Industrial Research Organization, University of Adelaide.

[1] Elsom, K. A., Bott, P. A., and Shiels, E. H., *Amer. J. Physiol.*, **115**, 548 (1936).
[2] Landis, E. M., Elsom, K. A., Bott, P. A., and Shiels, E. H., *J. Clin. Invest.*, **15**, 397 (1936).
[3] Smith, H. W., Goldring, W., and Chasis, H., *J. Clin. Invest.*, **17**, 263 (1938).
[4] Smith, H. W., Finkelstein, N., Aliminosa, L., Crawford, B., and Graber, M., *J. Clin. Invest.*, **24**, 388 (1945).
[5] Lewin, K., *Z. Klin. Med.*, **42**, 371 (1901).
[6] Alpert, L. K., *Bull. Johns Hopkins Hosp.*, **68**, 522 (1941).

Lack of Hæmatopoietic Potency of Liver of Mice fed on a Meat Diet

Recently, Adler[1] reported that mice fed on a diet composed of meat only develop an anæmia which is generally fatal but is cured by beef liver. Ilan, Kende and Guggenheim[2] have found that treatment of mice while subsisting on the meat diet with *para-*

Table 1. Showing Degree of Entry of Diodone into Erythrocytes of Sheep. Diodone Values (mgm./100 ml.) taken at 30-min. Intervals of Time

Animal No.	Plasma				Whole blood				Calculated whole blood*				Entry of diodone into erythrocytes (per cent)			
	30	60	90	120	30	60	90	120	30	60	90	120	30	60	90	120
2	1·92	1·73	1·97	1·78	1·15	1·08	1·15	1·10	1·22	1·10	1·24	1·14	—	—	—	—
81	1·78	1·48	1·56	1·56	1·14	0·97	1·01	1·01	1·18	0·97	0·99	1·00	—	—	2	1
31	0·88	1·32	1·58	1·65	0·51	0·86	0·99	1·14	0·58	0·87	1·06	1·12	—	—	—	1·9
58	1·96	1·83	1·69	1·69	1·32	1·25	1·12	1·14	1·29	1·21	1·14	1·14	2·3	3·3	—	—
60	2·06	2·02	1·96	1·40	1·29	1·29	1·24	0·98	1·29	1·29	1·26	0·92	—	—	—	1·1
9	1·86	1·70	1·70	1·57	1·16	0·95	0·95	0·99	1·15	1·08	1 08	1·01	0·9	—	—	—

* Calculated whole blood = Plasma value × hæmatocrit value (for plasma).