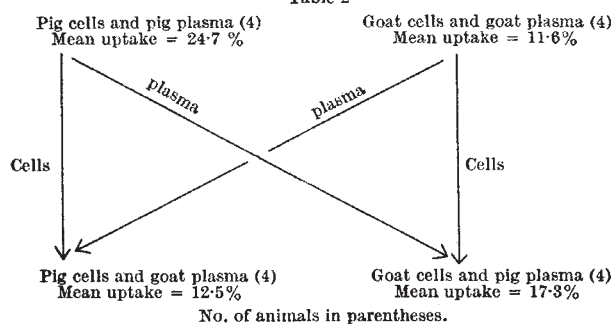


Table 2



uptake of thyroxine-<sup>131</sup>I has been observed in individual hens ( $r=0.9$ ;  $P<0.01$ ).

For comparative purposes Table 1 includes published figures for serum TBG capacity and protein-bound iodine level. There is clearly no relationship between levels of uptake of protein-bound iodine and 'Trix'. The same cannot be said about the relationship between TBG and uptake because of inadequate information. With reference to the hen, however, high uptake of both iodothyronines seems to correspond to an observed lack of TBG in chicken and their different response to tri-iodothyronine and thyroxine in comparison with mammals<sup>3</sup>. It is possible that the high uptake of 'Trix' and thyroxine-<sup>131</sup>I in rabbit is partly connected with the fact that in normal conditions rabbit serum is relatively saturated with endogenous hormones<sup>5</sup>.

Table 2 shows a criss-cross experiment on the inter-species recombination of red cells and plasma. In this experiment, unwashed red cells were mixed with plasma of different species. After 2 h of incubation, although a slight tendency to agglutination and hemolysis was observed, the addition of goat plasma to pig red cells decreased uptake of 'Trix' from 24.7 to 12.5 per cent and the addition of pig plasma to goat red cells increased uptake from 11.6 to 17.3 per cent. This shows that goat thyroxine-binding proteins have a greater affinity for 'Trix' than those of pig plasma, and is in general agreement with present views on the competition for 'Trix' between binding sites on the red cells and those on the proteins in the serum.

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### Effect of Melanocyte-stimulating Hormone on the Eye of the Rabbit

THE aqueous flare is a scattering phenomenon, which may be observed when a beam of light passes the anterior chamber of the eye. It is caused by the presence of substances with large molecules (proteins). Using a photographic apparatus<sup>1</sup> for measuring the intensity of the

flare, Anjou, Krakau and Stigmar<sup>2</sup> observed that an injection of chromatographically pure preparations of ACTH may cause an increase, sometimes quite impressive, of the flare density in normal eyes of rabbits. The maximum density occurred about 3 h after the injection; then the flare intensity faded slowly. The flare effect was regularly accompanied by a reduction of the intraocular pressure. No effect could be seen after vasopressin.

The investigation has been continued with a photoelectric modification of the previous device<sup>3</sup>. Suspecting that the effect might be elicited via the adrenals a series of adrenal hormones (cortisone, hydrocortisone, deoxycorticosterone and norpinephrine) were tested. No responses as a consequence of these were observed.

With  $\alpha$ - and  $\beta$ -melanocyte-stimulating hormone (supplied by A. V. Schally and R. Guillemin, Baylor University, Houston, Texas), however, the typical effect on the flare was obtained with a dosage of about 3  $\mu$ g/kg (s.c.). The effect on the flare density is due to an increased permeability of the blood-aqueous barrier. This was demonstrated by means of intravenously injected fluorescein, which passes into the anterior chamber in far greater amounts during the period of increasing flare than is normally the case.

The idea that we are dealing with an influence on the melanocytes of the eye is in agreement with the fact that ACTH shows a melanocyte-stimulating hormone effect. It also agrees with anatomical facts—thus the pigment epithelium is found in the boundary layer between the small vessels and the non-pigmented epithelium in the ciliary processes. Finally, strong support is provided by the observation that the effect can be provoked mainly in pigmented rabbits, whereas there is practically no response in albinotic animals to the doses administered (one slight reaction observed in a series of 10 albino rabbits).

The present finding may possibly have some bearing on certain previous observations on diurnal variations provokable by light in the physiological flare intensity, and on other phenomena connected with aqueous dynamics.

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### Selective Stimulation of Intra-cardiac Postganglionic Fibres

It was observed by Lewis *et al.*<sup>1</sup> that the duration of the refractory period of the electrically stimulated auricles may be increased by atropine. They believed that the effect may be ascribed to the stimulation of the intra-auricular parasympathetic fibres by the driving stimuli. Since that report, the effects of the stimulation of the intra-cardiac parasympathetic and/or sympathetic nerve fibres superimposed on the effect of stimulation of the heart muscle or sino-auricular node have been observed by other authors<sup>2-4</sup>. Brady *et al.*<sup>5</sup> described the inotropic effect of series of impulses applied during the refractory period of the cardiac muscle.

In this communication a simple method of selective stimulation of the intra-auricular postganglionic fibres is described.

The auricles of the young rabbits anaesthetized with chloralose (0.1 g/kg intravenously) were isolated with both vagus nerves attached, following McEwen's method<sup>6</sup>. They were mounted in a bath of Tyrode solution containing 250 mg sodium bicarbonate/l. and saturated with 100