

RESULTS

Intravenous injections of adrenaline (1 to 4 $\mu\text{g}/\text{kg}$), noradrenaline (1 to 4 $\mu\text{g}/\text{kg}$) and electrical stimulation of ipsilateral preganglionic nerve produced a typical contractile response in the nictitating membrane. Isoprenaline (1 to 10 $\mu\text{g}/\text{kg}$) did not produce any response in the nictitating membrane.

Slow intravenous injection of prisolone (10 mg/kg) produced a long lasting contraction of the nictitating membrane. When the tone of the nictitating membrane was sufficiently raised by prisolone (administration by vein), isoprenaline produced relaxation of the nictitating membrane in 1.25, 2.5, 5 and 10 $\mu\text{g}/\text{kg}$ doses given intravenously in all the experiments (Fig.1) Higher

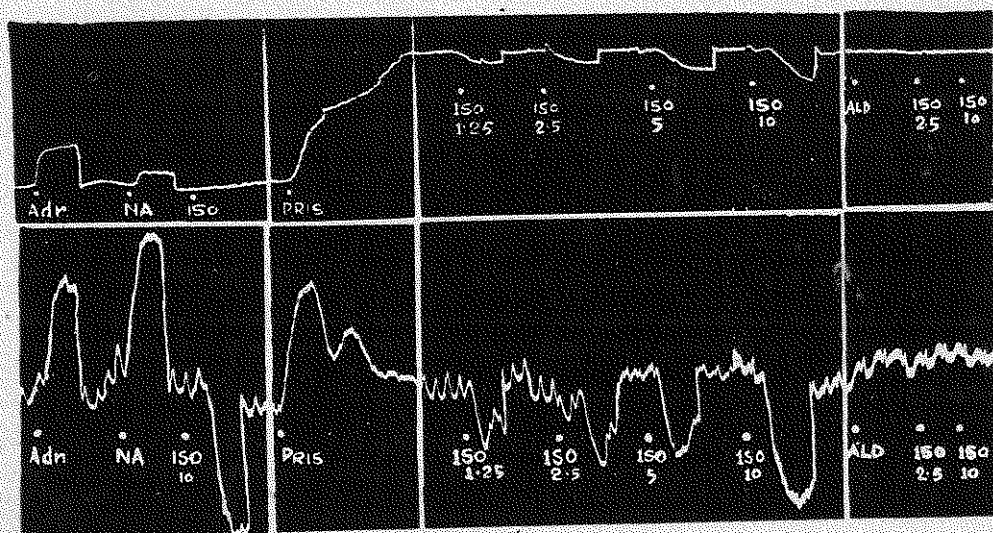


Fig. 1 : Nictitating membrane (*in situ*) of cat anaesthetised with chloralose (80 mg/kg I.P.)

Upper Record	—	Nictitating membrane responses.
Lower record	—	Mean arterial B.P.
1st Panel	—	Shows control responses to adrenaline (4 $\mu\text{g}/\text{kg}$), noradrenaline (4 $\mu\text{g}/\text{kg}$). Isoprenaline (10 $\mu\text{g}/\text{kg}$) did not produce any response of nictitating membrane.
2nd Panel	—	Shows a marked rise in the tone of the nictitating membrane after prisolone (10 mg/kg slow I.V.)
3rd Panel	—	Shows relaxation of the nictitating membrane by isoprenaline (1.25, 2.5, 5 and 10 $\mu\text{g}/\text{kg}$ I. V.).
4th Panel	—	At ALD, Alderlin (Pronethalol, 1 mg/kg) was given by vein. After 30 mts, isoprenaline (2.5 and 10 $\mu\text{g}/\text{kg}$) was injected. The responses were completely blocked.

doses of isoprenaline (greater than 10 $\mu\text{g}/\text{kg}$ I.V.) produced a marked fall in blood pressure and hence were not used. This relaxation was completely blocked by pronethalol (1 mg/kg) given intravenously (Fig.1). Pronethalol did not modify the effect of priscoline.

Adrenaline or noradrenaline did not produce any relaxation of the nictitating membrane after priscoline administration.

DISCUSSION

It has been demonstrated that isoprenaline produces relaxation of the nictitating membrane of the cat when the tone of the smooth muscle of the membrane is increased. This inhibitory effect of isoprenaline is specific on the beta receptors, since it is completely abolished by pronethalol, a beta receptor antagonist. The increase in the tone of the nictitating membrane produced by priscoline persists for a long time, and is reported to be due to its alpha-receptor stimulating action (Hoszowska *et al.* 5, Gowdey, 4). This action of priscoline is not modified by pronethalol. The use of priscoline in this study has been made for two reasons. Firstly it is known to produce a sustained contraction of the membrane and secondly it blocks the alpha adrenergic receptors.

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