reflex of the simultaneous type. It has been shown, however, that during periods of extreme lethargy in the cretin sheep this reflex is weakened.[1]

The suggestion was made[1] that the weakened muscles of the cretin might initiate defective proprioceptive impulses and thus influence behavior in escaping from the maze. The repeated movements of the cretin's foreleg in response to the conditioned tactile stimulus (Fig. 1, at the left) which are believed to be conditioned reflexes to proprioceptive stimuli of secondary origin[2] indicate normal functioning of the proprioceptors in the thyroidectomized sheep.

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The effect of diphtheria toxin on the adrenals.*

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The adrenals are remarkably susceptible to diphtheria toxin. Elliott[1] found that a sufficient dose of diphtheria toxin to produce death within seventy hours after injection usually caused a marked depletion of the epinephrin content of an adrenal with an intact nerve supply.

We have attempted to show an increased output of epinephrin after the injection of diphtheria toxin by means of the deganglionated iris (superior cervical ganglion, removed at least a week before the test). Diphtheria toxin ranging from 0.0005 cc. per kilo to 0.0119 cc. per kilo was injected intraperitoneally into fourteen cats. This was usually given in one injection.

The size of the pupil (as compared to the control), the rectal temperature and heart rate were determined at intervals after the injection.

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[1] Liddell, H. S., *Am. J. Physiol.*, 1926, lxxv, 579.

[2] Beritoff, J. S., *Brain*, 1924, xxvii, 360.

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[1] Elliott, T. R., *J. Physiol.*, 1912, xliv, 374.

With the larger doses some animals died in twenty to twenty-six hours. Animals lived longer with the smaller doses, although most of them died from the injection within a few days.

In none of the cats was there an unquestioned dilatation of the deganglionated pupil.

The adrenals were fixed with formaldehyde and potassium bichromate and stained with Sudan III.

With the range of dosage used there appeared to be no definite relation between the amount of toxin and the depletion of the medulla. Occasionally, the medulla was depleted, judging by the staining. Usually, however, epinephrin was present in patches or in limited groups of cells.

Likewise, there appeared to be no definite relation between the dosage and the amount of lipoids in the cortex except that with the larger doses, lipoids were absent or nearly so in the *zona reticularis*.