of the large dose (Table 2) which caused pronounced atrophy of both testes and seminal vesicles. This is probably due to the formation of anti-gonadotrophins. In the case of female mice, the protozoal extract induced a significant growth of the ovaries but had no effect on the uterus.

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A Heat-Loss Mechanism involving the Habenular, Interpeduncular and Dorsal Tegmental Nuclei

A region of the brain sensitive to temperature has been described as between the optic chiasma and the anterior commissure in the cat[1]. Direct heating of this region with diathermy was shown to induce panting. In the goat, panting was found[2] to continue for 1–2 min. after the end of 5 min. of electrical stimulation in the corresponding region of the brain, and to be effective in lowering the temperature of the animal. Moderate heating of this region in the cat and the rabbit was also found[3] to reduce gamma motor activity. The present experiments serve to identify an efferent pathway from this temperature-sensitive region.

In rabbits anæsthetized with urethane, ether or pentobarbital electrical stimulation in a wide region between the optic chiasma and the anterior commissure can be shown to induce both panting and an inhibition of somatic reflexes such as the knee jerk. If stimulation at 25–50 pulses per sec. is continued for more than 10 sec. the panting and inhibition of the knee jerk reflex continue for 1–3 min. after the end of stimulation. This syndrome of panting and inhibition of the knee jerk reflex ending simultaneously and often fairly suddenly many seconds after the end of stimulation can also be elicited by electrical stimulation of the habenular (Fig. 1), interpeduncular or dorsal tegmental nuclei. These nuclei are interconnected by well-known tracts and form a system of unknown function. The typical syndrome is not elicited by stimulation in other regions including the hypothalamus, the hippocampus and the medial or lateral septal nucleus.

Electrical stimulation in the region sensitive to temperature evokes an electrical response in the ipsilateral habenular nucleus with a latency to first inflexion of 3 msec. Repetitive stimulation causes an electrical discharge of up to 1 mV. amplitude and 3 per sec. frequency in the habenular nucleus, which terminates with the panting syndrome after the end of stimulation but is not of the same frequency as the respiration. Direct heating of the habenular nucleus does not cause the panting syndrome until a damaging temperature is reached. Repetitive stimulation of a

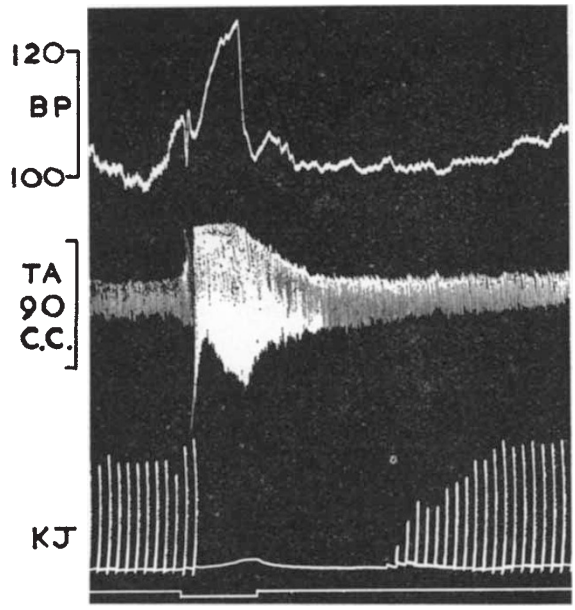

Fig. 1. Stimulation of the lateral habenular nucleus of a rabbit anæsthetised with urethane at 50/sec., 2·5 V., 4·2 m.sec. *BP*, blood pressure in carotid artery calibrated in mm. mercury ; *TA*, tidal air, expiration downwards ; *KJ*, knee jerk reflex, extension upwards, elicited at intervals of 5 sec. by a magnetic hammer

habenular nucleus for 5 min. can cause a 1°C. fall of rectal temperature at a room temperature of 18°C.

It is probable that the habenular, interpeduncular and dorsal tegmental nuclei and their tracts form an efferent pathway from the temperature sensitive region. This proposition is being tested by tracing degenerating fibres from small lesions in the temperature-sensitive region by the method of Nauta and Gygax.

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Composition of Some Fat-free Carcasses and Bodies of New Zealand Sheep

The composition of the fat-free carcass and body has been shown to be constant for mature animals of many species[1–5]. However, it is only recently that this constant has been confirmed for the sheep[5,6].

Data have accumulated in this laboratory on the composition of sheep carcasses covering the extremes in hot carcass weight and fatness likely to be met with in the New Zealand sheep industry (Table 1). The composition of the frozen carcasses was determined essentially by methods previously described[5], with the exception that ash determinations were carried out individually on the carcasses reported in this communication. The loss between hot and frozen carcass weight was assumed to be moisture when the composition of the hot carcass was being calculated. Data were also available on one newly born lamb and on three fœtuses which had been delivered by