Using the method of Drinker the paw lymphatic of 3 large shepherd dogs was cannulated and fresh saline emulsions of diseased lymph nodes were injected. In 2 dogs the injections were repeated so that in all the material from 5 patients with Hodgkin's disease was used. After this the dogs were observed clinically from 7 months to 3 years and then killed. On necropsy of each dog no evidence of disease resembling Hodgkin's could be found.

8455 P

Uterine Temperature of the Rat; a Measurement of Internal Body Temperatures in Unanesthetized Animals.

JAMES B. HAMILTON.* (Introduced by Edgar Allen.)

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Measurements of internal body temperatures have been obtained in unanesthetized animals after previous implantation of fine thermocouples upon the part to be tested. Prolonged investigation may be carried out with a minimal introduction of error if the animals are permitted 48 hours to recover from the effects of visceral exposure and operative anesthesia which are incident to application of any thermometric device. Seven abdominal organs have been studied in various animals during normal conditions, physiological changes (*i. e.,* uterine temperature during oestrual rhythms), hypothermia, and hyperthermia. The details of thermocouple implantation, instruments and results will be described in a later paper.

Physiological Changes in the Uterus. Concomitant measurements of uterine and body (colonic) temperatures revealed that the uterus conformed to the level of body heat during all stages of the oestral cycle in the rat. Two-hour tests made daily previous to mating, throughout gestation, and for 18 days postpartum showed that the pronounced organic changes occurring in pregnancy and the subsequent states of lactation and involution also failed to give differential organic temperatures. Even the severe muscular contractions present during parturition did not disturb the agreement of organic and body temperatures, although measurements were taken of one rat during delivery of a remarkably large litter of 17 young. Neither the injection of theelin in doses large enough to cause

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marked uterine growth nor ovariectomy with subsequent castration atrophy affected the uniformity of temperatures. Epinephrine and pituitary extracts were used to produce rapid responses, but no change in uterine temperature was observed save when the body temperature exhibited a like and concomitant change.

Changes in General Body Temperature. It was found that in a cold environment the body temperature of the rat could be reduced without the aid of anesthesia as much as 45°F., below its normal level with subsequent spontaneous recovery. In all stages of this extreme drop the uterine and body temperatures continued in unison, regardless of whether the organ was in a highly vascular state as in oestrus or pregnancy, or whether it was atrophied as after ovariectomy. In environmentally produced hyperthermia this similarity of the organic and body degree of heat also persisted, even though the body heat level attained and exceeded the lethal point. Stimulation of the body by drugs to produce a febrile condition and the converse, a drug-produced loss of heat, likewise gave a similar uterine-body degree of heat.

Summary. By means of a new technique internal body temperatures were measured in intact and unanesthetized animals. The uterus of the rat was studied during physiological changes which included all stages of the oestral rhythm, pregnancy, parturition, lactation, involution, rapid uterine growth and castration. Uterine temperature was also observed at body heat levels ranging from 55° to 110°F. The temperature of the uterus was found to conform to the body (colonic) level of heat at all times. These results give no evidence for the many claims of temperature differences among the abdominal organs.

8456 P

The Electrothalamogram.*

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If one picks up the electrical potentials from subcortical ganglia in the hemispheres of the mammalian brain, rhythmic discharges

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