

ordination, partial paralysis, especially of the hind limbs, prostration, and finally death between the eighth and tenth days in practically every case. When higher dilutions of the virus are given, or when black-and-tan mice are tested, the incubation period and duration of signs of disease and of life lengthen and the percentage mortality falls below 100%.

The most conspicuous and consistent anatomical changes associated with the intranasal infection appear to be necrosis of pyramidal cells in the lobus piriformis and cornu ammonis of the cerebrum and acidophilic intranuclear bodies in certain glial cells throughout the brain and cord and in cells of the choroid plexus in preparations fixed with Zenker-acetic and colored with Giemsa stain. The necrotic cerebral lesion has been mentioned but not stressed by Hurst⁴; the intranuclear bodies observed jointly by Rivers and Webster in this material have not been referred to previously. Besides these characteristic changes, necrosis of Purkinje cells, motor neurons in pons, medulla, and cord and infiltration of mononuclear cells around blood vessels and dying neurons are found in a percentage of cases. These lesions have been reported by others.^{4, 5}

The virus does not affect rabbits when inoculated intracerebrally. The necroses and intranuclear bodies do not appear in preparations of normal mice. The virus does not seem, therefore, to be contaminated with herpes or unknown mouse virus.

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Weight of Pituitary and Thyroid of the Rat at Various Stages of the Oestrus Cycle.

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In the recent literature on the relation of the pituitary gland to reproduction there have been several notes concerning changes in the histological picture or in the physiological activity of the pituitary associated with changes in the oestrus cycle. Charipper and Haterius¹ observed an increase in the size and number of the basophiles during oestrus, although the cells were not counted or meas-

¹Charipper, H. A., and Haterius, H. O., *Anat. Rec.*, 1932, **54**, 15.

ured. Wolfe and Cleveland² found an increase in the eosinophilic cells during oestrus and an increase in granules in the basophilic cells during late dioestrus. Smith and Engle³ found an increase in the gonad-stimulating hormone of the anterior pituitary during dioestrus as tested by the implant method. Wolfe⁴ confirmed this.

The observations presented here were made on mature normal

TABLE I.
Weight of Pituitary and Thyroid of the Rat at Various Stages of Oestrus Cycle.

Stage of Cycle	Age Body		Pituitary		Age Body		Thyroid	
	No. Days	Wt. gm.	mg.	mg./kg.	No. Days	Wt. gm.	mg.	mg./kg.
Pro-oestrus	5	165	10.0±0.8	59.0±1.6	5	165	15.6±1.5	94.0±10.0
Oestrus	23	188	12.3±1.3	65.1±1.9	34	177	19.0±1.6	114.0±13.0
24 hours after oestrus	0	—	—	—	9	150	15.8±2.2	106.0±24.0
48 hours after oestrus	14	179	10.5±1.0	58.9±2.2	17	171	18.8±3.6	112.0±12.0
Over 48 hours after oestrus	8	170	9.1±0.9	53.6±4.3	7	170	18.2±1.6	107.0±4.5
Day before expected oestrus	3	153	7.7±0.9	50.6±2.9	3	153	16.4±2.0	107.0±23.0

Figures for age and weight represent the mean for the group.
Mg./kg. refers to mg. of fresh pituitary per kg. body weight.

² Wolfe, J. M., and Cleveland, R., Abstract by Wistar Institute, in press.

³ Smith, P. E., and Engle, E. T., *Anat. Rec.*, 1929, **42**, 38.

⁴ Wolfe, J. M., *Am. J. Anat.*, 1931, **48**, 391.

female rats ranging from 3 to 6 months in age. Infected animals and animals having irregular oestrus cycles or cycles over 6 days in length were excluded.

Animals of the same strain were kept under the conditions and on the diet described previously.^{5, 6} Vaginal smears were made at intervals of 12 hours or, in most cases, of 8 hours, and oestrus was defined as the period at which an abundance of cornified cells was obtained, after the preceding smear had shown nucleated epithelial cells. Dioestrus was defined as 48 or more hours after this time. Three animals with very regular cycles were killed 20 hours before the expected onset of the next oestrus. The animals were killed with chloroform and the pituitary, thyroid and adrenal were quickly removed and weighed in a closed weighing bottle to 0.1 mg. The data on the adrenal have been previously reported.⁶ The pituitary weights are thought to be accurate to about 0.2 mg. since the gland need not be dissected from surrounding tissue. The thyroid weights are much less so because of the difficulty of accurate and rapid dissection. They also include the parathyroids.

The mean actual and relative weight of the pituitary and the probable error of this mean were calculated for each group of animals. The resulting figures indicate definite and significant increase in the weight of the pituitary during oestrus, with gradual and progressive decrease during dioestrus. This decrease in animals killed 52-72 hours after oestrus amounted to approximately 20% of the relative weight at dioestrus.

The thyroid showed no significant change in weight, but the wide variation in thyroid weight in the entire series is sufficient to obscure any except an extreme change.

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Cultivation of *Mycobacterium Leprae*.

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McKinley and Soule¹ reported the successful cultivation of *Mycobacterium leprae*, obtained from Puerto Rican lepers, on several

⁵ Andersen, D. H., *J. Physiol.*, 1932, **74**, 49.

⁶ Andersen, D. H., and Kennedy, Helen S., *J. Physiol.*, 1932, **74**, 247.

¹ McKinley, Earl B., and Soule, Malcolm H., *J. Am. Med. Assn.*, 1932, **98**, 361.