These observations are quite in agreement with those of Warrington and are supported by the observations of Fulton and Keller[2] on the degeneration of peripheral nerves following trans-section of the spinal cord in monkeys.

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Observations on Effect of Repeated Administration of Nembutal in Guinea Pigs.

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The nembutal, sodium-ethyl (1-methyl-butyl) barbiturate, was dissolved in water and injected intraperitoneally into guinea pigs to see whether they had a tolerance for the drug. The animals were divided into 2 groups: (1) those receiving the drug twice weekly and (2) those receiving it daily.

The doses varied from 7.5 to 20 mg. per kilo body weight, but the dose for each pig remained constant. The minimum fatal dose (M.F.D.) was found to be 60 mg. per kilo. This amount killed 90% of the pigs.

To study the effects of the drug, the periods of time required for the development of 3 phases in the hypnotic state were selected: (1) the time from the injection until the animal could not move forward after painful stimulation (pinching); (2) the time from the injection until the animal could move forward after painful stimulation, and (3) the time from the injection until the animal could walk with a steady gait. The onset of sleep followed the first of these phases.

The weight of the animal greatly influenced the length of the hypnotic state, the heavier pig having the longer period of hypnosis, when the same size dose was given. There was, however, often considerable difference in the susceptibility of the individual animals which had approximately the same weight.

Injections of 25% of the M.F.D. of the drug induced sleep in about 65% of the animals. If this amount is given semi-weekly, the hypnotic effect, as judged by the failure of the onset of sleep,

[2] Fulton, J. F., and Keller, A. D., The Sign of Babinski, Springfield, 1932, 165.

is greatly reduced within 4 weeks. The length of period of hypnosis is also markedly shortened. Daily doses of 25% of the M.F.D. produce the same effects in a much shorter time. Pigs which had received 16.6 to 20.8% of the M.F.D. semi-weekly for 6 weeks showed a definite tolerance to 29.1 to 33.3% of the M.F.D. Pigs which had had several semi-weekly injections of 25% M.F.D., or several daily injections of as much as 25% to 33% of the M.F.D., and which had shown definite tolerance in both groups as measured by the duration of sleep and hypnosis, were not protected against a dose of 60 mg. (M.F.D.) per kilo.

We used 63 guinea pigs in the semi-weekly group. The results obtained from the first injection of the drug in each of the animals of this group served as controls. That is, animals which received subsequent doses were in an hypnotic state for a shorter time than they were after the first injection. Thus there were 63 controls for this group.

For the daily group 24 guinea pigs were employed. The results of the first injection in each pig served as controls, as above, so there were 24 controls for this group.

For determining the M. F. D. we sacrificed 24 normal animals.

To test the tolerance against a M. F. D. (60 mg. per kilo.) 33 pigs were used. These pigs had been treated previously as follows: (1), 4 pigs had received 19 semi-weekly injections, (2), 19 pigs had had 19 semi-weekly and 14 daily injections, and (3), 10 pigs had had 9 daily injections.

In all 111 individual guinea pigs were used.

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Effects of Different Anterior Pituitaries and Human Pregnancy Urine on Rat Sex Organs.*

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We have shown[1, 2] that anterior pituitaries of different species as

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[1] Loeb, Leo, PROC. SOC. EXP. BIOL. AND MED., 1932, **29**, 642, 1128. *Endocrinology*, 1932, **16**, 129.

[2] Loeb, Leo, and Friedman, Hilda, PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 741.