a comparison of the two as possible. Four mice, 1 month convalescent from influenza virus (Chicago strains), were inoculated intranasally with a regular passage emulsion of our infected mouse lungs. There was no evidence of any immunity to the infection. Similar tests with influenza virus in influenza convalescent mice have shown a definite immunity. The converse cross-immunity test has not been done due to lack of convalescent mice. No evidence of *in vitro* neutralization was found using antiserum prepared in the rabbit against the PR 8 strain of human influenza virus. Three human serums (patients supplying original pharyngeal washings) also gave no neutralization.

The present significance of this infection appears to be the possibility of its confusion with influenza virus infection in mice or its interference with other work in which mouse lungs are passed. Slight clinical and microscopical differences may be noted between this infection and that of influenza virus, but in general they are quite similar. Our own experience will illustrate the possible difficulties which may arise. After several months' storage in glycerin, 4 strains of human influenza virus were passed rapidly through 4 generations of mice by intranasal inoculation of lung emulsions. A serum neutralization test was done, using a serum which had previously shown strong neutralizing properties against human influenza. No neutralization occurred in any strain, and our conclusion was that our influenza virus had become contaminated with and possibly replaced by the other agent.

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Neurogenic Fever Reduced by Nembutal.*

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Following operations on the brain in the region of the optic chiasma and infundibulum, patients frequently develop a hyperthermia which is difficult to control and is often fatal. Similar sharp rises in temperature have been obtained in cats and monkeys by placing lesions in the anterior part of the hypothalamus or in the preoptic region. These operations were performed under nembutal anesthesia and the hyperthermia did not appear until the depressing effect

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of the nembutal had worn off after the lapse of several hours. The technic involved, the location of the lesions, the course of the hyperthermia and its significance for an understanding of the mechanism involved in temperature regulation have been discussed elsewhere.[1, 2]

This investigation was undertaken to study the course of the hyperthermia, when ether instead of nembutal was used as an anesthetic, and the effect of nembutal when injected after a high temperature had been developed. Under ether, lesions were placed bilaterally in the anterior part of the lateral hypothalamus and immediately following the operation the cat was strapped on its side in a comfortable hammock and a continuous record was taken of rectal temperature for the next 20 hours with a Leeds and Northrup Micromax.

Seven out of 11 cats showed postoperative hyperthermia. In one the rectal temperature rose to a high of 104.3° in 450 minutes and in another to 104.8° in 670 minutes. In these 2 cats no nembutal was given. Five others in which the temperature rose more sharply were given nembutal (14 mg per kg) after the temperature had reached levels varying from 104.8 to 106.9. The nembutal caused precipitate drops in temperature in all 5 cats varying in extent from 2.4° to 4.4° (Table I). The time during which the temperature was dropping

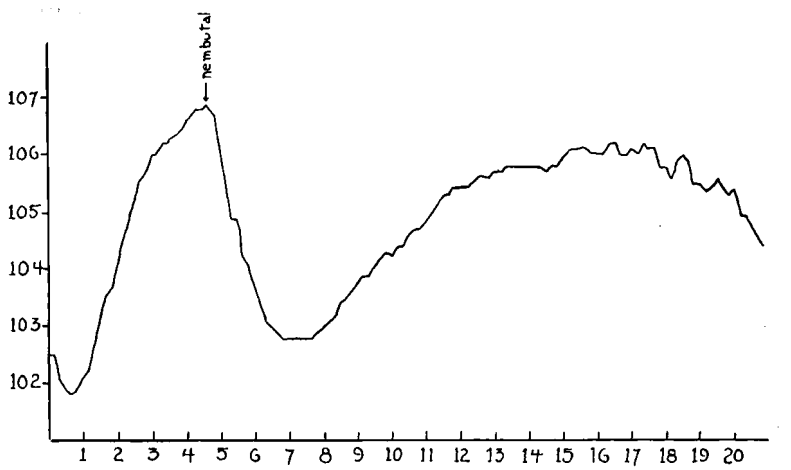

FIG. 1.

Chart showing temperature variations in Cat 132 during the first 20 hours following placing of lesions in the anterolateral part of the hypothalamus. Temperature in degrees Fahrenheit.

[1] Ranson, S. W., Fisher, C., and Ingram, W. R., *Arch. Neurol. and Psychiat.*, 1937, **38**, 445.

[2] Clark, George, Magoun, H. W., and Ranson, S. W., *J. Neurophysiol.*, 1939.

TABLE I.
Hyperthermia Caused by Anterior Hypothalamic Lesions and Reduction of Fever by Nembutal. Rectal Temperature in Degrees Fahrenheit and Time in Minutes.

Cat. No.	Min. after operation before injection	Temp. at time of injection	Drop caused by injection of nembutal	Min. from beginning of injection to bottom of fall	High temp. reached after the drop	Min. from bottom of drop to second high temp.
130	280	104.8	4.4	60	104.8	380
132	280	106.8	4.0	130	106.4	600
133	360	104.9	4.2	90	105.8	450
135	280	104.8	2.4	40	107.2	440
137	720	106.9	3.5	90	106.4	300

varied from 40 to 130 minutes. During this fall the cats slept quietly. As the effects of the nembutal wore off and the cats began to move again the temperature started rising and in several hours reached points as high as or in some cases higher than it was at the time of injection.

Fig. 1 illustrates the rate of rise and fall of temperature in Cat 132. The cat had been on a heating pad during the operation and its temperature fell somewhat before the rise began.

During the sharp rises in temperature following the operation the cats were frequently observed to shiver while their rectal temperatures were as high as 104, 105, or 106°. The cats did not pant and there was not much increase in respiratory rate. The room temperature during these experiments ranged from 79 to 82°.

The dose of nembutal required to produce these sharp drops in temperature was less than half as great as is regularly employed in this laboratory as a surgical anesthetic and it could have been safely repeated when the temperature began to rise a second time. The nembutal was given intravenously in 4 of the cats and subcutaneously in one with substantially the same results. The intravenous injection is made very slowly during a period of 10 minutes. The possibility that this drug might be useful in combating neurogenic hyperthermia in man should receive the consideration of neurosurgeons.