ences are constant, repeated examinations at several stages during the course of the experiments seem necessary and also the investigation of infections of varying degrees of severity.

We are indebted to Dr. Kolmer for supplying us with a strain of trypanosomes, and to Dr. Brown and Dr. Pearce for the sera of rabbits infected with syphilis.

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Relation of spinal level of blood pressure to successive occlusions of head arteries in cats.

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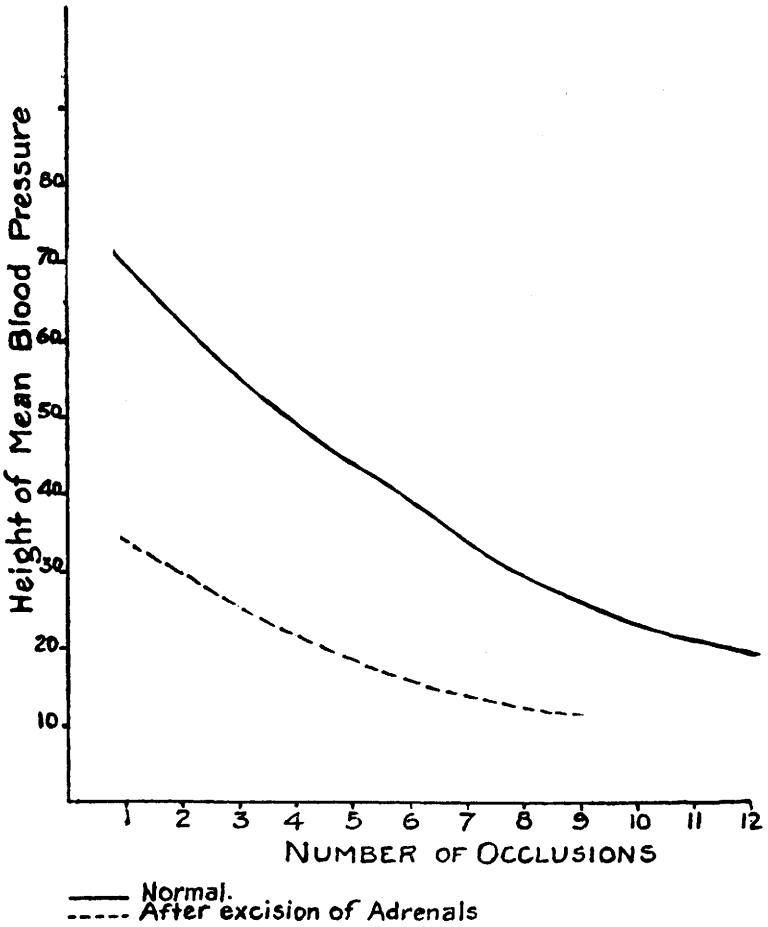
In experiments upon the cardio-vascular responses following repeated occlusions and restorations of the circulation of the head arteries in cats, it has been repeatedly observed that the spinal level of blood-pressure, that is, the level of pressure maintained by the activity of the spinal cord alone, when the functional activity of the medulla has been eliminated, may vary between 35 and 75 millimeters of mercury.

Certain criteria are necessary to determine whether blood-pressure within this range is actually spinal pressure, since in some animals, a pressure as low as 50 or 60 mm. is sufficient to restore medullary activity, whereas in other animals, a pressure to 70 to 75 mm. may be ineffectual in bringing this about. Blood-pressure, then, may be considered spinal when

(1) its level is unaffected by occlusion or release of the head arteries.

(2) no signs of any change in level of pressure or return of any medullary reflex is observable from half to three quarters of an hour after circulation has been restored to the head arteries.

With these conditions in mind, a series of experiments was carried out, with varying numbers of successive occlusions, from 1 to 14, in normal cats. In these animals, at some stage in the occlusion series, the head arteries were permanently ligated fol-



lowing an anaemic rise and fall of blood pressure. Blood pressure recorded on the chart in each case, is the mean pressure.

In these experiments, it was found that the height of the spinal pressure has a definite relationship to the number of occlusions which have been done on the cat, as the accompanying curve shows. That is, when the first or second occlusion is permanent, spinal pressure is about 70, whereas, when the 13th or 14th occlusion is permanent, the spinal pressure is about 20 mm. These observations have been repeated until one can predict what the spinal pressure after any given occlusion will be.

In cats in which the adrenals were excised prior to the occlusions of the head arteries, a similar relationship between height of spinal pressure and number of occlusions, is observed. But

a lower level of pressure occurs after any given occlusion. This also, is indicated in the accompanying chart.

During these experiments, after spinal pressure had been for some time maintained, curare was given intravenously. By this means, whatever rôle the skeletal musculature plays in the maintenance of spinal blood pressure, was eliminated. Pike[1] and Langley[2] have shown that the intravenous injection of curare is followed by a fall of the spinal blood pressure, indicating some participation of the skeletal muscles in the maintenance of this pressure. Pike has further shown that the fall of pressure induced by curare is about equivalent to that seen after anatomical division of the dorsal roots of the spinal nerves in the cat. In these experiments, the injection of curare was followed by a fall of blood pressure, which in each individual case was about 40 to 45 per cent of the mean spinal pressure. This would indicate that the progressively lower pressures with increasing numbers of occlusions in the same animal are due to a progressive failure of function of the somatic neuro-musculature as well as of the vascular neuro-muscular mechanism.

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The effects of repeated intravenous injections of distilled water on the blood picture in rabbits.

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The effect of repeated induced intravascular hemolysis upon the blood of rabbits was studied in the following manner: Ten to 12 cc. of sterile distilled water were injected slowly into the marginal ear veins of 6 rabbits at 48 hour intervals. The number of injections varied, the maximum being 34. Recently, as a control experiment, Patterson and Kast[1] described an anemia in

[1] Pike, Suart, *J. Exp. Physiol.*, 1913, vii, 1.

[2] Langley, *J. Physiol.*, 1919, liii, 120.

[1] Patterson, M. D., and Kast, L., PROC. SOC. EXP. BIOL. AND MED., 1925, xxiii, 172.