$\varphi$ = 111 grm. blood in ten minutes for left hand, *i. e.*, 6.5 grm. per minute per 100 c.c. of hand.

$\varphi$ = 306 grm. blood in ten minutes for right hand, *i. e.*, 14.5 grm. per minute per 100 c.c. of hand.

*Conclusion.*—In the hand whose lower motor neurones were not involved in the lesion producing the paralytic condition the blood-flow per unit volume of hand substance is scarcely inferior to that in the normal hand.

In the hand a lesion in whose lower motor neurones is responsible for the paralysis, the blood flow per unit volume of hand substance is 2½ times less than in the normal hand. The difference in the amount and condition of the muscular tissue is one important factor in causing the difference in blood flow in the two conditions.

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## Edema formation in guinea pigs in chronic experimental uranium nephritis.

By **ERNEST C. DICKSON.**

[*From the Pathological Laboratory of Cooper Medical College.*]

In a series of experiments performed on guinea pigs during the past two years, with the purpose of confirming the findings in experimental chronic nephritis which I have previously reported,[1] some interesting observations in edema formation have been made. Twenty-one animals received subcutaneous injections of an aqueous solution of uranium nitrate, as follows: six received numerous injections of 0.5 m.grms. at frequent intervals; eight received several injections of 5 m.grms. at longer and irregular intervals; and seven received one or more injections of 10 to 15 m.grms. Four animals died within two weeks after the first injection, and can be excluded from the chronic nephritis series. The remaining seventeen survived for from three to twenty-three months after the first injection, and all showed kidney lesions of a chronic nature, similar to those which I have previously described.

In Group I, which received the numerous small doses, two

[1] *The Archives of Internal Medicine*, June, 1909, vol. iii, No. 5.

animals which had received 26 and 80 injections, respectively, survived for seven and twenty-three months, and at autopsy showed no edema. Two which had received 47 and 70 injections, respectively, survived for twelve and nineteen months, and at autopsy showed marked ascites, over 30 c.c. of fluid being collected in the latter case. The remaining animal which received 86 injections survived for twenty-three months, and at autopsy showed marked ascites, and double hydrothorax. In all but one case in this series, death occurred in from two to five days after the last injection.

In Group II, four animals which died within four months after the first injection, showed no edema. One which received 10 injections of 5 m.grms. each, during fifteen months, died two days after the last injection, and showed marked subcutaneous edema, but no accumulation of fluid into the serous cavities. This animal increased 50 grms. in weight during the last two days of life. One animal which received eight injections during thirteen months, died five days after the last injection, and showed moderate subcutaneous edema, marked ascites, double hydrothorax, and hydropericardium. Still another which received four injections during eight months, died eleven days after the last injection, having increased 125 grms. in weight during the last five days of life, and at autopsy showed marked subcutaneous edema, and marked ascites, over 120 c.c. of ascitic fluid being collected. The remaining animal of this series received seven injections during fourteen months, died eight days after the last injection, and showed moderate ascites.

In Group III, one animal which received two injections of 10 m.grms. and one which received a single injection of 15 m.grms. died within four months, and showed no edema. One which received 30 m.grms. in three doses, died in sixteen months, eleven days after the last injection, and showed ascites, double hydrothorax, and hydropericardium. The remaining animal received 20 m.grms. in three injections, died in sixteen months, five days after the last injection and showed moderate subcutaneous edema, and moderate ascites.

In the complete series of seventeen animals which survived for longer than three months, seven which died before the eighth

month showed no edema, and of the ten which lived for longer than eight months, nine showed definite, and in some cases, marked edema. In four of the nine cases there was marked subcutaneous edema, which in three cases was associated with effusion into the serous cavities. All of the cases of subcutaneous edema occurred in Groups II and III, where relatively large doses of the drug were administered.

In none of the cases was any attempt made to induce edema formation by forcing water. The animals were fed upon a mixed diet in which was a plenty of greens, and they obtained all their water from the green food. Since death occurred in every case but one within eleven days after the last injection, and during the resulting acute intoxication, it would seem that the edema was a true renal edema, and not due to stasis resulting from a broken down heart. There can be little doubt that the prolonged action of the uranium nitrate upon the blood vascular system had so damaged it, that it was unable to withstand the strain of the plethora which was produced by the inability of the kidney to excrete water during the terminal attack of acute nephritis.

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## The action of infundibulin upon the mammary secretion.

By **ISAAC OTT** and **JOHN C. SCOTT.**

[*From the Physiological Laboratory, Medico-Chirurgical College of Philadelphia.*]

In the goat we have found in the early nursing period that infundibulin (the active principle of the posterior part of the hypophysis), when injected into the vein of the ear, rapidly and greatly increased the secretion of milk. The nipple had a cannula inserted into it, and a water aspirator produced the suction necessary to empty the udder. The milk before and after the injection was caught in a graduated flask and measured every five minutes. The following experiment will given an idea of the activity of the infundibulin:

GOAT—RIGHT NIPPLE.

| | | | |
|---|---|---|---|
| 2.25 P.M. | | | |
| 2.30 " | ..... | 4 drops | milk. |
| 2.35 " | ..... | 5 " | " |
| 2.40 " | ..... | 5 " | " |