

amebiasis after varying periods of time following successful inoculation by feeding.

In Table II are recorded the date of inoculation, the date of the first stool-examination positive for *E. histolytica*, the date of the first positive complement-fixation reaction, and the lesions found at necropsy in these animals.

The results shown in Table II demonstrate that in 3 of the 4 monkeys amebic lesions were found in the cecum and colon containing trophozoites of *E. histolytica*; that in all 4 monkeys the stools were positive for the ameba, and that positive complement-fixation occurred in all the animals. In Monkey MA-3 the reaction was positive 2 months before death but no amebic lesions were found at necropsy, while the complement-fixation reaction had become doubtful 27 days before death. It is probable that in this animal a spontaneous recovery from the amebic infection had occurred.

*Conclusions.* It is concluded that the results of these experimental infections with *E. histolytica* in *M. rhesus* monkeys demonstrate that in these animals typical lesions of amebiasis occurred in the intestine and that a positive complement-fixation reaction for amebiasis followed each experimental infection.

## 9689 P

### Effect of Deviating Urine into the Blood Stream and Intestine of Dogs.\*

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It is now well established that elevation of the arterial blood pressure can be produced in animals by various procedures which decrease the blood flow through the kidneys.<sup>1</sup> A reflex effect from the ischemic kidney appears to have been ruled out as the cause of this type of hypertension by the findings that it is not prevented or relieved by denervation of the kidneys,<sup>2, 3</sup> excision of the splanch-

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<sup>1</sup> Goldblatt, Harry, Lynch, J., Hanzal, R. F., and Summerville, W. W., *J. Exp. Med.*, 1934, **59**, 347.

<sup>2</sup> Page, I. H., *Am. J. Physiol.*, 1935, **112**, 166.

<sup>3</sup> Collins, D., *Am. J. Physiol.*, 1936, **116**, 616.

nic nerves,<sup>4</sup> or complete sympathectomy.<sup>5</sup> The possibility remains that a humoral agent is the responsible factor. A partial chronic reabsorption of urine was produced in 4 dogs by separating the bladder from the urethra and making a wide anastomosis between the bladder and the ileum about 12 cm. from the ileocecal valve. A definite and sustained elevation in the non-protein nitrogen of the blood occurred in each case but in all the post-operative blood pressure readings were lower than the pre-operative controls. The pressure was measured by inserting a needle connected with a mercury manometer directly into the femoral artery. Three of the animals ate very little after the operation, became progressively emaciated, and died or were destroyed in 20, 23, and 28 days respectively. One animal survived 89 days when he developed distemper and was sacrificed.

In a second series of 4 normal dogs a direct anastomosis was made between the ureter from one kidney and the lumbar vein. A glass cannula was used for this purpose and the tip was permitted to project into the lumen of the vena cava. This procedure has been reported by a number of authors<sup>6, 7</sup> to cause a rapidly fatal toxemia and the existence of a specific nephrogenic toxin has been postulated to account for the result. Contrary to the experience of previous workers the animals in this series tolerated the procedure very well and there was no increase in blood pressure and no elevation in the nitrogenous constituents of the blood. The free passage of urine from the one kidney into the blood stream was indicated by the visualization of the kidney pelvis by X-rays following the intravenous injection of diodrast up to 14 days after the operation. At autopsy there was found moderate to marked hydronephrosis of the kidney on the operated side. The anastomosis was patent in 3 cases and the cannula partially obstructed by a blood clot in the fourth. In the former, slight pressure on the renal pelvis caused clear urine to flow from the cannula projecting into the vena cava. One animal died on the 13th day, the others were well when sacrificed on the 11th, 37th, and 28th days respectively.

*Conclusions.* (1) If the entire urinary secretion in dogs is diverted into the lower ileum, a partial reabsorption occurs, as indicated by a sustained rise in the blood N.P.N. and symptoms of toxemia, but no elevation in the arterial blood pressure is produced.

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<sup>4</sup> Goldblatt, Harry, *Proc. Assn. Path. and Bact.*, Boston, April 9-10, 1936.

<sup>5</sup> Alpert, L., Alving, A., and Grimson, K., *PROC. SOC. EXP. BIOL. AND MED.*, 1937, **37**, 1.

<sup>6</sup> Brücke, E., *Wien. klin. Wchnschr.*, 1926, **39**, 1058.

<sup>7</sup> Galehr, O., and Ito, T., *Z. f. d. ges. exp. Med.*, 1927, **55**, 115.

(2) If the urine from one kidney is deviated directly into the vena cava by uniting the ureter and lumbar vein, no toxic symptoms appear, the blood N.P.N. remains within normal limits, and there is no rise in the arterial blood pressure. These experiments give no support to the theory of a specific nephrogenic toxin as postulated by Brücke.

### 9690 P

#### **Effect of Cortical Hormone upon Blood Pressure in Shock Induced by Massive Doses of Adrenalin.**

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Previous work<sup>1</sup> led to the conclusion that cortical hormone exerts a direct effect upon the low blood pressure in shock induced by stripping the intestine. The pressor action of the hormone appeared to be more or less independent of serum electrolyte and associated blood volume changes. The present experiments on adrenalin shock lend further support to these conclusions.

Five adrenalectomized dogs were used. They were active, vigorous, at peak weight and indistinguishable from intact animals. No hormone was administered 18 hours previous to use in the experiments. Table I shows that they had normal blood pressures, blood concentration and serum electrolytes. These dogs were given 20-40 cc. of either 1-3000 or 1-5000 solution of adrenalin (diluted with either 0.9 NaCl or 5.5% glucose) by continuous or intermittent intravenous infusion. The time interval ranged from 20-60 minutes. The animals were table trained and no anesthetic was used since the slow injection did not cause pain or discomfort. Occasionally a dog would retch or vomit if the adrenalin was given too fast. Arterial pressures were recorded by the needle puncture method<sup>2</sup> during injection and frequently thereafter. The essential data obtained from study of a representative case are given in Table I.

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<sup>1</sup> Swingle, W. W., Parkins, W. M., Taylor, A. R., and Hays, H. W., *Proc. Soc. Exp. Biol. and Med.*, 1937, **37**, 601.

<sup>2</sup> Parkins, W. M., *Am. J. Physiol.*, 1934, **107**, 518.