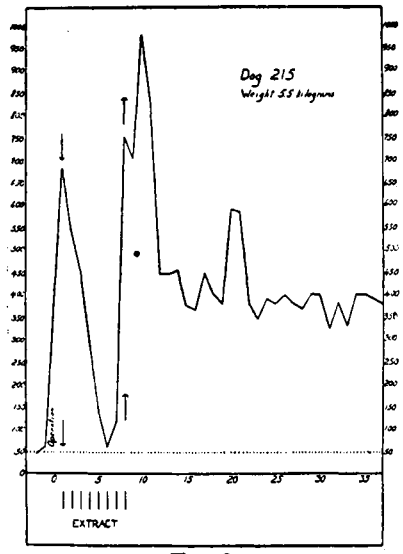


FIG. 2.

Food and water intake as in Fig. 1. Anterior pituitary extract 1 cc. daily subcutaneously. Note that in this experiment the food consumption (Baloration) was maintained constant.

the early temporary alleviation of d.i. which invariably occurs when prolonged d.i. is precipitated by hypothalamic lesions is not due to a fleeting depression of anterior pituitary function.‡

## 9729 P

## Total Creatinine, Phosphates, Calcium and Potassium in Normal and Infarcted Myocardium of the Dog.*

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In 1934 and 1935 with the help of Decherd, the authors studied the mobilization of creatine in experimental myocardial damage[1]

‡ We are indebted to Dr. Oliver Kamm of Parke, Davis & Co. for the generous supply of "anterior pituitary total extract" which we used in these studies. Although it is now going on the second year since the lot was prepared, it is still satisfactory in potency, as evidenced by experiments executed at the present time (December 1).

* This study was made possible by Grant No. 444 of the American Medical Association.

1 Herrmann, G., and Decherd, G., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 477.

and the creatine and glycogen content of normal and infarcted heart muscle of the dog[2] and noted very definite and at times striking changes. The present series of experimental ligations of branches of the left coronary artery of the dog were carried out for the purpose of studying the effect of obstruction of the blood flow upon the phosphates, calcium, potassium as well as creatine levels of the dog's heart muscle.

Twenty out of 24 experiments were satisfactory. The dogs were completely anesthetized with amytal. A tracheal cannula was sewed into place and the chest opened under air pressure. The pericardium was brought up, split open and anchored to the chest wall. The anterior descending branch of the left coronary artery was tied off just below its first visible branch. The dogs were sacrificed after varying intervals from one to 22 hours. Sections were taken from the left ventricular muscle outside and in the infarcted area. Section A of apparently normal left ventricular muscle and Sections B from the infarcted areas were minced and ground up with chemically clean sea sand. Both were extracted with 5% trichloracetic acid and analyzed for total phosphorus, for acid soluble phosphate P and inorganic phosphate P by a modification of

TABLE I.
Averages of Analyses of Sections of the Left Myocardium of 24 Dogs in which a Branch of the Left Coronary Artery Was Ligated.

| Aver. in mg. per 100 gm. | TP | PAS | Lipid P | Inorg. P | K |
|---|---|---|---|---|---|
| A section (Normal) | 285±137 | 93±9 | 198±124* | 72±11.2 | 344±110 |
| B section (Infarcted) | 258±54 | 88±13 | 164±66* | 70±7.9 | 348±111 |
| | Cr (Wet) | Cr (Dry) | Ca | | % Solids |
| A section (Normal) | 236±42 | 1178±190 | 9.3±1.8 | | 21.15±1.4 |
| B section (Infarcted) | 208±61.5 | 987±300 | 8.7±2.04 | | 20.25±2.16 |

TP = total phosphorus.
Lipid P = lipid phosphorus.
Inorg. P = inorganic phosphate P
K = potassium.
Ca = calcium
Cr (Wet) = total creatinine as determined in fresh muscle.
Cr (Dry) = " " " calculated on basis of % solids.
PAS = acid soluble phosphate P
Lipid P values were obtained by subtraction. *Two lost observations account for slight discrepancies in average as subtracted.

[2] Herrmann, G., and Decherd, G., PROC. SOC. EXP. BIOL. AND MED., 1935, **32**, 1304.

Deniges'[3] method. Other sections were analyzed for potassium by the Brech and Gaebler[4] method, for calcium by Halverson and Bergeim's[5] method, for total creatinine by Folin's method, using the Jaffe reaction. The water content or percentage of solids was determined by drying oven at 110°C. for 24 to 36 hours.[6]

The results as tabulated indicate that the ischemia and anoxemia resulting from ligation of the smaller branches of the anterior descending branch of the left coronary artery produce significant chemical changes. The losses of creatine are accompanied by losses in the total, acid soluble and lipoid phosphates but not of inorganic phosphates or potassium. The creatine losses are less striking than those recorded previously when the main anterior descending branches of the left coronary arteries were ligated[2] due to the smaller and the less definitely demarcated area of infarcted myocardium and almost inevitable inclusion of some normal tissue with the asphyxiated muscle.

## 9730

## Bacteriostatic Action of Sulfanilamide upon Meningococcus in Spinal Fluid.

ERWIN NETER. (Introduced by Ernest Witebsky.)

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It is generally agreed that sulfanilamide and related compounds have a curative effect in natural and experimental infections of man and animals by the hemolytic streptococcus. One of the most interesting features of sulfanilamide as a chemotherapeutic agent is its property to be more or less effective against a wide variety of microörganisms, including the pneumococcus, gonococcus, meningococcus and *Cl. welchii.* The mechanism of the action of sulfanilamide in bacterial infections is not fully understood. There can be no doubt, however, that sulfanilamide exerts a certain degree of

3 Deniges, G., *Compt. rend. Acad. Sci.*, 1927, **184**, 330.

4 Brech, F., and Gaebler, Oliver H., *J. B. C.*, 1930, **87**, 81.

5 Halverson, J. O., and Bergeim, O., *J. B. C.*, 1917, **32**, 159.

6 Shohl's modification of Stolte's dry ashing method, Peters, John P., Van Slyke, Donald D., *Quantitative Clinical Chemistry*, Williams & Wilkens Co., Baltimore, 1932, **2**, 70.