which are strongly acid cause a peculiar muscular stiffness which masks the central action. The alkaloid itself causes also a certain muscular stiffness but it is much less marked and is only troublesome with large doses. The alkaloid was therefore used in these experiments. As was the case with other convulsant drugs we found the action of caffein much greater in the cold. If the frogs are kept cold tetanus can be obtained with doses which are too low to markedly affect the muscles.

In contrast to morphin we found that both in the cold (2–5° C.) and in the warm (12–18° C.) there was no difference between normal and decerebrate frogs in their response to the convulsant action of caffein. In both tetanus was obtained in the cold in all frogs with doses of 0.2 mg. p. gm. and in most frogs with 0.1 mg. p. gm. At room temperature tetanus was constantly obtained in normal decerebrate frogs with doses of 0.6 mg. p. gm. but never in either with 0.3 mg. p. gm.

The experiments show that there is a difference of some sort between the actions of caffein and morphin on the central nervous system although the convulsions are identical in appearance.

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On the production of hyaline casts by certain ions.

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At the February meeting of this Society one of us (G.) reported that after an intravenous or intramuscular injection of a sublethal dose of a solution of magnesium sulphate in dogs hyaline casts invariably appear in the urine. As a result of this observation a series of experiments was made to answer the question as to which of the ions of the injected salt is the cause of the appearance of the hyaline casts—the kation magnesium, or the anion SO_4, the sulphate radical. We have tested in the first place several magnesium salts as well as several sulphates. This led up to further experimentation with some salts which contain neither magnesium nor the sulphate radical. Briefly stated, our results are in general

as follows: The injection of any compounds which have either magnesium or the sulphate radical as a component caused the appearance of hyaline casts in the urine. The injection of salts which had in their composition neither Mg nor SO_4, produced, however, no such effect. Of the magnesium salts, besides the sulphate, the chlorid, nitrate and the acetate were studied also. They all caused the appearance of hyaline casts in abundance. The acetate was perhaps less effective. Of the sulphates, besides the magnesium, also the salts of sodium, ammonium, and potassium were studied. All gave hyaline casts; the action of potassium, however, was less transparent. On the other hand the chlorids of sodium and of ammonium and the nitrate and the acetate of sodium produced no hyaline casts. The effects of potassium salts were apparently complicated by the profound action of these salts upon the heart and probably also by some direct action upon the kidneys. Of course, we could not attempt to give here any further details, nor enter upon a theoretical discussion of the possible significance of the reported facts. We wish only to add the statement that an analysis of the experiments seems to show that there is some definite relation between the diuretic action of the salts under discussion and their specific capacity for producing hyaline casts.

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The specific dynamic action of levulose, glycocoll and alanin in phlorhizin glycosuria.

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Ingestion of levulose by a dog which has been phlorhizinized does not increase the metabolism; the respiratory quotient is not changed and levulose is converted into dextrose, for this alone appears in the urine and in increased quantity. Ingestion of glycocoll or alanin largely increases the metabolism in glycosuria, although they are not oxidized and are converted into glucose and urea. The conclusion is drawn that the preliminary cleavage products of carbohydrate break-down are not stimulants of metabolism,