alpha glucoheptulose, were not fermented by any of the organisms. Glucosamine was used by most of the cultures which fermented glucose, with the exception of *Proteus* and 2 yeasts which gave negative results. Gluconic acid was also fermented by most of the glucose-splitting types, with the exception of the streptococci, pneumococci and the yeasts. Glucose ethyl mercaptal, a sulphur containing sugar, gave entirely negative results.

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A Microcrystallographic Study on Phosphates and its Practical Application.

ERNEST A. PRIBRAM.

From the Department of Bacteriology and Preventive Medicine, Loyola University School of Medicine.

In precipitating phosphate solutions of a concentration of 1/20 to 1/200 of their molecular weight in a solution of the specific gravity of the urine, by using an ammonium magnesium sulphate reagent (Dowd's reagent), we find 8 different forms of crystals, changing gradually at certain amounts of the phosphorus. The form of these crystals can be used for an estimation of the amount of phosphorus in the urine.

Three cc. of the urine and 0.6 cc. of the reagent (10% solutions of magnesium sulphate, ammonium chloride, ammonium hydroxide, 20 cc. of each) are mixed and the crystals, which are formed after at least 10 minutes, are examined with the 4 mm. objective. The predominant crystal indicates the amount of phosphorus. By titrating dilutions of the urine in a 2.5% solution of sodium chloride and precipitating 3 cc. of the dilutions with 0.6 cc. of the reagent the amount of phosphorus in the urine can be calculated from the last dilution, in which the crystal type of the undiluted urine appears. (Crystal type I corresponds to 103 mg. of P in 100 cc. of urine, type II, 93 mg., and so on; type VIII indicates that there are less than 10 mg. of P in 100 cc.) The specific gravity of the urine or the 24 hour specimen may be used for the calculation of the total output of phosphorus during one day. The presence of considerable amounts of urea or of sugar change the form of the crystals in a typical way.