

tion with ammonium sulfate. The other flocculates at a saturation of 0.7 to 0.8, but only after it is diluted with water so that the ratio of the final volume to the weight of the original cottonseed flour extracted is as 50:1.

A fraction having a relatively low nitrogen content, but containing a constant and very high ash percentage was obtained from the salt extract by coagulation; the composition of this preparation points to a nucleic acid. The examination of this product is under way and the results will be published later.

The globulins were prepared by reprecipitation with ammonium sulfate followed by dialysis. The identification of glutelin and a nucleo protein present in the meal, and also the chemical analyses and determination of certain physical constants of the different protein fractions are under way.

### 108 (2631)

#### The development of antirachitic potency in phytosterol and cholesterol following irradiation.

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In a previous communication<sup>1</sup> it has been shown that when vegetable oils are activated by means of ultra-violet irradiation, the antirachitic factor is confined to the non-saponifiable fraction. Further investigation has demonstrated that phytosterol obtained from these oils, although unable to protect against rickets, can in the same way be endowed with antirachitic potency. In these tests the phytosterol was suspended in water, and 0.25 cc. of a 1 percent suspension was fed daily to each rat. Similar experiments were carried out with cholesterol, of which 0.25 cc. or 0.1 cc. was fed. It was found that cholesterol was also able to prevent rickets following irradiation when fed to rats receiving the low phosphorus rickets-producing diet. Spectrograms showed that following irradiation the cholesterol was

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<sup>1</sup> Hess, A. F., Weinstock, M., and Helman, F. D., *Proc. Soc. Exp. Biol. and Med.*, 1924, **xxii**, 76.

altered so as to transmit a greater intensity and a wider range of the shorter ultra-violet radiations. Lanolin which had been irradiated with the mercury vapor lamp to the same degree—for one-half hour at a distance of one foot—was found to have acquired much less antirachitic potency.

### 109 (2632)

#### Crystals of vitamin B from the Mung bean.

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The source of the vitamin is a Chinese bean, the Mung bean, ground dry into a meal. The method of extraction is a modification of Suzuki's (1912). The meal is boiled with methyl alcohol (80 percent) plus 2 percent hydrochloric acid, and extracted three times in a reflux condenser. The filtrates are added together and evaporated under reduced pressure. Precipitates are filtered off as evaporation proceeds. The evaporation is continued to the removal (complete) of alcohol. All fats, organic acids, etc., are removed from the aqueous solution with ether. The solution is then acidified with sulfuric acid and treated with phospho-tungstic acid to complete precipitation, and filtered. The precipitate is decomposed with a solution of acetone made alkaline with barium-hydroxide, the resulting precipitate being filtered off. The excess of barium-hydroxide is removed with sulfuric acid, and excess of sulfuric acid is removed with lead acetate, and excess of lead removed by hydrogen sulfide. The resulting solution is then evaporated. When evaporation has reached approximately 3 percent of the initial quantity of liquid used in the extraction, needle-shaped, colorless crystals begin to appear. When evaporation is carried to dryness the crystals coalesce as brownish masses. This mass may be recrystallized as white crystals from 80 percent ethyl alcohol.

The melting point of these crystals is 320 degrees Centigrade, and they turn brown at 245 degrees Centigrade. The identity of these crystals as uric acid crystals could not be established by