was prompt, spasmodic and sustained in character. In others it was slower but equally sustained for periods of five to seven minutes. In four cases where the sputum was studied in the interval of attacks, *i. e.,* before and after the attacks, no contraction of smooth muscle was obtained—the kymographic registration showing a flat curve.

Control sputa prepared in a similar manner to the above from five cases of pulmonary tuberculosis, three of bronchiectasis, and five normal individuals gave absolutely negative results.

Further investigations are in progress to ascertain the nature of the substance and its significance.

107 (2630)

Proteins of the cotton seed.

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By extracting finely ground cottonseed kernels (hull-free) with benzene (C_6H_6) nearly all of the fatty and resinous substances and much of the coloring material is eliminated. For this purpose benzene is far superior to ether. Such a thorough removal of the above substances from the flour greatly facilitates a satisfactory subsequent extraction of the proteins by different solvents. The high percentage of nitrogen extracted by sodium chloride solution (Table I) is doubtless due to the method of preparation of the flour.

TABLE I.

	Percent of total N.
Salt soluble protein N	76.6
Alkali soluble protein N	8.2
Extractable non-protein N	10.1
Residual N (by difference)	5.1

We were able to separate from the salt extract two globulins. Of these one can be precipitated directly at 0.4 to 0.5 of satura-

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[1] 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

[1] Hess, A. F., Weinstock, M., and Helman, F. D., PROC. SOC. EXP. BIOL. AND MED., 1924, xxii, 76.