While a hypersensitive state probably takes some part in the inception of the infection, these experiments indicate that the subsequent exudative lobar involvement is essentially a progressive and cumulative process.

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The nitrogen distribution of some feedstuffs and cereals.

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The importance of knowing the amino acid content of feedstuffs has led the authors to apply Van Slyke's method[1] for the analysis of proteins direct, without previous isolation of the proteins themselves. The fine-ground and well-mixed material is weighed off in amount equivalent to 2–3 grams protein (estimated from the N-content) and completely hydrolyzed with 20 per cent. hydrochloric acid. Thereafter the method of Van Slyke is followed.

Analyses of corn, corn germ, cottonseed flour, kafir corn, tomato seed (pressed) and peat have been completed, results in duplicate agreeing well. The authors have had difficulty in accounting for the sulphur of the protein, the results for cystin being lower than was expected. This difficulty has been experienced by others and it is generally believed that if the cystin grouping be present, it is decomposed on hydrolysis and the sulphur changed to a form not precipitated by phosphotungstic acid with the cystin fraction. It is also conceded that sulphur exists in protein in other than the cystin grouping.

The results show Kafir corn and tomato seed meal to be lacking in histidin. Qualitative tests for tryptophan are positive for tomato seed, positive but slight for Kafir corn. Osborne and Clapp[2] found tryptophan and lysin, 2.93 per cent. in glutelin extracted from corn by weak alkali. The same investigators found neither lysin or tryptophan in zein of corn. Osborne's feeding experiments with cottonseed globulin show this protein to be satis-

[1] *Jour. Biol. Chem.*, X, 15. 1911.

[2] *Amer. Journal of Physiology*, 20, 477. 1907.

factory for maintenance and growth. Lysin and tryptophan are both present. Other experiments by Osborne and Mendel indicate that lysin and tryptophan in the diet are both necessary for growth. If lysin be present without tryptophan maintenance is secured, but not growth. The writers found lysin N in both corn and cotton seed. The qualitative tests for tryptophan were positive. Unfortunately the determination of tryptophan by hydrolysis with acids has never yielded satisfactory results, it being thought that the tryptophan complex is broken down.

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The distribution of blood in shock.

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In a recent communication we have shown that the essential factor of shock is a disturbance in the normal distribution of the blood. This disturbance is of such a character that the normal quota upon the arterial side of the circulation is diminished and this diminution is maintained so that, as a consequence, even after the original cause of the disturbed distribution of the blood, whether of a mechanical, toxic or inhibitory nature, is removed the abnormal diminution of the blood upon the arterial side of the circulation not only persists but, in fatal cases, progresses from local peripheral causes alone until death occurs.

The reality and nature of these local factors in the production of shock is made clearest in that form of shock which is produced by mechanical means alone, because in shock created in this manner no other factor can enter except the consequences of a primary disturbance of the normal distribution of the blood.

The mechanical means which we adopted for the production of shock was that used for the reduction of blood pressure when testing out the shock-producing effect of trauma to the peripheral sensory nerves. It consisted in partially occluding the inferior vena cava within the chest by passing a thread around the vein and drawing out the two ends through the incision in the wall of