C. R. Srinivasan (1929). Mad. Ag. Station Report (1929—30)

a) Difference between manured and unmanured rows.

Treatment.	Strain.	Manured line. Mean of 16 repetitions.	Adjacent unmanured line. Mean of 16 repetations.	Mean Difference.	Standard error.	Mean difference / Standard error.
1. Ammonium sulphate to supply 100 lb. per acre.	Co. 1	922·3	755·3	167·0	25·70	6·50
	Co. 5	677·4	569·4	108·0	15·10	7·16
2. Super phosphate to supply 200 lb. per acre.	Co. 1	714·5	743·5	29·0	11·40	2·54
	Co. 5	565·9	571·9	6·0	17·40	0·35
3. Super phosphate to supply 200 lb. + ammonium sulphate to supply 50 lb. per acre.	Co. 1	823·7	754·1	69·6	18·70	3·70
	Co. 5	599·0	559·7	39·3	14·35	2·73

(b) Difference between unmanured rows.

Treatment.	Strain.	Line adjacent to manures. Mean of 16 repititions.	Line away from manures. Mean of 16 repetitions.	Mean Difference.	Standard error.	Mean difference / Standard error.
1. Ammonium sulphate to supply 100 lb. per acre.	Co. 1	740·0	755 5	15·5	29·00	0·57
	Co. 5	567·3	563·1	4·2	6·30	0·67
2. Super phosphate to supply 200 lb. per acre.	Co 1	746·3	743·5	2·8	14 00	0 20
	Co. 5	552·2	571·9	19·7	15·13	1·30
3. Supper phosphate to supply 200 lb. + ammonium sulphate to supply 50 lb. per acre.	Co. 1	770·5	754·1	16·4	21·42	0·77
	Co. 5	554·0	559·7	5·7	15·50	0·37

Value of 't' for P=·05=2.12

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ABSTRACTS

A method for making mechanical analyses of the ultimate natural structure of soils. By G. J. Bouyoucos. (*Soil Sc.* Vol. 40, No. 6, p. 481). Through a number of sieves, 10, 20, 40, 60, 80 and 100 meshes, soil is successively passed in the slaked state, the process being repeated, with the fraction passing through the first sieve being taken to the next one and so on. The several fractions retained on the sieves are weighed. All these together with the material passing through the finest sieve (100 mesh) were collected again, dispersed and mechanically analysed by the hydrometer method. At the finish, the dispersed material is again taken through the sieve procedure and the several fractions now obtained with

the dispersed soil are noted. Thus we get material passing with mere slaking and with dispersion and this gives a measure of resistant and non-resistant aggregates in the soil. M. R. B.

Cotton bark as a source of Rayon pulp. (*Imp. Inst. Bull.* Vol. XXXIII, No. 4, p. 446). Cotton pulp cut into small pieces and treated with alkali produced a pulp which had more ash constituents and less L-cellulose, than the material usually used for Rayon pulp, viz., bleached sulphite wood pulp. More drastic treatment with alkali to produce a finer pulp may be successful, but the yield will be too low for economical working. M. R. B.

The relation of soil treatment to the nodulation of pea-nuts. By H. B. Mann. (*Soil Sc.* Vol. 40, No. 6 p. 423). The paper is the result of an investigation of the effect of Calcium Carbonate and Sulphate, not so much on the final yield of nuts, but on the conditions of application and the effect on nodulation—an aspect which has not been well studied before. The experiment was done in pots, six treatments being studied, which included $CaCo_3$, $CaSo_4$, free sulphur, mixture of sulphur with $CaCo_3$ and with $CaSo_4$ and a control and three types of soils were examined. The results showed that (1) there was no correlation between growth of plant and nodulation (2) that the effect of lime on nodulation depends on the type of soil, being increased in soils poor in lime and getting reduced in soils rich in lime (3) Sulphur decreases nodulation and (4) that both Carbonate and Sulphate of lime are similar in their effects on nodulation. M. R. B.

The variation in the mineral content of vegetables. By J. Davidson and J. A. Leclerc. (*The Jour. of Nutr.* Vol. II, No. 1, p. 55). A paper that attempts to fill up the gaps of information on the mineral content of foodplants, which are necessary to make up a balanced ration. Samples of kale, broccoli, lettuce, cabbages and spinach were analysed for their ash content, and for potash, soda, lime, magnesia, phosphorus, sulphur, chlorine, manganese, iron and even copper, the examination covering the following factors which affect variation (1) variety, (2) place of growth, (3) type of soil, (4) fertilisers used, (5) dry or irrigated and if the latter, analysis of irrigation water used (6) insecticides used and (7) season. The results showed cabbage to be highest in phosphorus, kale in lime, spinach in magnesium and lettuce in potash. But, it was seen that each vegetable varied largely in its constituents due to the several factors, and each vegetable had its own range of variation for each particular constituent. Fertilisers and the nature of irrigation water used, seemed to contribute largely to the variation.

M. R. B.

The relation of soil erosion to certain inherent soil properties. By J. F. Lutz. (*Soil. Sc.* Vol. 40, No. 6, p. 439). A paper that studies the physical and chemical properties of several soils varying in their erosiveness, and the relation of these properties to erosion. Two soils were examined, one highly erosive and another comparatively non-erosive. Mechanical analysis and determination of aggregates showed that there is greater clay in the non-erosive soil; also it contains 15 to 16% more aggregates. Another important point is that these aggregates are in the form of large stable granules. The aggregates of the erosive soil in addition to being unstable, are dense and impermeable. A striking difference noted from the experience of previous workers, was the absence of any relationship between zeta potential and silica-sesquioxide ratio. Experiments on swelling and hydration, however, showed that hydration is a more important factor than charge, in determining the stability of colloid suspensions. The degree of hydration was measured by viscosity measurements. M. R. B.