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First Steps in Farming—Young Man's Department. LIQUID MANURE.

(Continued)

LINCOLN COLL., NOV. 20th.

In our last number we were considering the case of soils which are not benefited by the application of liquid manure, and the causes of failure. We showed that certain clay soils only require constant working in order to yield remunerative crops of wheat in succession for a number of years, and that, therefore, they contain a practically inexhaustible store of mineral elements of nutrition, and an ample supply of organic food; and further, we saw, from the analysis of one of these soils, that the amount of fertilising materials supplied by the 50,000 gallons of Mechi's tank liquid was altogether insignificant when compared with their natural provision.

It may be said: if these soils abound in available fertilising matters, why is farmyard manure employed upon them with advantage? The answer is this: farmyard manure is a more perfect manure than liquid manure, and being a bulky manure, it performs important mechanical functions that cannot be performed by liquid manure. Secondly, the retentive character of these soils precludes the young plants from availing themselves of the total amount of fertilising material dispersed through the whole mass of the soil; while those grown on a porous sandy soil penetrate it to a greater depth and in every direction, availing themselves of the manuring constituents uniformly distributed among a large bulk of soil by the agency of liquid manure. I do not think that much

benefit would be derived from the application of solid manure to clay soils, if it were possible to incorporate it with the soil as uniformly as liquid manure, and to the same depth to which the latter penetrates them. But decided benefit results from a good dressing of common dung, because, in fact, only a small proportion of the soil is actually manured, and because, by the very bulk of the manure, the physical and chemical characters of a portion only of the soil are so altered that in reality the plants feed upon a new and artificially formed soil: compare the effects on a heavy soil, of ten tons of manure spread broadcast with the effects of the same quantity of manure in drills.

It is not every clay soil that encloses in its embrace abundant stores of available plant-food; there are poor clays as well as poor sands, and it may be asked: Might not liquid manure produce a good effect on sterile clay land? I think not. The close texture, coldness, and want of porosity which characterise sterile clays, are opposed to the advantageous application of liquid manure, and for this reason: only a small part of such soils can be penetrated by the tender roots of plants, whilst by far the larger part of the soil enriched by the liquid manure is out of their reach; consequently, most of the liquid manure would, under these circumstances, be lost, and the small quantity left in the portion of the soil penetrated by the plant-roots cannot of course produce any striking result.

Again, we must not forget that evaporation of water produces cold: that all clay soils are generally more than sufficiently wet; that the additional quantity of water supplied in liquid manure renders them wetter still; and we shall see that the injury done to the land by the resulting cold cannot be counterbalanced by the small amount of fertilising matters supplied.

Moreover, clays, whether fertile or barren, and all land that is stiff, as are the majority of Canadian soils, must be rendered closer by a heavy dose of liquid manure: an excess of water could not benefit them in their physical character. The use of liquid manure at a time when the land is more than sufficiently wet is therefore clearly objectionable. It is equally objectionable on stiff soils when they are too dry. In