

their value on their organic matter and their dryness during winter. If the organic matter fell too low the soils would cease to retain plant food and to resemble sandy loams; instead they would become like soils of similar mineral composition elsewhere, rather lean hungry sands, excellent for market garden purposes if highly manured, but not good farming soils. That the organic matter can fall, and fall quickly, is seen from the fact that No. 7, a freshly broken soil, contains 21.5 per cent, while No. 8, which has been in cultivation some time, contains only 13.1 per cent. But here again there is no reason why the danger limit should ever be reached; warning can be given by the Experiment Stations in ample time for the proper conservation measures to be taken."

MANITOBA SOILS.

Locality.	Red River Valley	Portage la Prairie.	Portage la Prairie 25 years cropped.	Brandon.	Dauphin District.	Dauphin District.
No. of Sample.	1	2	3	4	7	8
<i>Soil.</i>						
Fine gravel* above 1 mm.						
Coarse sand 1 mm. - 0.2 mm.	1.04	1.32	11.38	2.53	21.13	19.55
Fine sand 0.2 - 0.01 mm.	3.85	8.59	8.40	15.42	22.61	33.35
Silt 0.01 - 0.01 mm.	17.13	29.98	29.65	17.71	19.67	11.00
Fine Silt 0.01 - 0.002 mm.	28.20	15.61	11.56	16.40	6.43	6.16
Clay below 0.002 mm.	23.27	16.53	14.17	29.21	3.36	4.11
Loss on ignition.	26.29	19.43	14.79	11.25	21.54	13.11

*As the soil had already gone through a 1 mm. sieve the fine gravel could not be determined.

"B. *The Saskatchewan Soils.*—The Wolsley soil is remarkable for the uniform distribution of the various grades of particles. There is neither deficiency nor excess of anything; there is enough sand to make the soil work easily and to keep it open, but not too much; there is enough clay and silt to give retentiveness and supply potash but not enough to make the soil difficult to work. It is not very different from the Portage la Prairie soil and the remarks made there apply here also. Even if the organic matter were much reduced the soil would probably be easily cultivated; at the same time it is so useful a source of plant food that it should not be allowed to fall too low."

"The Tisdale soil owes its clay-like nature partly to the absence of coarse sand and partly to the rather large quantity of clay present. It contains no mineral material capable of keeping it open and friable, but the abundance of organic matter present serves this purpose instead. The supply of organic matter must therefore be kept up."

"The Indian Head soils contain a large amount of clay, which, however, is tempered by the presence of 10 per cent of coarse sand. It would still be somewhat intractable were it not so well supplied with organic matter and lime, both of which must therefore be maintained at a sufficiently high level."