No phosphoric acid could be detected, and only traces of the alkalies were present.

The specimen, about 6 by 8 inches in size, is one of shell marl, showing a large number of small shells and also at one side a considerable amount of peat. The whole was fairly sampled and the analysis made on the quantity so obtained.

In commenting upon its value as manure, I would say that as a rule the fertilizing power of a marl depends, to a large extent, upon the amount of carbonate of lime it contains, although the value of those marls which contain phosphoric acid and potash would be enhanced thereby. The application of such marl as the one analyzed would be of especial benefit to a peaty soil which is deficient in lime.

Besides acting as a manure, marl is often useful in altering the mechanical condition of the soil. The addition of marl to a sandy soil has the effect of making the soil heavier and better adapted for holding manure and moisture, and conversely its action on clay is to produce a more pliable and easily worked soil. As carbonate of lime is not at all caustic, its application, even in excess of the amount needed, cannot result in any injury to vegetation.

I remain, Sir,

Yours very truly,

FRANK T. SHUTT, M.A., F.C.S.,
Chemist, Dom. Exp. Farms.

REPORT No. 2.

OTTAWA, 1st November, 1887.

Prof. WM. SAUNDERS,
Director, Dominion Experimental Farms,
Ottawa.

DEAR SIR,—As instructed by you, I have made an analysis of the alkaline water sent by Miller Christy, Esq., of Manitoba, for examination, and find as follows:—

Solid matter per Imperial gallon, 465·22 grains, the percentage composition of which is tabulated below:

Lime (CaO)	10·55
Magnesia (MgO)	7·25
Soda (Na_2O)	25·56
Sulphuric acid (SO_3)	22·15
Chlorine	28·08
Alumina and oxide of iron	·52
Water of hydration, small quantities of carbonic acid and organic matter undetermined	5·89
	100·00

Examination with the spectroscope showed sodium to be the only alkali present.

Calculating from these figures on the supposition that the chlorine is combined with the sodium, and the magnesia with the sulphuric acid, we arrive at the following:—

	Per cent.
Sodium chloride (common salt)	46·27
Magnesium sulphate	21·75