For the Journal of Agriculture.

CATTLE DISEASES.

I purpose in the following article to offer to the reader some notes and comments upon certain classes of disease with which the cattle in this country are at times afflicted. I will be allowed some credit for courage in an undertaking of this kind while the Report on the Cattle Disease in Pictou has not yet fully reached us, and while in the portion that has so far been published, certain points seem to bear rather strongly against certain views of the matter which I must continue to hold with some favor.

We are informed that "Professor Lawson's report on the soil does not point to anything abnormal or indicate anything which would lead us to suppose that it had anything to do with its production. In fact we find it appearing on all kinds of soil; it prevails on the high rolling land, on the swampy soil, on the uncultivated common, and on the best tilled farms."

In connection with this statement, however we must bear in mind another, which we find shortly before it, as follows: "It would appear that the disease, if not communicable by direct contact, is communicable by immediate agents, notably infected buildings, and by the animal fluids and decomposing bodies."

We find then, that a palpable and definite form of disease exists among us in full force and form; but whence its origin and how its initiation is the problem that still remaineth. My say in the matter only relates to what constitute the supporting causes of (it may be) this and other cattle diseases in this country, and several existing hindrances to the continued health, not only of cattle but other stock as well.

To begin with, then, it is found by intelligent observation, that as perhaps an invariable rule, when the balance of nature is in any degree impaired, then some degree of disease will most surely appear. In other words, if we note much want or much excess of any of the elements constituting a fertile and healthy soil, the same want or excess is most surely to be noted first in the plant growth, then in the state or bodily system of the animals feeding on these plants and drinking the water of such a district. Of course there are several, notably the alkaline and siliceous elements in soils, that may exist in much larger proportion than can be conceived necessary, but yet a full and even growth from these soils be found to continue for a long time, without any difference being detected; but extremes in these, as in other matters, will develope evils. Although Nova Scotia is composed of a great variety of rocks, and her surface presents a good variety of soil, yet the different kinds of the latter are in many instances rather sharply divided. We cannot be said to possess any great extent of any particular quality or homogeneity of soil. There is the boulder drift, but it is patchy, and in many places indeed very thin, scarcely to be discriminated from the clays of either the metaphoric slate or of the coal districts underlying. As a whole, I should say the greatest want in our soil is lime in a soluble state. In the most of our soils, indeed, we have lime, but it is in the carbonate or silicate form. We have any amount of gypsum in cliffs and isolated masses, as in Hants County; but it has never appeared, to me at least, that it generally exists, distributed throughout our soils in any efficient degree. Phosphate of lime is the scarce element in this country. Magnesia too, must be classed as one of our exceptional elements. We have deposits of it in some shape; but, as in the case of the gypsum, it at present, as an agricultural factor, awaits the aid of business enterprise.

In order to, as far as possible, shorten and narrow down our present subject, let us take a short look at the case presented to our notice in Pictou. Here is a very exceptional kind of soil, covering a coal basin, and for the greater part formed from the grey sandstones and shales of the middle and upper carboniferous formations. No doubt this soil, fifty years ago, contained the requisite elements in good proportion, easily deliverable to the crops of the agriculturist. We have then here, we will say, fifty years of a heavy demand upon the phosphates and sulphates, not only of lime but of other bases, from a soil exceptionally devoid of these elements. There must have been here for a long time a continued cropping of grain, and grazing for the purposes of the dairy, when, all the while, the soil itself has been the party called upon to recuperate itself from sources long since exhausted.

Let us see what are elements mainly predominating in soils of this class. There is but little of the granitic or felspathic element in the boulder drift, which certainly extends to a greater or less degree over these parts. There is to be seen an amount of the quartzite quality in some beds of gravel, resulting from the decomposition of the extensive reefs of conglomerate that are in distant quarters of the country to be found. This, with the sandstones and clays aforesaid form the chief components of the soil about North Pictou, and indeed I may add over good part of all the northern half of Nova Scotia. In all these soil elements how little there is that go to make up the physical constitution of a man or a beast, or any kind of vegetable. The principal salts are mostly the silicates of alumina and carbonates of iron and lime—both insoluble in water. And to mend the matter, in many cases the cattle are kept enclosed on the same fields for long periods—the same fields, the same cattle, the same dung—until the soil becomes sour and bitter and poisonous. And this, I would suggest, is the chief supporting cause of that debility in the animals that affords aid and comfort to the disease. Just at this time, healthy cattle may or do contract this particular form of disease; or, a good number of animals in a week condition may escape. But any Pictou man knows that it is not safe to go to sea with rotten timbers or a sprung mast in his ship; when a storm comes, here destruction takes hold.

If I have so far ever so remotely indicated correctly any important reason wherefore disease has any chance to exist in any part of this country, I may be excused if I proceed to note a remedy, or what may be reasonably suggested as one.

It is well known to every intelligent person, that in countries at present occupied by intelligent agriculturists, a large and constant business is carried on in transporting manures, and their constituents, manurial earths, earths requisite in making up the balance of qualities wanting in the soils of particular localities. With us phosphates are scarce and dear, so is the alkali potash; that want of nitrogen may be to a great extent obviated by improved management. But we have a manurial substance of the very first importance, in inconceivably endless quantities, so vast in extent that the shores and beaches for miles in the Bay of Fundy are composed of it, and whole fleets are loaded with it by merely grounding the vessels and blowing the beach up, at a cost of only a few cents per ton. Moreover, this substance is so distressfully scarce in most soils in this country, and the elements of which it is composed are such a general physical want to the animals of this country, that these elements are nearly always in effect powerfully sanitary and medicinal. This substance, by a very simple preparation, has the effect in most instances, when applied to any of our sour, bitter, poisonous and worn out soils, to render these soils healthful and sweet; so that where only nasty weeds grew, the ground becomes taken possession of by a full rich crop of clover, or other crop of value as may be more suited to the soil elements of any given locality. This substance also, when properly applied to the newly-produced dung, scattered plentifully over the ground where cattle lie, or liberally applied to the ordinary compost heap, has the effect of securing a large proportion of the nitrogenous gases that would otherwise escape. This substance is gypsum. It is used by