

DEEP PLOUGHING.

In a recent number of the *Michigan Farmer* it is stated, that two adjoining fields were ploughed, one *four inches deep*, the other *eight*; the first gave only *seven bushels* of wheat to the acre, the last *thirty-two*! It is possible that other causes might, in this instance, have combined to produce this result; still there can be no doubt whatever that *deep cultivation*, particularly in climates subject to summer droughts, has a wonderful influence on the amount of the crop. We have seen ourselves similar instances to the above.

IMPORTATION OF MANURES INTO GREAT BRITAIN

It is calculated that the amount of Guano consumed in England and Scotland, amounts to upwards of two hundred thousand tons a year, and of Bones an equal quantity; which at a very moderate calculation must cost upwards of three millions of pounds sterling.

PROFESSOR JOHNSTON'S LECTURES.

We have seen as yet, only the first lecture of the interesting course which Professor Johnston recently delivered before the members of the New York State Agricultural Society at Albany. The report, which we find in *Moore's Rural New Yorker*, is very copious, and appears to present in many parts the very words that were used by the learned Professor. We shall present our readers, from time to time, with such extracts as our space will admit. The first lecture is on the *relations of Physical Geography to practical Agriculture*. The following remarks on the practical bearings of general science on the farmer's pursuits, we recommend to the attention of our Agricultural readers.

It will be impossible for me to fill up a single one of the numerous outlines I shall have occasion to present to you. My purpose will be to impress on you the great breadth of existing knowledge which bears on the farmer's art. And first, to show the character, the true practical position which his own art occupies among human pursuits. And in the second place, to satisfy men engaged in other occupations, that whatever farmers, as a class, may be, in any country, at any time, they ought not, either for their own individual interest or for the interest of the country to which they belong, to be less intelligent, or less instructed in general and special knowledge, than other classes of the community are.

Such a course of lectures is likely to be useful at the present time; in the first place, because of the position which according to my judgment practical agriculture now occupies in this State; and secondly, because of the measures which the State Legislature, during the present session, are likely to take—I hope will take—in order to improve that condition.

I shall also make it one of my objects to show that natural science has not only a direct money bearing on the pockets and property of the farmer, but opens up also large views of the natural capabilities of countries, and of the relations of these capabilities to the comfort

and welfare of man: which are not only interesting in themselves, but such as belong to statesmen to become familiar with.

INFLUENCE OF LATITUDE ON VEGETATION.

You know, that if you pass from the southern extreme of this large country northwards you pass over different climates, so to speak; you pass over different parts of the earth, the latitude of which differs. As, for instance, in passing from the extreme south towards Maine, you know that you pass from the sugar and cotton-producing country, into the wheat-producing, and from this to the barley and oat-producing country—which description properly represents Maine—and that whatever is true along the sea-board, is true of all the interior portion, and of all America, from the extreme north to the extreme south; that latitude very materially modifies the kind of culture which it is necessary to adopt to make crops grow best.

On this I need not dwell; but to show you how very small differences in latitude most materially affect the growth of plants and crops, take one single example. The growth of sugar presents this example. According to the results of experience, the sugar cane will thrive where the mean temperature is from 64° to 67° of Fahrenheit. By mean temperature, I mean that which is obtained by averaging the temperature of every day in the year. If this temperature is from 64° to 67° in any given place, there is the place where the sugar cane will thrive. But though the sugar cane may thrive in such a latitude, and may be cultivated with success where the temperature ranges from 67 to 68°, still, it grows most luxuriantly, and yields the largest return at the least cost, where the mean annual temperature ranges from 70° to 77°. All other things being equal, the countries where the highest temperature prevails, are those where the sugar cane can be grown at the least cost, and drive all others out of the market.

The southern part of Spain, near the Straits of Gibraltar, presents the first degree of temperature spoken of. Here the sugar cane will thrive; and here was grown the first sugar that came into the market. The northern part of Africa has a temperature of the second grade—67° to 68, or nearly 70°. There, and in the Azores and the Canary Islands, the sugar cane was cultivated profitably; and there it was cultivated after southern Spain had ceased the culture. But in Jamaica, and other neighboring islands and countries, with which all are familiar, and where the temperature is about 77°, there the sugar cane grows most luxuriantly. But Cuba, and the northeastern part of Brazil, possess the most favourable temperature for the growth of the sugar cane. Thus the single circumstance of variety of temperature, depending on latitude, designates the places where the culture of sugar cane can be carried on most successfully.—All other things being the same, the cost of labor, the energy and enterprise of the people, the institutions of the country—all these conditions being equal—these two countries ought to drive every other country out of the sugar market of the world. But these conditions do not exist; and in other countries the energy of their population, and the effect of their institutions, come into play, and they may compete successfully even with those most favored by climate for the culture of sugar.

EFFECTS OF WATER ON CLIMATE.

The distribution of land and water, is a most important element in the determination of what crops will grow best in countries having the same latitude. You know that all along the sea-board of any one of these continents the climate differs from that of the interior;