AGRICULTURAL.

ROTATION OF CROPS.

The following Letter, addressed to the Editor of the P. E. Island *Colonial Herald*, contains much valuable information which may be of use to our Nova Scotia farmers:

Sir,—Allow me through the medium of your already widely circulated journal, to make the following remarks on the benefits which might be derived by adopting a judicious Rotation of Crops in place of the very defective system now practised, particularly on old farms, and some practical hints on the proper cultivation of the principal crops.

In order to contrast the present practice with that about to be recommended, it will be necessary to state what I suppose the present practice generally to be, and with that I shall begin.

A small spot, as near the farm yard as possible, is selected for potatoes; on this spot all the year's manure is crowded, and the crop put in at from twelve to twenty inches apart, in the drills, and from plant to plant from four to six inches. A few turnips are sometimes sown broadcast in a cow pen; wheat or barley generally follow — these crops sow down with what is called grass seeds—these, in most cases are the seeds which accident or bad farming introduced into the previous year's hay, to which is sometimes added a small quantity of clover seed. The following year the hay is cut, and the land is continued in hay as long as the crop will pay cutting; it is then, in some cases, pastured a few years, and ploughed up, when a regular succession of oats and barley follows for perhaps six years, sometimes more; and even if not pastured, the land is still submitted to the same ordeal, until patch after patch is again in potatoes and turnips, and so on. During all this time, every ounce of hay, straw, potatoes and turnips that can be spared is sold —the farm stock are only allowed to exist. No person, I think, will deny, that this is the general way of farming here, and that the harness and implements of husbandry are also as unsuited to the work as the mode of farming is to the land. The system I wish to recommend, although more suited to old farms, is still in some degree applicable to new ones, which have only a few acres in cultivation. It is as follows:

Growing different crops in succession is a practice which every experienced cultivator knows to be highly advantageous, though its beneficial influence is not yet fully accounted for by chemists.* Sir H. Davy says, "It is a great advantage in the convertible system, of cultivation, that the whole of the manure be employed; and that those parts of it which are not fitted for one crop remain as nourishment for another. Thus, if the turnip is the first in the order of succession, this crop, manured with recent dung, immediately finds sufficient soluble matter for its nourishment, and the heat produced in fermentation, assists the germination of the seeds and the growth of the plants. If, after turnips, barley, with grass seed is sown, then the land, having been little exhausted by the turnip crop, affords the soluble parts of the decomposing manure to the grain. The grasses remain, which derive a small part only of their organised matter from the soil, and probably consume the gypsum in the manure, which would be useless to other crops: these plants likewise, by their large systems of leaves, absorb a considerable quantity of nourishment from the atmosphere; and when ploughed in at the end of two years, the decay of their roots and leaves affords manure for the wheat crop; and at this period of the course, the woody fibre of the farm yard manure, which contains the phosphate of lime, and other difficulty soluble parts, is broken down, and as soon as the most exhausting crop is taken, recent manure is again applied. Peas and beans in all instances seem well adapted to prepare ground for wheat, and in some rich lands they are raised in alternate crops for years together. Peas and beans contain a small quantity of a matter analogous to albumen; but it seems that the azote, which forms a constituent part of this matter, is derived from the atmosphere. The dry bean leaf, when burnt, yields a smell approaching to that of decomposing animal matter, and in its decay in the soil, may furnish principles capable of becoming a part of the gluten in wheat. Though the general composition of plants is very analogous, yet the specific differences in the products of many of them, prove that they must derive different materials from the soil; and though the vegetables having the smallest system of leaves will, proportionably, most exhaust the soil of common nutritive matter, yet particular vegetables, when their produce is carried off, will require peculiar principles to be supplied to the land in which they grow. Strawberries and potatoes at first produce luxuriantly in virgin mould, recently turned up from pasture; but in a few years they degenerate, and require a fresh soil. Lands, in a course of years, often cease to afford good cultivated grasses; they become (as it is popularly said) tired of them, and one of the probable reasons of this is, the exhaustion of the gypsum contained in the soil."

Having such powerful authority as the above, I shall begin by stating what I know would be a successful rotation, as well as being perfectly practicable in this Island But, in the first place, every attention must be paid to collect manure, in addition to what is to be had at every farm yard. And there is no farm in the Island that has not, or near it, either shell, marl, or mud, swamp mud, marsh mud, or alluvial or vegetable deposit. Seaweed is useful as a bed for cattle or pigs, and by using it in that manner, it would increase the quantity of farm yard dung, and contribute to the comfort of that class of farm stock; but, by itself, it is of very little importance as manure. Any or all of those manures may be mixed, either singly or together, with the farm yard manure, or applied by themselves with equal success: in any case they should be turned over once or twice, to assist in their pulverization, and they would form very suitable manures for any crop. Lime would be a valuable addition, particularly if applied to the cradle hills on new land, or to old exhausted grass lands, on being again ploughed up. In this case, it should be spread on the surface, and harrowed in with the seed; and in no case should lime be ploughed in deep, as it has a tendency of itself to sink into the soil. Gypsum might also be used with advantage as a top dressing to grass lands. Russia cake and bone dust, with many other artificial manures, would be valuable additions; but though few farmers can as yet purchase manure, none of them can be excused for neglecting what can be had for the trouble of carting it on the land. There is always time which could be devoted to this work if frolicking were less in fashion.

Proposed Rotation.—In the first place, the Farm should be laid off in, as near as possible, six equal proportions, so that each of the six successions of crops should occupy nearly the same number of inclosures and acres.

1st Succession, Turnips, Potatoes, Carrots, Mangel Wurtzel, Peas and Beans, Tares. Fallow manured.

2nd do. Wheat, Barley, Rye, sown down with Timothy and Clover.

3rd do. Hay.

4th and 5th do. Pasture.

6th do. Oats, Wheat, Barley—if Wheat, top dressed with some portable manure, harrowed in with the seed.

New stumped land ought always to be fallowed, so that the land may be well and completely pulverized and levelled by repeated ploughings and harrowings during summer; it will then, without manure, carry a good crop of wheat or barley, and may be sown with grass seeds. I am aware that in this Island there is a prejudice against fallows, and by judicious management they would not be necessary in old cleared lands; but on lands as above described, it is indispensable in good farming.

"The expediency or inexpediency of pulverizing and cleaning the soil by a bare fallow, is a question that can be determined only by experience, not by argument; no reasons, however ingenious, for the omission of this practice, can bring conviction to the mind of a farmer, who, in spite of all his exertions, finds at the end of six or eight years, that his land is full of weeds, sour, and completely unproductive."

Quebec Agricultural Report for August, 1837.—The first week of this month was dry with cold nights. In some parts there was a small degree of frost, but was not perceptible even on the most tender vegetables. In the second week there was a heavy rain with a north-east wind. On the 16th there was much thunder, which was followed by a few warm and fair days, which were succeeded by showery weather to the end of the month,

The hay crops have been got in with much difficulty, and somewhat injured. The quantity is greater than last year, though less than was expected, particularly on low wet soils.

The grain crops are uncommonly luxuriant, but many of them are rather late, and fears are entertained of their suffering by early frosts. In the vicinity of the town, some fields of barley and oats are under the sickle, and the wheat wants only warm and dry weather to ripen. The injury by the fly, or maggot which it deposits in the grain, is not extensive in this neighborhood, but the reports in this respect from some parts of the country are unfavorable.

The potatoe and turnip crops are good, and although much of the seed of the former missed growing, both will be abundant.

The pastures and after-growth in the meadows, are not so good as was to be expected from the moist state of the weather. The young clover and grass seed sown after the grain, in fields well cleaned and manured, are doing well.

The orchards have abundance of apples, but they are injured by the hail storms of last month.

Prices in the markets have lowered, and from the favorable agricultural reports from all parts of North America, they will probably be low till the appearance of the next crops is known.

The difficulties respecting the currency still continue, and are a great drawback to trade and industry of every kind, calling loudly for

* The cause of a necessity for *Rotation of Crops*, is to a certain extent, well known: It is that the roots of plants have the power of returning to the soil every injurious or useless matter which may have been taken up in the sap, and that the soil around the roots at length becomes so clogged with these excrements, that it is unfit for the growth of the plant by which they have been voided—even although a fresh supply of manure be applied; while at the same time, other kinds of vegetables would derive nourishment from the matter rejected by the former. To prove the truth of this principle, it is only necessary to wash the roots of some growing plant, and then immerse them in a dish of water. In a few days the water will have become thick and discolored with the substances thrown out by the plant.—Ed Bee.