

perfectly clean land, may be ranked first; for it is suited to most soils,—is sown without any labour (except that of scattering the seed) with a crop of corn or flax, in very rich soil—gives a great amount of food for cattle, especially if sprinkled with liquid manure between the cuttings.

Turrips are equally important for winter food, and for similar reasons as respects their food.

The expediency of pursuing any settled order of rotations, should not only be decided by the nature of plants and soils, but also by the character of the climate (the condition of the atmosphere, as to heat and moisture, being of extreme importance), and the qualities and quantities of the manures available.

An intelligent man who tries a good course of rotations, though on a small scale at first, will be unlikely to re-adopt the old, slovenly "hand to mouth" manner of farming; for he will perceive, after experiment, that a system of rotations which includes a due proportion of live stock, is one which, with perseverance and industry, is most likely to increase his profits three or four-fold.

To prove the correctness of this assertion (which is, in reality, that of M. Dornbasle), I shall, for our next week's employment, give you a translation of a short narrative related by him.—I remain, your faithful friend,

MARTIN DOYLE.

EFFECTS OF LIME.

From the Muck Manual.

Lime is very extensively applied, but more particularly in the north of England and Scotland, where the soil is for the most part derived from the older and primitive rocks, which is also the case in the greater part of Devonshire and the whole of Cornwall, as well as in Wales; and when we consider the several causes of its beneficial effect, which we shall presently notice, we think we shall establish its claim to more general use than it has yet attained.

The modes of applying lime to arable land, and the quantity used, vary much in different parts of the kingdom; there is, however, one maxim which should be common to all, and that is, to mix it with the soil in as caustic a state as possible; for on this depends its more active chemical effect.

The most convenient and economical mode of managing lime, when applied to arable land, is to deposit it unslaked, as it comes from the lime-kiln, in small heaps of three or four bushels each, to be spread regularly over the field, and covered immediately with a considerable quantity of the soil, by which it will in a few days be reduced to powder; and as soon as the lime has become slaked, it should be spread over the soil, and ploughed into the land, to mix it intimately with the earth. In rainy seasons much attention is required to avert the consequence of too much water, which, by

making it run together in a mass, prevents it from being spread regularly over the land. This consequence is so serious, that in Cornwall it is considered justifiable, even by scrupulous persons, to attend to the work on Sunday after a heavy rain.

As too much light cannot be thrown on this important subject, and as the application of lime has been more attended to, and carried to a comparatively greater extent, in Scotland than elsewhere, we shall render the best service to the practical Farmer by giving some extracts from a late eminent writer on Scottish Husbandry.

"There is no country in Europe where calcined lime is used to so great an extent, and in such quantities, as in the more improved and improving districts of Scotland. This may be partly owing to the total absence of chalk, which abounds in many parts of England, and which renders calcined lime less necessary there; but it is principally to be attributed to the great benefit that has been derived from its use, which would hardly be credited were its effects not too correctly stated to be disputed. In bringing new, or maiden soil into cultivation, the use of lime is indeed found to be so essential, that little good could be done without it. Its first application in particular gives a degree of permanent fertility to the soil which can be imparted by no other manure. Maiden soils in Lammernuir, of a tolerable quality, will, with the force of sheep's dung, produce a middling crop of oats or rye; but the richest animal dung does not enable them to bring any other grain to maturity. Peas, barley, or wheat, will set out with every appearance of success, and when the peas are in bloom, and the other grains are putting forth the ear, they proceed no further, and dwindle away in fruitless abortion; while the same soils, when sufficiently limed, will, in good seasons, bring every species of grain to maturity.

"This fact proves that oats and rye require less calcareous matter than what is necessary for other grains; that lime acts as an alterative, as well as an active medicine; and that the defects in the constitution of the soil are cured, even after the stimulant and fertilising effects of the lime have long ceased to operate. Lime is also peculiarly beneficial in improving muirish soils, by making them produce good herbage where nothing but heath and unpalatable grasses grew formerly, of which instances, too numerous to be repeated, must be in the recollection of every experienced Farmer. The expense of this article, and the distance to which it is carried in some parts of Scotland, is stated to be enormous: in Aberdeenshire for instance, very little of it is produced in that country; it is carried inland to the distance of more than 30 miles, after being imported from Sunderland; yet lime is there considered to be so absolutely necessary to the land as to be considered the foundation of all sub-

stantial improvement. It is supposed, however, not to be so useful on the sea-shore as in the inland districts, from the soil being perhaps mixed with sea-shells.

"Lime is certainly well calculated for clay lands. Some recommend laying on a certain quantity of it, to the amount of 20 bolls of 'shells' (calcined lime), or 120 bushels to the Scotch acre, or 96 to the English acre, and as hot as possible, every time the land is fallowed. The plan is, however, objected to from respectable authority, and it is contended that so small a quantity of lime shells is quite unfit for stimulating any kind of soil, except where it is of a dry muirish nature, and not formerly limed. To lime land every time it is in fallow seems unnecessary; more especially if a sufficient quantity were applied in the first instance. From 60 to 70 barley bolls per Scotch acre, or from 350 to 420 bushels per Scotch, that is from 288 to 336 bushels per English acre, are quantities frequently given in East Lothian. In regard to loams, if they are in good condition, and in good heart, perhaps liming once in two rotations of — years each, will be sufficient. It is a rule, however, in regard to the application of lime, that it should only be applied to land in a dry state, and well drained.

From the Albany Cultivator.

CULTIVATION OF WHEAT.

Is there not some great defect in our general mode of wheat culture? In the early settlement of the country, when the soil was first brought into cultivation, wheat was readily produced in almost every section; but the production of this grain soon began to decline, and with the progress of population westward, it may be said the wheat region has been constantly receding in that direction. This circumstance would, long ago, have excited alarm, but for the vast extent of territory in our possession still unoccupied. The question, however, may even now excite some anxiety—Whence are the future inhabitants of our country to derive their bread, when there shall no longer remain new land to cultivate?

Our soil, in regard to the production of wheat, presents quite a contrast, in some respects, to that of some of the countries of Europe. There, soils which now yield bountiful harvests, have borne the same crop, at various intervals, for a thousand years or more. In our oldest districts, where cultivation was only commenced a little more than two hundred years since, the culture of wheat is mostly discontinued, and where carried on at all, yields in general but poor returns.

In view of these facts, it appears to us that we may derive some useful hints from attention to the best modes of European wheat-husbandry. In the best systems which prevail in England, for instance, there are at least two points which we think might be very advantageously adopted in this country. We mean the more perfect preparation of the