

use. May not the real cause of their failure in this instance be that, whether in bean, or peal-meal, or in clover, the food of the cows in question contained so much nitrogen already that the albuminoids in the malt-combs were superfluous. Animals cannot work up more than a certain quantity of these matters, and all the rest the food contains must go into the manure-heap. Of course, the word here spelled *combs* should be *culms*, but I have retained the vulgar English form.

*Experiments on fertilisers.*—The following hints on the proper way of judging the additional produce caused by the use of fertilisers I recommend to the perusal of all who intend to try experiments on those manures. As I have had occasion to observe, *usque ad nauseam* I fear, most of the trials that have been made on this continent have failed because the land under experiment has not been exhausted by previous cropping. In this province, however, there can be no difficulty in finding thoroughly exhausted pieces of land, and the sooner some of these are subjected to a practical essay of their potential yield, the better will it be for the country at large. For, at present, the general run of farmers are absolutely incredulous as to the enormous power of a suitable fertiliser: I mean suitable to the land as well as to the crop.

It is evident that the measure of the effect of any dressing must be taken from the unmanured plots, and it is therefore highly important to study these standards whereby the efficacy of a manure is to be measured. First, we wish to put this matter very plainly by making the broad assertion that the so-called unmanured plots are really misnamed. We know of no unmanured plots except at Rothamsted, where fifty wheat crops have been removed in succession from the same area. These are truly unmanured plots, and may be viewed as standards whereby to measure the effects of fertilisers. We cannot accept the phrase "unmanured plot" as correctly describing a plot which has been regularly manured up to the experiment in which it figures as an unmanured plot.

The error into which readers are likely to fall is this. The unmanured plot is regarded as a zero plot, as though it stood at 0, and the increase from the use of fertilisers is taken as from nothing. The way in which the figures are handled is liable to give this wrong impression, as is seen in the columns devoted to increase and decrease. Increase in the unmanured plot is expressed as . . . (nil), and increase from the use of fertilisers added to neighbouring plots are regarded as dating from zero. There is no harm in this, provided the reader keeps in mind that the unmanured plot does not stand at zero but in many cases really represents soil in a highly fertile condition, forced up by previous management almost as high as it is capable of rising. It is a well known axiom with regard to land that each increment of crops is obtained with greater difficulty than the preceding one. For example, an exhausted soil may yield 15 bushels of barley, and on such a soil a dressing of nitrate of soda or of phosphates, or even of potash, may indicate a great effect. Much depends upon what is wanting in the soil, and as nitrogen is very frequently the one thing needful, up goes the yield, after a dressing of nitrate of soda, 15 to 25 bushels per acre. It is the same if potash is absent to such a degree that the crop cannot assimilate potash in sufficient quantities. Hence the effect of potash in the experiments tried by Mr. Cooke, of Flitcheam, near Lynn. No experiments carried out in the west of England can disprove this. All we learn is that the condition of the soil varies as between Lynn in the east and Broad Clyst, near Exeter, in the west. If the soil is so well stocked with plant food that the "unmanured" plots yield 30 bushels, we will probably have to rest content with an increase of 5 to 7½ bushels. If the unmanured plot yield 42 or 45 bushels, as in one of Sir Thomas D. Acland's barley experiments near

Exeter, an increase can only be obtained by a vigorous philosophy in the form of nitrate, and the effects of superphosphate, potash salts, and common salt on such land may easily amount to nothing.

Another factor with regard to the effects of manurial dressings is the natural fertility, which in some cases is high and in others low. It may be as easy and natural for one soil to produce 60 bushels of barley as for another to produce 30—i. e., good farming may in one case be represented by 60 bushels and in the other case by 30 bushels, and when these limits are reached it may be as difficult to force up the yield of the good land to 65 as it would be difficult to extract 40 bushels out of the inferior soil.

*A few hints on garden-crops.*—I do not suppose these few hints on growing vegetables will be found very new by old and skilled gardeners; the only virtue I claim for them is that I have mentioned nothing that I have not tried, and successfully too, myself.

#### BROAD-BEANS.

Windsor-bean and Longpods, are the best and earliest. Best suited to heavy soils, but answer well in a rich loam. Sow in rows, 2 feet apart, 2 inches deep, 3 inches apart in the row. Hoe thoroughly, and pinch off the tops as soon as there is a fair show of blossom.

#### KIDNEY-BEANS.

Sow as early as you dare: if the first lot is out off by the frost, or checked by a cold wind, not much loss is incurred. never let a crop of haricot beans that has once been checked stand to recover: dig it up and sow again. Sow moderately thick, as, in this climate, the hot sun of July invariably make thin-sown beans hard; whereas, thick-sown beans shade each other. Canadian Wonder and Chiswick, are about the best kinds, to be followed by dwarf butter-beans. For those who care for "Pork and beans" I recommend *Bonmain's*. Last year, I abused them as grown for eating green, but my people have tried them Boston fashion, and they all agree in saying that they are far superior to any *pea-bean* they ever ate. They are large, yield well, and ripen early. Always sow in rows 2 feet apart, and keep on sowing every fortnight until the 1st July. Two inches will be deep enough.

Of the Runner-beans I spoke last month.

#### BET-ROOT.

Beet-root thinned out too far apart is invariably devoid of sugar. Six inches in the row is quite enough, and 18 inches between the rows, half an inch deep. Soak the seed in lukewarm water 24 hours, and let it germinate in a warm place so that the white tip of the germ is just visible before sowing. The land should be rich for this plant, as a quick-grown beet-root is richer in flavour and more tender in substance than a slow-grown one. Wrench the leaves off: a knife bleeds the the root. Only grow the turnip rooted—Egyptian-sort—where the ground is too shallow, stony, or too poor to grow the long-red. Earth up, if you like: the sugar-beet is always earthed up, so I suppose the operation produces more sugar, and sweetness in the chief desideratum in table-beets as well as in the other kind.

The Silver-beet is grown for the sake of the *mid-rib*, which is eaten like asparagus. Pull the leaves from the plant: do not cut them. A few drops of lemon-juice, or of vinegar, will prevent the ribs from turning black while cooking.

*Try this:* make a stiffish butter; cut a cooked beet-root into slices ½ inch thick; make fritters of them. *Vous m'en direz des nouvelles.*