

Wild Mustard.

as it is called in the every injurious qua- if partaken of by tity, has now been s. In the last part gricultural Society s, Principal of the erts in his report on ne novel and inter- an able analytical given in quantities 37 young animals, affected with symp- entually died. An- ere supplied with a the cake, both of rd case, consisting of 1 1/2 lbs. of the re or less affected, he symptoms were poisoning, and the ealed in every in- the stomach and isis and microscopi- quantities of wild rape cake, as well igation. om these and ana- rape cake, may be ical experience has rape cake is a per- matter of fact that poison, giving rise and intestines. umstances, and ow- al analysis having ce of considerable in the rape cakes chs of the animals at that such cakes nals. wild mustard seed tionally added to ad grown together, parated before they cake. as a weed is not un- a, in some instances The facts before gainst allowing do- plant in any form, e they will seldom and the seed should with flax or rape r. anures. olled to a tract of ns, cease to have applied at first, if . It is becoming specially to such as l who avail them- nure their grounds manure, that some sity of fertilizers. attention generally cases a number of of manure to the anured; and the former manur- ding crops before ation of manure of some change be-

comes the more apparent, and the more is it forced upon the attention of the farmer. On farms where the four-shift system is pursued, and each division is manured every fourth year, the need of a rotation of manure, as well as of crop, is soon seen. It is not the frequency of manuring that is at fault, but the repeated applications of manures of the same kind and composed of the same elements.

This is especially the case with farm yard manure. Than it there is no better fertilizer for the general purposes for which it is applied. Combining the stimulating properties of horse and swine manure with the cooler and more abiding properties of the manure from the cow-house, it contains the elements most needed to promote the germination of seeds and the maintenance and continuous support of plant life; and the mixture of these constituents with other matters that are by themselves comparatively worthless, as it is in the well prepared dunghill, adds greatly to their utility. And there is no manure of which the waste and abuse by a too frequent application to the soil is so frequently witnessed. Wherever there is a greater facility of obtaining it and the temptation to use it, year after year, to force such crops as are in greatest demand in the market, the injurious effects are soon apparent.

Not only does the yield of crops become less, but also their quality becomes inferior to what it had been. In some crops this is especially observable. Cabbage from this cause becomes club-rooted. Turnips grow stringy and are less nutritive. Potatoes rapidly degenerate. They lose that floury property so characteristic of them when of good quality. They become dark in color, bitter to the taste, and very liable to disease. In those heavy, murky seasons, when the disease is most prevalent, the potato crop on ground so treated is sure to be cut off, while under other circumstances it may escape little injured.

The evil effects of the too frequent use of a fertilizer is not limited to farm-yard manure. The too frequent repetition of any other is sure to produce similar results. Great as is the value of lime as a fertilizer, it will, if applied after too brief intervals, cease to act as beneficially as when first applied. There is in the soil less of those organic elements for it to exercise its chemical force on. The term "lime-sick" is not unknown to farmers where lime is extensively used.

The effects produced by guano when first applied as a fertilizer, are experienced no longer after it has been many times used on the same fields. Its partial disuse may be in some measure attributed to this cause, though it is more usually attributed to a falling off in the quality of the guano now obtained. From our experience in the use of this fertilizer, we have looked upon it more as a stimulant than as a manure enriching the soil permanently or even for a few years. We have used it in our growing root crops, as turnips, to aid the germination of the seed and force its rapid growth to the rough leaf, but we always applied farm-yard manure and used the guano in addition as a stimulant.

The Maryland Agricultural College.

From the American Farmer we take some brief extracts exhibiting the working of institutions that are professedly Agricultural Colleges: "We believe no agricultural experiments were ever attempted to be carefully and systematically made on the farm; certainly their results were never given to our farmers; and we suppose the first correct and complete analysis of a soil has yet to be made on the premises. The technical education given was nothing. Among farmers all over the State it was a subject of derision;

and for a considerable portion of time we believe the chair of agriculture was not even filled. The practice of agricultural pursuits was neglected entirely." In proof of the charges made, the writer quotes the language of a gentleman who has been long in the college, and who cannot be taken as a prejudiced witness: "The college has failed absolutely as a school of agriculture—its primary purpose, and the present scale of expenditure is enormously out of proportion to any educational result of whatever kind."

"The farming puts us to open shame. The institution seems to have produced one effect only—namely, the squandering of very large sums of money granted by the Legislature."

Wheat—Its Present and Future Production.

The following article on the production of wheat by a contributor to the Western Rural will well repay the farmer for its reading. That there must be a full supply of lime in the reach of the wheat plant or it fails to perfect itself, either in staw or grain, or both, is based on scientific principles, and has the additional proof afforded by the experience of the cultivators of the soil for ages. In this, as in other matters, we see the entire agreement of science, when properly understood, with the knowledge gained by the observations of practical men, who know nothing of scientific reasonings or demonstrations. In the rule given by the writer to distinguish between a natural wheat and a grass soil, he is scarcely explicit enough. All water as it descends on the earth is pure and soft. It becomes hard by passing through salts that are in the soil, whether lime-soil or not. All say there is no soil without some lime, as is shown by the fact that plants have lime as one of their constituent parts, and that it is a constituent of every animal whose frame is supplied from the plants grown on the soil; but the lime in many soils is so much less than is needed for the successful production of wheat, that the application of lime in some form is necessary. Water may be so hard that it will not readily make a lather, and yet need the application of lime. The means indicated are insufficient to ascertain the need of the application of lime.

The average yield of eight bushels of wheat per the acre is not applicable to our farms and farming in Canada; though we too can increase the produce of our fields and add to their yield four bushels per acre:—

Assuming the premises laid down in previous articles to be as correct, at least, as the ten per cent. guesses of the Commissioner of Agriculture, we have an area of 165,000,000 acres of improved land inclosed and in farms; we have also 3,000,000 of farmers upon that area, whose individual occupancy is equal to fifty-five acres, or the size of the farms will average fifty-five acres of inclosed land. Not over one-half of that area is annually under tillage and in crops. Of the area thus occupied, only one-fourth of the breadth is under wheat annually, or about seven acres on each farm, and the acreable annual product is only eight bushels of sixty pounds to the bushel. We have annually in wheat crop, 21,000,000 of acres, producing a nominal crop of 168,000,000 of bushels.

To spare a surplus for export, which is in no wise desirable under our present system of farming, we must either increase the breadth annually sown, or the acreable produce of the land in crop. The breadth will not be materially increased; and if it was, the increase of population would absorb it. Our surplus, then, must come from an increased product of the land annually seeded. Can this be done? Most undoubtedly; for "what man has done, man can do."

Over all this broad land, from California to Maine, where wheat has been attempted to be grown, there are in every locality exceptional instances where as high as twenty, twenty-five and

thirty, to even sixty, bushels per acre have been made at a single crop. In Georgia the writer saw a field which had borne six consecutive crops of wheat, and had commenced with an annual crop of six bushels to the acre, and the sixth had just threshed out eighteen bushels to the acre; and the fertility of the land was being annually augmented by a system of cultivation both cheap and profitable, mainly by green manuring, making, with a little help from artificial manures, the land to furnish the material for its perpetual fertility. This was an exceptional case, it is true; but the soil was only a fair sample of the prevailing soil of the South. It was not, perhaps, the poorest, nor was it the best, of Southern wheat soils.

I have seen on the sandy soils of New Jersey, large fields which have given this year as high as thirty-two bushels to the acre, over a considerable area of territory, and by a process of manuring which was also profitable in itself.

Notwithstanding our slovenly mode of cultivation, and the want of adequate capital among farmers to prosecute a system of high farming, it is possible to increase the annual product of wheat to an extent that will meet a largely increasing home demand, and all the probable demand for export.

It will be found that our normal crop is not much, if any, in excess of 168,000,000 of bushels. If, therefore, we are called upon for an export supply, we must fail to yield it, or, perchance, coming when we have had an unusual crop, it may be supplied from the accumulated surplus of years of plenty when the normal annual crop has been in excess.

If, therefore, each farmer who raises a crop of wheat should resolve that he will increase his crop by only four bushels per acre, there will be no deficiency in the supply, and our people may still enjoy the pleasures of the "wheaten loaf" and the pains of the national disease—dyspepsia. But there is no fear of famine, or starvation of the poor, as long as Indian corn is produced in its present "profuse abundance."

It would seem of little use to prescribe rules for the successful cultivation of this plant in so diversified a country, in soil and climate. Every farmer ought to know, and does know, whether he has prepared his land in the best manner to give him a full crop. He ought to know what kind of seed is best for his land, and when it should be committed to the soil. All this he ought to know, or else he ought not to sow. If, therefore, he finds when his crop is threshed, that he is below the average yield, he must ask himself, "Have I done my duty? or is the fault in the season?" If the fault is with him he can amend it next time.

There are certain rules which must be observed in every climate and in every soil. The natural soil for wheat is calcareous, or where the spring water is hard. Wheat, of all the other cereals, is the most exacting on lime. There must always be a full supply in the reach of the plant or it fails to perfect itself, either in straw or grain, or both. One of the readiest means by which to distinguish between a natural wheat and a grass soil, is in the nature of the water of the springs. If it be "hard," or does not readily make lather with soap, it is a natural wheat and fruit soil. If, on the contrary, it be soft like rain water, it is a grass soil, and potatoes, flax and tobacco will grow best in it. Any plan of manuring, therefore, which does not contemplate adding to the soil a sufficiency of lime, where that mineral is deficient, will be productive of feeble results.

Where the cultivation is attempted in alkaline, or soft-water soil, and the lime cannot be added, the crop should only be put in at long intervals, and upon a heavy coating of vegetable matter plowed under.

By practising upon these rules, modified by the peculiarities of the locality, the wheat crop may be largely increased, and a surplus always on hand to meet the varying demands for export.

LIME FOR PEACH TREES.—John M. Clayton, of Delaware, U. S., who was a large and successful peach grower, found lime the best manure he ever applied to peach trees. He scraped the dirt off and applied from three to a dozen shovelfuls of lime fresh from the kiln to the naked roots. It killed the grubs and favored the growth of fruit. The editor the Plough said:—"Certainly we have never seen more healthy looking trees than those of farmer Clayton." Sometimes one can kill the larvæ of the curculio under peach trees by a heavy dressing of lime recently slacked.