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The Field.

Familiar Talks on Agricultural Principles.

INDIAN CORN.

This valuable cereal is largely grown in the United States, and is cultivated to some extent in this country, though from some cause or other, a prejudice exists against it in the minds of not a few of our farmers, especially those who have emigrated from Britain in middle or advanced life, and who appear to think that no grain can possibly be worthy of attention which does not find a place in old-country crop rotations. There are very few parts of Canada where Indian corn cannot be raised to advantage provided the seed of a suitable variety be planted. In those portions of the country where the summers are shortest, the small eight-rowed variety will do well, and yield a remunerative crop; while in the most genial sections of the Province, the larger dent varieties which are grown on the western prairies will usually come to perfection. A small variety is cultivated as far north as fifty-one degrees of latitude on the Red River. It is a most useful grain; capable of being put to a great variety of uses; contains a large amount of nourishment; and as it is a hoed crop, requiring clean culture, is excellent for ridding the soil of weeds. Every part of the plant may be turned to account. The leaves and stalks make an excellent fodder, both green and in a cured state. Even the cob may be ground, and thus converted into a wholesome food much relished by stock. The grain itself is highly nutritious, and stands unrivalled for fattening purposes. The meal is a valuable article of human food, and the starch prepared from it is now extensively used for making jellies and other delicacies.

The composition of the grain of Indian corn is variously stated by chemists who have analyzed it, but all agree in assigning to it a large amount of those qualities which make it a desirable food for both man and beast. According to some analyses, it furnishes 88.43 per cent. of fat-forming principles, gum, &c; 1 26 per cent., of flesh-forming principles, 9 per cent. of water, and 1.31 per cent. of salts. According to Salisbury of New York, quoted by Norton, it contains 60 per cent. starch, 10 per cent. fatty matter, and 12 to 16 per cent. gluten and analagous substances. It belongs to the class sometimes called *potash plants*, as it does not flourish in a soil which, however rich it may be in other respects, is destitute of potash. It does best in a rich soil, though from the fact that its broad leaves take up a large amount of nourishment from the air, it is not strictly speaking an exhaustive crop. Its proper place in a rotation is as a green crop, since the treatment it requires, and the effect it produces on the soil, do not differ much from those of the turnip and carrot. It succeeds best on light and porous loams, though it easily adapts itself to a variety of soils, doing well on all, if well manured, except the strongest clays. A good yield is often got on newly ploughed green sward, but when it is designed to plant it on such land, it is best to plough it the previous Autumn, and cross plough, manure, and harrow in the Spring.

Corn should be planted in hills, the distance apart being regulated by the variety grown. Three feet apart each way will do for the smaller kinds, but the larger varieties should be four feet. Care should be taken to have the rows as straight as possible, to facilitate culture with the horse-hoe, which is a great saving of time and hard labour. The seed should be covered from an inch to an inch and a half deep, according as the soil is moist and heavy or of light texture. Three hoeings are thought by many to be about the thing for the growing plant, but in general the oftener it can be hoed the better. The more the ground is stirred the faster the plant will grow, and the larger the yield will be. In case of drought, frequent stirring of the soil will be found most beneficial. Care should be taken thoroughly to exterminate all weeds. It is considered by many experienced cultivators a good plan to cut off the feather or bloom—the male flower of the corn—after it has fertilized the ear The proper time for doing this is when the beard or tassel of the ear begins to wither, not before. As few large leaves as possible should be cut off with the top, as they help the growth of the ear The tops make good green fodder, and their removal renders the plant less liable to be blown down by strong autumnal winds. It is time to harvest Indian corn when the ears are glazed, but not perfectly hard. The stalks are cut close to the ground, and "stooked," as it is called. If this be done before the grain becomes hard, the fodder will be of a much more highly nutritive quality than if it be deferred longer. While the crop is standing in the field, and before the gathering, it is well to mark the earliest and best formed ears for next year's seed. Selection of early and well filled ears will have an excellent effect on the future crop.

Principal Dawson in his little work on "Scientific Agriculture" remarks that "the meal from corn raised in this country is finer and more delicate in flavour than that from Southern and Western corn. This should cause it to bring a higher price; and should in connection with the productiveness of the crop, commend its culture to all farmers who have the sandy or loamy soils which it prefers. Even if too late to ripen, it is valuable for fodder, if cut immediately after the frost strikes it."

Steam Cultivation: Its Comparative Cost.

In a former article on "Steam in Agriculture," we endeavoured to point out the advantages of steam over horse-power in the cultivation of the soil. These may be briefly summed up as follows:—The greater rapidity of the process effects an important saving of time, and in the short Canadian seasons, during which all agricultural operations have to be crowded in, this consideration is of even greater force than in England, where the operations of the farm can be carried on more or less throughout the whole year. A second advantage secured by the employment of steam power, is the more complete destruction of troublesome weeds that already have possession of the soil, and to eradicate which, with his ordinary appliances, sometimes baffles all the efforts of the farmer. Among such pests may be mentioned the Canada thistle, and couch grass. Next to this, a kindred advantage in favour of steam is the more extensive germination which it favours of the seeds in the ground, and their subsequent destruction, thus ridding the ground more thoroughly of an ever recurring source of trouble to the farmer. A more complete aeration of the soil is further effected by the thorough manner in which the steam plough tears up the ground, and exposes fresh, moist portions in a fit condition to absorb from the air those gases which thus stored become a rich supply of plant food. And, lastly, the deeper ploughing of the land in steam cultivation secures in a great degree the advantage of drainage—a most important element of success in all soils, but especially in the stiff clays for which the steam plough is best adapted.

These are weighty considerations, and some perception of the valuable results that would follow the substitution of a more efficient power for animal muscle, suggested, more than two centuries ago, various schemes for cultivating land by steam; among these, so far back as 1618, a patent was obtained by David Ramsay and Thomas Wildgoose for a machine to "plough grounde without horses or oxen." No doubt the scheme was reckoned by many in those days as fitly characterized by the name of the inventor. Nevertheless, other patents for a similar purpose were taken out by the same genius in 1630 and 1634. In the latter year one William Barham also obtained a patent for an "engine for the drainage and ploughing of land without the use or help of horses or oxen." About 40 years after, another inventor, named Francis Moore, took out no less than three patents for contrivances having in view the "dispensing of animal power in tillage, navigation. &c." It is recorded in a periodical of the day that Mr. Moore had such faith in his invention that he not only sold his own horses, but by his advice, many of his friends imitated his example, fearing their value would be effected by the general introduction of his machine. About the same time Mr. Edgeworth, (father of the celebrated Maria Edgeworth,) patented an engine with an "endless railway," almost identical with that invented by the late Mr. Boydel. Coming down to the present century, in 1810, a Major Platt obtained Letters patent for a steam ploughing apparatus; and still later, "in 1849,