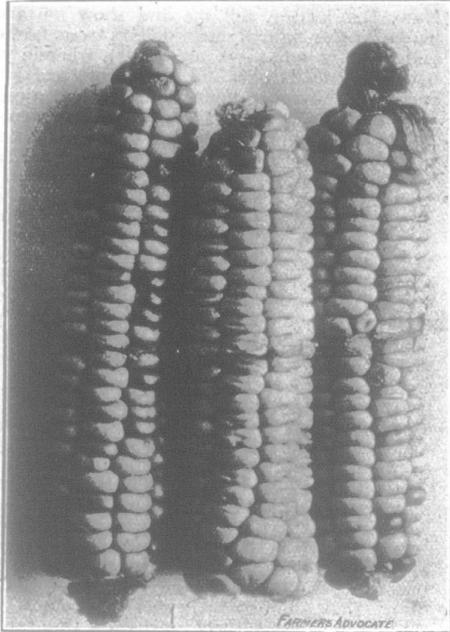


Where is the Northern Limit for Corn?



SQUAW CORN (SELECTED).

MANY of our neighbors to the south would have us believe that the line of demarcation between the corn-growing land and the sections where it will not grow and ripen is far to the south of the international boundary. But they are mistaken, as we propose to show.

Corn (*zea mays*) has been grown in Western Canada for some time for dry fodder and for silage; but until attempts were made with varieties suited to our shorter and drier summer seasons, little success was attained in growing and ripening corn. The experimental farms at Brandon and Indian Head have for years demonstrated the possibilities of corn as a fodder crop, which testimony has been backed up by the experience of hundreds of farmers.

The *FARMER'S ADVOCATE* has in its campaign for an improved and more profitable agriculture and the institution of crop rotations, urged the inclusion of clover and corn into those rotations, and has gone far afield in a search for varieties and methods likely to prove of use to Western farmers.

The varieties of corn planted year after year at the Dominion experimental farms have not proven the most suitable for our conditions. Many of our readers will remember that we suggested the planting of varieties seen growing at the North Dakota Experiment Station; viz., North Western Dent, Mercer, Triumph and Will's Gehu (a bred up squaw corn). There are doubtless other varieties suited to our needs; but we have tried some of the varieties mentioned and found such very satisfactory, and also have had the opportunity of noting the work of other farmers with this great fodder crop.

The illustrations accompanying this article are made from photographs of corn harvested at Maple Grove, the well-known stock farm of Walter James and Sons, the work with the corn being done particularly by E. R. James, who had this year some thirty bushels odd of corn of the different varieties tried. There are, of course, several things to be considered in a discussion as to the merits of certain varieties of corn, but briefly there are two main requirements; namely, the yield of fodder and grain. Mr. James ranks the varieties tried by him in the following order, from the standpoint of a fodder crop:—North Western Dent, Acme Fodder, Burleigh County, Gehu and White Dakota; and if rated according to the grain yielding capabilities of each, North Western Dent is far ahead, Burleigh County Mixed, Gehu and Will's Gehu, the latter rather lighter in yield but earlier. Acme Fodder being fair.

It will be years before the farmer of the West can hope to produce large quantities of fine corn, and only after varieties, and planting kinds, are secured, either by importation or by breeding

up the squaw corns or selections from varieties already grown.

Corn being a true grass, no tap root is produced, but it has instead a system which branches out in all directions. Some of the roots grow downwards, and often reach a depth of four feet or more, while others grow close to the surface. The corn plant obtains most of its water supply through its deep roots. This is especially true during very dry weather. When soil is well drained the roots penetrate to a greater depth than in undrained soil, thus enabling the crop better to withstand drought. Land that is not drained is often so wet during the spring that all the roots remain near the surface and reach their growth without going deep. At earing time, when dry weather most frequently occurs, the roots cannot make much new growth, and thus cannot burrow downward to reach the moisture of the subsoil. Deep cultivation late in the season usually causes a lighter yield by cutting off many roots that are growing near the surface to secure food and air. This weakens the plant and cuts off part of its supply of food at the time when it is most needed.

The corn plant has two kinds of flowers—the male flower, or tassel, and the female flower, or silk. The tassel grows at the tip of the stem and is composed of many small flowers. Each of these produces a large amount of pollen for fertilizing the silks. The silks grow from the cob, there being one from each kernel. On windy days the pollen is scattered to quite a distance, making it easy for corn to cross-fertilize; there-

fore two varieties planted side by side are likely to mix. To obtain a cross between two varieties of corn the pollen of one variety is brought into contact with the silk of the other.

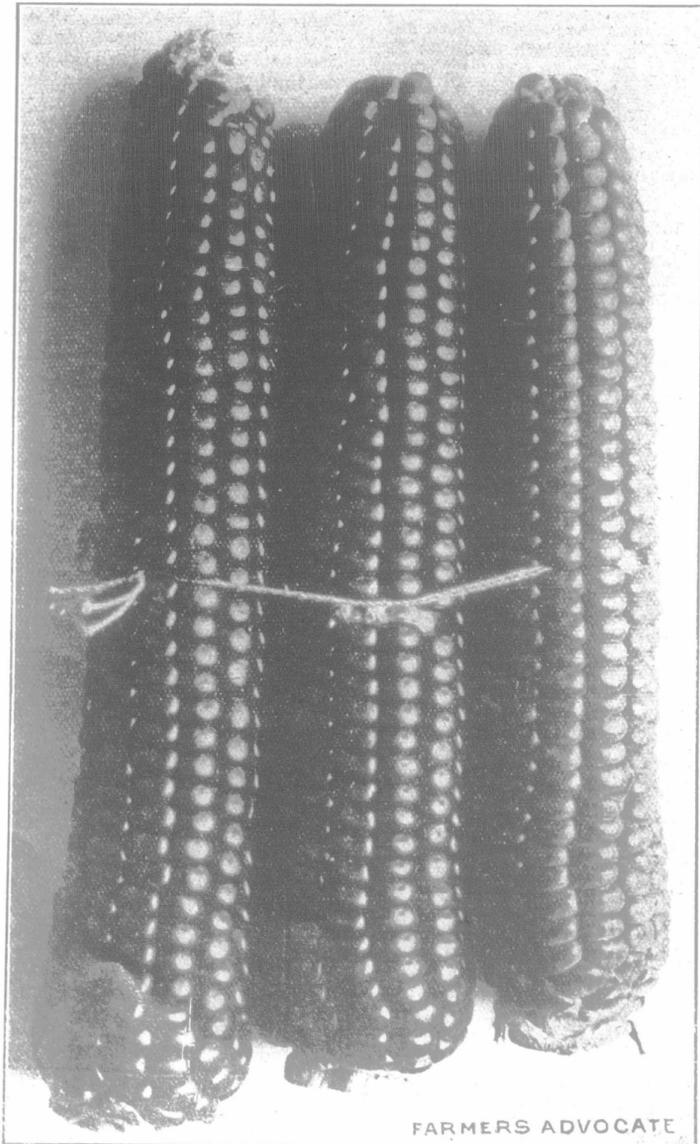
The ear is the most valuable part of the corn plant, and it has no superior for fattening stock. Sixty-three per cent. of the digestible matter of the corn plant is in the ear, and only thirty-seven per cent. in the stalk, blades and husks. It requires seventy pounds of corn in the ear, or fifty-six pounds of shelled corn, to make a bushel.

THE KERNEL.

The kernel of corn may be divided into five distinct parts: The tip cap, hull, corneous part, starchy part, and germ. The tip cap is a small cap that covers the inner or tip end of the kernel. Its office is to protect the germ, but it is sometimes broken off in shelling. The hull is the very thin outer coat of the kernel, and may be easily removed after soaking the kernel in water for a few minutes. The corneous part is yellow in color, rich in gluten, and is the most valuable part of the kernel. The white portion which is rich in starch nearly surrounds the germ. The germ is found in the center of the tip end, and extends from one-half to two-thirds the length of the kernel. The germ contains the embryo stem, pointing toward the crown of the kernel, and the embryo root, pointing toward the tip.

GETTING LAND READY FOR CORN.

The ground may be plowed either in the fall or spring with success. On the average, fall plowing produces somewhat larger yields of both



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SAMPLES OF GEHU CORN GROWN AT ROSSER, MAN.