

Agriculture.

A FINE SECTION.

A valued correspondent in a communication to us, mentions a portion of Cumberland Co., N.S. and describes it as follows:

Our polling section is about twelve miles wide and sixteen long. A large portion is wood land, but it contains about 10,000 acres of marsh land inclosed from the tides of the Bay of Fundy by a dike about five feet high. This land has been growing hay the last one hundred years without any manure. About half of it grows a natural grass called broadleaf; the other is plowed and seeded. In about fifteen years it grows timothy and clover. As the land is perfectly level it has to be drained.

CLOVER AS A FERTILIZER.

The most important fertilizers are nitrogen phosphoric acid and potash. Clover will collect, store up, and furnish these essential elements of crops more easily and cheaper to the farmer than they can be obtained any other way. The clover plant absorbs nitrogen from the atmosphere and returns it to the soil, where a large portion is changed to ammonia, the very best fertilizer for wheat and other cereal crops. The great clover roots get the phosphoric acid and potash from the deeper portions of the soil and the adjacent subsoils; where, as Dr. Voelcker says: "They would remain in a locked-up condition, were it not for the agency of these roots." Thus clover collects and furnishes precisely the fertilizer our grain crops most need. Hence the great importance of ploughing under clover.

GRANGE 131.

SOME OBSERVATIONS ON CORN. BY PROF. BEAL.

In some recent remarks on corn, by Prof. J. W. Beal, of the Michigan Agricultural College, says:

"The leaves of corn are alternate, and two-ranked and parallel-veined. The lower portion of the leaf is called the sheath, and rolls like a scroll around the stalk. The staminate or sterile flowers are on the branching top of the stalk. The flowers grow in couples, the lower one being sterile; the upper bears three stamens, which bear the pollen to fertilize the ovules. The pistillate or fertile flowers are on a spike called the ear. From the end of each young kernel proceeds a long style—a thread commonly known as the silk. The pollen falls on the silk, and soon pushes out a long, slender, minute thread, which is supposed to extend down to the rudimentary kernel. The husks of the ear are composed of what answer to the sheaths of the leaves. These are often tipped with short blades. The pollen of several varieties of corn which I have studied begins to drop from one to three or more days before the silk appears, protruding from the young ear. The pollen continues to fall from a stalk for about eight days—some more some less. The pollen first ripens on the top of the center spike of the tassel, and afterwards it ripens on the side branches, finally ripening last on the lower part of the tassel."

"As before mentioned, each stalk contains from four to ten young ears. The pistils of the upper ear mature first, and so on in regular descending order. In both the staminate and the pistillate flowers, then, the order of flowering is the same—from above downwards. In some cases of sweet corn, the silk makes its appearance after all the pollen on the stalk has been shed. In rare cases, some of the

pistils appear before any pollen is ripe on the stalk. In most cases, the silk is fertilized on the first day after its appearance. From these statements, it appears that Indian corn is cross-fertilized with almost as much certainty as willows and poplars; i. e., the kernels on any ear fertilized by pollen from other surrounding stalks. As the pollen must be ready about the time that silk appears, to fertilize it, to mix or cross two sorts they must flower at the same time."

Will pollen show its effect the first year in crossing to kinds of corn?

"It is generally stated that it will. On this point I have made some experiments. In 1870 I planted in my garden, near each other, three hills of the following kinds of corn, well mixed together, viz: Waushakum (a yellow flint), white flint, black popcorn, early Minnesota sweet, black sugar, and a very dark King Philip. Every ear showed a sign of mixture by pollen from one or two of the other varieties, except those of the King Philip; perhaps there was even here some change in the texture of the kernel, but I did not perceive it. Dr. Sturtevant, in the report of the Connecticut Board of Agriculture for 1878 says: 'The red corn presents a fixity of type which overcomes, in most instances, the effect of crossing, even in its color.'

"In 1877 I planted a small piece of early, eight-rowed yellow dent corn, called Yankee or Jersey dent. In the midst of this piece I planted a single row of smut-nose, yellow flint corn. Before flowering, the tassels of the flint corn were carefully and thoroughly removed by my own hands. There was a little difference in time of flowering, so the ears of flint corn did not fill well, but there was no trace or sign of any effect caused by the pollen of the dent. On the next year the flint corn showed all gradations, from the dent to the flint. I do not know much about the dent corn used in this experiment, but the flint corn was sent from the Grand Traverse country, by Prof. Tracy, who said it had been raised in that country ever since the recollection of the oldest inhabitant. In this case, the characteristics of the flint corn had become well fixed. The corn had become thoroughbred, and retained its peculiarities with considerable tenacity. The same thing has been noticed by breeders of animals, where one was a thoroughbred and the other a common or grade animal.

"The extremes of time required for growing corn to maturity, so far as I know, are from 70 to 200 days. The small yellow popcorn, which grows from 2 to 2½ feet high, often ripens in 70 days, and perhaps less, while in the southern States corn often requires 200 day for growth and maturing."

"Climate has a wonderful effect on corn. Prof. Shelton, of the Kansas Agricultural College, sends corn to the Michigan Agricultural College which has been raised there for three years. It went to Kansas as King Philip, it comes back well marked with dent corn. He says it is the effect of the climate, and is not due to crossing with dent corn. Dr. Sturtevant mentions a similar case of an eight-rowed flint corn, removed to and cultivated in Ohio, became from seven years' use closely allied to gourd seed, being much dented, and the number of rows on the cob had increased to 12 and 20. In Louisiana, the continued cultivation of soft gourd corn from the west produced a hard flint with a larger cob, in twelve years. At Lansing, dent corn has a tendency to ripen earlier and become round at the tip of the

kernel from year to year unless care is taken by selecting seed which shows prominent dents in the ends of the kernels. In southern Ohio and Indiana there is not that tendency for dent corn to change to flint corn."

"The average yields of corn in many of the best states for this cereal does not come up to 40 bushels per acre. A hundred bushels to the acre was once thought almost incredible, but now it is nothing extraordinary. During the past summer, on Long Island, a field of four acres averaged 113.69 bushels of shelled corn per acre. The largest yield on any one acre was 159.37 bushels of shelled corn. The variety is known as the Chester Mammoth. Another field, of about seven-eighths of an acre, of Blount corn, yielded at the rate of 134.445 bushels corn per acre. E. F. Bowditch, Framingham, Mass., the past season, had a field of 17½ acres which yielded on the average 109½ bushels of shelled corn of prime quality per acre. The cost per bushel of ears was 16 cents. I saw the field of Mr. Bowditch just before it was ready to harvest. It was the finest field of corn of its size that I ever saw. The largest yield on record, on one acre, to my knowledge, is that of Dr. Parker, of South Carolina. The yield was 200 bushels and 12 quarts of shelled corn per acre. The land was underdrained, highly manured, highly cultivated, closely planted, and irrigated."

Horticulture.

PRESERVATION OF FRUIT.

An Interesting Letter from Mr. B. Gott, of Arkona.

Written for the CANADIAN FARMER.

By an announcement in your latest issue I came to the knowledge that a Fruit Canning establishment is likely to be started in our borough, with every prospect of success. This information is very timely and not without its significance. It is quite clear from our past experience that the capabilities of our section of the county for fruit production are indeed very extensive and of very fine quality. Should the people attempt the culture of fruits to the extent desired, and to the amount of our capabilities, the question as to what we would do with our fruit would at once force itself upon us with unwonted pressure. "Oh, but," will say the more sagacious and observing among us, "we are not intending to plant largely of fruit until we see a better prospect of a good market for the products; we would much rather sow the grain and grow grass and raise cattle; this we know will certainly pay. We don't want to plant trees and grow fruit to allow it to lie under the trees to rot." And really there is much practical wisdom in this view of the subject.

The question of fruit production, then, is only limited by that of the capacity and extent of the market, and this question of market is at once determined by that of fruit preservation. If our rich and luscious summer fruits can only be brought over for a short time by any means the hurry and glut of their season of ripening, and especially if these means are cheap and practical, the question of marketing them can be profitably arranged at our leisure. In this way all the fruits we can produce can readily and profitably be disposed of either in our home or distant markets, and if not at one moment they can be kept over until they can be sold. By the settlement of this question of preservation, fruit production thus stimulated would at once spring into renewed

activity, and where there is now only a bushel produced, tons would be gathered from our profitable acres, and all euro of finding a ready and profitable disposal. Amongst our neighbors in the State of New York, this subject is thoroughly and practically settled. The fruit growers of that fertile region are fully alive to the importance of fruit preservation, and they practice it to the extent of millions of lbs. annually. At the late meeting of their Horticultural Society, at Rochester, this subject was thoroughly discussed and an Association was formed to take special charge of its interests. When the reports of their county fruit committees were read, they were struck with amazement at the extent and importance of their fruit preserving processes. During the whole winter their evaporated fruits are exposed for sale in the markets in the larger cities and towns of the country, and find a ready and welcome demand in the homes of all classes of their people. There are at present but two popular methods of fruit preservation countenanced in this country, viz: I. By canning. II. By drying or evaporating. According to the extent of our observation in this matter we much prefer the latter of these methods for the following reasons: 1st, the fruit is prepared for operation with less expense. In the case of small fruits they are at once placed in the dryer, a machine carefully calculated for the purpose, and in a few minutes the fruit is taken out and is ready for packing. In the case of large fruits they are simply pared and quartered, and rapidly evaporated to a dry state ready for shipment. No expense of cans or labels or other superfluous packing is needed, and the consumer gets the goods in their simplest form, ready by the addition of a little water for preparation for the table or any domestic purpose. 2nd, it is easier and cheaper to pack and ship. For this purpose it is simply placed in boxes or barrels and sent direct to the dealer, be he ever so far away, and without any fear of breakage or loss. 3rd, it can be more readily handled, exposed and sold by the dealer, and with less risk of suspicion or delay. People soon learn that it is quite possible to place beautiful and tempting labels on packages that contain goods very dissimilar in character and value. No suspicion of this kind can attach to evaporated fruits. It is freely exposed and the purchaser can be assured of its qualities before a needless sacrifice is made, as he can see what he gets. 4th, it gives better satisfaction to the customer. He knows exactly what he has paid for, and there is no chagrin upon opening the package to find the goods are not as represented by the dealer. 5th, this fruit can be sold in smaller quantities to suit the desire of the smallest customer. In this way the area of consumption is much enlarged. Many a poor man could see his way clear to purchase a few pounds of dried fruit that could not lay out a large sum on tempting and expensive cans of fruit. 6th, there is no useless expense for cans or labels, &c., to be added to the expense of the fruit, and to be paid for by the poor man who buys. He gets exactly what he paid for and no more or less.

Many who are well acquainted with certain samples of dried fruit will be ready to object to evaporated fruits on the same grounds. This is not just, as well evaporated fruit bears no resemblance in general to that which is merely dried by the old processes. The evaporated fruit is cleaner, whiter,