

Agriculture.

Cost of Starting Ten Acres of Hops.

A subscriber asks for information in regard to the cost of raising hops. They are not raised to any great extent in this part of Canada. Prices have been unremunerative lately. We give the following article on the subject:—

A correspondent of the Syracuse, N.Y., *Standard*, says:—

"It may be interesting as well as useful to know something of the expense of hop-growing, and I will endeavor to give the cost, very nearly, for I have been in the habit of keeping some account of these and other farming items, and I think I can come very close to the mark, which, of course, will vary with different men and localities. The labor is on the basis of \$1.50 per day.

To six days laying out yard, 12s.	\$ 9 00
To 40 bushels (15 pounds per bushel) roots, say 3s. per bushel, we have paid 6s.	120 00
To eight days cutting same, 12s.	12 00
To 15 days setting out roots.	22 50
To hophouse, covered with hemlock and bottomed, spruce floor, sawed cedar shingles.	550 00
To stove and pipe.	80 00
To kiln cloth, 41½ yards, 16 cents and making.	8 00
To hop press.	55 00
To 75 hop sacks, three yards burlap, 1s., making and thread, 7½ cents, each, 45 cents.	33 75
8 boxes for 32 pickers, 12x25x27 inches.	40 00
To hop bars with springs for common lumber wagon.	38 00
To 15,556 poles, cedar, 12½ cents, sharpening, 2½ cent, 15 cents.	2,333 40
To cartage to yard, 1 cent.	155 56
To 2 hop boxes, 20 pounds each, 15 cents.	6 00
To 2 grubbing hoes, \$1.50.	3 00
To 2 self-sustaining ladders for tying.	2 00
Total.	\$3,468 21

To put it in round numbers, for ten acres, it will cost \$350 per acre. In addition to all this, a house is needed, with beds, a stove, cooking and table ware for a family of from twenty-five to forty, for use only from fifteen to twenty days in picking time.

I believe these are about what will be needed, and the prices, on an average, nearly correct. I have said nothing about the use of the land for the first year, or the cultivating, as the corn crop will pay this; nor have I said anything of such tools and implements as are needed in usual farming, for these are on hand if no hops are raised. A two horse cultivator will be desirable, on the score of economy.

The labor, cost of harvesting, use of land, fifteen per cent. on cost of poles to make them good when worn out, ten per cent. on other capital, etc., for each year, with good fair crops, will be about fifteen cents per pound.

The Agricultural Resources of Canada.

England, the great mart of the world, is daily increasing in population and wealth, and with these is growing the demand for larger supplies of breadstuffs and animal food. Meantime, the agricultural resources of Canada are assuming dimensions commensurate with the demand. In connection with the momentous question of supply and demand, the subjoined report of the agricultural capabilities of the Peace River Country in our great North-West will be read with interest:

The Committee on Immigration and Colonization met on the 24th inst. Prof. Macoun, Government Botanist, who travelled across the continent with Mr. Sandford Fleming in 1872, gave particulars of a visit to the Peace River country in October, 1872, to report on the flora. Barley ripened at Edmonton on 27th August, 1872. At Little Slave Lake barley ripened fifteen days sooner. Spent latter part of July and August in the Peace River country, and as far as Lake Athabaska. On the 21st July got new potatoes. Barley at Fort Vermilion ripened on the 6th August. At Athabaska wheat ripened on 25th August, 68 pounds to the bushel, and barley, grown at the same place, 58 pounds to the bushel. He described ears of this wheat at from 6 to 8 inches in length, and containing 5 or 6 grains in each cluster. From the Rocky Mountains to the mouth of Peace River is 760 miles, with only one rapid. About one hundred miles on each

side of the river is a country suited to wheat growing, with scarcely a swamp. The country was most beautiful. He took lists of plants by sections of country as he went northward and eastward, and when he came to tabulate his collections he found they indicated, much to his astonishment, that the climate grew warmer as he went north, and his experience was that the climate of Peace River was warmer than the Laurentian country back of Belleville. Vegetation was most luxuriant. Grasses were five to six feet high; a species of larkspur was seven feet high. The soil must be very rich to continue this growth year after year. Peace River opened for navigation about the middle of April, giving six months open water. Snow falls were light in the upper waters, but increased as the river approached Lake Athabaska. The whole of the Peace country is fit to raise wheat. There were 250,000,000 of acres of land, almost all of which was arable and capable of supporting untold millions of people. Any European at present going into the Peace country to make money he would consider insane; a railway might pay ultimately. He believed as water communication was good, settlements could be pushed by it. Grasshoppers can never reach Peace River. If a belt of forest were planted along the American frontier, there would be no grasshopper plague. He showed that the average summer temperature in Peace River country was only two degrees below that of Halifax. Found lignite coal similar to that of Wyoming territory. Coal was found all along the east side of the Rocky Mountains, 100 miles from its base. Seams of pure gypsum from ten to fifteen feet thick, extended along the banks of Peace River for 20 miles. At Salt River the Hudson Bay Company's employees shoveled from the ground salt, which is used by the people of the country. Coal and hematite iron interstratified, were to be found. Tar springs were found through a district of 100 miles. Edmonton is 1,200 miles by water from Fort Garry. The climate in the interior was never wet in the fall. The country was settled by mission settlements, the half breeds being called freemen. He would not advise a policy of forcing immigration into the Peace River country. The Saskatchewan was a ditch compared with the Peace River. The samples of products raised there, which were being sent to the Centennial, would astonish visitors. The population, half-breed and Indians, were very much afflicted with goitre. The Indians were being decimated by scrofula, which would probably exterminate them in ten years. The people eat principally animal food, buffalo, moose, and prairie chicken. A railway could be built from Edmonton to Peace River country, and the grades from Fort Garry west to a considerable distance in British Columbia were less than those on the Grand Trunk.

Harrowing Wheat in Spring.

The advantage of harrowing wheat lands thoroughly in the spring, as soon as the ground becomes dry enough to prevent the horses sinking into it, is known to many farmers who have practiced it, but is unknown to the majority. Wheat is usually sown in September, upon well prepared land. This land is left there, subject to all the storms of rain and snow, and the dry weather in succeeding spring, until the wheat is harvested. In consequence, the land becomes, in May and June, nearly as hard as a meadow. At a season of the year when the plants are in the greatest vigor of growth, the land is so hard as not to give one-half the nourishment it would if kept mellow by any process. Suppose, for instance, corn should be planted in the fall, under similar conditions with wheat, and that the winter did not injure it, and that it were left without cultivation of any sort until harvested; it is evident that the yield would be diminished over one-half, in fact, the yield would probably be so light and poor as to be almost worthless.

Now wheat, from many experiments in its cultivation by hand in England, shows as great sensitiveness to cultivation as corn; the yield by careful hand cultivation being increased to sixty bushels, and, in some instances, eighty bushels per acre. Now, a thorough harrowing of wheat in spring, in a very inexpensive manner, performs the cultivation nearly as well as when done by hand. If the crust formed by the winter snows and spring rains is thoroughly broken, and the ground to the depth of two or more inches well pulverized, the effect upon the wheat is like magic. It starts into the most vigorous growth, and in a few weeks has nearly or quite doubled in size the wheat not harrowed. In pieces of wheat that have come

under the writer's observation, which were harrowed in strips—that is, one strip not harrowed at all, and other strips on each side thoroughly harrowed, in the early part of June—the harrowed wheat stood fully one foot higher than the unharrowed at each side, and in every way was strikingly ranker and more vigorous. Mr. Robert J. Swan, of Rose Hill Farm, Geneva, N. Y., who has heavy clay land, says he has harrowed his wheat for four years with the Thomas harrow, and finds the yield to be increased fully ten bushels per acre. Byram Moulton, of Alexander, Genesee County, N. Y., harvested from fifty acres 1600 bushels of wheat. His neighbors only obtained about ten bushels per acre. The only difference in land or treatment was that Moulton's wheat was thoroughly harrowed with this implement in the spring, and his neighbors' was not.

The effect produced by harrowing barley and oats, after they have attained a growth of four or five inches, is equally marked. I have observed many instances where fully twenty bushels per acre increase, in consequence of thorough harrowing, was obtained. These facts, and many others of similar character, show clearly the great profit which farmers may derive from a thorough cultivation, by harrowing, of wheat, oats, barley and other sown crops, with the Thomas smoothing harrow.—*Cor. Country Gentleman.*

Pastures of Great Britain.

BY PROF. W. J. BEAL.

The objection often made to keeping land permanently in grass is that weeds come in and crowd out the grasses. This is only true in neglected fields, as is shown by the following:—

In a report of Lawes and Gilbert, the most celebrated English experimenters, they arrive at this general result: "That those manures which much increased the produce of hay, at the same time very much increased its proportion of graminaceous herbage," often changing the relative quantity from 76 per cent. to 97 per cent. By the above they mean that the true grasses crowd out the weeds when the land is highly manured. There are a few weeds that are not diminished by manuring, but the most of them are diminished. Lawes and Gilbert made some very interesting experiments with different manures on permanent meadow land.

In addition to the above, I wish to briefly refer to another remarkable point. At great labor and expense they tried similar pieces of meadows with different fertilizers. The change in relative proportion of plants in the meadow was very striking. By irrigation, in England, it has been found that some grasses increase, others decrease; that "large and innutritious herbs in pastures are destroyed by irrigation, their places being supplied by the best grasses." Docks and a few others are an exception to this rule.

One great cause of deterioration of meadow land the English have fully learned, that is, "By allowing grass to get too old before cutting." This not only makes the hay of poorer quality, but it weakens the plants. This fact cannot be too strongly impressed upon farmers everywhere. This principle is well understood and practised by the gardener. He knows that his plants will grow larger and last longer if he pinches the flower-buds off, or if he prevents them from going to seed. We can prolong the life of nearly every herb by preventing it from seeding. Wheat may be made to last another year beyond its usual time if the flower stalks are kept cut back. Nothing is more trying to clover than to permit it going to seed. The earlier hay is cut, the better for the strength and longevity of the plants. Among our farmers there is still a difference of opinion as to the best time to cut grass for hay. Most of them believe it is best to mow when the plants are in blossom, but many of them wait longer. I have just given a well established rule, that for the good of the plant cut before the flowers appear. In the *American Agriculturist* for 1875, page 213, Prof. W. O. Atwater gives the latest conclusions of the chemist on the proper time to cut hay: "It depends, first, upon the feeding value of the crop gathered; second, upon the value of the aftergrowth; third, upon the value of the roots and stubble left to enrich the soil for another crop." He says: "We are forced to the conclusion that, as far as the feeding value of the stock is concerned, the most profitable time for harvesting clover is a little before the period of full blossom. The experiments upon other grasses have not been as extensive, but so far as they have been made, as well as from

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