

thrives on almost any kind of soil, and lives to a great age, yet it is not a formidable hedge. Still it will not endure bruising or crushing by animals rubbing against it, especially when in a frozen state, and cattle seem to have a singular fondness for doing that very thing.

Common berberry, being very prickly, is given a wide berth by animals of all kinds. The most enduring hedge fence I have seen was of this shrub. It thrives well on any soil which is not of a poor, wet, cold nature. It grows closely, and by annual thinning it is easily kept in any desirable size or shape, and soon forms a hog-proof fence that will last for generations. The common berberry is easily propagated, sold cheaply by nurserymen, and has few insect enemies.

The purple leaved berberry, although less robust, is quite as hardy, and more ornamental. It is said that berberry hedges breed rust on wheat. I have never seen any satisfactory evidence to that effect, and think the evil is wholly imaginary.

The hawthorn, which is commonly used for hedge fences in the British Isles, does not thrive well here. Several kinds of spiders attack and generally destroy it.

Our native thorn is of too slow growth. The buckthorn, which is no relation to any of the other thorns, is quite as hardy, makes a compact hedge when skilfully trimmed. No insects infest its leaves, and mice will not girdle its bark.

Where rapid growth of a shelter hedge is desired the Norway spruce is particularly well adapted. It is quite as hardy as our native white spruce, and is of much more robust growth, and can be successfully transplanted when of large size.

The hemlock spruce makes a beautiful hedge while young, but its lower branches soon die, leaving the hedge bare at the bottom, and much trimming shortens its life, hence it is not well adapted for the purpose.

The honey locust is sometimes planted for shelter hedges, but on account of its excessive tendency to send out suckers at a great distance from its trunk, I would discourage its use; yet it is not so objectionable in this respect as the Chinese Abele, which should never be planted where any other tree will grow.

There is no lack of variety of plants for ornamental hedges. The Japan quince (three varieties) makes an excellent hedge, where the climate is not too severe. The Tartarian honeysuckle (four varieties) is quite hardy. It makes a superb hedge, and so does the Persian lilac, and several varieties of shrubby spiraea, also mock orange and biburnums. The privet is not quite hardy enough for all parts of Ontario, but when the climate is favorable it makes a compact, neat hedge. The mulberry is also now planted for hedges in favorable climate.

If I were to speak of tree shelters on prairie and other rich, flat lands, where quick growth is especially desirable, I would recommend the poplars and several varieties of the willows, but for making formidable hedge fences they have not proved satisfactory. About twenty years ago many thousands of dollars were extracted from the Ontario farmers through the white willow swindle. A company of scamps from Michigan recommended it as being the grandest thing for hedges ever discovered. It was purchased in Canada extensively, throughout the country, and now all that remains to be seen of it is some rows of wide spreading clusters of very ugly trees. Yet I dare say some credulous farmers will again be humbugged in the same way by the yellow or black willow, both of which are nearly as worthless for hedge purposes as the so-called white willow. Would recommend that intending hedge planters be guided in some measure by the experience of others.

#### "Working for Fun."

To the Editor of the FARMER'S ADVOCATE:

Dear Sir,—I have read from time to time the advice given, under the heading of "Timely Notes," by "Invicta," and have in the main agreed with such advice. But there is a part of the notes for December I would like to have him explain further. I fully agree with him that there is a great number of Manitoba farmers "working for fun," and to some of them it is a "nightmare" of a very real kind. In this part of the province some of the most successful farmers are those who came with little or no capital to start with, and to them it has been the goal they have been striving for, to pay *cash* for everything as obtained, be it "binder twine, needful machinery, store goods, or what not." Would "Invicta" please explain how such beginners are to turn over that new leaf he speaks of? Does he recommend them to leave farming till they have sufficient capital to carry them through a year without giving any *notes*? Do the crops of good farmers always pay expenses and store goods where "Invicta" lives? Then there are those farmers who have bought C. P. R. lands, with golden dreams of No. 1 hard to pay "those yearly instalments," and awoke some fine morning in August to find their hopes and dreams vanished. Since then they have been working an uphill game, with more "hard times" than "hard wheat," and happy if they could only pay the notes when demanded by their "masters." I know of no way that any man without plenty of capital can avoid going into debt for the *necessaries* to successful farming, till such time that he can make it from the farm. MINOTA.

#### British Columbia.

BY T. F. PATERSON, LUCKNOW, ONT.

On taking train at Calgary for Vancouver one naturally asks, as he rides along, "What was this great expanse of country created for?" Nothing but mountains meet your gaze on all sides, with here and there small cataracts roaring round their basis, or foaming down their sides. The train, as it proceeds to its destination, may be rounding a sharp curve, the next minute curling alongside of a precipice, then roaring with a thundering sound as it passes a deep canyon, and then with a piercing shriek from the locomotive's whistle, which reverberates again and again from the rock-bound mountain sides, it shoots into a tunnel, and all is as dark as midnight. Such is the ride from Calgary to Vancouver as experienced by rail.

Now, for the sake of convenience, I will divide my remarks relating to the country under the following heads:—1st. Its farming facilities; 2nd. Its lumbering resources; 3rd. Its mining grounds; 4th. Its fisheries; 5th. Climate; and 6th, and lastly, as a place of settlement. It is a fact, known generally, that the good

#### AGRICULTURAL LAND OF THE PROVINCE

is very limited, the best being situated along the coast of the mainland. The only land that is workable is to be found along the rivers and in the small mountain valleys. Thus the settlements are very scattered. Coarse grains, hay and potatoes can be grown very successfully, especially along the coast; but as yet all and more are required for home consumption. Stock raising is fairly profitable, but as a rule the cattle cannot compete with the cattle shipped in from Alberta District. Prairie land along the coast is worth from \$50 to \$70 per acre, while further inland government timbered land can be had for homesteading, or improved claims at from \$3 to \$4 per acre. The timbered land is exceedingly difficult to clear, the trees as a rule being very large, and the land in some places stony. Taking everything into consideration B. C. is a poor agricultural country.

#### AS A LUMBERING COUNTRY

It is not excelled in Canada. A large area is covered with valuable timber of various kinds, the Douglas fir and cedar being the principal. Extensive mills are either built or in the course of erection in the various cities, towns and villages, the rivers forming the highways of transportation to the different mills. On visiting the largest mill in Vancouver were to be seen logs from 40 to 80 ft. long and from 2 ft. to 8 ft. in diameter, and yet were turned by one man with chain cant-hooks with perfect ease and rapidity. In some localities the trees grow to an enormous size, some being 50 ft. in circumference, but they are few and far between, and a good many of them are found in the minds of the natives by imagination only.

#### NOW AS TO THE MINERALS.

British Columbia being a mountainous country, it is consequently rich in minerals of various kinds, gold, silver and coal being the principal. Some paying claims have been discovered, and by employing a large amount of capital in working them large fortunes have been made; but the following assertion may be safely ventured: That for every one that makes money by engaging in the mining industry ninety-nine lose. By building railways in the mineral districts, and the employment of more capital, mining bids fair to become one of the greatest industries of the province.

#### FISHING, WE MAY SAFELY SAY,

is the second great industry of the province, the seal and salmon engaging attention principally. Large canneries are erected along the banks of the various rivers and give employment to a great many men, especially Chinese and Indians, during the fishing season. British Columbia salmon is well known in the eastern cities of Canada, and large quantities are shipped to the various countries of Europe. Seal fishing along the north-western coast is also a lucrative business, and by fair (and sometimes foul) means large fortunes are realized.

#### AS TO CLIMATE.

British Columbia has, we may say, all the way from temperate to arctic. Along the coast in the southern part the climate is something similar to that of the British Isles. The rainy season lasts about six months of the year, during which time it rains almost incessantly. During the summer it is delightful, the temperature averaging about 60°. Farther inland, in the vicinity of Kamloops, and in the Okanagan Valley the climate is very dry and hot in the summer and very severe in the winter, the mercury dropping to 30° below zero sometimes. In the northern part the cold is very severe during the greater part of the year.

#### NOW AS TO A PLACE OF SETTLEMENT

for the farmer, there are various opinions regarding the matter. Some go and better their condition, while others are eager to return to their native province; but I think it will be quite correct to say that, taking everything into consideration, Ontario is the better province for either pleasure or profit.

#### GARDEN AND ORCHARD.

##### The Progress in Greenhouse Vegetable Culture.

AS DISCOVERED BY THE OHIO AGRICULTURAL EXPERIMENT STATION.

The introduction of the Grand Rapids lettuce may be said to mark the commencement of a new era in lettuce growing. It is less subject to disease and can be grown more cheaply than any other of the heading sorts, which are looked upon as standards in the East. The difference between it and the varieties is so marked that by its cultivation the profits may be nearly or quite doubled. This alone is a great advance, but after three years' experimenting with sub-irrigation the Ohio station has found that the lettuce crop may by this means be nearly doubled.

This places the lettuce grower in a much better position than before; in fact, lettuce forcing in greenhouses is now a profitable business, whereas it was in danger of being abandoned in many parts of the country.

This is a matter about which tariff reformers will not have much to say, as tariff has nothing to do with the matter. Over production in one section nearly destroyed a growing industry in another, but the discovery of a variety and the application of an old device in a new manner has saved a business which is likely to become one of great importance.

There is no reason why vegetable culture under glass should not now become of equal importance with floriculture, and this means many thousands of dollars annually added to our productive resources.

Sub-irrigation was first used with lettuce in order to avoid watering the foliage, thus preventing the much dreaded lettuce rot. It was found that the lettuce grew much better by this method of watering than when water was applied to the surface of the soil. Operations were then enlarged, until entire houses are now supplied with water in this manner. In order to operate the plan successfully water-tight benches are erected. These may be made in various ways, but matched flooring laid in white lead answers very well. Drain tile are laid on these benches 2½ feet apart and covered with soil. Watering is accomplished by pouring into the ends of the tile, where a T joint is laid for convenience.

Some later experiments show that the same principle may be extended successfully, beginning as soon as the seed is sown. The seed is sown in shallow boxes with slatted bottoms. A convenient size is 16x24 inches and two inches deep. Lath is used for the bottoms, and is laid close together, which allows the water to pass through, but prevents the soil falling out. These boxes, or flats, are filled with soil and the seeds sown in very shallow marks made on the surface of the soil. Covering may be done with the fingers or a board, and the whole surface pressed down firmly with a block. No water is applied to the surface of the soil, but the boxes are placed in a shallow vat in which is a small quantity of water. These seed boxes are allowed to remain in the vat until the soil is quite well soaked, then taken out and placed in a warm part of the house. The seed germinates very quickly and certainly by this method, hence should not be sown so thickly as when surface watering is practised. When large enough the young plants are transplanted into flats of the same size as above named, and watering is done in the same manner. Labor is saved by following this method, although the contrary may seem to be true. This is because watering need be done less frequently than by the old method; but even if such were not the case the results justify the adoption of the new method.

Both radishes and cucumbers flourish under the same treatment, although they are not benefited to such an extent as lettuce. Tomatoes respond less than any other crop, but they show sufficient gain to pay for fitting up the house for sub-irrigation.

Experience has shown that a sub-irrigation plant pays for itself in one season, or one hundred per cent. on the investment. This estimate is for greenhouse crop in general, but for lettuce alone the profit is greater.

In a previous bulletin tomato culture after lettuce was given in detail; but there are other crops which may be grown with profit, such as radishes, cucumbers and parsley. Under the benches the space may be used for mushrooms, dandelion, pie plant and asparagus. The mushroom crop is about as profitable as any that can be grown, and yet it requires no light.

In view of the facts that have been stated it is evident that an important industry may now be built up. If such a thing is not done it will be because gardeners do not take advantage of the situation. The business ought to be encouraged, for whatever is done in this line means just that much added to our productive capacity.

If you contemplate the purchase of improved stock or farm machinery of any description, fencing or anything else needed on a farm, you have only to consult the advertising columns of this issue to find something bearing on the subject. Look them over carefully; it will be time well spent.