

Tree Planting in the West.

For anyone who takes time to stop and consider the question there must be but one conclusion, that a wood lot is a very useful adjunct to a farm, both for its direct returns in supplying wood for fuel and other farm purposes, and for its indirect advantages as a protection from the winds and a conservator of moisture. This has been specially evident in the West, where there are such large extents of level land almost or entirely bare of trees. The land regulations which were adopted by the Dominion government from the beginning of its administration showed a recognition of the importance of this question, as provision was made for dividing up wooded land into wood lots for sale to householders who had not sufficient wood on their own lands.

The forest tree culture claim regulation was also adopted to encourage planting on the prairie lands, but this provision did not remain long in force, and out of some 253 claims taken up under it only six were carried to completion. This plan did not work out with much greater success in the United States, from which Canada had adopted it. The fact is that the conditions to success were not understood even by the experts, as may be well illustrated by the provision of the regulation referred to, which required that the trees should be planted not less than twelve feet apart.

The success which has rewarded the efforts of a few persevering individuals, and the work which has been accomplished by the experimental farms, has added much to the knowledge of the subject, and has given a sufficient basis on which a choice of species may be made and plans of management adopted with reasonable certainty of success, and, without repeating the somewhat extravagant estimates and prophecies of some of the earlier advocates of tree planting, it may be safely asserted that an intelligent and systematic effort to have the planting of trees carried out generally will result in very decided benefits to the individual and the country at large.

The forestry branch of the Dominion is making such an effort, and the plan upon which they propose to work is outlined in a circular which has recently been issued by the superintendent, Mr. E. Stewart. Applications from settlers in the west desiring to avail themselves of the co-operation of the government in the planting and cultivation of a forest plantation, windbreak or shelter belt will be received at Ottawa. The local tree planting overseer will visit the property of the applicant and prepare a sketch and description thereof, with full particulars and suggestions as to the plantation to be set out. A working plan will be prepared from this information, a copy of which will be sent to the applicant together with an agreement to be signed by him. The department will, as far as possible, furnish seed and plant material, and it reserves the right to take from any plantation set out under its direction any seed, seedlings or cuttings that should be removed and may not be required on the property. The department will render all services specified free of charge, but the owner must prepare the soil, set out the plantation, and properly care for it afterward. A minimum of half an acre of 1,500 trees and a maximum of five acres of 15,000 trees has been fixed. The agreement to be signed by the applicant contains the main provisions above cited.

In addition to this special work the forestry branch will issue circulars from time to time giving general information. In the first of these, which has recently been issued, are given general suggestions for the preparation of the soil for tree planting. The object is to reproduce natural forest conditions, particularly the loose, porous soil which characterizes it, and we quote a few paragraphs from the circular giving directions as to how this may be attained:

A piece of land which it is intended to plant up should in every case be thoroughly worked up and cultivated some time before the time for planting arrives. Land which has already been under cultivation for some years will prove the best for tree planting. If planting is expected to take place in the fall the soil must be ploughed as deeply as possible during the summer - if possible using a subsoil plough as well as the ordinary plough. After ploughing, the surface must not be allowed to get hard, but should be frequently harrowed in order to preserve

the moisture in the ground which would otherwise be lost by evaporation. The chief advantage in fall planting lies in the fact that at that season farm work is not usually so pressing as in early spring, but outside of this, spring planting should always be resorted to if possible, as the soil is moist then and the young plant has a whole season in which its roots may become well established before the winter sets in.

"Preparation of the soil for spring planting should be commenced in the previous fall by its deep cultivation as possible. The surface of the ground should, however, be left rough in order to catch as much snow as possible and also to expose a larger surface to the weathering action of the frost. Immediately before planting the ground should again be ploughed deeply and the surface harrowed down. In cases where it is wished to plant seeds instead of young plants the soil must necessarily be brought into a finer condition. In cases where seedling trees are available for planting it is recommended, as a general rule, that planting operations should be carried on in the spring rather than in the fall of the year. In the case of certain seeds it is often advisable and cheaper to plant in the fall.

"The site for a proposed plantation should be carefully selected with a view to the requirements of the species which it is intended to plant. As a general rule it may be taken that slopes facing towards the north are best adapted to tree growth, as they are usually moister, for the reason that they do not receive the direct rays of the sun, and are less liable to sudden changes of temperature than are southern slopes. Certain trees, as willow, ash, and balsam of Gilead, thrive best on moist soil in the neighborhood of streams and ponds and will often prove a failure if planted on high land where the supply of moisture is somewhat scanty. Many species, however, as box elder, or Manitoba maple, are adapted to growth on higher ground, although the same varieties would probably attain larger proportions in low land where they could obtain more moisture. Such natural considerations as these must be carefully taken into account in connection with tree planting in order to attain to any degree of success."

The cultivation of hood crops, such as roots and potatoes, between the rows of trees is suggested as a method of decreasing the cost of the work necessary in the early years. The system adopted in Germany is to place the seedlings in rows about three and one-third feet apart and grow potatoes between them.

The plan outlined above is thoroughly practical, and it has received the very cordial endorsement of the people of the west to whom it has been presented, and, if it is carried out perseveringly and continuously, the results should be of the greatest advantage.

It must be impressed that this work is not the work of a day. Trees will not reach maturity in a year, or two years, or three years. One cause of failure in the past has been that the efforts made were spasmodic and lacked continuity. The work can be done at comparatively small cost, but there should be no hesitation at placing sufficient funds at the disposal of the Forestry Branch to insure that it be done well. A good beginning has been made and the foundation of the system has been laid in such a careful and practical manner as to give the assurance that it will be carried out wisely and economically. The development of the west is of the greatest importance to the future of Canada, and anything that tends to that end should be of interest to every Canadian. We trust that the influence of the Canadian Forestry association will be exerted to ensure that the scheme be given such generous support that it will have the fullest opportunity to demonstrate its usefulness.

The plan adopted is largely based on that followed by the Division of Forestry for the United States, but in that country the field of operations is not confined to any particular section. Whether it would be advisable for the Dominion forestry office to extend its work in the same way or whether, in the older provinces, the matter should be left in the hands of the local authorities is a question worthy of consideration. The need may not be pressing in these provinces, but expert advice would be very useful to anyone desiring to have a forest plantation, and we trust that some means may be adopted for the encouragement of such

efforts throughout the whole Dominion.

The federal government of the United States had at last adopted a system of co-operation with the settlers, and the main features of this system have been utilized in framing a system for the Dominion, but it is proposed to go further than they do, in that it is hoped to be able to furnish seeds and plant material.

The system as proposed by Mr. Stewart is as follows:—

1. It is proposed that any owner wishing to avail himself of the co-operation of the government in the planting and cultivation of a forest plantation, wind-break or shelter-belt, shall make application to the Forestry Branch at Ottawa.

2. On receipt of this, the local supervisor of tree planting for the district in which the property is situated is directed to visit and examine the lay of the land and its quality, any streams on it, the location of the buildings, etc., and in case he thinks trees can be successfully grown on it, he will show the position of the proposed plantation, the kind of trees to be grown, their distance apart, etc.

3. This sketch and any other detailed information he may consider necessary will be sent to the head office, where a working plan will be prepared drawn to scale and showing the general features of the farm as compiled from the notes and sketch made by the local supervisor, and also the position of the proposed plantation and other necessary information.

4. A copy of this plan along with the agreement will be sent to the owner. He will keep the copy of the plan for his guidance and return the agreement duly executed.

5. According to the terms of the agreement, the owner agrees to prepare the soil for the plantation and to plant and properly care for the same after planting according to the plan under the direction of the said supervisor or agent of the department of the interior.

6. The department will as far as the means at its disposal permit, furnish seed and plant material for the purposes of planting the said plantation.

7. The department proposes to render all services above specified wholly without charge.

8. The department under the agreement reserves the right to enter and take from the plantation for use elsewhere any young seedlings that may be growing up and which should be removed in the proper management of the location, unless the owner wishes the same to extend his plantation. The same privilege is stipulated for with reference to cuttings and seed.

9. It is also provided that the department shall have the right to publish and distribute the said plan and its results for the information of farmers and others whom it may concern.

The two prominent features of the proposed plan, Mr. Stewart points out, are (1) the furnishing of the seeds, cuttings, and young trees by the government, and (2) government supervision in tree planting and cultivation by the settlers. As to supply the plant material will be a matter of some magnitude, it is proposed to allow the department the unused product in any plantation for use elsewhere. The department will be permitted to enter and take young seedlings which are not required by the owner to extend his own plantation. By this means it is believed that the difficulty in supplying the plant material will be met.

Canada's Gold Output.

New York, June 22.—The Engineering and Mining Journal to-day publishes complete estimates of the gold output in the United States and in the world at large last year. The figures, \$118,435,562 for the United States, and \$256,954,654 for the world at large compared with \$99,518,718 and \$311,505,948 in 1899 do not differ materially from the estimates of several months ago.

Regarding the world's output the Engineering and Mining Journal observes: "The unfavorable result was due to the small contribution by the Transvaal mines, a few only of which were operated during the early months of the year. Deducting the Transvaal output from the grand totals for 1899 and 1900 the statistics show an increase in the other gold producing countries of \$10,717,000. The largest gains were made by the United States, Canada, India, Rhodesia and Brazil, while in Australia

and China there were important decreases.

"In one respect the gold situation in 1900 was unprecedented. It has never before happened that the output of a great gold producing country has been suddenly cut off entirely or almost entirely. The Transvaal, which produced \$78,070,761 in gold in 1898, was expected to yield over \$95,000,000 in 1899, and \$110,000,000 in 1900. The war broke out in October, 1898, and the total for that year was \$72,061,501; while in 1900 the only production was from the few mines which were operated by the government in the opening months of the year, and this work was stopped when the British armies reached Johannesburg. Instead of \$110,000,000 the Transvaal appears in our table for only \$7,208,869.

"The United States, which in 1899 ranked third among the great gold producers, in 1900 showed a substantial increase, which, with the limitation of the Transvaal, put it in the first place in 1900. Australia dropped from first place to second place, while Canada took third place, and Russia took the fourth place. These four countries produced together 79.2 per cent of the total."

Municipal Statistics.

The sheet of statistics respecting municipalities in the province for the year 1900, just issued by the Municipal Commissioners department contains considerable interesting information.

The population of the province according compiled from the returns furnished the department by the municipal assessors is shown to be 2,048,841. These figures however do not include the Indian population, a large number of Galicians, nor the residents of the Swan River and Dauphin districts. If these were added it is estimated that the population of Manitoba would approximate about 250,000. Other figures compiled from the same sources show the number of resident farmers in the province to be 31,261. The number of acres in the different municipalities totals up 12,942,375, of these 3,017,930 are under cultivation and 483,000 are wooded.

The live stock statistics show that there are 111,610 horses, 235,378 cattle, 31,016 sheep and 72,540 pigs within the boundaries of Manitoba.

Real and personal property according to the assessment is valued at \$31,561,288. The taxes imposed for the year amounted to \$1,624,901.82. The assets of the province, exclusive of Winnipeg which are not given amount to \$2,013,037.36 and the liabilities also exclusive of those of Winnipeg are \$1,577,157.

Irrigation Extension.

Mr. Geo. P. Anderson, of Denver, Colorado, the widely-known irrigation engineer who planned and was in charge of the construction of the irrigation system inaugurated in South-west last week. Mr. Anderson has spent the past ten weeks in preparing a report in regard to the possibility of the construction of an effective irrigation system drawing its supply of water from the Bow river near Calgary. Under his supervision careful surveys have been made of the whole of the great area between Calgary and Medicine Hat, and Mr. Anderson's present mission east is to submit his report to President Shaughnessy of the C. P. R. in regard to the proposed irrigation work mentioned.

The irrigation canal in Southern Alberta is proving a complete success in every way, and great numbers of settlers are taking up this season in that region, some 5,000 acres having been taken up solely for grazing purposes by cattle men from the Western States, in addition to the very large number of agriculturists who are going into that fertile section of the west whose productiveness is now made sure by irrigation.

J. J. Codville, of Winnipeg, left a few days ago to spend a well earned holiday at his summer home at St. Patrick, Quebec.

The annual statement of the Hochelaga Bank shows net earnings of \$184,768, out of which the usual dividends were paid. The sum of \$70,000 was added to the reserve fund and \$8,423 carried forward, against \$2,533 last year. The paid up capital now is \$1,500,000 and the rest \$750,000.

A woman's first duty is to love her husband and swerve him forever.