

## DISEASE AMONG SPRUCE TREES.

The following letter appears in the Montreal Witness:

SIR.—Mr. Vennor, in your number of the 18th, gives rather a novel cure by introducing woodpeckers and other tree creepers. Will he kindly let us know where these birds can be caught, and how caught? He can scarcely be sincere in proposing such a cure. Woodpeckers could never be trapped, and if he introduced a million in a grove of spruce, in a few hours there would be very few left in the grove, as they are continually on the wing, and the woodpecker is miles away in the evening from where he took his morning meal. Having some knowledge of the Maine timber lands and these localities, I may say the disease alluded to among the spruce trees arises from the fact that all the first and second quality spruce deals have been cut down all through Maine, and what has been left standing by the lumberman, were the faulty trees, culls and dead standing timber, which of course will be the favorite localities for the wood borer, of which there is a numerous family. One of the most destructive is the *Monohammus Confusor*, it is remarkable for the length of its antennae, or horns, which sometimes are twice the length of its body, the latter being an inch and a half long. It is produced from a grub of a whitish color with a large broad head and very powerful jaws, with which it cuts into the trees. It attacks all newly cut timber with the bark left on and all injured timber, blown down, burnt and sickly trees. I had an opportunity of demonstrating the facts after a forest fire had passed through a considerable grove of mixed timber. The borers in question made their appearance in large numbers and attacked all the fallen trees, depositing eggs in every crack and crevice or knot hole. The damage done by this beetle is in some instances enormous. I had one season several thousand pine and spruce logs which stuck on the drive. The waters getting so low they remained stranded on the rocks and beach till the following spring, and every log was attacked by them and bored from one to two inches inward, which caused a loss of several thousand dollars on the value of the logs. The *Monohammus Scutellatus* is another borer and more numerous than the one I have described, but the habits of both are similar. The *Chalcophora Liberta* and *Virginica* are also wood borers. I never knew the Coddling moth or worm to attack the forest trees. It is known to be most destructive to the apple, as it makes its attack upon the fruit. The insect deposits its eggs in the apple blossom, the eggs are soon hatched and penetrate into the growing fruit. Every apple grower knows something of its ravages. I made an extensive exploration through the Canadian forests bordering on Maine and found the spruce trees, both scattered and in groves, in a perfectly healthy state and did not see any signs of the disease referred to. Mr. Vennor's cure by woodpeckers would only be making the evil worse and the trees less valuable, as the woodpecker makes a considerable hole in the tree before he can reach the grub with his speared tongue. The prevention must be with the beetle, not with the grub. In May the beetle comes out of the grub in immense numbers. The crow is the only bird that devours them. Hens and turkeys eat them also. I have seen them in the new settlements, where the slash has been made during the winter, running and flying from tree to tree devouring the beetle most vigorously.

CHARLES HUGHES.

Montreal, 25th August, 1883.

## FORESTRY IN AUSTRALIA.

The colonies of Australia are awakening to the importance of forest conservation and restoration, and South Australia is the first to establish a system of forestry, that promises good results. Legislation upon this subject, was begun in 1871, when Mr. Krichauff, M. P., called for a return, eliciting information from persons resident in the different districts of the colony, in regard to the supply, preservation, and culture of forests. The answers were prepared by Dr. Schomburgk, director of the Botanical Gardens at Adelaide. In 1873 he introduced a bill, and secured its passage. It was entitled "An Act to Encourage the Planting of Forest Trees," and provided for the pay-

ment of £5 per acre for every acre planted by a land-owner in certain districts of the colony, upon certain conditions specified. A report on Forest Reserves was submitted during the same session, prepared for the Hon. the Commissioner of Crown Lands, by G. W. Goydor, Esq., the Surveyor-General, in which it was suggested, that certain portions of the country should be set apart by proclamation as Forest Reserves, and the subject of the formation of a department of forests, was discussed at length.

In 1875, a bill was brought in by Mr. Krichauff, and passed, entitled "An Act to make Provision for the Appointment of a Forest Board, and for other Purposes." It defined the districts pointed out as proper for forest reserves, in the previous report of Mr. Goydor, and specified the duties of the Board. It did not, however, survive long enough to test its merits, and was superseded, in October, 1878, by the "Forest Trees Act," and this again by "The Woods and Forests Act of 1882," which has been passed during the current year.

A cumbersome arrangement under the Forest Board having failed to meet the requirements, the three non-official members resigned; upon which the Government, considering that the operations of the system could be better conducted by the Conservator of Forests, placed directly under the Honorable Commissioner of Crown Lands and Forests, this mode of management is now in operation.

The principal fault of the system appears to consist in the smallness of means provided, amounting we believe, to about £5,000 per annum. This, when applied to the expenses of office management, and to the care of something like 240,000 acres, of which two-thirds are timberless, or covered with a useless growth of dwarf Eucalypti, Acacias, and the like, should not raise great expectations of grand results.

From the official report for 1881-2, it appears that there were then 19 Forest Reserves, containing 239,336 acres, which, with the exception of the Travelling Stock Reserves, were all leased for pasturage purposes at rates ranging from 1d. to 2s. 8d. per acre. There were four well established nurseries, having together an area of about 20 acres. Planting, and other forest conservancy operations, were being conducted upon eight reserves. The force consisted of three foresters and four nurserymen, with an average force of 25 laborers. About 4,043 acres had been enclosed and set apart for planting and other forest operations. The average income from the Forest Reserves, in the last six years, had been £5,581, and the expenditures of the board, £5,787. About 440,000 young trees were doing well, from the results of the board's planting; some 300,000 saplings and seedlings of natural growth had been pruned, in connection with the system of encouragement for the renovation of the indigenous forests, and about fifty thousand seedlings of natural growth had been reared in the Natural Regeneration inclosures.

The following extract from regulations, dated January 13th, 1879, and applicable to the Wirrabara Reserve, will prove of interest to our readers:

1. All standing trees disposed of by the Forest Board in this reserve, by private contract or otherwise, must be previously marked by the Conservator or officer in charge.
2. The official mark will consist of a longitudinal chip taken off two opposite sides of the tree and stamped F. B. in distinct characters.
3. Each tree must be cut off from its base at a height not greater than two feet from the ground.
4. In cutting down trees, care must always be taken to fell them in such a manner that they will not interfere with or injure any of the other trees, saplings, or seedlings, left standing on the ground; and should any damage arise in this way from the carelessness of the workmen, the officer in charge of the reserve (whose decision on such matters shall be final) is empowered to value such damage at a rate equal to the deterioration effected, and collect the amount from the party to whom the tree felled has been sold.
5. Any party or parties found felling trees which have not been marked and sold to them, will incur a penalty of not more than five pounds, in addition to the value of the material.

6. No purchaser shall be permitted, on any pretence whatever, to light fires within the forest, except on such sites and for such special purposes as shall be defined by written permission from the conservator.

7. The purchaser of any tree must remove the whole of the same that is convertible into a marketable commodity, and pile together all refuse ready for burning, to the satisfaction of the forest officer. Any breach of the two last regulations, will incur dismissal from the forest.

8. Purchasers will be allowed sufficient time for the removal of their timber from the forest. This time will in all cases be specified and entered in the forest sales book. Should any purchaser fail in having it removed within the period stated, then it will be optional for the officer in charge to declare it forfeited or give an extension of time for its removal.

9. Splitters applying for timber, on satisfying the Conservator of their respectability, and on giving a guarantee that they will not attempt to evade the regulations, will be allowed to erect temporary huts on such sites as the Conservator shall deem expedient; but they will not be allowed to keep stock of any kind in the forest further than may be necessary at certain times for the removal of their timber to market—this to be decided by the Conservator, whose decision shall be final.

10. All standing timber will be sold per cubic foot, or in lots by valuation, to suit purchasers.

11. As soon as the trees are marked and sold, they will be at the entire risk of the purchaser; but the purchaser will not be allowed to cut or ring trees bought, until a proper settlement for the same be made to the satisfaction of the forest officer.

12. All sales amounting to less than £2 to be paid for in full before the timber is interfered with; and all sales realizing more than that amount, the purchaser shall pay half such sum in advance, the remainder before any of the timber is removed from the ground.

13. Sites for the erection of saw mills will be granted on payment of a nominal charge per annum, and licenses given for materials, sinking wells, erection of huts, and stabling for accommodation of horses used in the haulage of timber. Special arrangements for the purchase of timber will be entered into with parties erecting saw mills.

14. Sites for the erection of saw-pits will be granted free of charge, with liberty to erect temporary camps and depasture working bullocks actually employed in the hauling of timber, etc.; all subject to approval of the Conservator.

15. Licenses to split posts and rails from dead wood in localities named in body of licenses, will be granted at 20s. per annum each, with an additional fee of 10s. per 100 for all posts and rails removed from the forest.

16. Licenses to procure straining or corner posts of dead timber from localities to be named in license, will be granted at 1s. for each post.

17. Licenses to remove firewood from the dead timber lying upon the ground from localities to be named in body of the license, will be granted at the following rates:—

- 8s., for one horse load;
- 1s. 6d., for load of two horses or bullocks;
- 2s., for load of four horses or bullock;
- 4s., per load where more than four horses or bullocks are used.

## STONE, SAND AND GRAVEL.

18. Licenses to remove stone, sand and gravel, will be granted at 20s. per month each.

19. Splitters will be allowed to erect temporary huts only in the forest, and only on such sites as may be approved by the Conservator.

New regulations dated March 20, 1883, and received too late for further notice in this number, have been issued under the Woods and Forests Act of 1882. They vest in the Conservator of forests, their immediate control and management, the sale of timber, employment of laborers, etc., but subject to the approval of the commissioner of forest lands.

These regulations forbid the lighting of fires for any occasion during the summer months (May to October), and provide for the sale of licenses for various purposes, besides the cutting of timber,

## LAKE ST. JOHN VALLEY.

In an account of the Lake St. John Valley a special correspondent of the Toronto Globe says:—

"The forests around Lake St. John contain pine, elm, tamarac, ash, spruce, cedar, barwood, fir, white poplar, birch, and some hard maple. This, says Michaux, is the most northerly region where white spruce and cedar have been observed. White pine is found in abundance, and hemlock literally fills the forest. Poplar some times attains a height of 80 feet and a diameter of three feet. Mr. Robert Bell in 1858, reported that acorns were found on the shore of Lake St. John, showing that oak must exist on some of the rivers.

In his description of the town of Chicoutimi the same writer says:—

"The Government pier, at which the steam boat lands, is at the end of a cross street, half a mile from the Court-house, and a mile east of the old Hudson Bay post. This pier was commenced in 1873, by the St. Lawrence Tow-boat Company, and completed by the Dominion Government, by whom it is now maintained. The total Government expenditure upon this work to date has been \$17,017. The depth of water at the end of the pier was originally ten feet, but it has since been reduced to seven feet by slabs and sawdust from the mills above. The tide rises for some distance above Chicoutimi, and sea-going vessels can ascend with a draught of ten feet during low water, and with a draught of 18 feet during high tide. The *Mario's Hospital*, a two-story brick structure 35x45, will be finished this year. It is situated on the top of the hill in the rear of the College, and is opposite the stone monument erected to the memory of the late William Price. In consequence of the depositing of slabs and other refuse in the Sagouay, it has been found necessary to take steps to clear the channel. The total expenditure by the Dominion Government upon the improvement of this channel up to 1882 was \$13,559. No less than from twenty-seven to forty-five ocean vessels, besides many schooners, have come to load lumber at Chicoutimi every year since 1872, and at the smaller ports lower down quite a number also obtain cargoes."

## EXTENSIVE PLANTING.

The *Lumberman's Gazette* says:—Nebraska believes in forestry, and demonstrates the strength of her belief by practical results. On the last arbor day 500,000 trees were planted within her territorial domain, which, if they arrive at maturity, will not only furnish lumber for building purposes in the future, but will be of inestimable value to the people in the cooling shade they afford and the protection against the biting blasts of winter, but their climatic effects possibly will never be measured. As much attention to this question in all the states and territories as in Nebraska would very much tend to relieve that great source of an anxiety, —the denudation of the American forests. Kansas last year also came to the front nobly in this connection by planting 93,000 acres with timber. The constant agitation which has been so persistently maintained in the class of journals of the country is thus bearing excellent fruit.

## The Pacific Coast.

The lumber industry, says the *San Francisco Journal of Commerce*, is going to be *par excellence* one of the great industries of our Pacific coast future. There is no region on earth except tropical South America that possesses anything like the forest that clothes the great mountain chain whose principal summits roar above the deserts of Arizona. These are fully 700 miles of mountains covered with virgin forests, which it would seem as if the whole world could not exhaust. The estimated quantity of lumber contained in these forests is not less than 4,032,000,000, or 4,000,000,000 feet, worth in log, at a very low estimate, \$25,000,000,000. California itself has 12,000,000 acres of woodlands, the annual production being about 500,000,000 feet. The total average product of the coast is estimated as follows:—California, 500,000,000 feet; Washington, 300,000,000; Oregon, 200,000,000; British Columbia, 50,000,000; other sections, 60,000,000—total, 1,110,000,000 feet. The value of this for export is about \$10,000,000.