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ANNUAL BUSINESS MEETING.

Everything is now in readiness for the Annual Business Meeting to be held in the Chateau Laurier, Ottawa, on Wednesday, February 4, beginning at 10 a.m. It is hoped there will be a good attendance of our members, as in addition to the review of the work of the year, the election of officers, etc., several important matters will be discussed for presentation to the Government during the course of the day. The Canadian Lumbermen's Association meets on the preceding day, concluding with a banquet in the evening.

THE MAPLE SUGAR INDUSTRY.

Attention is directed to the article in this issue by Dr. Geo. Fisk, of Montreal, who, as the developer of a maple sugar grove on modern lines, shows what can be done with rough and hilly lands, which are entirely unsuited to other crops. There is so much of this kind of land in Canada that the possibility of developing it in the way indicated by Dr. Fisk is of the greatest importance to Canada. We trust our members will give it a careful reading.

COMMISSION OF CONSERVATION.

A number of matters of interest to our members were dealt with at the meeting of the Commission of Conservation in Ottawa Jan. 20 and 21. A report of this meeting will be found on another page. Of particular weight are the remarks of the Chairman of the Commission, Hon. Clifford Sifton, in regard to the

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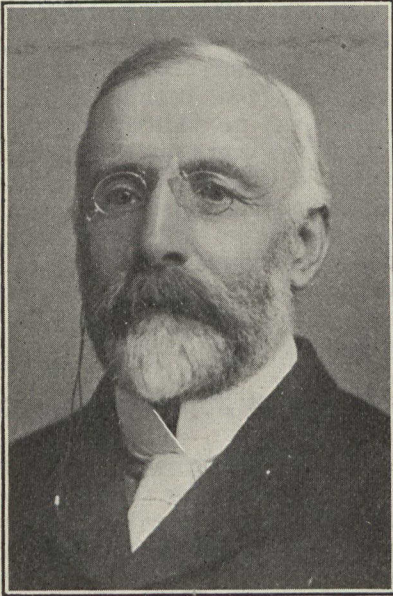
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need for the extension of Civil Service regulations to the outside Civil Service, and also in reference to the co-ordination of the work of the various branches handling Dominion forest matters, which he considered necessary in order to secure the greatest efficiency.



MR. AUBREY WHITE, C.M.G.

Among those who were honored by His Majesty King George the Fifth on New Year's Day, 1914, was Mr. Aubrey White, who was created a Companion of the Order of St. Michael and St. George (C. M.G.) Mr. White entered the Crown Lands Department of Ontario in the outside service in 1876, and was made Deputy Commissioner in 1887. Later, when the office was enlarged and the title changed, he was made Deputy Minister of Lands and Forests, which is his present office. Mr. White has been a pioneer in the matter of forest conservation, having recommended and organized, in 1885, the first forest fire protective patrol system on the continent. Mr. White is a Past President of the Canadian Forestry Association, and is one of its most active Directors. His reports and bulletins always receive the most careful consideration from forest administrators. For over a quarter of a

century he has been the administrative head of the Department producing the greatest part of Ontario's revenue, and one of the largest forest services in the world. The Toronto News thus refers to Mr. White's new honor:

'The New Year honor conferred upon Mr. Aubrey White was thoroughly deserved. Civil servants in this country are none too richly recompensed in a material sense, and the prerogative of the Crown is well employed in seeking out men like the Deputy Minister for special distinction. Under Liberal and Conservative Governments alike Mr. White has labored long and faithfully in the public interest. He is one of the most capable administrators in the Province, and in decorating him the Sovereign has recognized the whole civil service afresh in a gratifying manner. Mr. White will wear his C. M. G. with becoming dignity.'

Within the three National parks in which the Dominion Government maintains the buffalo in a state of semi captivity says the sixth annual report of the American Bison Society, there were at the end of March, 1913 1,287 buffalo. The number of males was approximately the same as the number of females, a larger number of the former being aged. The total number of calves successfully raised during the year was 221. An estimate of the number of wood bison in Mackenzie River territory and of those loaned by the Dominion Government to city parks, etc., makes the total number of pure bred bison in Canada about 1,600.

Owing to the crowded state of the columns of the *Journal* this month, several articles dealing with forestry in British Columbia and Ontario had to be held over until the February issue.

Mr. H. A. Preston of Massey, Northern Ontario, writes condemning the carelessness that is often responsible for the spread of, destructive forest fires and suggesting that the Government be more strict in enforcing the law prohibiting settlers setting fires during the months of June July and August.—*Rod and Gun.*

Possibilities of a Modern Maple Grove

By Dr. George Fisk, Montreal, Proprietor of Maple Glen Reserve, Magog, Quebec.

The Canadian Forestry Association is authority for the statement that 50% of the land in the Dominion of Canada is fit only for growing tree crops. The many deserted farms in the outlying districts of the Province of Quebec tend to confirm this opinion, for if we investigate why these farms have been deserted, we learn that as soon as the lumbermen had cropped the neighboring lands of the best lumber, the outlying farmers found it difficult to make a living from handling crops without the aid of the tree crops. A move to a new farm in an unnumbered district provided him with profitable work for the whole year. These farms that have been deserted in this way have soon grown up to a

second growth, principally of the hard wood varieties, and in many cases with a very large percentage, if not a pure growth of maple. It would appear, then, if lumbering was at one time profitable, and the annual crops were not sufficiently profitable to retain the farmer, that the question of reforesting these farms warrants very careful consideration.

In districts of sandy soil the pine tree is the favorite for replanting, and should be a commercial success. However, the investor could not hope to realize a return on the investment in less than sixty years, the average time required for a pine tree to grow to a diameter of 18 inches. This proposition is hardly



View in Dr. Fisk's Bush, Showing Metal Sap Pipes.

attractive to the farmer who must of necessity count on an early return from his investment. The only natural forest tree in Canada which may be cropped while it is slowly growing to maturity for lumber is the maple tree. This may be tapped with profit for the production of maple sugar after it has grown to the size of six or eight inches, and so provide a revenue long before it is large enough to give the best returns as lumber. In twenty-five or thirty years after a tree the size of a broom handle has been transplanted, it should yield a very profitable return for the time and money invested.

The most suitable locations in this Province of Quebec for maple groves are along the ridges and hillsides, and it is not difficult to find many hillsides gradually sloping, which have been cleared or partially cleared, and are now grown up to thickets of hardwood, in which maple largely predominates. Mr. R. H. Campbell, Director of the Forestry Branch of the Department of the Interior, concludes an interesting comparison between the pine tree and the maple tree as follows: 'When one considers the revenue derived after the thirtieth year from the sap, and the higher prices obtainable for thinnings as fuel, or making acetic acid, wood alcohol and charcoal, there seems but little doubt that the maple would in the end be the more profitable tree. This is particularly true in the case of the small wood-lot owner, or farmer, who has many uses for the wood, and especially where the maple already exists in the stand and natural reproduction can be secured.'

Let us examine this problem of a maple orchard ideal in location, arrangement and outfit for producing maple sugar of the highest quality at the lowest possible cost. To produce an article economically is, of course, to produce it in fairly large quantities. It is, therefore probably

wise to develop as large an area as possible in one sugar orchard. The chief expense in administering a sugar orchard is in gathering the sap from tree to tree. The quickest and most economical method of doing this is by gravity through a system of pipe lines. The orchard preferably should be placed around a sloping hillside, not too rough or steep for the necessary road where teaming is needed, and this entire slope should focus at some point lower down, where the sugar cabin and storage tanks should be placed.

It is not difficult to find in this Province of Quebec many suitable areas in which more than 30 or 40 acres of hillside are tributary to a suitable point for a sugar cabin. If we take, then, for illustration, a unit of thirty acres, sloping preferably to the east or southeast, we would in time be able, by proper planting, to have an orchard of 4,000 trees or more, estimating 133 trees per acre. This should mean 4,000 buckets, or, perhaps, more, if some trees are large enough to permit of more than one bucket. If this area contains maple trees already, it simplifies the undertaking very much, as it will not be necessary for the owner to wait twenty-five years for the full maturity of his orchard. If the other varieties of wood are first cleared out, and the vacant places filled by planting young maples where necessary, the orchard will go on improving year by year.

In considering the economical administration, small subsidiary cabins should be built at convenient points to allow for the storage of tanks, covers, spouts and piping, each cabin to contain from 500 to 1,000 buckets. This facilitates tapping in the early spring, when the snow is deep and the transportation is difficult. With a system of two-inch galvanized sheet iron pipe in 10 ft. lengths, which can be placed in position on a series of posts, or suspended from a



View of Inside of Sugar House, Maple Glen Reserve.

line of barb wire, so as to be easily taken up after the season is over and stored in the cabin, all long hauling of sap is obviated. The collector of sap, with a neck yoke and two pails, gathers the sap from tree to tree, and empties it at pleasure into the nearest pipe by means of a connecting hopper. The sap flows direct to the storage tank, and the collector wastes no time in needless journeyings to the storage tank. With a complete line of piping, it is never necessary for a collector to travel more than a few yards before emptying his load. A good man should be able to gather all the sap from 600 to 800 trees each day in this way.

It is very important that the evaporating outfit should be ample for the size of the sugar orchard. We see all too frequently small evaporating accommodation, necessitating much overtime work. The largest evaporator at the present time on the market is a 6 ft. x 24 ft. This is not

at all unwieldy, and can be operated by one man with little more trouble than one of one-fourth the area. In most sugar orchards this size should be ample for an orchard of 4,000 trees, by providing a night shift for boiling. The next point is to provide large buckets, covers, and satisfactory spouts to give the best possible returns from each tree tapped. It is a frequent observation that small buckets waste one-half of the sap which flows, and that uncovered buckets in rainy weather waste nearly all the sap.

It has been estimated that about 9% of the sugar content of the maple tree is obtained from a single tapping. It is also an opinion of experts that if 20% could be obtained no damage would be done to the tree. If some way is devised by which an increased flow could be obtained it would increase the commercial returns materially.

In administering a sugar orchard



A Gala Day in a Sugar Bush at Algonquin Park, Ontario.

it is a well known fact that if the orchard is concentrated over a small area it is much more economical than where the trees are wide apart. Careful reforestation of the barren areas in the orchard will, in time, give an ideal orchard for economical administration.

There are many points in the cabin and woodshed which may be adjusted for economical administration. A large evaporator will frequently absorb three cords of wood during the day. This is a lot to bring in by the armful. An overhead rail from the woodshed with a truck suspending platform will simplify this very much. There are many other similar points of economy which we will not mention.

Let us estimate, then, the results at the end of twenty-five years after careful reforestation that one would expect to obtain. With an area of thirty acres, averaging 135 trees, or 135 buckets to the acre, and one

large evaporator, it would be possible for six men to administer this with comparative ease. The average annual return should be about two pounds of sugar per tree, or one gallon of syrup to five trees. If a high quality of sugar and syrup were made, as it should be under these conditions, a high price should be obtained for the product, at least \$1.50 per gallon, for the syrup, and 15 cents a pound for the sugar, on an average. This should show a gross return of \$1,200 per annum. Allowing an ample wage list of \$300, the depreciation of plant of \$100 (which is over generous), the net returns would be \$800, or \$20.66 per acre, which is a very good return for what is now waste land.

The labor problem, of course, is a very important factor in any estimate of this kind, but the sugar season is a quiet one with those who work on the farm and in the lumber woods, and with proper accommoda-

tion for the men, preferably in the sugar orchard itself, it should not be difficult to provide and retain adequate skilled labor. To many a farmer who has a wood lot and taps a few trees that nature has given him, the return is not large for the labor, but the same thing prevailed in the apple industry, when the farmer attempted to sell a few seedling apples from accidental fruit trees about the fences and clearings. To-day select orchard lands are planted, drained, cultivated, and carefully tended, and I am free to say that, considering the initial cost of suitable apple tree land, and the subsequent expense of planting and caring for the orchard, the return is not greater, nor the investment more

secure, than would be a maple orchard well located and well administered. Furthermore, much of the land suitable for maple trees is quite unsuitable for fruit trees, and young maple trees are found on every hand ready for planting, and require no spraying or cultivating. The necessary capital to plant a maple orchard is far below the amount required to plant a fruit orchard.

If our Government should wisely limit the use of the word 'maple' to absolutely pure maple products, it would then be a perfectly safe commercial venture to reforest many of the waste areas, and develop those gorgeous maple groves which are at once the glory and salvation of our northern hillsides.

Commission of Conservation

Fifth Annual Meeting a Notable Event.

The fifth annual meeting of the Commission of Conservation of Canada was held in the Board Room of the new offices of the Commission, Masonic Temple, Ottawa, on Jan. 20 and 21. The Chairman, Hon. Clifford Sifton, who was unavoidably absent last year, occupied the chair, and the proceedings throughout were of the most interesting and important character. The meeting opened with the address of the Chairman, in which he reviewed the work before the Commission. The headings of the different paragraphs indicate the wide scope of this important pronouncement. These are: Water and Water Powers, Fisheries, Game and Fur Bearing Animals, Oyster Culture, Minerals, Agriculture, Agricultural Survey, Illustration Farms, Public Health, Town Planning, Forestry, The Trent Watershed Survey, Fire Protection, Investigation of Forest Resources, Forestry on Dominion Timber Berths, Permanency of Forest Service.

Address of Hon. Clifford Sifton.

As the address of Hon. Mr. Sifton would in itself fill nearly the whole of this issue of the *Journal*, it will be possible, on this occasion, to give only a few of his most striking points in regard to forestry. In dealing with the cut-over territory in the Trent watershed of Ontario, he suggested

Dominion, provincial or municipal ownership of the territory in question, the redrafting of regulations governing the timber limits still active there, and the appointment of a forester to have charge of the region. Fire protection work along the railway lines (under Mr. Clyde Leavitt acting for the Dominion Railway Commission and in co-operation with the Dominion and provincial forest services), was gone into with great care. The results which had been secured by the co-operative handling of the railway fire protection work had been admirable. In the West practically no criticism could be made in this matter. The eastern provinces were more conservative and completion of the organization was slower. However, assurances received indicated a much more satisfactory organization in the East in 1914. For the most part, the railways had endeavored to comply honestly with the various requirements. In order to complete the work of fire protection along railways, further action was necessary respecting lines not under the Railway Commission. These were the Government railways and the provincially chartered railways. New legislation was required regarding provincial railways, and increased administrative action in regard to

Dominion railways. The situation along Government railways had shown marked improvement during the year, but much remained to be done before the system would be as intensive as that now required on lines subject to the Railway Commission. The suggestion had been made to the Minister of Railways and was now under his consideration, that the Government railways be placed under the regulations of the Railway Commission.

Forestry on Dominion Timber Berths.

In discussing 'Forestry on Dominion Timber Berths,' Mr. Sifton said:

'During the past summer attention has been given to forest conditions on the public domain in Alberta, Saskatchewan and Manitoba and the Railway Belt of British Columbia. In this work particular attention was paid to the matter of fire prevention through brush disposal, and to the question of securing a natural reproduction of the forest through control of the methods of cutting. In addition to certain technical features, the question of organization is involved, owing to the fact that jurisdiction of the timber lands of the Dominion Government is divided between three separate branches of the Department of the Interior.

'As to the timber berths, responsibility rests upon the Timber and Grazing Branch, which is to a large extent in practice, a fiscal organization, charged with such work as the collection of revenue, the prevention of trespass and the administration of grazing leases.

'The question of brush disposal as a fire preventive measure, and of so controlling the methods of cutting as to ensure the perpetuation of the forest, are the principal technical features of present-day forestry practice. Provision for these matters is made in the licenses covering all timber berths, but, unfortunately, none of the branches of the Departments having to do with Forests have at work a sufficient staff of trained men to enforce these provisions. The Crown Timber Agents and their office staffs are obviously unable to devote any personal attention to these matters in the field. The Inspectors under the Crown Timber Agents are the only men upon whom this work can fall under the present plan of organization. Of these, there are one at New Westminster, one at Kamloops, one at Calgary, six at Edmonton, four at Prince Albert, and five at Winnipeg. The time of these men has previously been fully occupied with the duties regularly incident to their positions, and it is hopeless to expect that anything like adequate results can be accomplished by trying to impose upon these already fully occupied men the responsibility for the enforcement of the technical forestry provisions of the licenses. These provisions have not been enforced in the past on the licensed timber berths, nor can they by any possibility be enforced without the appointment of skilled officers especially charged with this duty. Thus we have the anomalous situation of a lack of technical supervision of logging operations upon lands containing the greater quantity of the accessible merchantable timber which is now the property of the Dominion Government.

'The particular way in which the remedy should be worked out is, of course, strictly a Departmental matter. The main consideration is that the results ought to be accomplished in some way.

'The above remarks are not intended, and should not be considered, as an unfriendly criticism. The situation simply appears to be that no effective provision for the administration of forestry regulations upon the timber berths of the public domain has yet been made. As a result, the protection and perpetuation of the forest upon the best timbered areas, both within and outside the forest reserves and parks, is most seriously endangered.

'While this is the case it gives me pleasure to draw attention to the excellent work of the same Department in connection with other branches of forestry work, the care of reserves, prevention of fire and the encouragement of tree planting. There seems no reason to doubt that the officers of the Department will make effective use of any powers bestowed upon them.

Permanence of Forest Service.

'Following the last annual meeting, representations were made to the Dominion and Provincial Governments favouring the extension of the merit system of appointment in forestry and fire-protection work.

'I regret to say that as yet very little has been done toward carrying out the recommendations made. With regard to this measure it is essential that the Commission should not cease to reiterate its views. Whatever may be said of other branches of the service, it is an unquestionable fact that not even a moderate degree of efficiency and economy can be attained in forest service without a permanent and specially trained staff.

'It frequently happens that men appointed in the ordinary political method from business life make very good officers while they have to deal only with collection of revenue and with what has heretofore been considered the usual work of a Crown Timber Officer, but, as fire rangers and supervisors of forestry regulations, such men are, when first appointed, absolutely useless. They will learn if they devote themselves to the work and stay long enough in one position, but at best such a system is extravagant and inefficient.

'At this stage of our work the prime necessity is to get the Governments of the Dominion and the Provinces to place the forestry staffs upon a permanent basis providing for appointment and promotion only for merit and qualification through the Civil Service Commission.'

Other Forestry Work.

The other items on the program directly referring to forest conservation were as follows:—'Work of the Committee on Forests,' by Mr. Clyde Leavitt; 'Forestry Work in the Trent Watershed,' by Dr. B. E. Fernow, and 'Work of the Dominion Forestry Branch,' by Mr. R. H. Campbell. Mr. Leavitt's paper was a review of the work of the year on the lines of his report for 1912, which was reviewed in the *Journal* last month, and a report of this will be printed later.

Dr. B. E. Fernow, dean of the Faculty of Forestry of Toronto University, in his report on the Trent watershed, showed the serious consequences which have followed the agricultural settlement of a district which, for the most part, was essentially non-agricultural in character. The soil having quickly become impoverished from cultivation, the people who remained on the poorer lands were existing under undesirable economic conditions. Repeated fires had destroyed a young growth having a potential stumpage value of millions of dollars, besides facilitating erosion and so changing the composition of the forest that its possible future value was greatly decreased.

Moreover, the destruction of the forest had had a very detrimental effect on the water supply of the Trent Canal. This was a question of serious import to the Dominion Government, which had already spent something like \$10,000,000 on the canal project. The provincial government

had also a great interest in the matter, since it still controlled approximately one-third of the area in question. The problem of efficient fire protection and of the reforestation of the non-agricultural areas was so important as to justify a conference between representatives of the two governments, looking toward the adoption of a definite co-operative plan for its solution.

Mr. R. H. Campbell, Dominion Director of Forestry, made a brief statement covering the work of the Dominion Forestry Branch, which will be published later.

Among the members of the Canadian Forestry Association who attended the meeting were Senator Edwards, Ottawa; Mr. W. B. Snowball, Chatham, N. B.; Sir Edmund Osler, Mr. J. F. MacKay, Dr. C. C. James and Mr. G. F. Beer, of Toronto; Hon. J. A. Matheson, Premier of P. E. I.; Dr. C. C. Jones, Chancellor of the University of New Brunswick; Dr. Howard Murray, Dalhousie University, Halifax; Lt.-Col. Jeffrey H. Burland and Dr. Frank D. Adams, Montreal.

Recommendations of Committee on Forests.

The recommendations of the Committee on Forests which were signed by Hon. W. C. Edwards, Chairman, Dr. B. E. Fernow, and Mr. W. B. Snowball, were adopted as follows:

The Committee on Forests finds that, since the last annual meeting, the situation, to which its

recommendations at that time referred, has changed but little, and that it can with propriety repeat most of the propositions then formulated, with some additions.

1. The protection from forest fires, in which a decided progress has been made, still requires assiduous effort to make it effective in all directions.

2. The matter of fire-protection along Government railways should be further taken up with the Dominion Government, and such railways should be made subject to the fire regulations prescribed by the Board of Railway Commissioners for lines subject to its jurisdiction.

3. Representations should be made to the Governments of Nova Scotia, New Brunswick, Ontario and Alberta, urging that both legislative and administrative provision be made for requiring provincially chartered railways to take adequate steps to safeguard the adjacent country from fires due to railway causes.

4. The ascertainment or inventory of timber supplies has been properly begun in British Columbia, in co-operation with the Provincial Forest Branch and with the Forestry Branch of the Canadian Pacific Railway, and in Saskatchewan in co-operation with the Dominion Forestry Branch. This work should be persistently continued. Co-operation of the provincial government of New Brunswick for the same purpose should be encouraged, and the governments of Ontario and Quebec invited to pursue a similar course.

5. The attention of the Dominion and Provincial Governments should be again drawn to the vital necessity of withholding from settlement all lands which cannot properly be classed as agricultural, and of setting such lands apart for the permanent production of timber supplies. The importance should be especially accentuated of reserving and protecting from fire the vast areas of young forest growth, in order that they may



Antiquated Systems of Boiling Still in use in Backward Sections.

reach merchantable size and form a future source of local revenue and industry.

6. The Governments of Ontario and Quebec should be urged to undertake a systematic classification of land in the Clay Belt in advance of settlement, in order to have settlement properly directed.

7. A strong effort should be made to secure co-operation between the Dominion Government and that of the Province of Ontario, to solve the problem of protection and recuperation of the Trent watershed.

8. The extension of forest reservations in the public lands of the west should be forwarded, as the surveys by the Dominion Forestry Branch develop their desirability.

9. The organization of forestry branches should be urged on the two forest provinces, New Brunswick and Nova Scotia, which are still without such an agency.

10. The Commission reiterates its opinion that in the forest services of the Dominion and Provincial Governments, more than in any other service, the appointments should be based on capability and experience, such as may be secured by civil service examinations.

11. Representations should be made to the Dominion Government looking toward the adoption of some plan, whereby adequate provision may be made for the enforcement of the technical provisions affecting lumbering operations on the licensed timber berths.

12. The immediate establishment of a game preserve in the southern portion of the Rocky Mountains, in Alberta and British Columbia, adjacent to the Glacier National Park of Montana, should be urged upon the Dominion Government and the Government of British Columbia. Immediately favorable action upon this recommendation is imperative in the interests of game preservation.

13. In the opinion of the Committee, an expenditure of \$25,000 per annum for the next four years is urgently needed, to furnish the basis for formulating and forwarding a forest policy for the Dominion.

14. In view of the importance for water power development of the forest cover on the upper waters of the Winnipeg River, and especially on the watershed of the Lake of the Woods, steps should be taken to secure a forest reservation on these headwaters, and to segregate as a forest reserve the area drained by this river.

GIVING AWAY NATURAL RESOURCES

Nothing could more clearly demonstrate the folly of permitting the Government to part with the natural resources of the country than the experience the United States is now passing through. The Government of that country for many years seemed to be mainly engaged in giving the resources away for a mere song to private interests.

Every cent's worth of the natural advantages of that territory belonged once to the Government as represented by the people. Had they been conserved as they should have been, they would have been owned by the Government to-day, and those who wished to exercise their industry in taking the raw products from the earth and finishing them and selling them to their customers would be doing so just as they are to-day—but the Government, instead of particular individuals, would be receiving the annual value or rental of the resource itself. The revenue from this would be greater than the United States Government ever enjoyed. But because private ownership of a common heritage has been permitted, the annual value goes to private pockets, and the Government must resort to iniquitous methods, such as imposing income taxes and taxes on the industry of the citizens at large, in order to raise its revenues.

Canada still has much of her natural resources. She can no longer sin in ignorance, with the United States going through the agonies of a readjustment of economic relations right before her very eyes. But in Canada as in other countries each citizen is looking after himself. If you or I can see a chance of grabbing a timber area or an iron or coal area or a waterfall we will undoubtedly do it if the others will let us. So long as they, the plums, are available, and we have a chance to get them we would

be fit for the asylum if we did not take them. Hence, we cannot object if someone else gets them. There is nothing to be done, consequently, but to fix it that neither we nor anyone else may get them. In the interests of all and as a most important measure for the protection of the present as well as of the future, the sale of the natural resources of whatever nature of the country must stop finally and for ever.—*Toronto Saturday Night.*

VIEWS OF MEMBERS.

There has been an unusual amount of correspondence of late and the tenor of it indicates a steady growth in forest conservation sentiment throughout the country. A few extracts are appended.

From an Ontario Senator

I have read with a great deal of pleasure of the meeting held in Winnipeg, during the summer. . . I read about the Manitoba timber, and I trust that the Association may go on to even greater things in the future.

From a Lady Member

You may be sure we are interested in the work being done by you and we wish you the best of success in it.

From a Montreal Manufacturer

I am pleased to notice the good work your Association is doing. It is certainly a very necessary one in Canada at the present time.

From a Winnipegger

Enclosed herewith find \$1 annual fee for membership in the C. F. A. You have my warmest sympathy in the work, and I will do what I can to forward this very important development in the wealth of our great heritage.

The Dominion Forestry Branch

Past, Present and Prospective Developments.

When, in 1900, the Honourable Clifford Sifton, then Minister of the Interior, asked for a grant of \$15,000 to establish a Forestry Branch, the proposal met with considerable opposition in the House. It was an experiment, the success of which was doubted. But from the very start the Branch amply justified its existence, and each succeeding year has seen an amplification of its activities. In the short period of thirteen years a forest fire protection system has been developed, which, measured by results, is second to none on the continent; forest surveys have been carried on, which have revealed the previously unknown timber resources of the Canadian West, and have secured the setting aside of thirty-six thousand square miles of Dominion forest reserves; a Tree-planting Division has been built up, which annually distributes more trees for prairie planting than any similar agency in America, and, exclusive of the annual Branch Reports, over forty comprehensive bulletins have been published, containing information on Canada's forest resources and the industries dependant thereon, of acknowledged value to layman, lumberman and forester alike.

The year of 1913 was marked by the greatest progress in the history of the Forestry Branch, due, in large measure, to the appropriation for forestry purposes being increased to \$541,720, almost double that of 1912. This permitted a large increase in the personnel, which had a summer strength in 1913 of over 400, of whom 27 were technical foresters. It also made possible the carrying out of proposed improvements, the extension of fire-patrol, and the developments of new phases of forestry work. 'Perhaps the most outstanding feature of the development of Dominion Forestry work recently,' as pointed out by Mr. R. H. Campbell, the Director of Forestry, 'has been the consolidation of the forest reserve administration on a well organized basis, and with a fair proportion of scientifically-trained foresters, with the result that it will be increasingly possible to apply good forestry methods in the handling of the timber and other resources of the reserves. This is a development made possible by the fact that technical training in forestry is now being provided by some of the colleges in Canada, and when this is supplemented by ranger schools, in which the forest rangers

can also be given special instruction, it should not be long before the Dominion Forest Service will be as well organized an institution as in any other country which has reached the same stage of development.'

Mr. Finlayson, Chief Fire Inspector, refers to this 'distinct improvement in organization and administration' as the chief reason for the remarkably low loss from forest fires on Dominion forest reserves and fire-districts in 1913. On the Rocky Mountains Forest Reserve, which has an area larger than that of all the reserves in Ontario combined, the total value of the mature timber reported destroyed by fire was only \$150. Even in the fire-districts, where the fire-rangers were unaided by lookout-towers, telephone lines, trails, fire-guards and other fire-fighting facilities found on the Reserves, the fire loss was the lowest on record. It is true that rains were frequent, but so were also fires. In one district in the Railway Belt of British Columbia, 110 fires occurred during the three summer months, yet owing to the alertness of the patrol, all were extinguished before any damage was done to standing timber. It is probable, when complete records are available, that the area burnt by forest fires, and consisting principally of natural meadows and cut-over land, will not exceed one-fiftieth of one per cent. of the total area of Dominion forest lands under protection, a result even better than that attained by the United States Forest Service, which also had the most successful fire season in its history.

In the summer of 1913 the Dominion Forestry Branch had eleven survey parties in the field, and over 15,203 square miles of wooded country were examined, at an average cost of only eighty-nine cents a square mile. The technical foresters in charge of these parties are qualified to report not only on the forest conditions, but also on the geology and character of the soil in the regions examined, and if the latter is clearly unsuited for agriculture the area is recommended to be reserved in order that the young trees may be better protected from fire, which, in the last fifty years, has destroyed over half the original stand of timber on the area examined by the Branch. This area comprises about 25% of a belt from Lake 150 miles wide, stretching from Lake

Winnipeg to the British Columbia boundary. In the Railway Belt practically all of the Coast District and the Dry Belt has also been examined by Dominion foresters.

Approximately three million trees were distributed in 1913 by Dominion Forestry Nursery Station at Indian Head, making a total of twenty-four million trees furnished by it to the settlers on the western prairies. The trees chiefly planted are green ash, Manitoba maple, cottonwood, willow and Russian poplar; and of the conifers, spruce, larch and pine. In 1901 only four acres were devoted to tree-culture at Indian Head. Sixty-seven acres are now required, and there has been such an increase in the demands for trees that a branch nursery was established in 1913 at Saskatoon, which will take a share in the distribution of tree seedlings this coming spring. Smaller nurseries have also been developed on some of the reserves to provide trees for reforestation. The Spruce Woods nursery now contains over 200,000 seedlings and transplants. Conifers are preferred for planting on reserves, and to secure seed for this purpose the rangers, last summer, collected over 100 bushels of cones.

But although the development of field forestry has been rapid, other branches of the work have not been neglected. The administrative and office staff at the Branch headquarters in Ottawa now numbers forty, of whom eight are technically trained foresters. These latter are engaged in administrative work, in the accumulating of statistics concerning the lumber and allied industries, in the draughting of forest maps from field reports, and in the preparation and editing of Branch Bulletins, circulars and newspaper articles designed to stimulate public interest in practical forestry. The head office library now contains 1,300 books on Forestry and allied subjects, and in America is second only to the library of the United States Forest Service. Forty-five periodicals are subscribed for, not including forestry publications received in exchange from all over the globe. There are also 5,000 good negatives now on file in the library, which are available to public speakers and journalists for illustration of lectures, or press articles on forestry topics. Statistical information for similar use is also furnished free. Not the least important branch of head-office work is the keeping of a cost record of improvement work. This, in the words of Mr. Dwight, who is in charge of the Administration Office, 'is now a valuable source of information in regard to the expenditures of money and rangers' services, and the progress of the actual work on the various projects under construction.' This is sound business tactics, which many disparagers of forestry practice would do

well to emulate.

The scientific side of forestry is also being developed at the Forest Products Laboratories recently established by the Forestry Branch at McGill University. Mr. A. G. McIntyre, the Superintendent, has already found employment for two assistants in the work of investigating the physical properties and possible new uses of Canadian woods. The results obtained will be extremely valuable to pulp and paper manufacturers, and to contractors and builders who seek cheaper native substitutes for expensive imported woods.

The tendency is for government forestry to become more and more self-supporting as time progresses. It has long been so in British India, where forestry practice is highly developed; it is rapidly becoming so in the United States in spite of an annual expenditure of over 4½ million dollars for forestry purposes, it will soon be so in Canada in spite of the fact that the revenue from Dominion Forest Reserves for the fiscal year ending March 31, 1913, barely exceeded \$23,000, derived principally from the disposal of small amounts of timber to settlers and miners. But since the passage, in 1913, of the new Forest Reserve Regulations, permitting the grazing of stock to the full capacity of these reserves, a very important new source of revenue has been provided. The revenue from grazing on the National Forests of the United States last year amounted to over one million dollars. On Dominion Forest Reserves four million cattle, at the minimum charge of twenty-five cents a head, would produce a similar annual revenue, and the forest reserves should ultimately provide range for the number.

The present revenue from Dominion timber lands under licence now approximates one-half million dollars, but although a considerable portion of these timber limits are within forest reserves, the revenue is at present handled by another branch of the Department of the Interior.

Other natural resources are exhaustible; the forests can be rendered permanently productive; other resources are valuable for themselves alone; on the maintenance of the forests depends the perpetuation of Canadian game, and also all industries relying for their existence on a continuous water supply, which the forests alone can adequately regulate.

G. E. B.

Authorities agree that at least 60 per cent. of the tree as it stands in the forest is wasted in converting it into lumber, and that 25 per cent. of the trees remain in the forests to rot or be destroyed in forest fires.

With the Forest Engineers.

(Contributed by the Canadian Society of Forest Engineers.)

The Secretary announces the election of the following new members:—

Active.—Whiting Alden, E. H. Finlayson, S. S. Sadler.

Associate.—L. R. Andrews, F. G. Edgar, R. M. Brown, M. A. Grainger, R. G. Lewis, B. R. Morton, J. W. Ottestad, W. L. Scandrett, L. C. Tilt, C. McFayden.

Ottawa Forestry Club.

At a meeting held at the offices of the Forestry Branch on January 21st, the forest engineers of Ottawa formally organized the Ottawa Forestry Club, and elected the following officers:—

President, R. H. Campbell.

Vice-president, Clyde Leavitt.

Sec.-Treas., R. G. Lewis.

The Club is intended to bring the members into closer and better acquaintance with one another, and to aid in the study and discussion of forestry problems. The exact nature of its relation to the Canadian Society of Forest Engineers has not been formally settled, but it will be considered by the members as practically a branch of the Society.

The membership is not to be confined to professional foresters, but a class of members, for whom the name of 'local associates' has been suggested, will be admitted, consisting of those who, though without the regular forestry training, have some direct interest in forestry questions. The office of president of the Club, however, is restricted to members of the Canadian Society of Forest Engineers. Local associates, however, have all the other privileges of the Club, except that of voting on business directly concerning the C. S. F. E.

Meetings will be held at least once a month, from October to April (inclusive), and otherwise as determined on by the committee of management (i.e. the officers of the Club). The meetings will frequently take the form made so familiar by the Canadian Club gatherings, viz., a luncheon followed by a speech, or paper, or the discussion of some topic stated beforehand.

The finances will be managed by an assessment system.

Owing to the crowded state of the *Canadian Forestry Journal's* columns this month, a number of items have had to be held over till the February issue.

THE SPREADING OF THE BLUFFS.

By John Leggat, Foxwarren, Man.

As the writer has lived for a number of years among the bluffs of Northwestern Manitoba, it might be interesting to your readers on the great treeless prairies to hear something of how Nature strives to reforest these districts when prairie fires are held under control. Northwestern Manitoba comprises the Riding Mountains and the country which lies between the mountains and the Assiniboine river to the south. The mountains are low hills of about two or three hundred feet in height and covered with spruce and poplar with numerous small lakes and hay swamps in the valleys. The Little Saskatchewan, Bird Tail and Shell Rivers, which are tributaries of the Assiniboine, take their rise in the mountains and flow southward. This tract of country between the mountains and the Assiniboine river is now all dotted over with poplar bluffs or groves, many of which have grown up since these lands were homesteaded and prairie fires held under better control; especially is this so of the odd numbered sections which were vacant for a number of years.

The reason why we find the poplar and willow spreading over the prairie is that the seed-bud comes on the tree in May, a little ahead of the leaf, and by the end of the month, when the leaf is formed, the seed-buds burst, and the little seeds which are imbedded among the woolly down contained in the seedbuds are carried across the prairie with the breeze like the thistle. In this natural way many districts of the prairie have become reforested and partly wooded. Along the main line of the C.P.R., between Medicine Hat and Calgary, young poplars were observed which had taken root in the moist soil of the railway ditches, the seeds of which would probably be carried from the bush along the banks of the Bow River a few miles to the south.

When we find that nature has provided the seeds of the poplar to spread over the prairie like the thistle, it must be in harmony with Nature for the farmer to reforest these fertile prairies, which no doubt have been denuded of trees and tree growth prevented by the prairie fires which must have swept the country before the advent of the settlers. The fact of coal underlying much of these prairies is an indication, we believe, that the country was at one time

wooded; and the farmer who cultivates a few acres of trees in the form of wind-breaks and shelter belts will be in harmony with nature and enhance the picturesque beauty of the landscape, the value of which will increase with age. In Northwestern Manitoba since these bluffs increased and grew up there have been no dry seasons to amount to anything, the fields are sheltered and the influence of a hot wind, blizzard or dust storm is nothing compared with what these are on the treeless prairies.

The experimental farm at Indian Head is an object lesson for the farmers of the great prairies to copy, and now that mixed farming is preferred, everyone knows the benefit of shade and shelter for stock, and as such a valuable heritage has passed into the hands of the people, without conditions of tree planting, and as there is no clearing to do, the farmer should be more anxious to take advantage of the free distribution of trees by the government and improve the beauty and increase the value of the surroundings. The C. P. R. is also giving valuable prizes for best wind-breaks and shelter belts for lands purchased from the company, and providing one half of the trees free of cost. These wind-breaks and shelter belts might be referred to as representing the wisdom and genius of the great prairies.

WHY PLANT A TREE?

Why plant a tree? Because the birds
That 'trance the listening air,
May nest among the rippling leaves
And sing your praises there.

Why plant a tree? Because the beasts,
As seasons come and go.
May shelter underneath the boughs
And there mute thanks bestow.

Why plant a tree? Because you may,
As aging years invade,
Eat of its fruit, admire its form,
Or rest beneath its shade.

Why plant a tree? Because your son,
And his son's son again,
For this alone in future years
May rise and bless your name.

OTTAWA RIVER CONSERVATION.

This is the first fall that the two conservation dams of the Upper Ottawa have been working to their full capacity and consequently there will be a great deal of interest particularly among power owners concerning the effect these dams will have on the volume of water available at the

Chaudiere. So far it would seem that these dams are very effective in holding back the water for the low water seasons. This has been a very dry season and consequently the amount of water coming down to the Chaudiere would be expected to be very much reduced. However, it has held up remarkably well. At the very low water period a few years ago there were only 7,000 cubic feet of water per second flowing at the Chaudiere, while now the flow is about 24,000 cubic feet, or over three times as much. The two dams, at Kippewa and at Timiskaming, are both in operation this year. They hold back the water in the wet seasons and let it out in the dry seasons in order to keep the level of the river more nearly uniform all year. Then they begin about November to store up water again from the fall rains and let it out during the winter. The Government is now building a third dam at Lake Quinze, which is farther up and will increase the storage capacity considerably. To give an idea of the vast amount of water these dams conserve, it is equal to a body of water with an area of 4,000 square miles and a depth of one foot. Besides making the water higher in the low water periods it will to a certain extent relieve the floods of the spring by holding back the water. The work has been conducted by the Dominion Government and will cost about \$1,000,000.—*Canadian Engineer.*

TREE SEED NOTES.

The crop of seeds harvested this season will be about the same as in past years. Some kinds of trees are again producing a good crop of seeds, while others are a failure.

The *Acer saccharinum*, sugar maple, has not produced any seed whatever this year, the entire crop having been blasted before maturing. *Larix Americana* is also a failure. A good crop of cones set last spring but the collectors found upon gathering them that the contents were of poor quality. The seeds did not test over five per cent. of good germinating quality.

Abies balsamea seed is also a total failure, none of the collectors being able to obtain a single pound of this seed.

American collectors report an abundance of 1913 crop of *Pinus strobus*, white pine, and they state that it is of the highest germinating quality. Here is a chance for nurserymen and foresters to replenish their stock of this fine lumber tree. Collectors also report a good crop of *Pseudotsuga Douglassi*, green variety, and state that the quality is very fine. *Pinus Banksiana* is also producing a good crop. *Pinus Palustris* is now being extracted from the cones and there seems to be a good supply.—*National Nurseryman.*

CANADIAN FORESTRY ASSOCIATION.

The Canadian Forestry Association is the organization in Canada for the propagation of the principles of forest conservation. This it does by means of conventions, meetings, lectures and literature.

It is a popular organization supported by the fees of members, assisted by some government grants.

There is a vast field of work before the Association which is only limited by the funds at the disposal of the Association.

Those who are not already members are invited to join and assist in the work. The membership fee is one dollar per year, and this entitles the member to attend and vote at all meetings and to receive the Annual Report and the *Canadian Forestry Journal*. Women as well as men are eligible for membership.

Applications for membership and requests for literature and information may be addressed to

The Secretary,
Canadian Forestry Association,
Canadian Building, Ottawa, Can.

OBJECTS OF THE ASSOCIATION.

- (1) The exploration of the public domain, so that lands unsuitable for agriculture may be reserved for timber production.
- (2) The preservation of the forests for

their influence on climate, soil and water supply.

(3) The promotion of judicious methods in dealing with forests and woodlands.

(4) Tree planting on the plains and on streets and highways.

(5) Reforestation where advisable.

(6) The collection and dissemination of information bearing on the forestry problem in general.

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