

**REPORT OF THE DIRECTOR OF
FORESTRY. 7-8 EDWARD VII.
SESSIONAL PAPER NO. 25.
A. 1908. PART IX FORESTRY**

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Forestry by Various

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PART IX
FORESTRY



FORESTRY.

REPORT OF THE SUPERINTENDENT OF FORESTRY.

DEPARTMENT OF THE INTERIOR,

OTTAWA, July 10, 1907.

W. W. CORY, Esq.,
Deputy Minister of the Interior,
Ottawa.

SIR,—I have the honour to submit the annual report on forestry and other matters under my control, accompanied by the reports of other officials in charge of special divisions. The reports presented for last year covered the work of last summer, both in fire ranging and tree planting, and consequently there is but little additional to report in regard to these services.

My appointment to the office of Superintendent of Forestry dated from March 1, last, on the resignation of Mr. E. Stewart, and, therefore, the report on forestry is mainly a review of Mr. Stewart's work. It seems a fitting occasion to sketch the development of the branch which he has initiated and organized. When Mr. Stewart assumed office in 1899, nothing had been done by the Dominion to organize a fire preventive service. To this work he first addressed himself, and developed it from year to year, till during the past season there were 52 fire rangers acting on Dominion territory, and the testimonies to the efficiency and value of the service are numerous and widespread. The co-operative tree planting scheme was begun in 1901, and since that time 8,471,092 trees have been distributed to 3,328 settlers. During the first year the distribution was 50,280, and for the present year will be 1,925,185 trees. Forest reserves aggregating an area of 3,450,720 acres have been set apart and established by statutory authority, and a timber survey has been completed on two of the reserves and is being continued on others, with the purpose of laying out scientific plans of management. This short *résumé* shows that Mr. Stewart has, in a few years, established a work of far-reaching importance to the future of the Dominion in which he may feel a just pride.

It is also regretted that Mr. Roland D. Craig, Inspector of Forest Reserves, and Mr. H. C. Wallin have resigned from the service to accept more remunerative positions elsewhere. Both were well equipped technical officers and their removal means a serious loss to the service. It emphasizes the necessity for making the government service sufficiently attractive to qualified men to insure permanency in the staff and a sustained development in policy and administration.

The office work and correspondence have largely increased as a result of the growth of the business of the branch, and it will be necessary to provide an adequate clerical staff to keep it in proper order.

The timber survey of the Riding Mountain reserve was continued during the past year, and it is hoped that the larger part of it will be completed this season, making possible the formulation of working plans for cutting the timber so as to remove only the annual product, and provide for the renewal of the forest.

By order in council of December 29, 1906, copy of which is attached, regulations were established for the cutting of timber in the Riding Mountain, Duck Mountain and Porcupine Hills reserves. These regulations, in accordance with the object for which the reserves are set apart, provide for the cutting of timber by settlers for their own use, the further restriction being made that those obtaining permits must reside within fifty miles of the reserve. The object of this latter provision is to con-

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fine the privilege of cutting timber to those who can make beneficial use of it, and to prevent, as far as possible, the obtaining of permits for purely commercial purposes. The dues provided for under these regulations are so adjusted as to encourage the removal of the dead timber and the less valuable species, and to preserve the most valuable. General regulations for all the forest reserves are now being considered.

During the past year an inspection was made of most of the forest reserves to ascertain the settlers located on them, and it is proposed to make an effort to induce them to remove therefrom so that the reserves may be kept intact and their administration made more feasible.

For the proper administration of the reserves it will be necessary to enlarge the staff and perfect the organization. Temporary fire rangers in the summer and unskilled assistance in the winter must give place to a permanent staff of qualified forest rangers if the purposes for which the reserves are established are to be properly carried out. The reserves have suffered severely from fire and must be guarded carefully. With such protection and technically qualified officers to make timber surveys and lay out working plans, the organization will be complete.

TIMBER.

The administration of the timber lands outside of the forest reserves, and of the grazing lands formerly conducted directly by myself has been placed under charge of Mr. B. L. York, under my superintendency, and his report thereon will be found under No. 23 of Part I, Dominion Lands.

The number of timber berths granted during the past year was 49, totalling an area of 410.8 square miles, and the amount received on account of bonuses was \$226,380.45, being an average of \$511 per square mile. It is satisfactory to note that recent sales of timber are yielding much larger average prices than have been received at any previous time.

The present method of disposing of timber is, however, not a satisfactory one. The department has, as a rule, little or no knowledge of the timber of which it disposes, and as the quantity now in private hands is fully adequate to meet present needs, no detrimental result would follow the holding of timber lands until government inspectors can examine and estimate the timber, so that an adequate upset price may be fixed before any berth is put up to competition.

The recent rapid development of the lumber business has largely increased the work of the timber administration, and to cope adequately with the situation will necessitate considerable strengthening of the staff generally, especially in the outside service.

The necessity for fuller knowledge of the timbered districts is emphasized continually by the experience of the department, and it would be a proper policy for the department to obtain directly more adequate information in this respect. The inquiry made by a committee of the Senate during the past session showed that the natural resources of the northern districts of the west are greater than the public had any idea of, but the evidence would be much increased in value if direct means were taken by the government to obtain information in regard to these districts, and, as a result, the administration of the timber therein could be more intelligently carried out.

The most important change in the timber regulations made during the past year was the provision for granting not more than one square mile of timber to the owners of small mills without competition at the rate of \$100 for each permit in addition to regular dues. The object of this provision was to furnish a supply of lumber to settlers in districts where it could not be obtained conveniently. It is intended to cover special circumstances where timber is specially and locally required. This provision appears to be working out satisfactorily and to be serving the object for which it was established.

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GRAZING.

The grazing regulations, established in 1905, have been sufficiently long in operation to show that they are working satisfactorily and, as the numerous applications which accumulated while the regulations were suspended have now been dealt with, it is confidently expected that no serious difficulty will be found in the further administration of the grazing lands.

IRRIGATION.

The construction of irrigation works in Southern Alberta and Saskatchewan continues steadily. The portions of the provinces referred to have been used in the past mainly for ranching purposes, operations being conducted on a large scale. With the influx of population and the necessity of feeding cattle during the winter, which was particularly emphasized during the past season, ranches are being reduced in size, and the irrigation of a few acres makes possible smaller holdings with an increase in the number of stock that can be carried. Irrigation will be found an important adjunct to the stock industry. At Raymond, in the province of Alberta, the beet sugar industry has been successful, with the assistance of irrigation. Many more profitable crops may be grown, and in regard to this, experiment is desirable.

An adequate and properly equipped agricultural experiment station could obtain a great deal of useful information in regard to the possibilities of irrigation, and the government would be fully justified in giving such a station generous support. The duty of water for different soils and crops, the crops that can be grown most profitably, the length of the irrigation season and methods of applying water, the prevention of loss by seepage and evaporation, and many other questions of great importance could be worked out experimentally at such a station.

There are some large projects under construction or operation at the present time, namely, those of the Alberta Railway and Irrigation Company, the Canadian Pacific Railway Company and the Robins Irrigation Company. By the construction of large and expensive works these projects will make available for irrigation purposes sources of water supply which could not be developed by the individual with small resources.

Irrigation will be a large and important factor in the development of this part of the west, and the staff of the irrigation office and the means at their disposal should be made sufficient to adequately investigate the water supply and the methods of its utilization and to deal with the large interests that are involved.

During the past season special attention has been given to the gauging of the streams and the inspection of projects under construction, as will be seen by the report of the Commissioner of Irrigation.

Respectfully submitted.

R. H. CAMPBELL.

APPENDIX No. 1.

CANADIAN IRRIGATION SURVEYS.

REPORT OF JOHN STEWART, D.L.S., C.E., COMMISSIONER AND CHIEF
ENGINEER OF IRRIGATION.DEPARTMENT OF THE INTERIOR,
CALGARY, ALBERTA, April 5, 1907.

In the spring of 1906, I sent three engineering parties into the field, one in charge of Mr. J. F. Hamilton, C.E., to gauge all large rivers and streams and establish gauge rods. During the season Mr. Hamilton gauged some 56 streams all told, and established 12 gauge rods in the large streams as follows: Bow river above the C.P.R. headgates. Fish creek at the L. E. railway crossing. Sheep river at railway crossing. Highwood river at traffic bridge. Willow creek at the railway crossing. Oldman river, below the railway crossing. Pincher creek at Pincher. Watertown river, section 20, township 5, range 27, west 4th meridian. Belly river, section 13, township 3, range 26, west 4th meridian. Watertown river at lakes, section 8, township 2, range 29, west 4th meridian. St. Mary's river above Alberta Railway and Irrigation Company's headgates. On all the above gaugings a careful cross-section was made.

The second party was in charge of Mr. P. M. Sauder, with instructions to inspect and report on all the various irrigation schemes which had been authorized and not completed in Southern Alberta, also to gauge all the small streams and make any surveys required by parties purchasing land under the Irrigation Act. Under those instructions Mr. Sauder made 85 inspections and reported on same to this office, and five surveys of land in connection with applications to purchase under the Irrigation Act, and gauged 34 streams.

The third party was in charge of Mr. R. J. Burley, with instructions to inspect and report on all the irrigation schemes authorized and not completed in Saskatchewan, also to gauge all small streams and make any surveys that would be required of lands sold under the Irrigation Act. Under those instructions Mr. Burley inspected 121 irrigation schemes and reported to this office. He also made 23 surveys of lands in connection with applications to purchase under the Irrigation Act, and took gaugings of 17 small streams until the current meter he had went out of order.

During the summer of 1906 I inspected the homestead and irrigation scheme of A. B. & E. Ward, at Kamloops, B.C., also a dry lake for W. W. Nichols, on section 23, township 26, range 2, west of the 2nd meridian, near Yorkton, and in December I inspected a portion of the irrigation scheme of F. P. Aylwin, as far as Arrowood creek, but owing to depth of snow I had to abandon the survey, which I had completed in February last by Mr. J. F. Hamilton, C.E.

During the past season I inspected the works of the Alberta Railway and Irrigation Company, twice, with reference to their expenditure on enlargement and extensions of their works.

With reference to the inside work of this office, since July 1, 1906, there have been 984 communications received, and 2,163 sent out, as well as 43 applications for water rights (in duplicate), 263 agreements for the supply and use of water (in quadruplicate), and some 136 gauge rod readings. There have also been some 20 right of way plans examined and compared, and recorded.

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For the coming season it is intended to carry out practically the same programme of work in the field as last year and have three parties employed on the same class of work and covering the same territory.

JOHN STEWART,

Commissioner and Chief Engineer of Irrigation.

APPENDIX No. 2.

REPORT OF NORMAN M. ROSS, ASSISTANT SUPERINTENDENT OF FORESTRY.

DEPARTMENT OF THE INTERIOR,
OTTAWA, April 3, 1907.

R. H. CAMPBELL, Esq.,
Superintendent of Forestry,
Ottawa, Ont.

SIR,—I have the honour to submit my seventh annual report, dating from June 26, 1906.

With the exception of about two months, from December 23, 1906, to March 2, 1907, which time was spent in the office at Ottawa, I have remained at Indian Head conducting the nursery and general tree planting works in the west.

From June until the ground froze up in November, weather conditions were very favourable for tree growth and general nursery work. There was but little rain during the fall, and all new growth had an opportunity to become well matured before winter set in. A heavy fall of snow occurred early in November, which formed a good protection over all the smaller stock and in the new plantations. Throughout the winter the snow fall has been very heavy, and although the weather has been exceptionally severe very little, if any, damage from winter killing is apparent at the present date. Considerable damage has, however, been done by rabbits. This is general throughout the west, judging from reports received from widely separated points. Some men report that their cottonwoods and ash have been very badly cut back and girdled, but the elm is the worst sufferer. In the nursery the cottonwood and ash have not been touched, but the elm is completely cut down, European larch very badly damaged, and the top shoots and terminal buds of Scotch pine nipped off wherever they projected from the snow. The native larch, with the exception of one or two trees, has escaped entirely. Some shrubs, especially *spirea van houttei* and *spirea arguta*, were cut clean to the snow line; *rosa rugosa* bushes were badly nipped and of several fine cut-leaf birch only the stumps remain. As far as the broad leaf varieties are concerned the results are not likely to be serious, but the young conifers will, I am afraid, be very badly misshapen, owing to the loss of the main shoots, and will take some time to recover a good growth. The native white spruce was not touched and the young stock in the transplanting beds was well protected by deep drifts of snow so that it has not suffered.

It is possible, owing to the great amount of snow, that some damage may result from snow break in the various plantations throughout the country, but up to the present we have not had any reports to that effect.

In my last report I have given the names of the inspectors employed during the summer and the districts in which they worked. The reports received from them are as usual very favourable. In Southern Alberta about as far north as Olds, on the