PROVINCE OF BRITISH COLUMBIA

REPORT

OF

THE FOREST BRANCH

OF THE

DEPARTMENT OF LANDS

HON. T. D. PATTULLO, *Minister*

P. Z. CAVERHILL, *Chief Forester*

FOR THE YEAR ENDED DECEMBER 31ST

1926

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1927.

VICTORIA, B.C., February 12th, 1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

Herewith I beg respectfully to submit the Annual Report of the Forest Branch of the Department of Lands for the year 1926.

T. D. PATTULLO,

Minister of Lands.

The Hon. T. D. Pattullo,

Minister of Lands, Victoria, B.C.

SIR,—There is submitted herewith the Annual Report on activities of the Branch during the calendar year 1926.

P. Z. CAVERHILL,

Chief Forester.

A 96-year-old hemlock stand in good site. Average D.B.H., 13.5 inches; average height, 120 feet; 272 trees per acre. Note regularity of size and height. Total volume, 14,600 cubic feet per acre. Volume of trees over 7-inch D.B.H. to a 5-inch top, 13,600 cubic feet. Volume present utilization of trees 14-inch D.B.H. and over, 43,700 F.B.M.

REPORT OF THE FOREST BRANCH,

DEPARTMENT OF LANDS.

The year 1926 was one of quiet progress in forestry-work in British Columbia. In production and shipments new records were made. New pulp and paper units were opened, which increased the production 22 per cent. The total scale of forest products increased 11.7 per cent. and reached a new high point at 2,918,119 M. If we add to this, material cut for local use on farms, for fuel, etc., the total drain on our forest is now approximately 675,000 cubic feet.

The fire situation again became acute, especially in the Southern Interior District, where the dry weather was accentuated by the frequent occurrence of dry lightning-storms, causing no less than 557 fires. It is encouraging, however, to be able to state that losses were $1,000,000 less than a year ago. Fire-fighting expenses were reduced by $100,000, and 76 per cent. of the fires were controlled in incipient stages, as against 70 per cent. in 1925.

New forest reserves were created and a considerable programme of development-work was undertaken, including stock-taking, building of lookout towers, trails, and telephone-lines for protection. Forest revenue was maintained and shows a slight increase.

In extra-provincial affairs the World's Conference at Rome marked a new milestone in forestry progress. One very important step was accomplished by the creation of an International Bureau for gathering and disseminating forestry statistics. Forest products are world commodities, and no country or province can be sufficient within itself. Therefore it is most important that reliable statistics be gathered on world consumption, sources of supply, and the probable future. To date no such statistics are available and the figures secured by different countries are not comparable, due to different degrees of utilization and methods of cutting. It will be the work of the Bureau to co-ordinate statistics and ascertain what the real case is.

Taken as a whole, then, 1926 has marked considerable progress, the one discordant note being the price received for lumber, which again showed a decline without a corresponding reduction in cost. This situation is not healthy, and again I would urge that it needs the careful thought of every person interested in the future of British Columbia's premier industry.

PROVINCIAL FORESTS.

During the year 1,286,000 acres were added to Provincial forests by the reservation of the Babine and Sonora Island areas.

The Babine Provincial Forest is situated north of the Canadian National Railways between Smithers and Fraser Lake, and between Babine Lake on the north-east and the Bulkley settlements on the south-west. It covers a rough, hilly section, unsuited for agricultural development, but already producing annually considerable quantities of railway-ties, the cutting of which provides seasonal employment for many of the local settlers and a ready local market for the produce of their farms. The creation of this reserve is a first step towards regulating the cut and ensuring a perpetual supply of raw material for this local industry.

The Sonora Provincial Forest covers the island of the same name situated off the Coast, 150 miles north-west of Vancouver. It has an area of 60 square miles. Formerly the scene of considerable logging, much of the merchantable timber is removed. There still remains, however, 455,000 M. feet of mature timber and many areas of valuable second-growth and reproduction, which will form the basis for future supplies by the time our mature stands are exhausted.

Stock-taking surveys of Provincial forests were continued. The object of these surveys is to ascertain the acreage of productive forest land; the quantity of merchantable timber; the acreage and condition of young stands; topography and other factors affecting protection and development; existing and possible industries for each forest. The Grizzly Hills, Aberdeen, Hardwicke Island, Sonora Island, the Thurlow Islands, and part of the Babine Forest were examined this year.

The Grizzly Hills and Aberdeen Forests lie on the Okanagan watershed east of Vernon, and it is from these that much of the water for irrigation of the adjacent farming sections is derived. The Grizzly Hills Forest covers 580 square miles, of which 22 per cent. contains stands of commercial size, including yellow pine, Douglas fir, larch, spruce, balsam, and lodgepole pine. Fifty per cent. is young growth, of which 80 per cent. is pure lodgepole pine and 20 per cent. mixed young growth, including spruce, balsam, larch, and fir. The non-productive area is 167 square miles, or 28 per cent. Estimates on Aberdeen are now in course of compilation.

The Provincial forests on the four Coast islands, Hardwicke, Sonora, and the Thurlows, include 97,000 acres, of which 52 per cent. is timbered and estimated to contain 1,000,000,000 feet of mature timber; 23 per cent., or 22,000 acres, are fully stocked young stands; on 14 per cent. the stocking is not yet complete; and 11 per cent. is non-productive, barren, or scrub land.

Of 909 square miles of the Babine Forest examined, 800 were found to be commercially productive. Merchantable tie or pulp stands cover 320 square miles, though not all of this is accessible for present utilization; 280 square miles carry thriving young stands; and 200 square miles, though productive, are not yet satisfactorily restocked after fires, one of which occurred in 1922. Cruises on the area are not compiled at present, but preliminary estimates place the stand of ties in excess of 15,000,000 pieces. In addition, there are some 2,000,000 cords of pulp material, mostly spruce.

Improvement Programme on Forest Reserves.—Six standard lookouts, situated as follows: Sonora Forest, 1; Yahk Forest, 2; Little White Mountain Forest, 1; Inkaneep Forest, 1; and Aberdeen Forest, 1, were constructed during the year. Trails to the extent of 88½ miles were constructed or rebuilt, also 37 miles of telephone-line. The total cost of these improvements was $17,337.76. Equipment for forest-protection placed on reserves, consisting of one launch, three power-pumps, hose, tools, and camp equipment, cost $6,103.03.

LUMBER TRADE EXTENSION.

Educational work in relation to British Columbian woods was continued in the Eastern Canadian market. A special folder, printed in French, was prepared for the benefit of architects and builders in Quebec Province. Work in the schools was undertaken to give the scholars a knowledge of our woods and their quality. This work met with instant success, and for a time the demand for samples and literature was greater than could be supplied.

The Lumber Commissioner was able to render valuable assistance to the British Columbia Consolidated Shingle Manufacturers' Association in regard to quality tests of its products, which were carried out in Eastern Canada.

The exhibit at the Canadian National Exhibition was rearranged and brought up to date. This display again attracted a great deal of attention and was instrumental in introducing British Columbian woods to thousands of people, each of whom uses, in some form, forest products.

WATER-BORNE TRADE.

The water-borne trade reached 712,743 M. feet, board measure, a very substantial increase over 1925 and a new high record in this line. The Atlantic still remains our chief market for water-borne lumber, but during the year Japan purchased 177,193 M., which was 164 per cent. over last year and more than any preceding year.

In reviewing the figures on purchases of timber supplied to the various countries in relation to the total purchases on the Pacific Coast, they appear satisfactory except for Australia. The demands of the Australian market increased during the year by 13 per cent., but the total purchased in British Columbia was 10 per cent. less than in the previous year.

WATER-BORNE LUMBER TRADE, 1921–26.

Destination.	1921.	1922.	1923.	1924.	1925.	1926.
	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.	Feet B.M.
Australia	27,275,928	55,949,129	78,003,422	34,848,783	40,228,887	36,809,373
New Zealand	4,553,603	4,516,862	11,252,890	12,169,230	12,619,730	16,201,328
South America	1,317,825	3,244,776	717,600	752,906	2,168,921	1,160,947
China	41,944,011	24,640,268	36,398,234	25,595,993	10,783,086	4,615,921
Japan	52,447,160	72,339,531	105,916,915	79,107,984	67,671,449	177,193,559
United Kingdom and Continent	13,592,562	12,698,383	16,201,290	41,527,008	53,845,679	41,575,593
South Africa	2,931,909	2,415,500	8,221,032	10,681,208	8,875,544	17,651,788
India and Straits Settlements	8,429,403	7,249,487	4,803,236	2,228,150	3,359,869	1,653,675
United States	25,553,543	83,856,504	248,611,600	313,104,821	361,016,940	400,347,692
Philippine and Hawaiian Islands	1,158,805	94,764	4,361,139	134,690	56,863	221,378
West Indies and Cuba	20,668	30,065	994,341	544,604	667,012	8,792,765
South Sea Islands	941,422	1,841,578	3,665,241	3,454,183	2,610,143	3,791,670
Mexico	.....	.....	677,756	... ...	....	....
Egypt	8,566,400	4,269,953	1,705,394	6,883,150	12,820,848	2,573,529
Foreign, unclassified	.....	.....	177,041	229,608	835,317	154,038
Totals	188,733,299	273,146,800	521,707,132	531,262,318	577,560,288	712,743,256

THE INDUSTRY.

The value of the industry is estimated at $84,802,000. The increase is largely due to increase in volume, the price being, if anything, lower than in 1925.

ESTIMATED VALUE OF PRODUCTION.

Product.	1921.	1922.	1923.	1924.	1925.	1926.
Lumber	$33,533,000	$26,400,000	$47,600,000	$41,800,000	$41,350,000	$42,516,000
Pulp and paper	13,500,000	12,590,000	15,018,000	13,938,000	14,466,000	16,315,000
Shingles	7,032,000	9,750,000	9,869,000	10,000,000	10,000,000	10,500,000
Boxes	2,000,000	1,726,000	2,072,000	2,272,000	2,200,000	3,000,000
Piles, poles, and mine-props	1,479,000	959,000	2,200,000	2,100,000	2,400,000	2,792,000
Cordwood, fence-posts, and mine-ties	1,180,000	1,187,000	1,500,000	1,400,000	1,800,000	1,414,000
Ties, railway	2,314,000	1,526,000	1,715,000	2,242,000	1,990,000	1,420,000
Additional value contributed by the wood-using industry	2,034,000	2,000,000	2,000,000	2,100,000	2,100,000	2,100,000
Laths and other miscellaneous products	250,000	400,000	500,000	550,000	1,617,000	1,500,000
Logs exported	1,648,000	2,939,000	4,200,000	4,300,000	3,870,000	3,170,000
Pulpwood exported	.....	.....	.....	.....	148,000	75,000
Totals	$64,970,000	$59,477,000	$86,674,000	$80,702,000	$81,941,000	$84,802,000

PULP AND PAPER.

The year witnessed considerable activity in pulp and paper. A new paper-machine was opened at Powell River, increasing the capacity there to 450 tons daily. The old Beaver Cove Pulp and Paper Company was reorganized under "The Canadian Forest Products Company" and new plans were laid for future development. Many inquiries were received and some investigations carried out with regard to development of new projects. The production of pulp and paper is shown below.

PULP.

Pulp.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sulphite	80,347	92,299	68,502	86,894	99,878	89,839	92,514	108,381
Sulphate	9,473	16,380	6,519	9,674	9,932	14,403	16,856	15,000
Ground wood	99,769	108,665	89,725	100,759	107,266	112,001	121,363	136,123

PAPER.

Product.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Newsprint	123,607	136,832	110,176	124,639	142,928	136,281	148,201	176,924
Other papers	7,202	9,792	6,934	7,945	7,709	9,653	9,261	10,389

ORGANIZATION AND PERSONNEL.

No important changes occurred in organization. The Assistant Grazing Commissioners were assigned to the two districts, Cariboo and Southern Interior, where the grazing is chiefly centred. The Ranger staff was increased by four and additional men were placed on the temporary cruising staff to take care of the heavy volume of cruising-work.

Late in the season one Assistant Forester was employed and assigned to the study of the waste-products problem. In general it may be stated that the work is constantly increasing and demanding an ever-increasing staff, if proper inspection of field operations is to be undertaken and the work done in a businesslike and satisfactory manner. Our staff is very limited in comparison with other Government services administering adjacent areas.

The following table gives a classification of personnel:—

DISTRIBUTION OF FORCE, 1926.

Forest District.	PERMANENT.													TEMPORARY.				
	Chief Forester, Assistant Chief Forester, and Foresters.	Grazing Commissioner and Assistants.	Lumber Commissioners and Assistants.	District Foresters.	Supervisors of Scalers and Assistants.	Scalers and Assistant Scalers.	Asst. Foresters, Asst. Dist. Foresters, and Junior Foresters.	Inspectors, Railway, Royalty, and Mechanical.	Supervisor of Rangers and Fire Inspectors.	Rangers.	Draughtsmen.	Clerks, Stenographers, and Messengers.	Wireless Telephone Operators.	Assistant Rangers.	Patrolmen, Lookout-men, and Dispatchers.	Launch Crews and Repairmen.	Cruisers, Compass-men and Packers, etc.	Total.
Cariboo	....	....	...	1	....	....	1	....	....	4	...	2	....	5	9	....	....	22
Kamloops	....	....	....	1	....	....	1	....	....	3	....	2	....	7	16	....	....	30
Prince George	....	....	....	1	1	....	1	...	....	6	1	3	....	10	11	....	....	34
Prince Rupert	....	....	....	1	....	4	1	....	2	7	....	8	....	6	6	6	....	41
Southern Interior	....	....	....	1	1	....	3	....	3	16	1	14	....	25	60	....	...	124
Vancouver	....	....	....	1	3	39	3	....	5	20	1	27	3	22	29	17	....	170
Victoria	3	1	..	....	....	....	9	3	....	....	8	35	....	....	....	....	61	120
Toronto	...	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Totals	3	1	2	6	5	43	19	3	10	56	11	91	3	75	131	23	61	543

INVESTIGATIONS.

(A.) COAST.

I. NATURAL REPRODUCTION STUDIES.

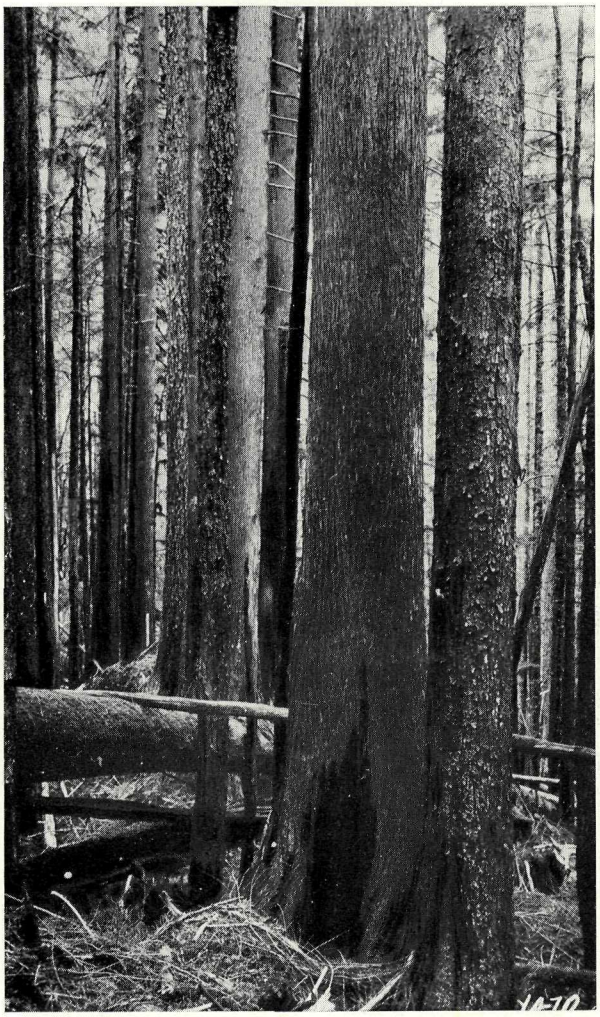
(*a.*) *Reproduction Surveys.*—No further work was done during the year, as it was felt that results already accomplished were sufficient for present needs, and that this work does not tend to solve basic problems in natural regeneration.

(*b.*) *History Maps.*—To secure data on the results of present conditions of the forest, maps have been prepared on ten representative areas of Coast timber, giving a complete record of logging, with date of each setting, and a record of subsequent happenings, such as slash-disposal, fire occurrence, regeneration, etc. By this method we will, in a few years, have definite information on the results of these occurrences in nature and the behaviour of these sites if left to chance.

(*c.*) *Seed Dissemination.*—Work was continued on this project, and the number of seed-traps increased to 100 portable, 6 by 4 feet, and 25 permanent, 6 by 12 feet or 6 by 36 feet. These are arranged at distances up to 80 chains from the parent tree, and observation maintained as to how many fertile seeds are caught in each and what this represents to the acre. During the current year hemlock was caught at 80 chains, cedar at 20, and Douglas fir at 10.

The following table shows the total amount of seed caught of all species up to November 5th, 1926. Owing to the presence of snow on the areas under study it was not possible to make examinations of these traps during the month of December.

	In Green Timber.	DISTANCE IN CHAINS FROM GREEN TIMBER.											
		2.	5.	10.	15.	20.	25.	30.	40.	50.	60.	70.	80.
Seeds caught	485	89	14	14	8	8	4	9	.	4	..	..	1
Viable seeds caught	105	22	4	7	1	3	1	..	..	2	..	..	1
Average viable seeds per acre	9,292	1,738	724	665	259	363	454	..	..	172	..	..	182



Mixed stand of cedar and hemlock. Age, 96 years; average D.B.H., 12.8 inches; average height, 111 feet; 305 trees per acre.

Union Bay. Reproduction ten years after logging, 2,500 per acre.

The preceding table detailed by species:—

	In Green Timber.	Distance in Chains from Green Timber.											
		2.	5.	10.	15.	20.	25.	30.	40.	50.	60.	70.	80.
Douglas fir:													
Seeds caught	90	..	6	5	..	1	..	..	..	..	..	..	..
Viable seeds caught	12	..	1	2	..	..	..	..	..	..	..	..	..
Average viable seeds per acre	1,062	..	181	190	..	..	..	..	..	..	..	..	..
Hemlock:													
Seeds caught	135	72	4	6	6	6	3	8	..	3	..	..	1
Viable seeds caught	9	14	2	3	1	2	1	..	..	2	..	..	1
Average viable seeds per acre	796	1,106	362	285	259	242	454	..	..	172	..	..	182
Cedar:													
Seeds caught	260	17	4	3	2	1	1	1	..	1	..	..	..
Viable seeds caught	84	8	1	2	..	1	..	..	..	..	..	..	..
Average viable seeds per acre	7,434	632	181	190	..	121	..	..	..	..	..	..	..

Seed production has undoubtedly a marked influence on the quantity of seed caught or the reproduction established in any year. For example, after the good seed-year of 1923 fifty Douglas fir seedlings per acre established in 1924 at 60 chains from the parent tree. In 1924 the Douglas fir seed-crop was a failure, and during 1925 and 1926 Douglas fir and hemlock seed-crops were very light, so that little or no new regeneration was found to follow these years. This variation in the seed-crop is to a great extent responsible for the diversity in the number of seeds caught and seedlings found from time to time.

In co-operation with the three western Forest Experiment Stations of the United States Forest Service further data will be secured on seed dissemination by releasing known quantities of seed at a given height and under ascertained wind velocity. The seed will then be collected at various points to ascertain how far and in what quantities they travel under known conditions.

(*d.*) *Seed Viability.*—The viability studies to determine how long seed would remain fertile when stored in duff were continued, and the first samples of seed were taken up and given a germination test. The results were negative. To supplement these tests and get further data on the stored-seed theory, 10 plots, 4 by 12 feet, were screened to keep out any wind-blown seed immediately after a burn, but still having duff up to 4 inches thick. The resultant germination, if any, will be solely due to seed stored in the duff.

(*e.*) *Seed Germination and Seedling Survival in Forest.*—In order to determine the effect on germination and survival of different forest seed-bed conditions, known quantities of Douglas fir, hemlock, and cedar seed were sown on sites representing the following conditions: Bare mineral soil; spring burn; light bracken cover—level; light bracken cover—steep north slope; light bracken cover—steep south slope; and 25, 50, and 75 per cent. shade.

Germination was low and a high mortality occurred, due to heat leisons, especially in Douglas fir, but further work must be done before any concrete results can be announced. Surface-soil temperatures were much higher than air temperature and varied with the seed-bed as follows, when air temperature was 83° F.:—

	Deg. F.
Level spring burn	145
30 per cent. southern slope, bracken	143
Level bare mineral soil	128
30 per cent. northern slope, bracken	108
Level light bracken	98

The highest soil temperature occurred on spring burns, and on these areas the highest mortality in seedlings was observed.

Studies in natural regeneration indicate that for satisfactory restocking we must have an abundant seed-supply and favourable seed-bed conditions. Dry hot years, such as have been experienced since 1924, are especially detrimental.

II. Artificial Reproduction.

(*a.*) *Nursery Practice.*—Ten nursery beds, 4 by 12 feet, were prepared and sown with Monterey pine, Sitka spruce, Douglas fir, cedar, hemlock, and some Japanese species. This stock is intended for experimental purposes. The Sitka spruce will be set out in areas which originally carried Douglas fir to determine the possibility of increasing the amount of spruce available for

use with hemlock in the manufacture of pulp. An additional area has been prepared, and next year more beds will be sown with Sitka spruce, Port Orford cedar, and redwood. The beds will be sown sparsely, as it is the intention to transfer the plants directly from the seed-beds to the field.

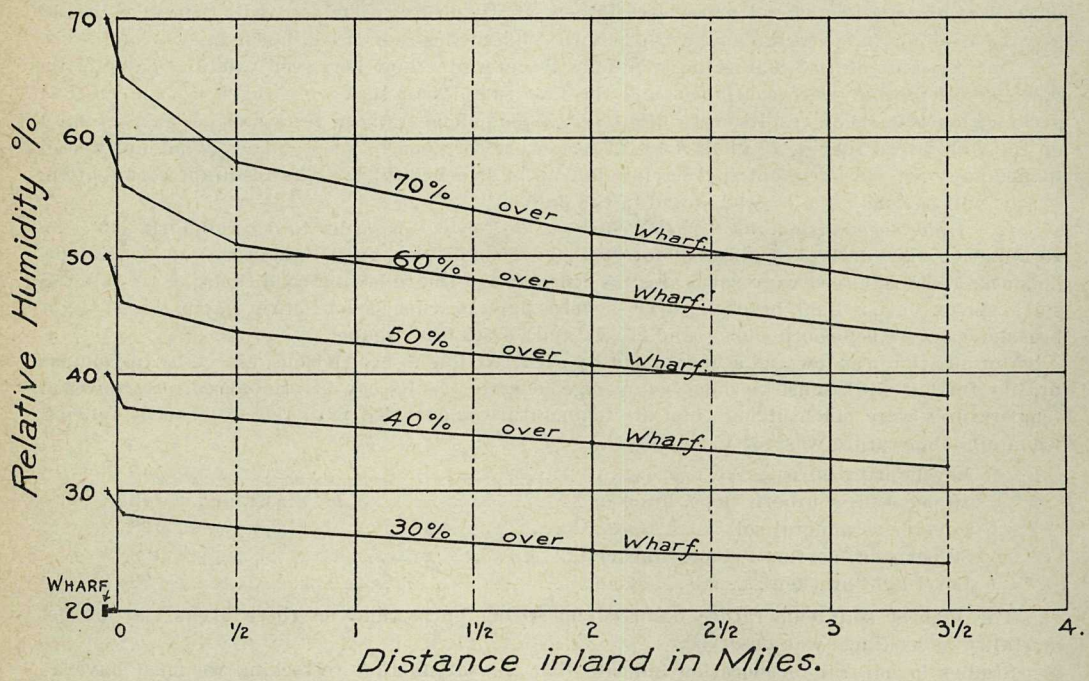
(*b.*) *Planting.*—The experimental fire-break started in 1925 was completed by planting an additional 6,000 alder. A small plantation of 500 redwood, secured from the nurseries of the University of Washington, was made in order to test this species under our climate. This species showed 87 per cent. survival at the close of the season.

III. YIELD.

Twelve permanent sample plots were established in Douglas fir and hemlock during the past summer. These will be measured from time to time over a series of years to determine the yield on the various sites with different density of growing stock.

IV. FIRE STUDIES.

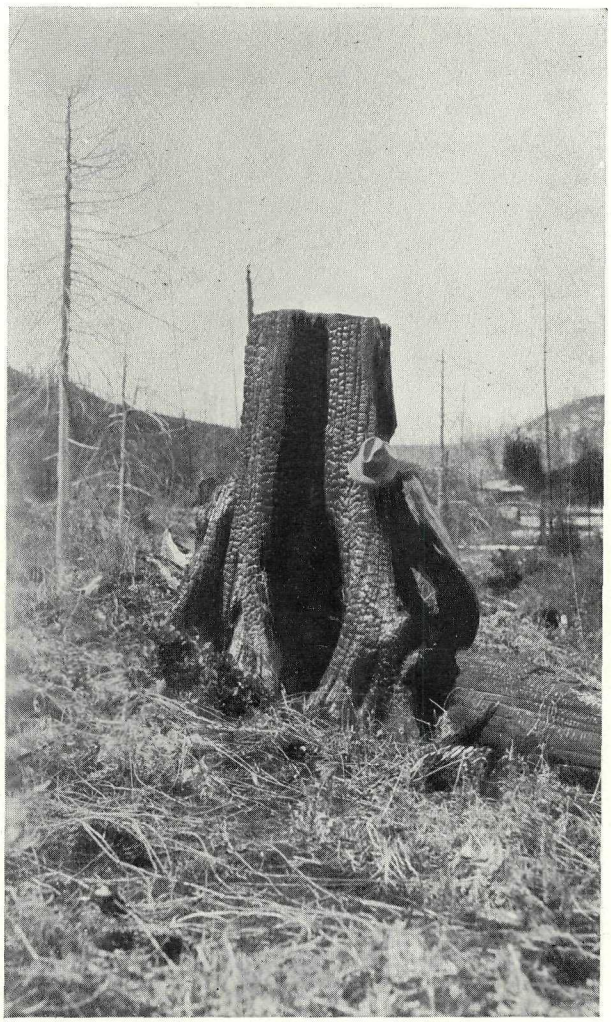
(*a.*) *Humidity.*—A project was started in 1925 and continued through 1926 to determine the variation in relative humidity due to topographic and soil-cover conditions, so that, if possible, readings made under one set of conditions might be interpreted to apply to another. In 1925 self-recording hygrographs were stationed in the open on cut-over lands as follows: Over a wharf; 30 yards from shore; one-half mile, 2 miles, and 3½ miles inland. This study showed that, when relative humidity was high at the Coast, there was a marked reduction as we proceeded inland. As the danger-point was approached, however, this difference was less marked. These changes are shown approximately in curves below.



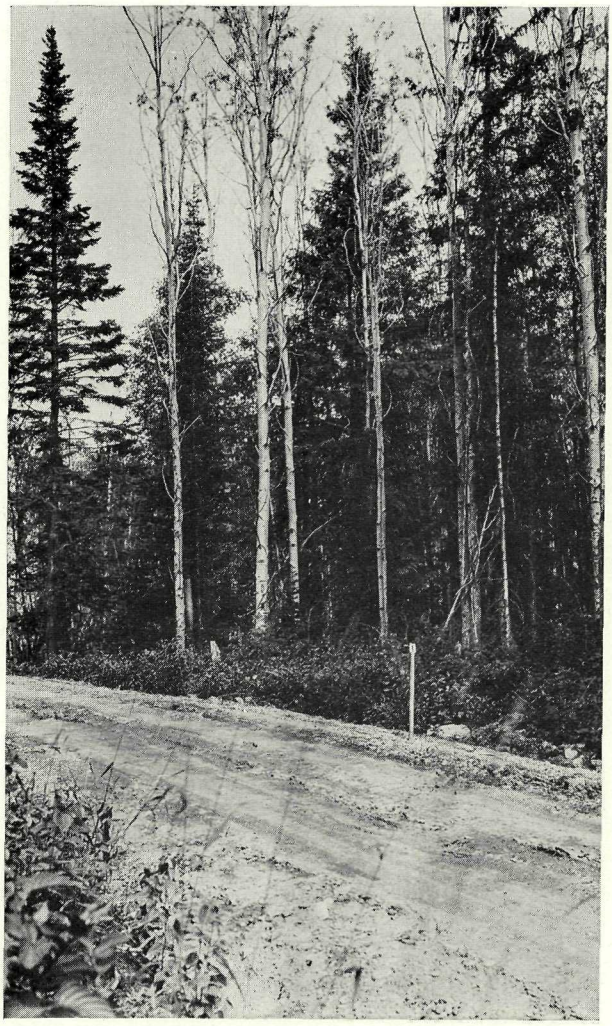
In compiling the above charts data were taken only for days when the humidity approached the hazard-point at some time during the day, and reached at least 40 per cent. on the instrument stationed 3½ miles from the water.

During the past season hygrographs were stationed to record the effect of aspect and cover, as follows:—

(*a.*) Cut-over lands—northern slope.
(*b.*) Cut-over lands—southern slope.
(*c.*) In reproduction 10 feet high.



Fir log 2 feet in diameter, quite sound and with pieces of original bark still in place, straddled by cedar 261 years old. Lot 917, Gordon Pasha Lakes.



The poplar in this stand seeded in after a fire which occurred in the spruce type about seventy years ago. A new crop of spruce has started under the poplar, and in a few years will have crowded it out and become completely re-established.

(*d.*) In reproduction 20 feet high—instrument in crowns 13 feet above ground.
(*e.*) Same as above, but instrument 1½ feet from ground and under crown canopy.
(*f.*) Under mature green forest.

Sufficient data were not secured to draw definite conclusions and the experiment will be continued next season. The information already secured indicates very little difference exists between northern and southern aspect, where slope is moderate. Where reproduction is established humidity increases and is highest under pole stands, where crown canopy is dense and relatively low. As the relative humidity approaches the hazard-point, however, these differences tend to equalize.

(*b.*) *Empirical Studies on the Behaviour and Control of Fires.*—Observations were made on five fires during the past summer, and records were made of the humidity, temperature, wind-velocity, type of forest fuels, topography, and rate of spread. The studies have not progressed sufficiently to present conclusive results, except that, on the Coast, humidity is the most important indicator of the behaviour of fires and that wind-velocity is a factor of less importance. The studies showed no correlation between relative humidity and wind-velocity. Fires appear to be in good shape so long as the humidity remains high, but when the humidity drops below 30 per cent. these same fires frequently go out of control. Approximately 35 per cent. appears to be the danger-point.

(*c.*) *Fire Occurrence.*—Studies in fire occurrence, due to the dropping of matches, cigarettes, and other lighted substances, were undertaken. Results to date indicate that dropped matches are a more prolific cause of fire than cigarette-stubs. Of the latter, the ready-made variety is the more hazardous. Further laboratory tests, where humidity and other factors can be controlled, are now in hand and should give valuable data on this problem.

(B.) CENTRAL INTERIOR.

I. NATURAL REPRODUCTION STUDIES.

(*a.*) *Reproduction Survey after Fires.*—This study was undertaken to secure accurate information of the nature and amount of natural reproduction after forest fires in the spruce forests, which occupy such large areas in the region east of Prince George. During 1926 a number of burned areas were examined by test-strips, having an aggregate length of approximately 1,000 chains (12½ miles), and 17 sample plots were established. It has not been possible to compile the statistics in time for the printing of this report, but the investigations of the past summer indicate that the fires which have swept through extensive areas of the spruce type occurred principally between 1855 and 1915. While most of the burned areas again bear a forest-cover, the process of natural reproduction has been slow, and the young stands are inferior in quality to the original forests which existed in the same localities. In most cases spruce was originally replaced by poplar (*Populus tremuloides* and *P. trichocarpa*), but it is encouraging that in many places fine stands of young spruce are being established by natural seeding under these nurse species. Many of the poplar stands are surprisingly heavy, and with better economic conditions in future years will be valuable as pulp-wood.

(*b.*) *Factors affecting Reproduction in the Spruce-Balsam Type.*—Throughout the spruce forests of the Northern Interior natural reproduction is abundant under the mature timber, but this young growth is almost entirely balsam (*Abies lasiocarpa*), a species at present of little value and so susceptible to attacks of fungus-disease that it is unlikely to become a desired tree in the future. A study of the factors responsible for these conditions has been undertaken, with the object of developing a basis for forest management whereby in the future a greater proportion of spruce regeneration may be obtained. This study will require several years for completion.

Twelve permanent sample plots were established in 1926, on which all tree-growth was measured and classified; on each plot portions of the soil were artificially treated, to determine the effect of root competition and seed-bed conditions upon young seedlings. These plots are to be under observation through several growing seasons.

(*c.*) *The Reproduction and Growth in Spruce-Balsam Forests after Logging.*—The object of this study is to determine the number of seedlings and small trees which are left after logging operations, and their rate of growth when they have been released from the suppressing influence of the parent stand. The information secured will serve as a basis for the management of

cut-over areas, and will also indicate whether artificial methods of reforestation will be necessary to keep such forest land productive.

The study was started in 1926 and will be continued for several years. Four permanent plots were established. The preliminary figures from these plots are as follows:—

Number of Trees per Acre.

(Seven Years after Logging in a Typical Spruce Forest at Aleza Lake, B.C.)

Trees established per Acre.	Spruce.	Balsam.	Birch.
Prior to logging	130	620	20
Since logging	120	780	770
Totals	250	1,400	790

These figures are encouraging; they indicate that after logging there is a healthy reproduction produced naturally. However, further investigations are necessary to determine if this new stand, composed largely of balsam, will remain healthy, and if the proportion of spruce, the valuable species, is likely to increase in the future. The tremendous increase in birch is an interesting factor for consideration, and, in addition, continued study will have to be made over a period of years to determine the time required for this young stand to produce a second cut of saw-timber or pulp-wood.

II. Brush-disposal in the Spruce-Balsam Type.

Proper disposal of slash after logging in the spruce forests of the Interior is essential in securing adequate protection against fire, and this study has been undertaken to determine the relative costs of the various methods of brush-disposal that have been proposed for this region, together with their effects upon logging costs, fire hazard, and the establishment and development of second growth. This study is being made in a special timber-sale on the experiment forest at Aleza Lake. In this sale the five following methods of brush-disposal are being carried out on sample plots:—

(*a.*) Piling and burning concurrently at the time of logging.
(*b.*) Piling at the time of logging and burning later.
(*c.*) Leaving the brush in unburned piles.
(*d.*) Lopping and scattering.
(*e.*) Lopping only.

The cost of each method is being determined on these plots, and the experiment will be repeated each year, with modifications which may appear advisable, as long as may be desirable. The various plots will be kept under observation after logging, to note the effect of each method of disposal upon natural reproduction and the reduction of fire hazard.

III. Mensuration—Tables of Volume and Yield.

During the year the following tables have been prepared:—

(*a.*) Volume table, in board-feet, based on total height, for spruce in the Northern Interior.
(*b.*) Volume tables, in cubic feet, for merchantable and total contents, based on total height, for lodgepole pine throughout the Interior.
(*c.*) Volume table, in board-feet, based on total height, for balsam in the Northern Interior.
(*d.*) Normal yield table for lodgepole pine in the Northern Interior. (In course of preparation.)

Lodgepole Pine—Volume in Merchantable Cubic Feet, Interior of British Columbia.

(Volume Table in Cubic Feet to a Top Diameter inside Bark of 3 Inches with a Stump 1 Foot high.)

D.B.H.	Height in Feet.										D.B.H.	Average Total Height.	Average Volume.
	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.			
	Contents in Cubic Feet.												
6	3.75	4.72	5.70	6.68	7.66	8.65	.....	.....	.....	.....	6	53.5	5.06
7	5.19	6.55	7.91	9.27	10.62	11.98	13.35	.....	.....	.....	7	60.0	7.91
8	6.79	8.57	10.36	12.12	13.92	15.68	17.47	.....	.....	.....	8	66.3	11.42
9	8.51	10.77	13.03	15.27	17.50	19.74	21.92	.....	.....	.....	9	72.3	15.78
10	10.37	13.13	15.89	18.64	21.37	24.08	26.75	29.42	.....	.....	10	77.3	20.63
11	12.36	15.65	18.93	22.21	25.47	28.72	31.92	35 13	.....	.....	11	81.7	26.02
12	.....	18.29	22.13	25.97	29.78	33.59	37.36	41.12	44.88	.....	12	85.3	31.80
13	.....	21.09	25.53	29.95	34.37	38.76	43.14	47.50	51.85	.....	13	88.3	38.01
14	.....	23.94	28.98	34.01	39.03	44.03	49.02	53.99	58.95	63.88	14	91.0	44.53
15	.....	26.84	32.48	38.12	43.75	49.37	54.97	60.65	66.41	72.13	15	93.0	51.05
16	.....	.....	35.97	42.22	48.46	54.70	60.93	67.13	73.33	79.49	16	95.0	57.81
17	.....	.....	39.21	46.04	52.84	59.66	66.46	73.24	80.02	86.77	17	96.6	64.15
18	.....	.....	41.76	49.04	56.31	63 57	70.84	78.09	85.32	92.56	18	98.2	69.53
19	.....	.....	.....	51.77	59.46	67.15	74.84	82.50	90.17	97.80	19	100.0	74 84
20	.....	.....	.....	54.18	62.25	70.31	78 37	86 43	94.48	102.50	20	102.0	79.98
21	.....	.....	.....	56.30	64 70	73.10	81.60	90.00	98.40	106.80	21	104.0	84.96
22	.....	.....	.....	.....	66.90	75.60	84.30	93.00	101.70	110.40	22	106.0	89.50

Engelmann Spruce—Volume Table for the Northern Interior of British Columbia.

D.B.H.	Total Height in Feet.													Average Top D.I.B.	Average Merch. Length.	Average Total Height.	Average Volume.	No. of Trees.
	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.					
	Contents—Board Feet.																	
8	15	21	29	39	52	.....	.....	.....	.....	.....	.....	.....	.....	6.0	23	57	27	15
9	17	26	36	48	65	.....	.....	.....	.....	.....	.....	.....	.....	6.1	31	63	43	20
10	20	32	45	59	78	103	133	175	.....	.....	.....	.....	.....	6.1	38	70	62	41
11	24	39	55	72	91	117	147	190	.....	.....	.....	.....	.....	6.2	45	76	85	52
12	28	48	66	85	105	132	162	206	260	350	.....	.....	.....	6.3	51	82	112	63
13	33	59	79	99	121	148	180	225	280	370	.....	.....	.....	6.4	56	88	144	72
14	38	71	94	115	138	166	199	245	300	400	500	.....	.....	6.5	61	91	178	71
15	.....	85	109	132	157	187	220	270	330	430	530	.....	.....	6.6	65	95	215	84
16	.....	103	126	151	177	210	245	295	360	460	570	670	780	6.7	68	98	252	84
17	.....	.....	144	172	201	235	270	320	390	490	610	710	820	6.7	71	101	292	66
18	.....	.....	165	196	226	260	300	350	420	530	650	750	860	6.8	74	104	330	63
19	.....	.....	190	224	254	290	330	380	450	570	690	800	910	6.9	75	106	370	58
20	.....	.....	.....	254	284	320	360	410	490	610	730	850	960	7.0	78	108	405	30
21	.....	.....	.....	288	316	350	390	450	530	650	780	900	1,010	7.1	79	110	445	27
22	.....	.....	.....	325	352	380	430	490	570	700	830	950	1,070	7.2	81	112	485	21
23	.....	.....	.....	366	391	420	470	530	620	750	880	1,010	1,130	7.3	83	113	535	19
24	.....	.....	.....	.....	435	460	510	580	670	800	940	1,070	1,200	7.3	86	115	585	19
25	.....	.....	.....	.....	.....	510	560	630	720	860	1,000	1,130	1,270	7.4	88	116	650	13
26	.....	.....	.....	.....	.....	560	610	680	780	930	1,070	1,200	1,340	7.5	90	117	730	11
27	.....	.....	.....	.....	.....	620	670	740	840	1,000	1,140	1,270	1,420	7.6	92	118	810	6
28	.....	.....	.....	.....	.....	680	730	800	910	1,070	1,210	1,350	1,500	7.7	94	119	900	5
29	.....	.....	.....	.....	.....	740	800	870	990	1,150	1,290	1,430	1,580	7.8	96	121	1,000	2
30	.....	.....	.....	.....	.....	810	870	950	1,070	1,230	1,380	1,520	1,670	7.8	98	122	1,100	3
31	.....	.....	.....	.....	.....	.....	940	1,040	1,160	1,320	1,470	1,620	1,770	7.9	100	123	1,210	2
32	.....	.....	.....	.....	.....	.....	1,020	1,140	1,260	1,420	1,570	1,730	1,880	8.0	102	124	1,320	3
33	.....	.....	.....	.....	.....	.....	1,110	1,250	1,370	1,530	1,680	1,850	2,000	8.1	104	125	1,440	1
34	.....	.....	.....	.....	.....	.....	1,210	1,370	1,490	1,650	1,800	1,980	2,130	8.2	106	126	1,580	.....
35	.....	.....	.....	.....	.....	.....	1,320	1,500	1,620	1,780	1,930	2,120	2,270	8.3	108	127	1,730	.....
36	.....	.....	.....	.....	.....	.....	1,440	1,640	1,760	1,920	2,070	2,270	2,420	8.4	110	128	1,900	.....
No. of trees.	2	17	38	64	127	171	178	156	61	28	5	3	1	.....	.....	.....	.....	851

NOTE.—Values outside heavy lines based on insufficient data.

IV. THE GROWTH IN STANDS OF LODGEPOLE PINE AFTER SELECTIVE CUTTING FOR TIES.

The cutting of lodgepole pine railway-ties is the principal forest industry throughout large areas of the Northern Interior, especially along the Canadian National Railway between Prince George and Hazelton. In most of the stands where ties are cut only a few of the trees are large enough to be utilized, and a study has been undertaken to determine the effect of the removal of the larger trees upon those which are left and to find the time required for these smaller trees to grow to merchantable size for ties. In this investigation eight sample plots were established during 1926 in typical tie operations in the vicinity of Prince George. It is expected that the analysis of the data secured from these plots will yield preliminary figures of the desired information and future measurements of the plots over a period of years will furnish more accurate figures. Additional plots will be established during 1927 and subsequent years.

GENERAL—ALEZA LAKE DEMONSTRATION FOREST.

The development of this forest has formed an important part of the investigative programme for the year. The forest was reserved for experimental purposes in 1924; it comprises 6,100 acres of mature spruce-balsam timber and 200 acres of cut-over land, and is situated near Aleza Lake, on the Canadian National Railway, in the heart of the spruce region.

The forest is used during the summer as a headquarters for research-work throughout the Central Interior, and also provides field conditions for most of the investigations dealing with the spruce types. When the information obtained in the various studies is sufficiently complete to form a basis for experimental silvicultural cutting, these will be made in the forest itself.

It is planned to operate the demonstration forest on a basis of sustained yield under intensive forestry practice as a means of demonstrating to owners and operators of forest land the advantages, economic and communal, which accrue from the application of sound forestry practice. As far as possible, the annual cuttings in the demonstration forest will be experimental in nature, thus combining in a single operation the investigative and illustrative phases of the work. The first logging is being carried out during the winter of 1926–27.

Certain necessary improvements have been constructed in the forest. During 1926 the system of trails for fire-protection was extended and certain mapping-work completed. The Experiment Station road and grounds were improved and a second building erected for the field staff.

RECONNAISSANCE.

As a result of an application by a prospective pulp company, an examination was made of Crown areas on the west coast of Vancouver Island between Nootka and Barkley Sounds. Of the 69,000 acres covered in this cruise, only 5,000 acres were found to contain commercial timber, estimated at 133,440 M. feet, board measure. Some 2,000 acres were found to have soil of agricultural value, but the cost of clearing and the isolation render settlement impracticable and, at present, undesirable.

A cruise was made on Graham Island of 60,000 acres, covering the headwaters of Yakoun River. The area was found to contain 1,168,000 M. feet, board measure, of spruce, hemlock, and cedar. This area has been offered for sale as a pulp licence and will probably be sold in the near future.

LAND CLASSIFICATION.

A classification survey was carried out along the south-western boundary of the Babine Forest to determine what sections were chiefly valuable for forest and what had agricultural value, special consideration being given to soil characteristics and fertility. Approximately 90,000 acres were covered in the survey, of which one-half was found suitable for agricultural development and the balance better suited for forest-crops. Five thousand acres carried stands of commercial timber, 75,000 acres were in process of restocking, and 10,000 acres were recent burn, where reproduction was not yet established. The forest for the most part is of the lodgepole-pine type.

The best agricultural section was situated between Rose and Burns Lakes, where 6,000 acres were shown to be good farm land. The agricultural value was arrived at through the preparation of soil-type maps, contour and cover maps. The soil maps will be an aid to prospective settlers looking for locations in this vicinity and may be supplemented by data on soil-analysis.

A classification survey was made for purposes of land settlement in the Prince George District, covering 100,000 acres. Of this area, 40,000 acres were found to carry statutory timber, containing a total stand of 590,000 M. feet, board measure, and 48,000 acres were found suitable for agricultural development, but will require considerable clearing.

Miscellaneous areas reported on for purposes of land settlement under the "Land Act" are shown in the following tables:—

AREAS EXAMINED FOR MISCELLANEOUS PURPOSES OF "LAND ACT."

Forest District.	Applications for Crown Grants.		Applications for Grazing and Hay Leases.		Applications for Pre-emption Records.		Applications to Purchase.		Miscellaneous.	
	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.
Cariboo	2	227	29	4,512	62	8,860	46	6,507	38	6,080
Fort George	..	.....	1	80	47	6,832	32	4,810	91	116,277
Kamloops	..	.....	..	.....	7	1,120	9	1,018	2	45
Prince Rupert	5	726	..	.....	35	5,273	19	4,131	58	5,319
Southern Interior	3	204	2	312	18	2,115	61	9,688	224	74,144
Vancouver	3	410	..	.....	18	1,461	40	4,281	152	63,500
Totals	13	1,567	32	4,904	187	25,661	207	30,435	565	265,365

CLASSIFICATION OF AREAS EXAMINED IN 1926.

Forest District.	Total Area.	Agricultural Land.	Non-agricultural Land.	Merchantable Timber Land.	Estimate of Timber on Merchantable Timber Land.
	Acres.	Acres.	Acres.	Acres.	M.B.M.
Cariboo	26,186	3,118	23,068	1,280	13,341
Fort George	127,999	65,918	62,081	40,723	609,031
Kamloops	2,183	580	1,603	.....	.....
Prince Rupert	15,449	4,562	10,887	1,827	20,302
Southern Interior	86,463	4,460	82,003	4,149	35,777
Vancouver	69,652	5,896	63,756	2,125	58,822
Totals	327,932	84,534	243,398	50,104	737,273

TAXATION VALUATION SURVEY.

The Forest Branch undertook valuation cruises for the Taxation Branch for the first time during the year 1926, and covered 24,937 acres of Crown-granted land in the Prince George District and 6,940 acres in the Alberni District. In the Prince George area 12,964 acres were found to be timber land, and in the Alberni District 1,633 acres were so classified.

FOREST ENTOMOLOGY.

Control-work on bark-beetles in the yellow pine south of Merritt was continued in the spring of 1926. A total of 3,358 yellow pine and lodgepole pine trees were cut and the bark burned at an average cost of $2.46 per tree.

The large infested areas of yellow pine in the region to which our control measures are being restricted, lying between Merritt and Canyon House east of the Coldwater River, have all been worked over. However, the recleaning of some of these areas, together with the treatment of small scattered infestations, will probably require the disposal of 3,000 trees next season.

Kelowna Watershed.—Insect-control in the lodgepole pine on this watershed may be considered as more or less of an experiment. This beetle (*Dendroctonus monticola*) has destroyed large areas of lodgepole pine south of the boundary-line in the United States and there are also several large infestations in this Province. The forest entomologists are still uncertain of the practicability of attempting to hold it in check in those sections where conditions are most favourable for its spread. It does, however, appear advisable to investigate the possibilities of control of this insect, owing to the extent of our lodgepole pine areas and the growing importance of this species.

It was anticipated last year that a large number of trees would require treatment in 1926, and nearly 10,000 were disposed of this season at an average cost of 72 cents per tree. While it is a little too early to draw definite conclusions on the practicability of attempting control-work

on other areas, indications are that, as far as this particular area is concerned, the control-work has materially assisted in checking the epidemic, and a much smaller number of trees will require treatment in 1927.

The fact that this area lies on a watershed of great importance to the fruit industry warrants a special study of this insect-control problem.

Other Infestations.—Every year more attention is being given by forest authorities to the part played by insects in the life of our forests. and they are beginning to appreciate the necessity of watching all incipient infestations and of being prepared to institute control measures, if practicable, for those which show signs of becoming epidemic. These measures, to be effective, should be preceded by a thorough study of the life-habits of the insects concerned.

During 1926 several species of destructive insects have been under the special observation of Mr. Ralph Hopping and his assistants, of the Entomological Bureau of the Dominion Government.

The spruce bud-worm, which was so much in evidence in the Quesnel Lake region in 1924 and almost entirely disappeared in 1925, became again more prominent in 1926. Several small infestations in the Douglas fir on Vancouver Island were also reported this year and examined. While these Western infestations of spruce bud-worm have not yet become serious, the devastations of this insect in the Eastern Provinces emphasize the necessity of carefully watching the situation here.

A study has been made of the life-history of the flathead borer (*Trachykele blondeli*) and the damage caused by it to the cedar on the Lower Coast between Sechelt and Toba Inlets. The report has not yet been published by the Dominion Entomological Branch.

During the past couple of years various rumours have been received of serious damage to valuable stands of Sitka spruce on the Queen Charlotte Islands. Mr. Hopping made a personal investigation of the epidemic and identified the insect as an aphis (*Myzaphis abietina*). While the appearance of the spruce stands seemed to indicate that large numbers of trees were dying, a close examination showed that the insect was working mostly on the older needles, and the younger needles and buds were seldom attacked. Little damage may be expected unless the epidemic continues for several years and increases in intensity. The few records possessed by entomologists of other infestations by this insect indicate that the above inference is correct, and epidemics usually die down before causing serious damage.

LOG SCALING.

The cut for the year, as shown by the scaling returns, increased to 2,918,119 M. feet, board measure, which does not include fuel nor the material cut for rural use on farms, etc. For this material returns are not received, but it is estimated at approximately 250,000 M. feet. This makes a grand total of 3,168,119 M. feet, as the total drain on our forest resources, 82 per cent. of which is of sawlog quality. Douglas fir represents 42 per cent. of the total cut, and this species shared to a greater extent in this year's expansion than any other. Cedar showed a falling-off due to a disrupted market and prevailing low prices. The cut of yellow pine and larch is also a reduction over last year's, while the reduction in the number of ties cut is reflected largely in lodgepole pine.

TIMBER SCALED IN BRITISH COLUMBIA IN 1926. (BY MONTHS AND DISTRICTS.)

		Cariboo.	Kamloops.	Fort George.	Southern Interior.	Prince Rupert.	Vancouver.	Total, F.B.M.	Total Lineal Feet.	Total Cords.	Total Hewn Ties.
January	F.B.M.	.....	219,158	4,389,427	9,253,799	4,607,608	163,147,444	181,617,436	.....	.....	.....
"	lineal ft.	.....	34,050	15,520	499,253	26,775	508,104	.....	1,083,702	.....	.....
"	cords	1,287	140	245	4,067	1,389	9,463	.....	.....	16,591	.....
"	hewn ties	55	.....	36,269	317,967	23,011	7,962	.....	.....	.....	385,264
February	F.B.M.	338,696	5,231,477	4,491,346	5,213,990	3,393,194	156,976,000	175,644,703	.....	.....	.....
"	lineal ft.	.....	841,340	20,790	435,146	40,460	92,136	.....	1,429,872	.....	.....
"	cords	57	828	242	6,542	484	7,820	.....	.....	15,973	.....
"	hewn ties	7,562	.....	132,884	56,793	1,760	1,000	.....	.....	.....	199,999
March	F.B.M.	94,702	119,487	5,924,837	6,493,725	4,490,612	207,077,047	224,200,410	.....	.....	.....
"	lineal ft.	1,956	9,575	22,145	360,801	43,789	527,163	.....	965,429	.....	.....
"	cords	61	64	506	2,971	161	10,308	.....	.....	14,071	.....
"	hewn ties	11,445	16,734	26,412	92,581	68,464	11,519	.....	.....	.....	227,155
April	F.B.M.	356,617	594,736	7,085,787	12,879,430	6,797,313	200,000,544	227,714,427	.....	.....	.....
"	lineal ft.	2,250	25,030	21,920	595,451	99,164	598,596	.....	1,342,411	.....	.....
"	cords	73	46	111	3,235	395	14,032	.....	.....	17,892	.....
"	hewn ties	24,443	520	129,185	65,177	85,935	35,419	.....	.....	.....	340,679
May	F.B.M.	459,346	326,456	11,857,306	17,910,375	11,346,234	216,395,555	258,295,272	.....	.....	.....
"	lineal ft.	.....	35,606	62,725	576,122	141,289	797,656	.....	1,613,398	.....	.....
"	cords	18	24	73	2,786	931	14,372	.....	.....	18,204	.....
"	hewn ties	23,866	17,704	81,803	80,143	101,837	1,788	.....	.....	.....	307,141
June	F.B.M.	326,530	195,507	7,898,278	32,074,310	15,333,690	201,616,678	257,444,993	.....	.....	.....
"	lineal ft.	.....	64,391	29,475	713,361	121,076	1,145,461	.....	2,073,764	.....	.....
"	cords	287	46	177	2,254	528	14,954	.....	.....	18,246	.....
"	hewn ties	10,901	14,418	63,079	108,339	47,300	9,629	.....	.....	.....	253,666
July	F.B.M.	215,782	12,137,731	10,437,694	29,132,197	13,205,871	160,129,214	225,258,489	.....	.....	.....
"	lineal ft.	.....	578,552	78,410	534,851	17,401	1,294,255	.....	2,503,469	.....	.....
"	cords	1,428	1,767	103	3,974	2,212	16,571	.....	.....	26,055	.....
"	hewn ties	3,722	18,435	11,731	95,683	112,804	7,818	.....	.....	.....	250,193
August	F.B.M.	89,899	9,245,695	9,718,508	15,264,757	12,954,410	153,899,187	201,172,456	.....	.....	.....
"	lineal ft.	.....	613,591	39,450	603,226	473,438	1,167,935	.....	2,897,640	.....	.....
"	cords	214	1,314	16	1,641	898	11,450	.....	.....	15,533	.....
"	hewn ties	418	17,134	9,527	149,841	89,366	10,056	.....	.....	.....	276,342
September	F.B.M.	22,506	308,388	12,121,887	19,671,076	17,879,944	140,341,180	190,344,981	.....	.....	.....
"	lineal ft.	.....	185,623	37,615	833,553	17,010	990,192	.....	2,063,993	.....	.....
"	cords	291	126	16	2,209	444	10,042	.....	.....	13,128	.....
"	hewn ties	1,124	13,321	10,143	5,726	9,360	24,719	.....	.....	.....	64,393
October	F.B.M.	60,801	347,758	9,064,749	22,770,380	20,832,258	184,215,884	237,291,830	.....	.....	.....
"	lineal ft.	10,557	105,397	56,745	836,599	258,716	1,327,643	.....	2,595,657	.....	.....
"	cords	282	44	70	4,816	510	9,874	.....	.....	15,596	.....
"	hewn ties	.....	16	2,302	92,804	3,632	527	.....	.....	.....	99,281
November	F.B.M.	161,056	638,492	10,211,636	18,006,977	12,525,940	201,662,355	243,206,456	.....	.....	.....
"	lineal ft.	3,260	909,333	86,335	641,013	372,449	914,323	.....	2,926,713	.....	.....
"	cords	8	700	26	3,347	362	6,356	.....	.....	10,799	.....
"	hewn ties	1,194	7,613	1,614	19,985	1,424	.....	.....	.....	.....	31,830
December	F.B.M.	105,848	256,435	6,482,178	12,249,036	15,047,871	138,562,741	172,704,109	.....	.....	.....
"	lineal ft.	.....	5,125	1,050	470,400	245,273	1,027,932	.....	1,749,780	.....	.....
"	cords	622	44	208	1,555	330	8,961	.....	.....	11,720	.....
"	hewn ties	1,808	.....	372	8,846	.....	.....	.....	.....	.....	11,026
Totals for year	F.B.M.	2,231,783	29,621,320	99,683,633	200,920,052	138,414,945	2,124,023,829	2,594,895,562	.....	.....	.....
"	lineal ft.	18,023	3,407,613	472,180	7,099,776	1,856,840	10,391,396	.....	23,245,828	.....	.....
"	cords	4,628	5,143	1,793	39,397	8,644	134,203	.....	.....	193,808	.....
"	hewn ties	86,538	105,895	505,321	1,093,885	544,893	110,437	.....	.....	.....	2,446,969

Total scaled in F.B.M. = 2,918,119,202.

SPECIES CUT IN 1926 (IN F.B.M.).

Forest District.	Fir.	Cedar.	Spruce.	Hemlock.	Balsam.	Yellow Pine.	White Pine.	Jack-pine.	Larch.	Miscellaneous.	Totals.
Cariboo	4,968,477	.....	51,098	.....	582	.....	.....	5,740	.....	3,239,600	8,265,498
Fort George	7,520,629	3,074,422	86,593,479	.....	5,633,665	.....	.....	15,688,880	.....	579,958	119,091,033
Kamloops	17,102,427	19,810,487	12,188,750	2,673,090	108,168	90,936	146,352	18,140	.....	1,430,335	53,568,685
Southern Interior	37,778,274	48,547,741	49,015,003	4,778,531	2,693,440	29,277,187	17,434,843	13,052,937	40,696,415	51,130,161	294,404,532
Totals, Interior	67,369,807	71,432,650	147,848,330	7,451,621	8,435,856	29,368,123	17,581,195	28,765,697	40,696,415	56,380,054	475,329,748
Prince Rupert	7,100,672	28,741,769	55,826,508	40,633,053	15,625,918	.....	.....	16,799,906	.....	6,049,919	170,777,745
Vancouver	1,232,145,084	605,235,057	45,032,158	284,606,606	66,357,831	.....	12,498,189	.....	.....	26,136,784	2,272,011,709
Totals, Coast	1,239,245,756	633,976,826	100,858,666	325,239,659	81,983,749	.....	12,498,189	16,799,906	.....	32,186,703	2,442,789,454
Grand totals, 1926	1,306,615,563	705,409,476	248,706,996	332,691,280	90,419,605	29,368,123	30,079,384	45,565,603	40,696,415	88,566,757	2,918,119,202
Grand totals, 1925	1,016,931,573	761,424,202	209,036,148	305,659,173	69,757,874	41,116,018	30,653,478	56,350,628	46,715,296	73,622,137	2,611,266,527
Grand totals, 1924	1,036,019,000	610,201,000	267,899,000	322,715,000	66,069,000	38,354,000	25,243,000	75,895,000	56,896,000	50,409,000	2,549,700,000
Grand totals, 1923	1,139,149,000	573,615,000	209,017,000	322,217,000	71,538,000	61,790,000	31,183,000	53,491,000	44,887,000	4,848,000	2,521,735,000
Grand totals, 1922	846,171,000	461,265,000	149,247,000	238,891,000	38,904,000	43,630,000	34,405,000	43,774,000	39,759,000	3,112,000	1,899,158,000

TOTAL AMOUNTS OF TIMBER SCALED IN BRITISH COLUMBIA DURING YEARS 1925–26.
(F.B.M.)

Forest District.	1925.	1926.	Gain.	Loss.	Net Gain.	Net Loss.
Cariboo	4,510,502	8,265,498	3,754,996	.....	.....	.....
Fort George	97,589,206	119,091,033	21,501,827	.....	.....	.....
Kamloops	64,772,202	53,568,685	.....	11,203,517	.....	.....
Southern Interior	283,825,010	294,404,532	10,579,522	.....	.....	.....
Totals, Interior	450,696,920	475,329,748	35,836,345	11,203,517	24,632,828	.....
Prince Rupert	177,010,753	170,777,745	.....	6,233,008	.....	.....
Vancouver	1,983,558,854	2,272,011,709	288,452,855	.....	.....	.....
Totals, Coast	2,160,569,607	2,442,789,454	288,452,855	6,233,008	282,219,847	.....
Totals for B.C.	2,611,266,527	2,918,119,202	324,289,200	17,436,525	306,852,675	.....

TOTAL SCALE, 1926, SEGREGATED, SHOWING LAND STATUS.

Forest District.	Timber Licences, F.B.M.	Timber Leases, F.B.M.	Hand-logger Licences, F.B.M.	Timber-sales, F.B.M.	Pre-emptions, S.R., and Miscellaneous, F.B.M.	Crown Grants, F.B.M.				Dominion Lands, F.B.M.	Totals, F.B.M.
						To 1887.	1887–1906.	1906–1914.	1914 to Date.		
Cariboo	.....	.....	.....	4,577,108	807,015	424,905	142,000	118,100	1,728,370	468,000	8,265,498
Fort George	24,542,242	.....	.....	50,530,017	15,143,476	10,058	.....	13,299,477	15,565,763	.....	119,091,033
Kamloops	1,166,198	.....	.....	4,924,443	1,847,145	20,332	65,338	1,086,708	2,070,240	42,388,281	53,568,685
Prince Rupert	31,581,490	32,810,836	6,678,737	63,734,337	6,449,439	6,295	10,318,871	11,219,544	7,535,613	442,583	170,777,745
Southern Interior	69,588,638	.....	.....	49,167,953	2,081,407	1,577,106	129,436,440	31,696,973	8,459,208	2,396,807	294,404,532
Vancouver	426,941,290	391,348,418	826,833	123,201,091	9,659,541	858,742,580	129,819,649	61,160,457	22,784,554	247,527,296	2,272,011,709
Totals, 1926	553,819,858	424,159,254	7,505,570	296,134,949	35,988,023	860,781,276	269,782,298	118,581,259	58,143,748	293,222,967	2,918,119,202
Totals, 1925	530,863,844	342,943,804	10,542,541	315,669,296	60,664,065	615,470,589	281,322,987	106,202,808	44,850,733	302,735,860	2,611,266,527

LOGGING OPERATIONS.

The number of active operations in the Province increased by 13 per cent. to 3,453. These required the making of 7,921 inspection reports by our field staff in order to ensure that the Department's interests were protected, the marking properly done, and that cutting was confined to the proper areas. As a result of these inspections 84 cases of trespass were discovered, as compared with 87 in 1925. The area cut over and the quantity of lumber involved, however, were considerably less than during the previous year. The amount of penalties billed on account of illegal cutting totalled $9,457.64.

LOGGING INSPECTION, 1926.

Forest District.	Operations.				No. of Inspections.
	Timber-sales.	Hand-loggers' Licences.	Leases, Licences, Crown Grants, and Pre-emptions.	Totals.	
Cariboo	39	...	85	124	241
Fort George	191	...	261	452	839
Kamloops	51	...	95	146	471
Prince Rupert	368	73	245	659	1,328
Southern Interior	455	...	607	1,062	1,550
Vancouver	371	11	628	1,010	3,492
Totals, 1926	1,475	84	1,921	3,453	7,921
Totals, 1925	1,262	54	1,730	3,046	7,321
Totals, 1924	1,245	69	1,853	3,167	7,466
Totals, 1923	1,010	166	2,140	3,316	6,892
Totals, 1922	914	159	1,579	2,652	4,654
Totals, 1921	691	186	1,331	2,208	4,053
Totals, 1920	605	220	1,961	2,796	2,703

TRESPASSES, 1926.

Forest District.	No. of Cases.	Areas cut over (Acres).	Quantity cut.				No. of Resulting Seizures.	Amount.
			Feet B.M.	Lineal Feet.	Cords.	Ties.		
Cariboo	8	55	5,916	1,955	126	655	1	$ 169 71
Fort George	11	98	61,076	.....	....	6,023	..	564 07
Kamloops	4	23	74,202	7,150	31	1,800	..	252 55
Prince Rupert	16	213	375,095	91,102	19	1,555	..	1,356 45
Southern Interior	19	57	121,742	11,385	107	200	5	766 83
Vancouver	26	95	1,334,812	32,765	150	.....	..	6,348 03
Totals, 1926	84	541	1,972,843	144,357	433	10,233	6	$ 9,457 64
Totals, 1925	87	645	3,486,609	98,456	1,563	16,820	4	$14,534 94
Totals, 1924	68	570	2,182,808	54,068	767	7,646	2	$ 8,539 86
Totals, 1923	105	1,015	6,712,868	121,202	1,598	20,082	8	$27,860 08
Totals, 1922	98	1,059	3,002,881	98,903	2,591	27,022	16	$16,406 30
Totals, 1921	98	1,938	3,222,673	209,395	1,639	21,605	10	$15,924 22
Totals, 1920	73	1,788	4,904,079	104,048	1,882	6,716	10	$17,119 85

TIMBER-SALE TRANSACTIONS.

The timber-sales awarded during the year totalled 687, an increase of 74 over 1925, with a total revenue value estimated at $1,038,536.69, an increase of 25 per cent. over the previous year. The average stumpage price was slightly less than in 1925. This is due not only to current depression in lumber values, but to the shifting of the centre of our timber-sale business from the Coast to the Interior districts. In 1925 66 per cent. of the sawlog material sold was on the Coast and in 1926 only 50 per cent. In the cut from timber-sales there was a falling-off in sawlogs and cord material equalling 10,800 M. feet, board measure, but an increase in poles and ties equivalent to 4,000 M. feet, board measure.

TIMBER-SALES AWARDED BY DISTRICTS, 1926.

District.	No. of Sales.	Acreage.	Saw-timber (Ft. B.M.).	Poles and Piles (Lineal Feet).	No. of Posts.	Shingle-bolts and Cordwood (No. of Cords).	No. of Railway-ties.	Estimated Revenue.
Cariboo	31	3,647	5,359,150	.....	.....	3,105	175,027	$ 24,312 03
Kamloops	26	2,527	1,376,564	232,818	.....	.....	14,912	10,013 25
Fort George	115	24,764.10	90,314,185	297,300	45,700	644	332,163	279,707 28
Southern Interior	154	26,369.78	42,541,925	2,566,779	161,490	4,522	143,257	224,363 35
Prince Rupert	162	24,352.70	67,708,919	1,931,690	.....	2,084	372,900	211,594 05
Vancouver	199	37,154.65	88,186,000	469,120	.....	3,100	6,740	288,546 73
Totals, 1926	687	118,815.23	295,486,743	5,497,707	207,190	13,455	1,044,999	$1,038,536 69
Totals, 1925	613	94,015.25	189,022,314	6,629,449	12,877	40,334	566,142	$ 795,802 20
Totals, 1924	769	146,652	302,813,267	6,336,071	.....	47,640	2,418,633	$1,226,460 87
Totals, 1923	852	163,464	516,397,438	6,234,342	.....	23,150	2,304,161	$1,513,970 84
Totals, 1922	671	108,501	249,572,808	3,304,254	.....	41,580	880,307	$ 862,888 49
Totals, 1921	531	91,614	188,971,774	2,479,095	.....	34,291	993,417	$ 646,487 65
Totals, 1920	594	121,690	440,649,755	2,811,095	149,300	86,726	6,415,349	$1,799,039 03
Totals, 1919	356	61,809	245,209,300	2,899,000	5,000	52,557	957,804	$ 654,372 09
Totals, 1918	227	34,257	159,659,000	378,080	20,000	18,478	701,654	$ 380,408 33
Totals, 1917	255	44,914	240,307,057	1,517,450	40,000	43,756	381,200	$ 483,281 50
Totals, 1916	133	23,318	136,345,000	435,810	.....	26,666	92,000	$ 259,765 12

AVERAGE SALE PRICE BY SPECIES.

Saw-timber.	FIGURES FOR 1926.		FIGURES FOR 1925.		FIGURES FOR 1924.		FIGURES FOR 1923.	
	Board-feet.	Price Per M.	Board-feet.	Price Per M.	Board-feet.	Price per M.	Board-feet.	Price per M.
Douglas fir	57,772,863	$1 67	41,960,515	$1 78	74,708,507	$1 73	75,915,023	$1 72
Cedar	37,147,149	2 01	38,953,370	2 05	63,367,585	2 28	61,303,504	2 25
Spruce	106,636,017	1 76	46,374,625	1 91	74,064,508	1 63	101,703,592	1 58
Hemlock	40,746,817	1 01	26,028,240	1 03	33,622,807	1 21	43,956,950	1 14
Balsam	21,478,293	79	12,763,909	1 05	13,295,185	1 10	17,580,743	1 10
White pine	6,370,450	3 98	7,193,280	3 74	5,802,597	2 63	4,184,830	2 85
Western soft pine	5,225,470	2 04	5,909,580	2 07	9,446,869	1 83	28,211,030	1 88
Tamarack	425,000	1 47	1,082,850	1 46	4,804,072	1 63	5,824,365	1 80
Other species	10,344,684	1 47	3,855,945	1 20	23,701,137	1 50	6,402,401	1 34
Totals	*286,146,743	$1 66	184,122,314	$1 78	302,813,267	$1 74	345,082,438	$1 68

*NOTE—9,340,000 board-feet pulp saw-timber not included in above list.

TIMBER CUT FROM TIMBER-SALES DURING 1926.

Forest District.	Feet B.M.	Lineal Feet.	Cords.	Ties.
Cariboo	685,384	5,510	2,460.63	34,418
Kamloops	1,929,309	683,524	44.00	23,783
Fort George	48,977,927	388,845	195.50	204,930
Southern Interior	24,300,942	2,069,066	5,154.60	449,601
Prince Rupert	48,170,586	1,196,349	1,475.11	484,328
Vancouver	118,909,376	631,326	7,346.61	1,862
Totals, 1926	242,973,524	4,974,620	16,676.45	1,198,922
Totals, 1925	251,141,398	4,885,352	20,808.14	1,077,414
Totals, 1924	230,148,575	4,541,371	17,294.00	1,543,915
Totals, 1923	207,473,848	2,753,532	17,666.55	856,628
Totals, 1922	187,217,151	1,523,744	37,345.91	495,672
Totals, 1921	179,780,056	2,169,550	10,483.00	831,423
Totals, 1920	168,783,812	1,638,549	17,703.00	654,829
Totals, 1919	107,701,950	672,699	12,208.00	573,286
Totals, 1918	113,927,610	499,589	15,539.00	146,807
Totals, 1917	99,078,832	545,429	14,862.00	34,937
Totals, 1916	63,055,102	225,799	8,425.00	.....

AREAS CRUISED FOR TIMBER-SALES, 1926.

Forest District.	Number cruised.	Acreage.	Saw-timber (M.B.M.).	Poles and Piles (Lineal Feet).	Shingle-bolts and Cordwood (Cords).	Railway-ties (No.).	Posts (No.)
Cariboo	19	2,108	4,660	.....	3,075	144,908	.....
Fort George	133	30,233	114,848	254,210	2,130	810,482	.....
Kamloops	28	3,943	12,706	999,758	.....	27,672	.....
Prince Rupert	173	25,537	82,620	1,470,665	2,144	220,590	.....
Southern Interior	280	44,662	49,479	1,096,378	5,734	89,243	20,200
Vancouver	186	36,032	105,404	415,870	2,165	6,931	.....
Totals, 1926	819	142,515	369,717	4,236,881	15,248	1,299,826	20,200
Totals, 1925	819	119,436	353,225	9,113,052	57,441	1,389,604	14,477
Totals, 1924	942	179,609	451,476	8,465,924	41,554	1,873,954	.....

SAW AND SHINGLE MILLS OF THE PROVINCE, 1926.

Forest District.	Operating.				Shut Down.			
	Sawmills.		Shingle-mills.		Sawmills.		Shingle-mills.	
	No.	Estimated Daily Capacity, M.B.M.	No.	Estimated Daily Capacity, Shingles, M.	No.	Estimated Daily Capacity, M.B.M.	No.	Estimated Daily Capacity, Shingles, M.
Cariboo	36	169	..	....	24	116	..	....
Fort George	23	626	..	....	1	50	..	....
Kamloops	34	528	..	....	14	256	1	120
Prince Rupert	26	585	1	15	7	430	2	200
Southern Interior	72	2,540	3	195	41	666	1	20
Vancouver	200	8,514	83	15,404	15	157	2	120
Totals for 1926	391	12,962	87	15,614	102	1,675	6	460
Totals for 1925	363	11,475	82	15,322	109	2,121	9	625
Totals for 1924	359	11,986	78	15,636	103	2,618	20	1,780
Totals for 1923	352	11,273	107	16,144	72	1,493	16	745
Totals for 1922	292	9,683	108	15,544	90	2,054	8	680
Totals for 1921	289	8,912	79	10,885	78	2,029	6	788
Totals for 1920	341	10,729	109	13,426	37	909	2	30

EXPORT OF LOGS DURING YEAR 1926.

Species.	Grade No. 1.	Grade No. 2.	Grade No. 3.	Ungraded.	Totals.
	F.B.M.	F.B.M.	F.B.M.	F.B.M.	F.B.M.
Cedar	16,291,973	53,139,751	36,824,524	.....	106,256,248
Fir	15,798,318	50,950,363	15,136,088	.....	81,884,769
Spruce	105,700	1,232,765	1,152,909	.....	2,491,374
Hemlock	.....	.....	.....	24,426,656	24,426,656
Balsam	.....	.....	.....	4,602,860	4,602,860
White pine	.....	.....	.....	4,731,501	4,731,501
Miscellaneous	.....	.....	.....	84,307	84,307
Totals, 1926	32,195,991	105,322,879	53,113,521	33,845,324	224,477,715
Totals, 1925	34,501,748	96,701,737	40,312,806	38,901,670	210,417,961
Totals, 1924	23,416,816	111,801,016	49,549,135	55,763,860	240,530,827

SHIPMENTS OF POLES, PILING, MINE-PROPS, FENCE-POSTS, RAILWAY-TIES, ETC.

Forest District.	Quantity exported.	Approximate Value, F.O.B.	Where marketed.		
			United States.	Canada.	Japan.
Kamloops—					
Poles and piling	Lin. ft., 1,538,795	$ 196,330	1,392,945	145,850	.....
Mine-props	Lin. ft., 152,292	18,275	.....	152,292	.....
Fence-posts	Cords, 98	490	.....	98	.....
Cordwood	Cords, 12	72	.....	12	.....
Fort George—					
Poles and piling	Lin. ft., 452,155	58,780	400,635	51,520	.....
Railway-ties	No. 415,102	252,382	.....	415,102	.....
Fence-posts	Cords, 945	5,670	.....	945	.....
Prince Rupert—					
Poles and piling	Lin. ft., 1,528,282	213,693	885,945	642,337	.....
Railway-ties	No. 447,565	26,420	.....	447,565	.....
Fence-posts	Cords, 9	117	.....	9	.....
Southern Interior—					
Poles and piling	Lin. ft., 7,276,960	1,237,083	6,634,465	642,495	.....
Mine-props	Cords, 5,364	59,004	.....	5,364	.....
Railway-ties	No. 842,066	473,136	33,239	808,827	.....
Cordwood	Cords, 67	536	.....	67	.....
Shingle-bolts	Cords, 180	1,620	180	.....	.....
Fence-posts	Cords, 10,679	96,111	3,588	7,091	.....
Vancouver—					
Poles and piling	Lin. ft., 6,994,643	1,049,196	6,710,318	.....	284,325
Shingle-bolts	Cords, 27	266	24	.....	3
Pulp-wood	Cords, 7,519	75,188	7,519	.....	.....
Total value, 1926	.....	$3,764,369	.....	.....	.....
Total value, 1925	.....	$3,572,455	.....	.....	.....

PRE-EMPTION INSPECTION REPORTS, 1926.

Pre-emption records examined by districts are:—

Cariboo	523
Fort George	556
Kamloops	123
Prince Rupert	338
Vancouver	359
Southern Interior	242
Total	2,141

ANALYSIS OF ROUTINE WORK.

DRAUGHTING OFFICE, FOREST BRANCH.

Month.	Number of Tracings made.						Blue-prints from Reference Maps.
	Timber-sales.	Timber-marks.	Examination Sketches.	Hand-logger Licences.	Miscellaneous.	Totals.	
January	13	157	50	6	18	244	19
February	8	101	33	8	27	177	14
March	10	121	34	30	34	229	50
April	9	107	43	3	61	223	90
May	6	103	31	7	98	245	73
June	9	175	28	4	30	246	24
July	8	62	43	8	47	168	26
August	20	42	32	4	32	130	78
September	8	39	25	1	30	103	8
October	22	43	28	..	20	113	24
November	10	59	23	12	28	132	21
December	14	70	12	2	7	105	191
Totals	137	1,079	382	85	432	2,115	618

TIMBER-MARKING.

TIMBER-MARKS ISSUED FOR THE YEARS 1924, 1925, AND 1926.

	1924.	1925.	1926.
Old Crown grants	133	126	130
Crown grants, 1887–1906	131	138	162
Crown grants, 1906–1914	168	205	165
Section 53, "Forest Act"	310	350	270
Stumpage reservations	57	36	45
Pre-emptions under sections 28 and 29, "Land Act"	21	30	14
Dominion lands (general)	85	96	28
Dominion lands (timber berths)	.....	10	20
Dominion lands (Indian reserves)	.....	4	21
Timber-sales	769	613	689
Hand-loggers	30	22	16
Special marks	1	1	7
Rights-of-way	.....	1	1
Pulp licences	.....	.....	3
Totals	1,705	1,632	1,571
Transfers and changes of marks	258	171	178

HAND-LOGGERS' LICENCES.

	1924.	1925.	1926.
Number issued	93	102	85

REVENUE AND EXPENDITURE.

The direct revenue of the Forest Branch reached the $3,600,000 mark, which is a new high record, exceeding 1925 by $110,000. The increase in the past five years is $908,414, and in the past ten years the annual increase has averaged $176,000. This increase is entirely due to expansion in operations, as shown through stumpage and royalty. Rentals and licence fees are both constantly being reduced as the areas covered are logged or dropped. The charges for active operations during the year were $2,528,822.43, as set out in tables below.

FOREST REVENUE.

	12 Months to Dec. 31, 1926.	12 Months to Dec. 31, 1925.	12 Months to Dec. 31, 1924.	12 Months to Dec. 31, 1923	12 Months to Dec. 31, 1922.	12 Months to Dec. 31, 1921.
Timber-licence rentals	$1,063,812 90	$1,130,556 52	$1,180,179 55	$1,283,300 77	$1,390,999 64	$1,193,654 58
Timber-licence transfer fees	2,400 00	3,465 00	4,650 00	3,750 00	1,950 00	3,735 00
Timber-licence penalty fees	32,549 14	28,017 75	64,653 05	100,045 86	83,376 60	50,859 19
Hand-loggers' licence fees	2,250 00	2,775 00	2,450 00	5,300 00	6,050 00	9,175 00
Timber-lease rentals	90,010 89	92,485 38	99,974 25	102,062 40	94,392 31	81,840 61
Penalty fees and interest	254 91	283 33	136 92	72 22	247 77	21 85
Timber-sale rentals	20,537 75	17,045 45	19,943 01	28,383 49	26,790 12	12,659 91
Timber-sale stumpage	572,324 74	512,399 28	537,786 50	431,007 99	358,984 19	317,488 77
Timber-sale cruising	7,173 84	6,296 67	7,491 04	9,933 97	8,699 50	4,640 39
Timber-sale advertising	1,498 82	1,403 43	2,033 96	3,509 00	2,188 63	1,695 08
Timber royalty and tax	1,779,553 60	1,658,043 07	1,521,001 39	1,477,027 24	1,203,884 89	990,326 99
Scaling fees (not Scaling Fund)	1,344 75	1,044 25	1,564 85	1,160 89	3,138 05	2,015 83
Scaling expenses (not Scaling Fund)	98 17	253 24	753 27	667 53	1,061 94	765 98
Trespass penalties	11,677 12	17,841 58	14,685 27	11,362 99	13,397 91	11,245 86
Scalers' examination fees	350 00	160 00	430 00	495 00	175 00	455 00
Exchange	693 04	520 12	1,332 26	3,168 40	357 14	291 03
Seizure expenses	300 50	1,097 95	654 92	1,559 17	454 35	330 80
General miscellaneous	3,651 95	4,699 66	9,392 22	5,907 36	3,135 47	1,972 33
	$3,590,482 12	$3,478,387 68	$3,469,112 46	$3,468,714 28	$3,199,283 51	$2,683,174 20
Grazing fees	12,328 54	14,114 89	14,240 66	13,651 01	8,171 21	11,221 79
Taxation, Crown-grant timber lands	410,684 46	398,393 85	298,973 97	308,041 92	319,410 51	261,896 49
Total revenue from forest sources	$4,013,495 12	$3,890,896 42	$3,782,327 09	$3,790,407 21	$3,526,865 23	$2,956,292 48

Revenue from Logging Operations, 1926.

(Amounts charged.)

Forest District.	Royalty and Tax.	Trespass Penalties.	Seizure Expenses.	Government Scale.		Scaling Fund.		Stumpage.	Total.
				Scaling Expenses.	Scaling Fees.	Scaling Expenses.	Scaling Fees.		
Vancouver	$1,308,288 82	.....	$ 140 45	$ 48 50	$ 720 39	$ 16,302 52	$110,867 25	$241,347 95	$1,677,715 88
Cariboo ...	3,796 49	$ 112 71	.....	.....	.....	.....	.....	3,652 95	7,562 15
Prince Rupert.	128,259 43	1,234 57	32 50	43 84	427 02	977 36	8,837 50	127,527 12	267,339 34
Southern Int'r.	209,112 51	.....	207 20	6 00	.....	.....	.....	115,262 55	324,588 26
Fort George...	111,018 02	.....	759 73	.....	.....	.....	.....	106,073 29	217,851 04
Kamloops	14,019 48	242 55	2 50	.....	.....	.....	.....	19,501 23	33,765 76
Totals.	$1,774,494 75	$ 1,589 83	$1,142 38	$ 98 34	$1,147 41	$ 17,279 88	$119,704 75	$613,365 09	$2,528,822 43
Totals, 1925	$1,754,605 06	$59,804 57	$ 913 29	$ 197 08	$1,254 80	$ 18,794 39	$116,682 68	$651,486 17	$2,603,738 04
Totals, 1924	$1,542,070 96	$10,860 22	$ 708 24	$ 548 37	$2,179 42	$ 14,760 12	$103,691 71	$597,071 65	$2,271,890 69
Totals, 1923	$1,499,355 83	$25,508 75	$ 746 59	$ 741 56	$1,175 22	$ 15,743 96	$108,713 66	$467,048 15	$2,119,033 72
Totals, 1922	$1,142,745 76	$14,926 63	$1,326 80	$1,933 72	$1,940 08	$ 12,407 50	$103,774 90	$375,607 42	$1,661,662 81
Totals, 1921	$1,005,261 61	$14,297 39	$ 516 85	$ 769 08	$1,256 70	$ 11,396 11	$114,450 43	$396,303 19	$1,544,251 36

FOREST EXPENDITURE, FISCAL YEAR 1925–26.

Forest District.	Salaries.	Temporary Assistance.	Expenses.	Total.
Headquarters	$ 89,133 68	$ 245 33	$ 27,689 90	$117,068 91
Cariboo	6,454 09	2,466 00	4,657 22	13,577 31
Kamloops	6,933 00	665 79	3,422 82	11,021 61
Prince George.	13,303 50	840 00	5,183 91	19,327 41
Prince Rupert	21,794 86	1,030 00	26,556 27	49,381 13
Southern Interior	33,501 61	2,813 62	24,421 53	60,736 76
Vancouver	49,447 63	1,445 09	43,879 59	94,772 31
Totals	$220,568 37	$9,505 83	$135,811 24	$365,885 44

Lumber-trade extension	19,065 30
Reconnaissance, etc	40,984 30
Insect-control	14,506 23
Grazing: range improvement	5,412 96
Grand total	$445,854 23

The sums estimated as being required for the fiscal year 1926–27 were as follows:—

Salaries	$238,569 00
Travelling expenses, Ranger stations, and wireless	46,000 00
Lumber-trade extension	20,000 00
Reconnaissance, etc.	45,000 00
Insect damage: investigation and control	15,000 00
Grazing: range improvement	10,000 00
Total	$374,569 00

In addition to this total, sums were available from the main Lands Department votes for temporary assistance, office supplies, maintenance of launches and autos, and miscellaneous expenses; publicity, general investigations, and contingencies. The sum of $300,000 was also voted as the amount of the contribution of the Government to the Forest Protection Fund.

SCALING FUND.

Balance brought down, April 1st, 1925	$ 5,401 58	
Expenditure, fiscal year 1925–26		$146,958 97
Charges, fiscal year 1925–26	139,515 46	
Balance, March 31st, 1926	2,041 93	
	$146,958 97	$146,958 97
Balance brought down, April 1st, 1926		$ 2,041 93
Expenditure, 9 months, April–December, 1926		99,327 00
Charges, 9 months, April–December, 1926	$104,894 04	
Balance, being excess of charges over expenditure		3,525 11
	$104,894 04	$104,894 04

FOREST RESERVE ACCOUNT.

The following statement shows the standing of the Forest Reserve Account as of December 31st, 1926:—

Amount received from the Treasury, being 3 per cent. of receipts from royalty, tax, and stumpage under subsection (2) of section 2 of the "Forest Act Amendment Act, 1925"	$69,888 40
Expenditure for 9 months ended December 31st, 1926	50,165 00
Balance	$19,723 40

CROWN-GRANT TIMBER LANDS.

	Area of Private Timber Lands (Acres).	Average Value per Acre.
1911	824,814	$ 8 72
1912	874,715	8 60
1913	922,948	9 02
1914	960,464	9 66
1915	913,245	9 55
1916	922,206	9 73
1917	916,726	9 61
1918	896,188	9 60
1919	883,491	9 48
1920	867,921	11 62
1921	845,111	10 33
1922	887,980	11 99
1923	883,344	11 62
1924	654,668	15 22
1925	654,016	40 61
1926	688,372	39 77

The extent and value of timber land in the various assessment districts are shown by the following table:—

Assessment District.	Acreage, 1926.	Increase or Decrease in Acreage over 1925.	Average Value per Acre.	Change in Value per Acre since 1925.
Alberni	96,975	+10,732	$54 49	- $ 4 38
Comox	153,278	+ 7,132	50 70	- 20
Cowichan	88,537	- 1,221	69 77	- 39
Fort Steele	48,408	- 3,430	10 10	+ 43
Galiano Island	328	+ 328	14 98*	.....
Golden	31,846	- 4,119	9 23	+ 01
Kettle River	7,129	+ 2,889	12 22	- 76
Nanaimo	82,962	- 783	44 81	- 24
Nelson	31,709	+10,001	9 89	+ 1 27
Prince Rupert	1,164	- 618	20 57	- 12 77
Revelstoke	42,017	- 2	15 26†	.....
Slocan	58,155	+ 2,769	10 12	+ 68
Vancouver	11,295	+ 7,867	66 21	- 73 00
Victoria	34,569	+ 2,811	35 75	- 1 95
Totals	688,372	+34,356	$39 77	- $ 84

*Not previously classified as timber land. †No change.

FOREST PROTECTION FUND.

The following statement shows the standing of the Forest Protection Fund as of December 31st, 1926:—

Balance at April 1st, 1925		$ 52,242 67
Collections, fiscal year 1925–26	$ 176,269 72	
Collections under special levy, 1925–26	95,851 35	
Government contribution	600,249 51	
		872,370 58
		$ 924,613 25
Expenditure, fiscal year 1925–26	$1,073,431 70	
Less refunds	21,410 31	
	$1,052,021 39	
Refund of revenue	4 00	
		1,052,025 39
Balance (deficit)		$ 127,412 14
Balance (deficit) at April 1st, 1926		$ 127,412 14
Expenditure, 9 months, April–December, 1926	$ 787,802 05	
Less refunds	13,402 52	
		774,399 53
		$ 901,811 67
Collections, 9 months, April–December, 1926	$ 136,708 94	
Collections under special levy, 9 months, April–December, 1926	70,409 10	
Government contribution	225,153 60	
		432,271 64
Balance (deficit)		$ 469,540 03

Forest Protection Fund Expenditure.

	Fiscal Years.							
	1919-20.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	9 months, April 1st to Dec. 31st, 1926.
Patrols and fire prevention	$135,452	$163,360	$227,738	$202,994	$254,792	$344,532	$377,427	$245,548
Tools and equipment.	64,563	121,353	118,933	91,812	81,408	25,418	33,976	28,692
Fires	165,688	292,890	106,891	508,992	75,503	258,034	650,138	504,234
Improvements and maintenance	26,555	68,239	17,779	37,609	21,667	5,690	11,890	9,328
Totals	$392,258	$645,842	$471,341	$841,407	$433,370	$633,674	$1,073,431	$787,802

Expenditure by Districts for Nine Months ended December 31st, 1926.

District.	Patrols and Fire-prevention.	Tools and Equipment.	Fires.	Improvements and Maintenance.	Total.
Victoria	$ 30,760 87	$17,237 85	.....	.....	$ 47,998 72
Cariboo	12,021 51	889 93	$ 12,676 08	$ 3,001 29	28,588 81
Kamloops	17,340 98	1,350 92	21,862 70	89 80	40,644 40
Prince George	20,244 79	1,619 59	14,634 76	3,037 82	39,536 96
Prince Rupert	12,233 84	367 87	2,184 36	202 18	14,988 25
Southern Interior	63,428 56	3,234 55	410,387 08	1,937 34	478,987 53
Vancouver	49,517 17	3,991 63	42,489 48	1,059 10	97,057 38
Undistributed	40,000 00	.....	.....	.....	40,000 00
Totals	$245,547 72	$28,692 34	$504,234 46	$9,327 53	$787,802 05

Expenditure for Twelve Months ended April 1st, 1926.

District.	Patrols and Fire-prevention.	Tools and Equipment.	Fires.	Improvements and Maintenance.	Total.
Victoria	$ 55,571 68	$ 3,332 76	.....	.....	$ 58,904 44
Cariboo	18,327 03	934 06	$ 16,721 40	$ 84 99	36,577 48
Kamloops	22,885 17	2,727 71	44,040 67	156 99	69,810 54
Prince George	29,270 84	1,737 90	38,247 06	403 12	69,658 92
Prince Rupert	20,059 45	873 88	12,634 70	24 38	33,592 41
Southern Interior	110,641 22	13,856 06	378,881 98	8,516 93	511,896 19
Vancouver	120,162 23	10,513 25	159,612 60	2,703 64	292,991 72
Totals	$377,427 62	$33,975 62	$650,138 41	$11,890 05	$1,073,431 70

FOREST-PROTECTION.

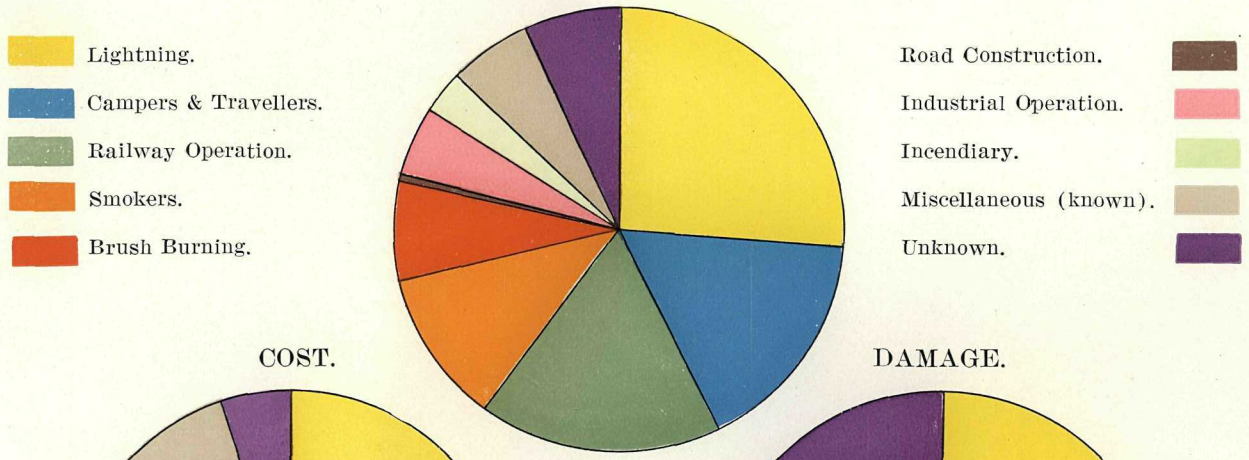
The fire season of 1926 might be described as one of variable intensity over the Province as a whole. The season was normal on the Coast and in the Northern Interior. The Southern Interior region, however, in common with the northerly portions of Idaho, Montana, and Eastern Washington, experienced the worst situation in years, more severe in some respects than 1925. Conditions in the Kamloops District were extremely hazardous during July and early August.

The winter of 1925–26 was exceptional throughout the interior of the Province, because of its remarkable mildness and lack of snowfall. The light fall of snow disappeared early, and in the last week in April and early in May, before the green vegetation could start, certain parts experienced a number of fires. The climatic condition in May and June was such that, although a considerable number of fires occurred, they were extinguished with comparatively little loss and at a moderate cost.

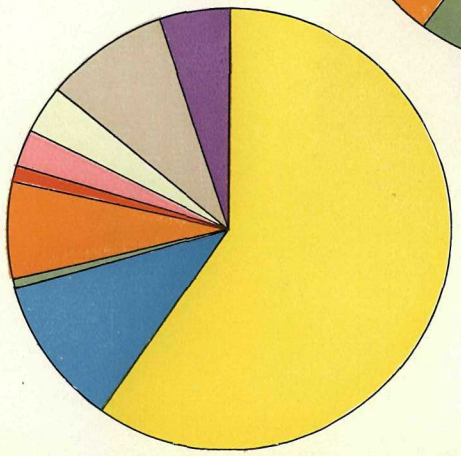
In early July there developed a very dangerous situation due to a series of lightning-storms in the Interior. On the Coast a humidity of 19 per cent. was registered at Vancouver on July 12th; twenty-two fires were reported on this date and the three most disastrous of the season started and escaped control. Electric storms that covered the Kamloops and the Southern Interior Districts occurred on July 6th and 12th, setting in all over 150 fires. This was followed

BRITISH COLUMBIA, 1926.

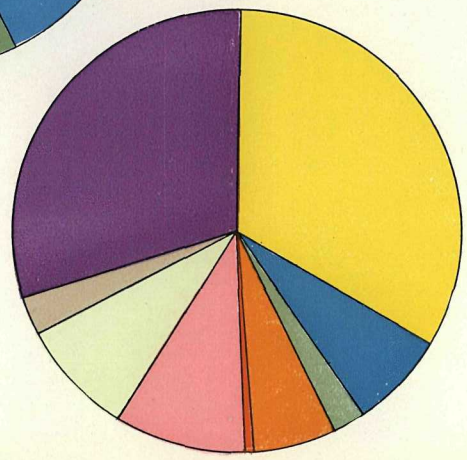
CAUSE.



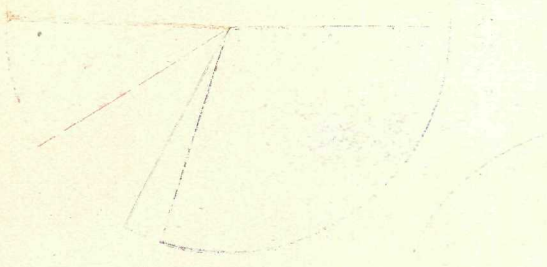
COST.



DAMAGE.



FOREST FIRES.



by an almost continuous absence of precipitation until August 17th, which, together with strong winds, high temperatures, and low humidities, resulted in a fire situation unparalleled in intensity in this portion of the Province since the inception of organized forest-protection.

Copious rains occurred in the Interior during the latter part of August, which practically ended the fire season.

An influential factor in keeping down fire losses on the Coast can be laid, in part, to the extraordinary precautions taken by logging operators. Fully 50 per cent. of the Coast operators suspended work entirely during dangerous periods, and the majority of those who continued to work did so on the early-shift plan. Many operators installed hygrographs or humidity reading devices, and watched them for the approach of dangerous conditions. Non-smoking in the woods was a requirement for employment in many of the Coast camps.

While the number of lightning-fires in 1926 is less than in 1925, the percentage of the total assigned to this cause still remains approximately the same, at 25.96 per cent. Compared with 12 per cent., the average of the ten years previous to 1925, this shows a remarkable and unexplainable increase in this hazard. That this increase is not confined to our own country is shown by United States Forest Service records and by the records of power companies and others.

FIRE WEATHER WARNING SERVICE.

The Superintendent of the Meteorological Service, Victoria, continued the daily fire weather forecast by broadcasting from Station CFYC, *Daily Province*, Vancouver. As many of the Coast logging camps are equipped with radio receiving sets, this service furnished an excellent way of giving warning of the approach of bad fire conditions.

Through the courtesy of the United States Meteorological Service at Spokane the District Forester at Nelson was given a daily weather forecast during the latter part of the season.

FIRE OCCURRENCE.

A total of 2,147 fires occurred during the season, as compared with 2,521 fires during 1925. This year, however, 53.99 per cent. of the total number occurred in the Southern Interior region, a larger proportion than ever before. The extreme hazard was not so long this year as in 1925, but was more intense, 63.05 per cent. of the fires occurring during July and August, and the majority of these during the period between July 12th and August 17th. An increase is shown in the percentage of fires extinguished while small, and a new high record of 75.93 per cent. put out under 10 acres reflects considerable credit on the fire-suppression organization.

FIRES, 1926, CLASSIFIED BY SIZE AND DAMAGE.

Forest District.	TOTAL FIRES.		UNDER ¼ ACRE.			¼ ACRE TO 10 ACRES.			OVER 10 ACRES IN EXTENT.			DAMAGE.		
	No.	Per Cent. of Total Fires in Province.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	Under $100.	Between $100 and $1,000.	Over $1,000.
Cariboo	166	7.73	54	32.53	5.88	40	24.10	5.62	72	43.37	13.92	119	30	17
Kamloops	121	5.63	60	49.52	6.53	18	14.90	2.53	43	35.58	8.32	86	14	21
Prince George	175	8.15	50	28.50	5.44	79	45.20	11.11	46	26.30	8.90	153	14	8
Prince Rupert	72	3.35	31	43.00	3.37	29	40.30	4.08	12	16.70	2.32	66	3	3
Southern Interior	1,159	53.99	496	43.00	53.97	383	33.00	53.87	280	24.00	54.16	960	100	99
Vancouver	454	21.15	228	50.22	24.81	162	35.68	22.79	64	14.10	12.38	418	15	21
Totals	2,147	100.0	919	....	100.0	711	....	100.0	517	....	100.0	1,802	176	169
Per cent.	100.0	....	42.81	....	...	33.12	....	....	24.07	....	....	83.94	8.19	7.87
Totals, 1925	2,521	100.0	1,036	....	100.0	732	....	100.0	753	....	100.0	2,001	277	243
Per cent.	100.0	....	41.10	....	...	29.04	....	....	29.86	....	....	79.37	10.99	9.64
Totals, 1924	2,174	100.0	767	....	100.0	782	....	100.0	625	....	100.0	1,823	259	92
Per cent.	100.0	....	35.28	....	...	35.97	...	....	28.75	....	....	83.84	11.92	4.24
Dominion Railway Belt	....	....	....	....	....	....	....	....	....	....	....	....	....	....

NUMBER AND CAUSES OF FIRES IN PROVINCE, 1926.

Forest District.	Lightning.	Campers and Travellers.	Railway Operation.	Railways under Construction.	Smokers.	Brush-burning not Railway-clearing.	Public Road-construction.	Industrial Operation.	Incendiary.	Miscellaneous (Known Causes).	Unknown Causes.	Total.	Per Cent. of Total Fires in Province.
Cariboo	20	42	1	..	9	15	1	1	45	3	29	166	7.73
Kamloops	73	12	10	..	7	9	1	..	1	..	8	121	5.63
Prince George	34	45	7	..	22	30	2	8	9	2	16	175	8.15
Prince Rupert	9	26	6	..	4	13	2	5	1	..	6	72	3.35
Southern Interior	395	140	328	..	130	54	5	10	10	67	20	1,159	53.99
Vancouver	26	86	24	..	66	36	3	80	2	54	77	454	21.15
Totals	557	351	376	..	238	157	14	104	68	126	156	2,147	100.0
Per cent.	25.95	16.35	17.51	..	11.09	7.31	0.65	4.84	3.16	5.87	7.26	100.0	....
Dominion Railway Belt	....	....	....	..	....	....	....	....	....	....	....	....	....
Per cent.	....	....	....	..	....	....	....	....	...	....	....	....	....

FIRES, 1926, CLASSIFIED BY PLACE OF ORIGIN AND COST OF FIRE-FIGHTING.

Forest District.	Total Fires.	Originated on Vacant Crown Lands and Lands paying F.P. Tax.	Originated on Lands not paying F.P. Tax.	Extinguished without Cost.			Cost Money to extinguish.								Total Cost of fighting Fire.		Average Cost per Fire.
				No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in Province.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in Province.	Cost less than $100.	Cost $100 to $1,000	Cost $1,000 to $5,000.	Cost $5,000 to $10,000.	Cost over $10,000.	Dollars.	Per Cent. of Total spent in fighting Fires in Province.	Dollars.
Cariboo	166	125	41	120	72.30	5.59	46	27.70	2.14	31	12	2	1	..	12,676.08	2.51	76.36
Kamloops	121	85	36	82	68.00	3.82	39	32.00	1.81	18	17	3	1	..	21,862.70	4.34	182.03
Prince George	175	71	104	89	51.00	4.14	86	49.00	4.01	60	22	4	..	.	14,634.76	2 90	83.62
Prince Rupert	72	21	51	49	68.00	2.28	23	32.00	1.07	20	3	..	..	..	2,184.36	0.43	30.33
Southern Interior	1,159	477	682	655	57.00	30.51	504	43.00	23.48	256	151	79	13	5	410,387.08	81.39	354.10
Vancouver	454	121	333	313	68.94	14.58	141	31.06	6.57	95	37	7	2	..	42,489.48	8.43	93.58
Totals	2,147	900	1,247	1,308	....	60.92	839	.....	39.08	480	242	95	17	5	504,234.46	100.00	234.85
Per cent	100.0	41.92	58.08	60.92	....	....	39.08	....	....	22.37	11.27	4.42	0.79	0.23	.....	....	.....
Totals, 1925	2,521	1,268	1,253	1,473	....	58.44	1,048	....	41.56	...	....	....	....	....	616,940.09	100.00	244.62
Per cent	100.0	50.3	49.7	58.44	....	....	41.56	....	....	....	....	....	....	....	.....	....	.....
Totals, 1924	2,174	780	1,394	1,315	....	60.49	859	....	39.51	...	....	....	....	....	249,382.17	100.00	114.71
Per cent	100.0	35.88	64.12	60.49	....	....	39.51	....	....	....	....	....	....	....	.....	...	.....
Dominion Railway Belt	.....	.....	.....	....	....	....	....	....	....	....	.. .	....	....	....	.....	....	.....

FIRE OCCURRENCES BY MONTHS, 1926.

District.	March.	April.	May.	June.	July.	August.	September.	Totals.
Cariboo	...	7	21	17	60	50	11	166
Kamloops	....	6	14	9	54	36	2	121
Prince George	....	26	26	7	48	47	21	175
Prince Rupert	....	12	6	11	15	20	8	72
Southern Interior	2	127	80	155	623	156	16	1,159
Vancouver	2	26	16	56	182	105	67	454
Total	4	204	163	255	982	414	125	2,147
Per cent	0.18	9.50	7.59	11.88	45.75	19.28	5.82	100.0

FIRE DAMAGE.

The total area burned over is estimated at 659,871 acres, as compared with 1,023,789 acres last year, or, roughly, two-thirds. Of the area burned, 58.81 per cent. is in the Southern Interior and only 9.08 per cent. on the Coast.

Merchantable timber destroyed is estimated at 229,449 M. feet, board measure, valued at $443.009, as compared with 773,738 M. feet, board measure, valued at $1,223,197, in 1925. Valuable reproduction destroyed amounted to 198,224 acres, as compared with 251,897 acres in 1925.

Damage to property of other forms than timber amounted to $749,891, as compared with $625,519 in 1925.

The total value of all forms of property destroyed is $1,680,264, as against $2,747,190 in 1925, or, roughly, 60 per cent. This is also a reflection of the greater care taken by Coast logging operators to suspend operations during dangerous periods, showing a falling-off of $441,777 in total damage done in the Vancouver District over the 1925 figures.

DAMAGE CAUSED BY FOREST FIRES, 1926.

Forest District.	MERCHANTABLE TIMBER DESTROYED OR DAMAGED.				VALUABLE REPRODUCTION.		CUT-OVER LAND, UNMERCHANTABLE TIMBER, OLD BURN, NOT RESTOCKING.			GRAZING RANGE.		AREA OF SLASH BURNED.		GRAND TOTALS.					
	Area.	Quantity killed.	Quantity salvable.	Net Stumpage Loss.	Area.	Estimated Present Damage.	Area.	Quantity killed.	Estimated Damage.	Area.	Damage.	Area burned.	Cost to Department.	Area.		Quantity.		Damage.	
	Acres.	M. Ft. B.M.	M. Ft. B.M.	$	Acres.	$	Acres.	M. Ft. B. M.	$	Acres.	$	Acres.	$	Acres.	Per Cent.	M. Feet B.M.	Per Cent.	$	Per Cent.
Cariboo	4,533	29,663	4,576	44,317	5,606	17,875	41,332	....	20,666	8,114	407	196	.....	59,781	9.06	29,663	7.43	83,265	8.95
Kamloops	21,134	107,219	.....	111,078	76,765	47,345	31,148	9,792	15,574	910	45	.....	.....	129,957	19.69	117,011	29.35	174,042	18.70
Prince George	3,688	29,158	2	36,414	3,365	7,278	5,703	...	2,851	166	9	1,520	140	14,442	2.19	29,158	7.31	46,552	5.00
Prince Rupert	138	1,129	50	655	1,555	2,284	2,851	2	1,426	81	4	3,115	.....	7,740	1.17	1,131	0.28	4,369	0.47
Southern Interior	27,815	104,259	23,150	190,136	106,865	227,816	208,115	..	104,057	34,162	1,843	11,063	17	388,020	58.81	104,259	26.16	523,852	56.31
Vancouver	5,246	117,406	81,607	60,409	4,068	19,362	37,018	66	18,509	261	13	13,338	4	59,931	9.08	117,472	29.47	98,293	10.57
Totals	62,554	388,834	109,385	443,009	198,224	321,960	326,167	9,860	163,083	43,694	2,321	29,232	161	659,871	100.0	398,694	100.0	930,373	100.0
Per cent	9.48	97.53	28.13	47.61	30.05	34.61	49.32	2.47	17.53	6.62	0.25	4.43	.....	100.0	.....	.....	.....	.....	.....
Totals, 1925	140,379	1,024,508	350,770	1,223,197	251,897	634,514	522,572	33,194	261,286	51,789	2,675	57,152	43	1,023,789	100.0	1,057,702	100.0	2,121,672	100.0
Per cent	13.71	96.86	34.23	57.65	24.60	29.91	51.05	3.14	12.31	5.06	0.13	5.58	.....	100.0	.....	100.0	.....	100.0	.....
Totals, 1924	28,454	206,253	102,832	179,502	106,019	285,693	210,830	1,398	198,352	30,206	1,531	26,705	269	402,214	100.0	207,651	100.0	665,078	100.0
Per cent	7.07	99.33	49.86	26.99	26.36	42.95	52.42	0.67	29.83	7.51	0.23	6.64	.....	100.0	.....	100.0	.....	100.0	.....
Dominion Railway Belt	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

DAMAGE TO PROPERTY OTHER THAN FORESTS, 1926.

Forest District.	Products in Process of Manufacture.	Buildings.	Railway and Logging Equipment.	Miscellaneous.	Total.	Per Cent. of Total.
Cariboo	.....	$ 660	.....	$20,117	$ 20,777	2.77
Kamloops	$ 75	5,100	$ 200	4,005	9,380	1.25
Prince George	302	1,100	750	6,147	8,299	1.11
Prince Rupert	2	.....	4,102	1,663	5,767	0.77
Southern Interior	20,457	22,255	48,360	22,587	113,659	15.14
Vancouver	96,345	214,100	268,350	13,214	592,009	78.96
Totals	$117,181	$243,215	$321,762	$67,733	$749,891	100.00

COMPARISON OF DAMAGE CAUSED BY FOREST FIRES IN THE LAST TEN YEARS.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.	1918.	1917.
Total number of fires	2,147	2,521	2,174	1,530	2,591	1,330	1,251	1,141	910	986
Area burned (acres)	659,871	1,023,789	402,214	157,601	1,568,585	145,838	389,846	433,797	140,085	237,289
Standing timber destroyed or damaged (M. ft. B.M.)	398,694	1,024,508	207,651	87,371	729,941	68,476	229,253	287,520	42,886	267,186
Amount salvable (M. ft. B.M.)	109,385	350,770	102,832	37,891	117,006	39,553	49,575	93,559	22,387	48,133
Damage to forests	$ 930,373	$2,121,672	$ 665,078	$ 74,238	$1,531,300	$ 97,332	$485,963	$393,183	$ 25,930	$129,125
Damage to other forms of property	749,891	625,518	540,291	617,649	693,016	195,221	473,900	345,787	200,335	162,333
Total damage	$1,680,264	$2,747,190	$1,205,369	$691,887	$2,224,316	$292,553	$959,863	$738,970	$226,265	$291,457

FIRE-FIGHTING EXPENDITURES.

Fire-fighting expenses incurred by the Department showed a falling-off from the high figure, $616,940, of 1925 by over $100,000. The expenditure by the Department was $504,234.46 and by private concerns $133,254.65, which was nearly the same as last year. The only district to show an increase over 1925 was the Southern Interior; 81.39 per cent. of the total expenditure was incurred in that district. This was due to the large number of lightning-fires occurring at one time over a large territory, making it impossible to get fire-fighting crews organized on some of them until they had assumed large proportions, with resulting high cost of control.

Of the total number of fires, 60.92 per cent. were extinguished without cost to the Department, and a further 22.37 per cent. at a cost of less than $100 each. Only 5.44 per cent. cost more than $1,000 each to extinguish.

FIRE CAUSES.

Lightning, as has been the case for the past five years, holds first place as the most prolific cause of fires. Human-hazard fires number 1,590, as compared with 1,705, the average for the past five years, and 1,867 for 1924, a year of comparative intensity so far as number of fires is concerned. This is very encouraging in view of the increase in tourist-travel and number of people going into the woods. Last year, for example, there was a real revival in prospecting in some parts of the Province.

Industrial operations are only charged with 104 fires, as compared with 137 in 1925, reflecting a greater care in the woods by those in charge of such operations, and particularly, it is believed, to the plan of working an early shift and closing down during the dry and hazardous afternoons.

Railways were responsible for 376 fires, as compared with 337 during 1925. The greatest increase was in the Southern Interior, where there were 110 more railway fires this year than last.

Campers and smokers showed a further decrease from the figures of previous years, there being only 589 fires assigned to this cause, as compared with 712 in 1925 and 690 in 1924. This undoubtedly shows that efforts toward public education on this subject are having a favourable result.

NUMBER AND CAUSES OF FOREST FIRES FOR THE LAST TEN YEARS.

Causes.	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.	1918.	1917.
Lightning	557	632	307	274	246	164	304	115	134	48
Campers and travellers	351	426	382	262	626	308	246	310	158	209
Railway operation	376	337	328	199	332	283	227	146	104	335
Railways under construction	....	....	....	....	....	2	1	22	1	....
Smokers	238	286	302	180	....	....	....	....	....	....
Brush-burning (not railway-clearing)	157	202	243	154	355	136	96	97	100	48
Public road-construction	14	14	19	12	22	20	7	5	2	5
Industrial operations	104	137	134	170	203	119	104	129	80	59
Incendiary	68	103	115	35	69	40	32	21	15	13
Miscellaneous known	126	150	107	71	202	64	69	140	72	55
Unknown causes	156	234	237	173	536	204	165	156	224	214
Totals	2,147	2,521	2,174	1,530	2,591	1,330	1,251	1,141	910	986

BURNING PERMITS, 1926.

Forest District.	CLEARING AGRICULTURAL LAND.				CLEARING LOGGING-SLASH.				CLEARING RAILWAY RIGHT-OF-WAY.				CLEARING PUBLIC ROADS.				GRAND TOTALS.			
	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.
	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.
Cariboo	463	2,008	2	2	91	384	....	....	1	1	....	....	13	54	....	2	568	2,447	2	4
Kamloops	314	398	....	...	19	28	....	....	9	42	1	....	2	10	....	....	344	478	1	....
Prince George	1,042	2,682	14	2	15	33	....	....	3	1	....	....	16	14	....	....	1,076	2,730	14	2
Prince Rupert	1,107	4,189	7	....	3	4	....	....	12	477	2	1	13	183	....	....	1,135	4,853	9	1
Southern Interior	824	1,711	35	5	45	394	3	....	25	287	3	2	27	174	1	....	921	2,566	42	7
Vancouver	3,392	4,026	9	17	38	8,876	....	1	10	1,200	....	....	48	56	1	....	3,488	14,158	10	18
Totals	7,142	15,014	67	26	211	9,719	3	1	60	2,008	6	3	119	491	2	2	7,532	27,232	78	32
Per cent	94.82	55.13	85.90	81.25	2.80	35.69	3.85	3.12	0.80	7.37	76.9	9.38	1.58	1.81	2.56	6.25	100.0	100.0	100.0	100.0
Totals, 1925	8,858	19,166	89	51	276	17,679	6	2	94	1,578	5	3	103	310	6	3	9,331	38,733	106	59
Per cent	94.93	49.48	83.96	86.45	2.95	45.64	5.66	3.39	1.01	4.08	4.72	5.08	1.11	0.8	5.66	5.08	100.0	100.0	100.0	100.0

FIRE-PREVENTION.

Continuing the policy of using every possible means to bring the necessity for care with fire before the public, an extensive publicity programme was carried out during the season.

The whole of Canada and the United States entered into "Save the Forest Week" in a concerted drive to arouse the fire conscience of the people.

This year in British Columbia publicity during the "week" was directed largely by local committees chosen from the outstanding men in the Province who were interested in the general forest-protection movement and who were willing to divert part of their time and endeavour to planning and carrying out the campaign.

Addresses were given by His Honour the Lieutenant-Governor and several prominent persons, as well as by practically every man in the Forest Service. The radio broadcasting stations of the *Daily Province* and the Canadian National Railway, Vancouver, were used for a time each evening of the "week" to spread the forest-protection message.

Large quantities of printed matter were distributed, lectures were given at schools, churches, service clubs, Boy Scout Associations, and, in fact, wherever a group of persons could be reached.

The school lecture programme was continued throughout the season as opportunity offered and was stressed by the Canadian Forestry Association in co-operation with the Forest Branch. The travelling lecture party of the association covered many communities on Vancouver Island and the Mainland, giving motion-picture illustrations of the forest-fire problem..

The industry in several localities contributed full-page illustrated advertisements bearing on this subject. The usual newspaper and periodical advertising of the Branch was carried throughout the Province during the three hazardous months.

Fair prize-lists, time-tables of bus lines, directories, etc., were invaded to carry the message to every available reader. A special folder, "Our Debt to Wood," was distributed at schools and exhibitions. A four-panel poster in colours was gotten out for display in hotels, restaurants, and other inside public places. The booklet "Camping and Hiking" was reprinted, with base maps showing the main highways of the Province, and was widely distributed. The demand for copies of this book indicate that it is being used by a large number of people. Several thousand book-marks, with a short protection message, were issued to the school-children. A miniature forest scene was built at the Victoria Home Products Fair and the attendants preached forest-protection and distributed printed appeals for care with fire in the forests, and a more pretentious display was shown at the Vancouver Exhibition through the collaboration of the Canadian Forestry Association, the Vancouver Hoo-Hoo Club, and the Forest Branch. This was visited by many thousands of people and attracted much attention.

Several of the smaller fall fairs were utilized, through the medium of prepared forest scenes, to draw attention to the part forest products play in the industrial activity of the Province.

FIRE-LAW ENFORCEMENT.

Two special law-enforcement officers were detailed by the Provincial Police to give their entire attention to the investigation of fires of suspicious origin and to the prosecution of offenders for breaches of the provisions of the fire-prevention part of the "Forest Act." It is believed that the employment of these men and the policy of stringent law enforcement has been a decided factor in reducing the number of fires set without permit. This year there were thirty-two such fires. Figures the last few years are: 1920, 38; 1921, 101; 1922, 144; 1923, 49; 1924, 48; 1925, 59.

There were twenty less prosecutions in 1926 than last year. The general public, through the more rigid enforcement by specially assigned men last year, would seem to have become imbued with a more healthy respect for the fire law.

PROSECUTIONS FOR FIRE TRESPASS, 1926.

Forest District.	Information laid.	Contravention of Provisions of Fire Permit.	Contravention of Section 98 of "Forest Act."	Contravention of Section 95 of "Forest Act."	Operating Open Burner without Permit.	Contravention of Section 114 of "Forest Act."	Burning without Permit.	Failure to report Fire.	Incendiary.	Leaving Camp-fires burning.	Refusing to fight Fire.	Fines.		Served Sentence in Gaol.	Suspended Sentence.	Cases dismissed.	Cases pending.	Cases withdrawn.
												No.	Amount.					
Cariboo.....	4	..	..	..	..	..	4	..	..	..	..	3	$ 60 00	1	..	..	..	..
Kamloops.....	1	..	..	..	..	..	..	..	..	..	1	1	25 00	..	..	..	..	..
Prince George .	3	..	..	..	..	1	2	..	..	..	..	3	125 00	..	..	..	..	..
Prince Rupert .	3	..	..	..	..	1	1	..	..	1	..	2	50 00	..	..	1	..	..
South. Interior.	14	..	..	..	..	..	2	..	..	2	7	11	331 00	3	..	..	..	..
Vancouver.....	24	2	1	3	1	1	11	1	..	2	2	22	600 00	..	..	2	..	..
Totals.....	49	2	1	3	1	3	20	1	..	5	10	42	$1,191 00	4	..	3	..	..
Totals, 1925.	97	..	..	..	..	8	45	6	2	14	24	62	$1,960 00	5	11	17	1	1

NOTE.—Southern Interior: Also two convictions for theft of Forest Branch property.

HAZARD REDUCTION.

The slash areas of the Province were reduced this year by burning over a total of 62,041 acres.

Intentional slash fires by logging operators, in most cases supervised by Forest Branch officers, and set after the close season, disposed of a total of 5,577 acres. During the close season permits were issued to cover the burning of 27,232 acres of slash, of which 9,719 acres consisted of new logging-slash, while accidental fires burned over a further area of 29,232 acres of old and new slash.

A total of 7,532 permits to burn were issued during the close season. Of the fires set under these permits, only 78 escaped control, or approximately 1 for each 100 fires.

This is the best showing since 1921, when less than one-half of 1 per cent. escaped control.

In most parts of the Province, through the favourable attitude of the District Engineers, road-slash has been to a large extent cleaned up, and wherever possible new road-slash is being disposed of concurrently with the right-of-way clearing.

Railway right-of-way clearing has been receiving careful attention from the several road-masters, and in general the condition of the railways is satisfactory throughout the Province.

The exclusive use of oil-fuel by the Canadian National Railway on the line from Prince Rupert to Alberta has shown immediate results in a decreased number of railway fires in that territory.

FIRE-DETECTION.

The programme of lookout construction, begun some three years ago, has been continued and new permanent lookouts were constructed at Sonora Island, on the Coast; Mount Baldy, to serve the Inkaneep and Kettle River Forests; and Moyie Mountain, in the Yahk Forest.

The old buildings on Little White Mountain, B.X. Mountain, and Casey Mountain were replaced by standard lookout structures.

A site for a lookout to serve the Nehalliston Forest was chosen, trail and telephone-line built and used with temporary quarters for part of the past season.

The permanent lookouts now number ten in all, located as follows:—

Vancouver Forest District	2
Cariboo Forest District	1
Southern Interior District	7
Total	10

In addition to these, several secondary lookouts were established and tried out for the season, as follows:—

Prince Rupert	1
Cariboo	2
Kamloops	1
Southern Interior	4
Total	8

MECHANICAL TRANSPORT AND FIRE-FIGHTING EQUIPMENT.

Portable fire-pumps were operated, in connection with fire-suppression, a total of 3,857 hours.

The usefulness of these units is increased in direct ratio to their portability and the volume of water delivered, and for that reason the replacement of the heavier units, as they lose their efficiency, with more portable units is being continued.

Twenty-three new pumps were purchased during the season.

The total number of portable pumps on hand in the several districts is 108.

In addition, there are twenty launches equipped with pumps fitted to run from the launch engine.

Launches.

Year.	Number of Units.	Total Miles run.	Average Miles per Unit.	Total Cost.	Average Cost per Mile.
1926	42	158,993	3,785	$16,275	$0.102
1925	43	167,478	3,894	21,376	.127
1924	43	119,703	2,784	16,094	.134
1923	40	106,500	2,662	19,493	.183

Motor-cars.

1926	79	593,642	7,512	$29,123	$0.054
1925	74	508,158	6,866	24,215	.047
1924	59	327,495	5,551	14,105	.043
1923	52	275,000	5,288	13,100	.047

Railway Speeders.

1926	17	42,207	2,482	$ 994	$0.023
1925	15	43,300	2,287	1,535	.035
1924	16	45,096	2,856	1,149	.025
1923	15	38,500	2,566	1,614	.041

Does not include capital cost or depreciation.

EQUIPMENT, IMPROVEMENTS, AND MAINTENANCE.

CARIBOO.

Equipment—	
Two Ford cars	$ 1,288 00
One Star car	957 00
Fire-fighting tools, etc.	704 00
Launch "Mountain Ash"	2,627 00
Total	$ 5,516 00
Improvements—	
Mouse Mountain Lookout	$ 25 00
Maintenance—	
Canin Lake Boat-house	$ 15 00
Quesnel Lake Boat-house	374 00
Lac la Hache Camp-site	63 00
Cottonwood Camp-site	57 00
Hanceville Ranger Station	357 00
Kelly Lake Camp-site	16 00
Pavilion Camp-site	16 00
Horsefly Lake Camp-site	17 00
Mount Begbie Lookout Trail	12 00
Carried forward	$ 927 00

CARIBOO—*Continued.*

Brought forward	$ 927 00
Maintenance—*Continued.*	
Alexandria Lookout and Trail	44 00
Goose Lake Trail	20 00
Blackwater Ranger Station	16 00
Bear Lake Ranger Station Cabin	28 00
Horsefly River Trail	12 00
McKinley River Trail	36 00
Archie Creek Forks Trail	12 00
Swamp Cabin–Elbow Lake Trail	28 00
Crooked River Trail	12 00
Big Slide Mountain Trail	26 00
Elbow Lake–Cruiser Lake Trail	28 00
Bear Lake–Canoe Trail	13 00
Miscellaneous	36 00
Total	$ 1,238 00

KAMLOOPS.

Equipment—	
One Star car	$ 915 00
Three fire-fighting pumps	905 00
One 16-foot boat	31 00
Hose for fire-fighting pumps	134 00
Fire-fighting tools	491 00
Total	$ 2,476 00
Improvements—	
Blue River Ranger Station House	$ 2,159 00
Birch Island Telephone Line	132 00
Garnet Mountain Lookout Trail	141 00
Horseshoe Ranger Station Cabin	141 00
Louis Creek Camp-site	158 00
McLure Cut-off Trail	376 00
Baldy Mountain Lookout Telephone Line	47 00
Baldy Mountain Trail	137 00
Larky Lake Ranger Station Cabin	439 00
Clearwater–Mahood Lake Trail	1,016 00
Total	$ 4,746 00
Maintenance—	
Barriere–Adams Lake Trail	$ 45 00
Vavenby–Adams River Trail	72 00
Adams Lake–Seymour Arm Trail	22 00
Launch "Aspen"	156 00
Clearwater–Blue River Trail	78 00
Main Seymour River Trail	37 00
Adams River Wagon-road	351 00
Upper Thompson River Trail	48 00
Blue River Ranger Station Cabin	76 00
Little Clearwater Ranger Station Cabin	88 00
Grizzly Mountain Lookout Trail	60 00
North Barriere Lake Boat-house	55 00
Carried forward	$ 1,088 00

KAMLOOPS—*Continued.*

Brought forward	$ 1,088 00
Maintenance—*Continued.*	
Clearwater Camp-site	32 00
Avola Ranger Station Cabin	78 00
Main Clearwater River Trail	42 00
Blucher Hall Lookout Trail	28 00
Fishtrap Trail	431 00
Peterson Creek Trail	62 00
Parky Lake–Allan Lake Trail	69 00
Allan Lake–Hoover Lake Trail	53 00
Miscellaneous	225 00
Total	$ 2,098 00

PRINCE GEORGE.

Equipment—	
Twelve hand-pumps	$ 147 00
Two fire-fighting pumps	693 00
Fire-fighting hose	481 00
Outboard motor	167 00
Rowboat	50 00
Fire-fighting tools	650 00
Total	$ 2,188 00
Improvements—	
Tool-caches	$ 26 00
Fort St. James Ranger Station	89 00
Tsinkut Mountain Lookout	84 00
Launch "Tachi II."	2,890 00
Total	$ 3,089 00
Maintenance—	
Willow River Trail	$ 138 00
Beaver River Trail	64 00
Miscellaneous	19 00
Total	$ 221 00

PRINCE RUPERT.

Equipment—	
Launch "Alpine Fir"	$ 7,500 00
Ford car	609 00
Outboard motor	178 00
Six hand-pumps	73 00
Total	$ 8,360 00
Improvements—	
Hazelton Garage	$ 175 00
Brick chimney, Hazelton Office	80 00
Lake Kathlyn Camp-site	105 00
Total	$ 360 00

PRINCE RUPERT—*Continued.*

Maintenance—	
Repairs, Launch "Lillian D."	$ 600 00
Repairs, Launch "Embree"	280 00
Repairs, Launch "Red Cedar"	245 00
Lakelse Telephone Line	86 00
Total	$ 1,211 00

SOUTHERN INTERIOR.

Equipment—	
Fire-fighting tools	$ 9,215 00
Fourteen Ford cars	8,870 00
One Star car	874 00
Ten fire-fighting pumps	3,360 00
Two power-speeders (second-hand)	50 00
Launch "White Pine"	2,626 00
Launch "Alba" (new hull)	287 00
Trout Lake Boat and Outboard Motor	257 00
Fire-fighting hose	2,246 00
Total	$27,785 00
Improvements—	
102 miles Trail	$ 7,605 00
B.X. Lookout	1,718 00
Casey Mountain Lookout	1,674 00
Little White Mountain Lookout	1,617 00
Moyie Mountain Lookout	1,680 00
Baldy Mountain Lookout	1,539 00
Saddle Mountain Lookout	94 00
Reno Mountain Lookout	217 00
Toad Mountain Lookout	231 00
Gold Creek Telephone Line	1,355 00
Phoenix–Greenwood Telephone Line	250 00
Waldo Pasture Fence	527 00
Flathead Ranger Station Cabin	306 00
Ellis Creek Cabin	196 00
Johnson Creek Camp-site	67 00
Boulder Creek Camp-site	65 00
Sheep Creek Camp-site	89 00
Deep Creek Camp-site	40 00
South Fork Camp-site	113 00
Total	$19,383 00
Maintenance—	
318 miles trail repaired	$ 2,875 00
Little White Mountain Telephone Line	160 00
B.X. Telephone Line	22 00
Casey Mountain Telephone Line	58 00
Duncan River Telephone Line	131 00
North Fork of Kettle River Telephone Line	92 00
Little Slocan and West Fork Telephone Line	98 00
Saddle Mountain Telephone Line	275 00
Elk Valley Telephone Line	306 00
Cedar Valley Telephone Line	13 00
Erie–Green City Telephone Line	30 00
Carried forward	$ 4,060 00

SOUTHERN INTERIOR—*Continued.*

Brought forward	$ 4,060 00
Maintenance—*Continued.*	
Elk Valley Ranger Station Cabin	51 00
Stanley Park Camp-site	41 00
Morrissey Road Camp-site	22 00
Elk Valley Road	31 00
Cedar Valley Road	63 00
Flathead Road	93 00
Phoenix Lookout	24 00
Cedar Valley Pasture	22 00
Miscellaneous	63 00
Total	$ 4,470 00

VANCOUVER.

Equipment—	
One outboard motor	$ 186 00
One rowboat	125 00
Eight fire-fighting pumps	2,901 00
One gear fire-fighting pump	67 00
Twenty-five hand-pumps	392 00
Two portable telephone sets	100 00
Fire-fighting hose	217 00
Fire-fighting equipment and tools	2,296 00
Total	$ 6,284 00
Improvements—	
Sonora Mountain Lookout	$ 1,620 00
Launch "Sonora"	2,388 00
Lake Cowichan Trail	709 00
Lake Cowichan Boat-house	42 00
Septic tank, Myrtle Point	97 00
Myrtle Point Telephone Line	179 00
Nobyrno Experiment	117 00
Mount Benson Lookout	9 00
Ways and dam, Thurston Bay	196 00
Cribbing, Thurston Bay	61 00
Plant improvements, Thurston Bay	405 00
Painting and repairing houses, Thurston Bay	359 00
Total	$ 6,182 00
Maintenance—	
Myrtle Point Ranger Station	$ 23 00
Myrtle Point Telephone Line	18 00
Sonora Mountain Lookout	92 00
Myrtle Point Lookout	24 00
Mount Benson Lookout	26 00
Miscellaneous	16 00
Total	$ 199 00

GRAZING.

RANGE AND LIVE-STOCK CONDITIONS.

The season of 1926 was a "dry one," particularly throughout the Southern Interior District. Exceptionally dry conditions with high winds prevailed throughout the midsummer period. This, following the most open winter, with its very light snowfall, experienced for many years, caused the early maturing and drying-up of secondary vegetation on the lower and heavily-grazed ranges. This dry condition was largely counterbalanced by the more early maturing of the feed throughout the timbered areas. Cattle which under normal conditions persist in congregating on the open ranges were forced, because of the total drying-up of all forage on the open areas, to graze entirely during midsummer on the timbered ranges. In consequence, their general condition was much better this year than during recent seasons, proving the contention of the Department that the timbered ranges furnish the best feed for midsummer use.

AUTHORIZATION.

The number of live sock authorized to graze on the Crown ranges of the various grazing districts for the year April 1st, 1926, to March 31st, 1927, is as follows: Cattle and horses, 60,000; sheep, 20,000.

BEEF AND LAMB PRICES.

The price of beef cattle on the hoof was higher during the 1926 season than during the past several years. Lamb prices on the hoof have ranged from 10 to 13 cents per pound, depending on quality and demand.

Prices for well-conditioned beef and mutton will continue to be satisfactory and the range live-stock industry will be a profitable one if more attention is given to the care of the live stock on both ranch and range.

HAY-CROPS.

The hay-crops were generally short, especially throughout the Southern Interior. The Cariboo District, however, north of the 52nd parallel was very fortunate. Although the snowfall of the winter of 1925–26 was so light that cars were operated all winter, very heavy rains occurred during December, 1925, filling all water-holes and reservoirs. There was ample water for irrigation, with fairly good crops resulting, and adequate supplies of hay are available for all live stock.

If weather conditions are not too severe throughout the Southern Interior this winter the stockmen will pull through, but supplies will be very short at the opening of the grazing season.

RANGE IMPROVEMENT.

At the date of the last Annual Grazing Report, February 1st, 1926, there was on hand a credit balance of $629.21 in the Range Improvement Fund. On April 1st there was available for further work during the fiscal year 1926 $5,987.18, of which $5,270.56 has been expended in stock-trails, mud-hole fencing, drift-fences to facilitate handling of herds, etc., leaving a balance on hand at date of $716.62.

The 105 bad mud holes discovered and now fenced are closely estimated to have each taken a toll of about ten head of cattle and horses annually. This represents approximately $50,000 annually saved to the live-stock industry of the Provincial ranges.

The use of the controlling-fences on the ranges, under which the breeding herds are being assembled during the early part of each breeding season, is showing value in increased calf-crops. Heretofore on those ranges great loss in service from expensive bulls was incurred through the scattered grazing of the herd during the breeding season.

The improvement of drinking-places is also showing results in the better distribution of the cattle on the ranges. All of these improvements, as well as others, would give the fullest value and be great aids to success in the range live-stock industry if the stockmen would take advantage of the better opportunity now presented to use the Crown ranges and handle their herds to protect the lower or early ranges from premature as well as over-grazing, and to use more of the timbered ranges, which provide the best feed for the cow raising the growing calf as well as for the growing beef during the midsummer months.

RESEEDING RANGES.

The experimental reseedings to cultivated grasses of burned-over areas in the Cariboo and Southern Interior Districts may be said to be failures.

On the unfenced areas both the heavy grazing by live stock and the crowding-out by native vegetation has practically destroyed the cultivated species. On the fenced areas completely protected from grazing the native vegetation has also crowded out the cultivated species.

Some form of soil-cultivation would be necessary if the cultivated species are to survive, and in order to prevent over-grazing by live stock, attracted by the high palatability of the cultivated species, large areas would have to be sown. Both would be expensive and are not warranted. With reasonable care in handling the live stock, over-grazed areas can be restored, and, furthermore, it is not necessary to sow cultivated species in an attempt to improve timbered ranges, as they are now, as a rule, furnishing ten times as much forage as is being consumed.

GRASSHOPPER-CONTROL.

The grasshopper-control campaign was continued on the Nicola ranges during the 1926 season by the Douglas Lake Cattle Company, the Guichon Ranch, the Nicola Stock Farms, and the S.X. Ranch, with poison supplied by the Government. Poisoning extended over the greater part of the season and inspections at the close of the work indicate that the plague is now under control on the Nicola ranges.

There were outbreaks on the Cariboo ranges at 105-Mile, Lac la Hache, Alexandria, and Riske Creek. Effective poisoning was carried out at these places. It is not likely further damaging outbreaks will occur there with present effective methods of control. At Riske Creek Mr. Jas. Stewart, on the River Ranch, accomplished good results, and, in view of a possible extensive outbreak on the Riske Creek prairie in 1927, materials for 20 tons of poison bait have been assembled at Riske Creek and arrangements made with the Riske Creek Stock-breeders' Association for co-operative poisoning-work.

WILD HORSES.

Following the removal of 1,950 head of wild horses from the ranges west of the Fraser River in 1925, a clean-up campaign was conducted over the same ranges in 1926, when 249 head, mostly stallions, were destroyed. They were the leaders of bands and had escaped in 1925. The result of this work is seen to-day in the general improved condition of the spring and fall ranges.

Work was also commenced during 1926 in the Cranbrook District, but, after it was well started, the representative live-stock association of the district requested a stay in the work as there was a prospect of a market for the horses developing.

Prospective buyers were in the Province last year and left with promises to return. Large numbers of horses were under control ready for inspection, but the buyers did not again appear. Later, buyers from the Russian Government came to the Province during the busy season, but without advance notice to the Department. This was unfortunate, for about 1,000 good horses were awaiting inspection.

There is a prospect that they will return in 1927 for more horses. Horsemen are being notified from this office regarding the type of horse wanted and are being requested to file at once an estimate of the number they will have available. Ottawa is being furnished this information and has promised to keep the Department informed of the development of the overseas market.

A plant has been erected at Regina to prepare horse-meat for overseas shipment. It has a capacity of 35,000 carcasses and the company has written for information regarding the number the Government can furnish for slaughter from British Columbia.

It is expected that further work in removing wild stallions, cripples, and large numbers of old, worn-out, and useless horses from the ranges in many of the districts will be continued this winter. The above types of horses are all useless, the stallions being a great menace and the cripples and old horses generally suffer miserably during the winter months.

FUTURE OUTLOOK.

The range live-stock industry is looking brighter, and as the use of registered bulls and improvement in methods in caring for cattle on the range increases, the revenue from the herds will be higher.

The cattlemen of the Province are considering the formation of a selling agency, the ultimate purpose of which is to increase profits to the stockmen through better marketing methods. Any such selling agency will depend for success upon:—

(1.) Absolute co-operation of individual and collective effort on the ranch and range.

(2.) The use of pure-bred bulls on ranch and range to improve conformation and quality of beef.

(3.) The careful culling of the breeding herd to eliminate poor-quality cows and non-breeders:

(4.) Adequate winter feeding of cattle of all ages, especially the growing beef.

(5.) Close attention to the breeding herd during calving and breeding seasons to save all calves and secure service from good bulls, thereby increasing the present low calf-crop.

(6.) The grazing of the herd on good feed during the seasonal period each type should be grazed, and particularly the carrying of the beef on the best possible forage.

(7.) Collective effort to arrange shipments to evenly distribute the annual beef output to market in an orderly manner.

(8.) Good and efficient management by competent officials thoroughly acquainted with the business of co-operative marketing.

The labour question on the range is an important one and it constitutes one of the serious problems of the cattle industry. The Annual Grazing Report has previously called attention to this, with particular reference to the care of the cattle on the open range. This is one of the gravest problems the stockman has to contend with, for the success of his business depends upon reliable and intelligent help on the range. At present he is not getting this class of help, and in consequence his calf-crop suffers heavy loss through failure to have the good bulls properly distributed throughout the herd during the breeding season. Heavy loss in the growth of the beef is also occasioned through failure to keep the herd on the proper feed during each seasonal period of the grazing season. This is due to general neglect of the essentials in range-cattle management and to a lack of knowledge of forage, forage-type grazing capacity, and its seasonal use periods.

The success of the business depends upon a knowledge of and attention to these things. A knowledge of the forage, its nutritive value, and how and when it should be grazed is most important. This all-round knowledge can only be gained through proper training, and it should be the function of agricultural colleges and universities to turn out the cowmen trained in veterinary science, as judges of good beef and how to raise and care for it; as experts in range forage, its values and methods of grazing it with benefit to cattle and range. This initial training, combined with practical experience, will render available to the cattle industry the reliable, intelligent, and expert cowmen so badly needed if profitable management is to be expected out on the range. Expert knowledge is demanded in fencing and improving the ranch. Expert knowledge is applied to raising, caring for, and harvesting the hay-crop. Expert knowledge of irrigation is sought in bringing water to the crops. Then why not expert knowledge in managing the cattle and range, from which the main revenue is derived?

A growing menace to the range-cattle industry is that of the annual "stampede" held in each hamlet of the range country. They accomplish nothing but confusion by unsettling labour on the ranch and range during the season when all important operations are going on. "Cowboys" are inclined to devote their energies to practising up for bucking and steer-riding contests instead of the care of the cattle herds they are hired to attend. If the "stampede" is to be held anywhere, let it be at large centres, where it will be on so extensive a scale that it will be truly an attraction rather than a baneful influence.

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