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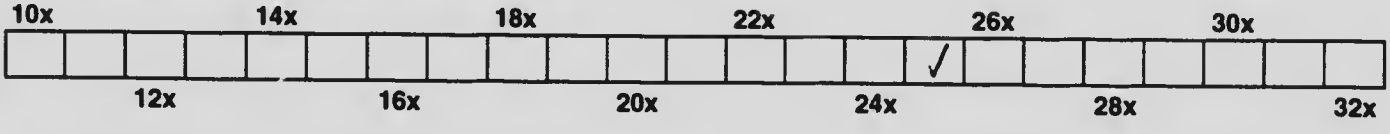

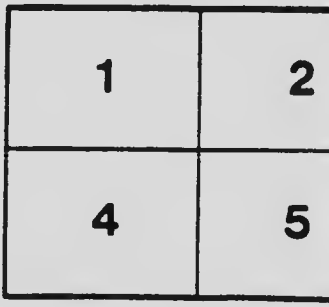

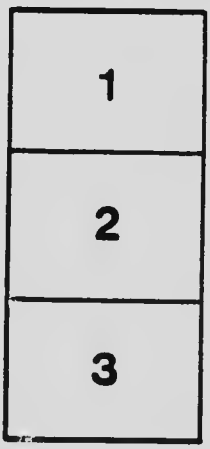

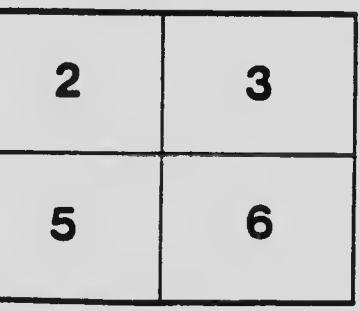

DEPARTMENT OF THE INTERIOR, CANADA
Hon. Frank Oliver, Minister; W. W. Cory, Deputy Minister
FORESTRY BRANCH—BULLETIN No. 20.
R. H. Campbell, Director of Forestry.

FOREST PRODUCTS OF CANADA

1909

TAN BARK AND TANNING EXTRACT USED

COMPILED BY
H. R. MACMILLAN, B.S.A., M.F.
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TAN BARK AND TANNING EXTRACT USED 1909.

This report, covering the year 1909, is based on information received from 67 tanneries and represents about 90 per cent of the vegetable tannin consumption in Canada. The total value of the vegetable tanning materials used by Canadian tanneries in 1909 was $1,426,004, consisting of 76,792 cords of bark, valued at $646,679; 17,313,500 pounds of liquid extract, valued at $428,283, and 1,372,470 pounds of raw vegetable tannins, valued at $51,042.

The quantities, total and average value of each of these classes used in each province in 1909 is given in Table 1.

TABLE 1.—Tanbark, Tannin Extract 1909.—The number of tanneries and the quantity total value and average value per unit of their consumption of bark extract and other forms of tanning materials, by provinces.

Province.	No. of tanneries.	Bark.			Extracts.			*Tannins in crude Forms.		
		Quantity.	Value	Av. val. per cord.	Quantity.	Value	Av. val. per lb.	Quantity	Value.	Av. val. per lb.
		Cords.	$	$	Lbs.	$	$	Lbs.	$	$
Canada	67	76,792	646,679	8 42	17,313,500	428,283	025	1,372,470	51,042	037
Ontario	33	46,945	408,869	8 71	12,221,000	311,420	025	849,970	30,237	035
Quebec	26	21,097	171,535	8 13	4,305,000	91,603	021	82,500	2,805	034
Nova Scotia	2	4,600	32,375	7 04	382,500	13,000	034	440,000	18,000	041
New Brunswick	3	4,150	33,900	8 17	405,000	12,260	03			

*Includes quebracho palmetto, chestnut, gambier or cutch, valonia cups, sumach and myrobalan imported raw.

Until a few years ago bark was practically the only tannin used in Canada. Both oak and hemlock bark were used and the tanneries were situated chiefly in districts where the bark was produced. Measured by value, bark now represents only 54.7 per cent of the vegetable tannins used in the country; no bark is used excepting hemlock, and there are very few tanneries depending altogether upon bark. Some of the large tanneries use no bark; the majority use bark for some processes and a variety of tannins for other processes. Only small tanneries situated in hemlock districts now depend altogether upon bark.

The tanning industry of Canada is confined chiefly to four provinces: Ontario, Quebec, Nova Scotia and New Brunswick. The value of the vegetable tanning materials used in the tanneries of Ontario in 1909 was $750,526, or 66.7

per cent of the total. Quebec used almost a quarter of the total, 23.6 per cent, valued at $265,943. In Nova Scotia the tannins used were worth $73,375, and constituted 6.5 per cent of the total, about one-sixteenth. The remainder, valued at $46,160, was used in New Brunswick.

Measured by value, hemlock bark was the chief tannin used in each province in 1909, and in all provinces excepting Nova Scotia a greater value of hemlock bark was used than of all other vegetable tannins together. The use of hemlock bark was most general in New Brunswick, where in 1909 it constituted 73.4 per cent of the total. In the other provinces bark formed the following proportions of all tannins used: Quebec, 64.5 per cent; Ontario, 54.5 per cent; Nova Scotia, 44.4 per cent.

Ontario and Quebec together, the two chief tanning provinces, used over seven-eighths of the bark used in Canada; Ontario used, in 1909, 46,945 cords; Quebec used, in 1909, 21,097 cords. The remaining one-eighth of the total was divided almost equally between Nova Scotia and New Brunswick, Nova Scotia using 4,600 cords and New Brunswick 4,150 cords. Of the total quantity of bark used in Canada 61.1 per cent was used in Ontario, 27.5 per cent in Quebec, 6 per cent in Nova Scotia and 5.4 per cent in New Brunswick.

The average cost per cord, at the tannery, of the bark used was $8.42. The price in Ontario was $8.71, which was 58 cents higher than the price in Quebec ($8.13). The price in New Brunswick ($8.17) was $1.13 higher than the price in Nova Scotia ($7.04).

Since the supply of hemlock easily accessible to the tanneries has been used up and the importation of tanning materials from the south has become more common, extract plants have been established in the hemlock regions of Canada and the tannin shipping regions of the south, from which the tannin is shipped to its destination in the form of a liquid extract, a form which is more conveniently and cheaply handled than the raw material.

Extracts represented by value 38 per cent of the tanning materials used in 1909; there were 17,313,500 pounds of liquid extract used, costing $428,283.

According to value, liquid extract is used proportionately more in Ontario and Quebec, where the largest tanneries are situated, than in Nova Scotia and New Brunswick, where the tanneries are smaller. In 1909, 12,221,000 pounds were used in Ontario, 4,305,000 pounds in Quebec and about 400,000 pounds each in Nova Scotia and New Brunswick. By value, liquid extract formed 41.5 per cent of the total tannins used in Ontario, 34.4 per cent of the total used in Quebec, 26.6 per cent in New Brunswick and 17.7 per cent in Nova Scotia.

The average cost at the tannery of the liquid extract used in Canada in 1909 was 2.5 cents per pound. It was the cheapest where the largest quantities are used, in Ontario and Quebec, where it cost respectively 2.5 and 2.4 cents per pound, and was most expensive where the smallest quantities were used, in Nova Scotia and New Brunswick, where the cost was, respectively, 3.4 and 3 cents per pound.

A few tanneries in Ontario, Quebec and Nova Scotia using foreign tannins import the materials in a raw form and manufacture their extracts. The materials imported in this shape, are, in the order of their importance, quebracho, palmetto, chestnut, gambier or cutch, valonia cups, sumach and myrobalan. A total of 1,372,470 pounds of these materials, costing $54,042, was used in 1909. This represented, by value, 7.3 per cent of the tannins used in Canada in that year. Three-fifths, 61.9 per cent, of the raw tannin materials were used in Ontario, where the consumption was 849,970 pounds; about one-half as much, 440,000 pounds, 32.4 per cent of the total, was used in Nova Scotia, and the remainder, 82,500 pounds, 6 per cent of the total, was consumed in Quebec.

The use of these imported raw materials is proportionately greatest in Nova Scotia, where in 1909 they formed 28.2 per cent of all tanning materials used. In Ontario they constituted only 4.4 per cent of the tanning materials used, and in Quebec 1.1 per cent. None were used in New Brunswick.

In Table 2 are shown the quantity, total value and average value per unit of the different species and forms of tanning agents used in Canada in 1909.

TABLE 2.—Tanbark and Tannin Extracts, 1909.—The quantity, total value and average value per unit of the different forms of vegetable tannin used.

Kind.	Bark.			Liquid Extract.			Tannin or other Forms.		
	Quantity.	Total value.	Av. value per cord.	Quantity.	Total value.	Av. value per lb.	Quantity.	Total value.	Av. value per lb.
	Cords.	$	$	Lbs.	$	$	Lbs.	$	$
Total	76,792	646,679	8 42	17,313,500	128,282	0.25	1,372,470	31,012	0.7
Hemlock	76,792	646,679	8 42	1,836,500	11,650	0.21			
Quebracho				7,087,500	201,788	0.29	1,321,650	75	0.7
Oak				1,101,500	77,816	0.09			
Chestnut				314,500	10,120	0.32			
*Unspecified				3,973,500	93,909	0.21	50,820	2,267	0.11

*Includes a small quantity of spruce extract, a by-product from sulphite pulp mills.

†Includes quebracho, palmetto, chestnut, gambier or catch, valonia, cups, sumach and myrobolans imported raw for the domestic manufacture of extracts.

As has been pointed out above, hemlock is the only bark used, and by value bark constitutes 54·7 per cent of the total, liquid extract 38 per cent, and other forms of tannin 7.3 per cent. The most important liquid extract is quebracho, of which 7,087,500 pounds, costing $201,788, were used in 1909; oak extract was used to the extent of 4,101,500 pounds, costing $77,816; 1,836,500 pounds of hemlock extract were used at a cost of $11,650 and 314,500 pounds of chestnut extract costing $10,120. Of these the only one domestically produced is hemlock; the others are all imported, chiefly from the United States and South and Central America. Included in the unspecified is a small quantity of spruce extract, a new tanning material manufactured from the waste liquor from sulphite mills manufacturing spruce pulp.

The value of liquid extracts varies from two to three cents per pound. The cheapest, in 1909, was oak at 1.9 cents; the most expensive, chestnut at 3.2 cents; the prices of the others were hemlock 2·3 cents and quebracho 2·9 cents.

Quebracho is the only tanning material imported in large quantities in the raw state; 1,321,650 pounds of quebracho were used in Canada in 1909, at a cost of $48,775, an average of 3·7 cents per pound.

The two chief tanning agents used in Canada are hemlock and quebracho; together they form 83·6 per cent, by value, of all the vegetable tannins used in Canada. The total value of the hemlock used in 1909 was $688,329; 98·9 per cent of this was used in the form of bark; 1·1 per cent in the form of extract. The total value of the quebracho used in 1909 was $253,563; 80·7 per cent of this came to the tanneries in the form of extract; 19·3 per cent in the form of chips.

The only Canadian produced tannin is hemlock; this constitutes, by value, 61·1 per cent of the vegetable tanning material used in Canada. The other 38·9 per cent, valued at $437,675, is imported.

Canada does an export as well as an import trade in tanning materials. Hemlock bark and extract of hemlock bark are exported.

The export of hemlock bark reached its maximum in the decade from 1877 to 1886, when an average of 81,991 cords, valued at $355,208, were exported annually. The greatest shipment recorded was in 1880, when it totalled 112,813 cords, valued at $141,360. This was an average of $4.33 per cord. Since that date the export has declined. There were exported in the fiscal year 1909,19,-659 cords of bark, valued at $122,118. The average price for the exported bark was $6.21 per cord. All of the bark exported goes to the United States.

The export of hemlock extract reached its maximum in the decade from 1875 to 1884, when the average yearly export was 11,777,000 pounds,valued at $234,-432, or 2 cents per pound. The greatest export was in 1883, 20,161,500 pounds, !valued at $305,418. For the last 19 years the annual export has been less than 5,000,000 pounds; in 1909 it was 3,299,500 pounds, valued at $79,437, or 2.4 cents per pound. About 90 per cent of the extract of hemlock bark exported goes to the United Kingdom, the remainder to the United States.

In 1909 the forests of Canada produced tanning materials to the value of $889,894; 77.3 per cent of this was used at home, the remainder was exported.

All the hemlock bark and hemlock bark extract used and manufactured in Canada is the product of the eastern hemlock. Though the bark of the western hemlock, of which 22,736,000 feet were cut in British Columbia in 1909, contains 16 per cent of tannin, it is not utilized yet. 32,252 acres of hemlock forest have been leased to private parties by the British Columbia government at an annual rental of 2 cents per acre, with the idea that the bark would be utilized for the manufacture of tannin, but there have yet been no developments. These leases were granted in 1905 and 1906 and are good for 30 years.—(1).

Taken together, bark and extract used in Canada or exported in 1909 represented a production of about 110,000 cords of hemlock bark. There were cut in Canada in 1909, 279,985,000 board feet of eastern hemlock.—(2.)

Accepting that this hemlock produces on an average six-tenths of a cord of bark for every thousand feet of lumber, there might have been utilized from the hemlock cut for lumber in 1909 about 168,000 cords of bark (3). Only about two-thirds of this quantity was utilized; the other one-third was wasted and represented a loss on the eastern hemlock, for 1909 alone, of about $400,000. A portion of the waste due to the total lack of utilization of western hemlock bark and the incomplete utilization of the eastern hemlock bark should be reduced.

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(1) Report of the British Columbia Forestry Commission.
(2) Bulletin 11, Forestry Branch, Ottawa
(3) In some districts one cord of bark is produced for every 1,000 feet of lumber.

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