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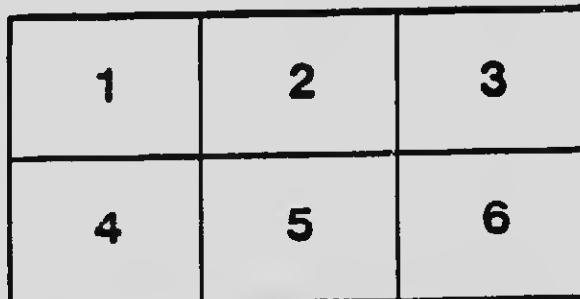
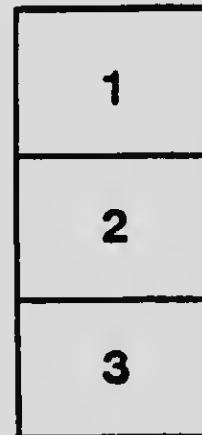
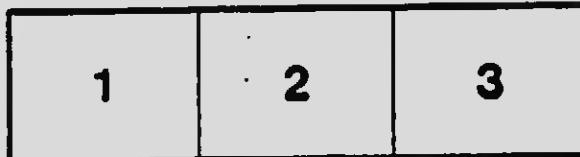
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COAL.

ANALYSIS OF THE TRADE BETWEEN
CANADA AND UNITED STATES.

BY
W. C. MILNER.

OTTAWA:
THE MORTIMER COMPANY, LIMITED, PRINTERS

1904.



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PREFACE.

Man draws arbitrary lines on the map, known as International boundaries, and flanks them with tariff walls and custom houses, and says: "Thou shalt not trade."

Nature places on either side stores of natural wealth needed in the industrial growth and prosperity of the other side, and says: "Thou shalt trade."

The great Province of Ontario possesses no coal deposits. Nature points her finger at Ohio, Pennsylvania and West Virginia, as the nearest sources of supply, but man has put up bars 53 cents high.

The great New England States have no productive coal measures. Nature says: "Your natural supply is down east in Nova Scotia," but the tariff comes in, and as a result the people are taxed by a long rail haul, or else by the expenses of a combined rail and water carriage.

To divert a prime requisite as coal from its natural channels of distribution is necessarily attended with loss of capital.

During the past quarter of a century the Province of Ontario has sacrificed over 30 millions of dollars, and it is easy to compute a direct loss of over 100 millions to the corners of New England. This wasting process is going on year by year.

The cheapening of an article that is at the basis of industrial activity, such as coal, by ten or twenty per cent., tends to extend and multiply its uses. Therefore, the mines of Ohio, Pennsylvania and West Virginia on the one side, and Nova Scotia on the other side, are yearly meeting the loss of these increased sales they would enjoy under an unrestricted natural market.

It is therefore the interest of the mine owners in these States and in Nova Scotia to ask the governments at Washington and

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Ottawa to arrange for the concurrent removal of the Customs duty, thus providing room for the free expansion of coal trade between the two countries.

The following analysis of the coal trade between Canada and United States has been compiled from Seward's "Coal Trade," and "Coal Trade Journal;" U. S. "Commerce and Finance," from Bureau of Statistics; U. S. Geological Reports; Canadian Blue Books; articles by C. Ochiltree MacDonald, Hon. R. Drummond, and Alexander Dick, in Nova Scotia (1903) Mining number, and Capt. Smith's Chart of Marine Distances, &c.

COAL.

ANALYSIS OF THE TRADE BETWEEN CANADA AND UNITED STATES.

By W. C. MILNER.

The relationship of the Coal trade of United States with Canada can be considered from three points :

- 1st. The centres of production.
- 2nd. The lines of distribution, and
- 3rd. The places of consumption.

The United States has become the greatest coal producing country in the world.*

The production of Bituminous coal in 1903 was 285 million of short tons and 74 million tons of Anthracite, a total of 359 million tons.

* The consumption of coal per head of the population has increased as follows:—

	Anthracite, Tons.	Bituminous, Tons.
1840 .....	.05	.05
1850 .....	.14	.17
1860 .....	.27	.31
1870 .....	.41	.51
1880 .....	.46	.87
1890 .....	.56	1.65
1900 .....	.59	2.75

The coal output of other countries during the same year was :—

	Production.
* Great Britain.....	258 million tons.
Germany.....	166 "
Austro-Hungary ('91)....	45 "
France.....	33 "
Belgium.....	25 "
Russia.....	18 "
Japan.....	10 "
India.....	8 "
Canada.....	7 "
New South Wales.....	6 "
Spain.....	3 "

* The 50 million tons of coal which Great Britain either exports or supplies annually to vessels at her own ports (which is rated as an export) forms, it is computed, four-fifths of British exports. Without that vessels going abroad for food-stuffs and raw materials would have to go in ballast, which would double the freights in imports. One-half of the coal exported abroad gives employment to British shipping or is for British industrial works. In 1901, Britain exported to the following countries as follows :—

	Tons.
France.....	7,565,606
Italy.....	5,497,625
Germany.....	5,819,844
Sweden and Norway.....	4,068,434
Russia.....	2,403,425
Denmark.....	2,101,595
Egypt.....	2,061,223
Spain.....	1,835,762
Brazil.....	776,018
Argentina.....	905,129
Other countries.....	6,315,896
Colonies.....	2,526,524
Total.....	41,877,081

The exports of British coal, coke, and patent fuel for the first half year of 1904 shew an increase of 800,000 tons over the same period of 1903 as follows :—

1903.....	22,489,303 tons.
1904.....	23,865,973 "

Germany produces "stone" coal corresponding to our Bituminous, and also lignite, called "brown" coal. About 1,600,000 tons of briquettes are made a year, and sell at \$3.20 per ton.

"More than 800,000,000 tons of coal a year are mined and transported to keep the world's furnaces aglow. * This means a square block half a mile each way. One hundred thousand men worked thirty years to build the pyramid of Cheops, and yet the annual output of coal is equal in bulk to 200 such pyramids." —(*Address by D. L. Tuttle, of P. & R. C. & I. Co.*)

The principal United States coal mining region is Pennsylvania, to wit:—

	Production.
Pennsylvania.....	103 million tons.
Illinois.....	37 "
West Virginia.....	30 "
Ohio.....	25 "
Alabama.....	12 "
Indiana.....	10 "

Twenty-two other states produce the remaining 70,000,000 tons.

The great Appalachian series of Bituminous coal measures, embracing an area of 12,000 square miles in Western Pennsylvania alone, also occupies adjoining territories in Ohio, West Virginia, and Maryland.

* Coal mines and railroads are inter-related. The mines depend upon railways to reach consumers and the railways depend upon coal for locomotive power. Oil has, however, in some localities entered the field. The Southern Pacific Railway Co. has been changing from coal to oil fuel; 780 locomotives out of 1,350 are using oil. The Company pays \$1,500 per day for oil to a land company to which it sold some years previously the territory producing the oil for the sum of \$1,600! An illustration to shew how dependent nations are on coal supply: In 1862, the U. S. cruiser *Vanderbilt* when making a 25,000 mile chase after the Confederate cruiser *Alabama*, arrived at St. Helena short of coal. The coal dealer there demanded \$80 U. S. cy. per ton for coal, which the commander was finally obliged to give or abandon the chase.

The fields run north-east and south-west, conforming to the folds of the Appalachian ridge.*

In the northern districts the upper coal bearing formations are absent, but passing south the deepening of the synclines by the sinking of their axis blends isolated patches into the main body and increases the thickness of the coal measures till the thickness ultimately attained is 2,600 feet. The bituminous field of Pennsylvania is noted for an almost entire absence of structural faults. In comparison with Nova Scotia coal fields this feature materially reduces the cost of mining. In the N.W. section the measures occur in outlying patches capping high knobs and ridges. These have escaped denudation in a former geological period. The seams of this great coal field extend into West Virginia.

Four counties in Pennsylvania and two in West Virginia, adjacent to each other, contain all the coal in the celebrated Monongahela Valley. It extends along the whole of the Monongahela River as far as navigable. Two thousand miles would not cover its outcrop. It lies mainly above drainage level. This is another important factor in the cost of mining. In the counties of Allegheny, Washington, Westmoreland and Fayette in Pennsylvania, and Monongalia and Marion in West Virginia. The output of the mines in these counties in 1902 was :—

PENNSYLVANIA.

Allegheny.....	13 million tons.
Washington.....	7 "
Westmoreland.....	19 "
Fayette.....	19 "

* These fields cover the whole of the following counties :—Greene, Washington, Alleghany, Westmoreland, Beaver, Lawrence, Butler, Armstrong, Jefferson, Indiana, Clearfield, Cambria. Also portions of :—Fayette, Somerset, Elk, Clarion, Mercer, Crawford, Venango, Forest, Warren, Bradford, McKean, Cameron, Blair, Huntingdon, Bedford, Fulton, Carter, Clinton, Potter, Tioga, and occupy six well-defined synclines.

Other Pennsylvania counties are :—

Cambria.....	10 million tons.
Clearfield.....	6 “
Somerset.....	5 “
Jefferson.....	7 “

Centre, Elk, Indiana and Tioga from one to two millions each.

Output West Virginia mines :—

WEST VIRGINIA.

Monongalia.....	153,474 tons.
Marion.....	3,397,194 “

Other West Virginia counties are :—

Fayette.....	4,775,112 tons.
McDowell.....	5,459,655 “
Harrison.....	2,066,597 “
Kanawha.....	1,848,617 “

About twenty counties having an aggregate output of about eight millions.

The following was the production ('02) by districts in West Virginia :—

New River.....	7 million tons.
Pocahontas.....	7 “
Fairmont.....	5 “
Elk Garden.....	2 “

West Virginia, owing to its geographical position, is able to ship to tide water at 25 cents per ton cheaper than Pennsylvania, while to lake points the latter and Ohio have the advantage of 10 cents. This sum is however made up by a lower cost of operating, so that the West Virginia operator competes at the lakes on equal terms with those states.

ANTHRACITE.

The total output of the Anthracite mines of the United States was 66 million tons. The area of its production is practically

confined to North Eastern Pennsylvania, and but few transportation companies have access to it. While Bituminous is delivered largely as run of mine, Anthracite is sold as a manufactured article, e. g. :

	Per cent.
Lump	4.08
Broken	8.26
Egg	13.05
Stove	19.72
Chestnut	19.14
Tea	14.11
Buckwheat No. 1	14.72
Smaller	6.92

The following are the great producing counties in 1902 :—

Luzerne	12,852,000 tons
Lackawana	10,779,000 "
Schuylkill	7,704,000 "
Northumberland	2,878,000 "

Other counties, viz: Dauphin, Sullivan, Columbia and Cariboo shipped less than 1,000,000 tons each.

This output is all consumed in the United States, excepting about 750,000 tons shipped annually to foreign countries and about 2,000,000 to Canada. About 8,000,000 tons are consumed in New England.

CANADA.

The only remaining sources of coal supply for Eastern America are in Nova Scotia. The Nova Scotia fields are regarded as the continuation of the Allegheny Bituminous coal fields already referred to. These mines are at tide water, well situated for North Atlantic trade.

The known coal areas of Canada cover an area estimated at 100,000 square miles.

Hon. R. Drummond (N. S. Mining No., page 21, 1903), estimates that Nova Scotia possesses 3,992 square miles of coal fields.

Of this 992 miles contain seams from $4\frac{1}{2}$ feet to 15 feet in thickness; 1,500 miles contain seams up to 3 feet in thickness, and 1,500 miles under the new rocks of the Gulf shore and Gulf counties. He computes that there are 10,000,000,000 tons yet to be won in Nova Scotia.

The carboniferous area of New Brunswick is extensive, but it possesses only thin seams of coal which are considered of doubtful commercial value. The natural oil lands of that province are coming into prominence, and if their present promise be realised they will provide a substitute for fuel coal.

The great provinces of Quebec and Ontario possess no coal deposits.

The coal areas of Manitoba, estimated at 15,000 square miles, yield lignites only, of a good quality. The fixed carbon is 41 p.c., volatile matter 38 p.c., water 15 p.c., and ash 5 p.c.

The next coal area of Canada is at the base of the Rocky Mountains, and occupies an area of 50,000 square miles. It outcrops on the Belly, Bow, and Peace rivers. Proceeding west, a very valuable deposit is in the Rocky Mountains, where Anthracite seams as well as Bituminous coal are found.

The C. P. Ry. gets its supply from Canmore, Alberta, near Calgary. East of this that company owns extensive fields, on the main line east of the Rockies, and can furnish unlimited supply to the territory as far east as Winnipeg. Lethbridge coal is sold at Winnipeg. From Lethbridge to Rossland, nearly 400 miles through the Crow's Nest Pass, is one continuous coal field. The Canadian Pacific and Great Northern both own large and valuable deposits. Coal is also on the line of the projected Grand Trunk Pacific and Canadian Northern.

The coal measures east of Banff, Alberta, are now being developed. There are six workable seams within a distance of a third of a mile across the dip, which is 45 degrees westerly.

Two lowest seams, in cretaceous sandstone, are semi-Anthracite; the upper ones in softer shales and sandstones are semi-

Bituminous. The former are being worked. Coal from them analyzes as follows:—

Carbon.....	84 per cent.
Volatile.....	“
Ash.....	7 “
Water.....	1 “

Semi-Bituminous:—

Carbon.....	78 per cent.
Volatile.....	14 “
Ash.....	7 “
Water.....	1 “

The next area is on the Pacific Coast. Dawson gives the following estimate of its extent:—

Nanaimo Basin.....	200 sq. miles.
Comox “.....	700 “
Queen Charlotte Island.....	800 “
Lignite rocks south of 5th parallel.....	12,000 “

On Queen Charlotte Island a 3 foot seam and a 6 foot seam compare favorably with Pennsylvania Anthracite.

Steam coal is found generally throughout the southern part of British Columbia.

COAL TRADE OF CANADA.

IMPORTS.

	(1903) Tons.	Value.	Duty.
Anthracite from U. S.....	1,394,675	\$6,683,649	.....
Bituminous “.....	3,642,296	7,803,648	\$1,813,580.51
“ dust “.....	552,173	434,225	63,733.16
	5,589,146	\$14,921,522	\$1,877,313.67
Anthracite from G. B.....	62,038	\$345,015	.....
Bituminous “.....	99,784	344,467	\$36,197.06
Coal dust.....	7,265	11,902	788.92
Bituminous from Japan..	11,872	\$58,300	.....
“ “ Australia.....	59	90	\$31.27

CANADIAN EXPORTS OF COAL, 1903.

Country.	Quantity. Tons.	Value.
Great Britain.....	25,335	\$92,119
Newfoundland.....	126,169	330,054
British Africa.....	10,697	41,999
" West Indies ..	17,404	81,570
" Guiana.....	3,473	15,737
United States.....	1,719,027	4,640,064
St. Pierre.....	16,708	54,938
Hawaii.....	7,539	30,156
Australia.....	274	822
British Possessions...	1,281	4,483
Belgium.....	273	819
Cuba.....	578	2,652
Denmark.....	6,102	18,788
France.....	950	2,925
Germany.....	2,001	7,390
Holland.....	922	3,264
Japan.....	1,030	3,605
Norway & Sweden...	37,977	113,933
Philippines.....	345	1,208
Russia.....	1,292	3,876
Spain.....	310	1,240
Switzerland.....	264	792
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	1,979,951	\$5,452,434

The Canadian exports of coal are as follows:—

1899—1,140,840 tons.....	\$3,562,794
1900—1,641,031 ".....	4,599,602
1901—1,888,538 ".....	5,307,060
1902—1,817,534 ".....	4,867,088
1903—1,979,951 ".....	5,452,434

The exports of charcoal cinders and coke during the same period were as follows in value :

1899	\$22,574
1900	36,673
1901	200,930
1902	191,912
1903	149,777

NOVA SCOTIA COAL TRADE.

Tons raised (of 2,240 lbs.), 5,245,247.

The business has developed as follows : -

Coal sold --	Tons.
1830	27,269
1840	101,198
1850	180,084
1860	322,593
1870	568,277
1878	693,511
1880	954,659
1890	1,786,111
1900	2,997,546
1901	3,119,335
1902	3,898,626
1903	4,621,074

PRODUCTION, NOVA SCOTIA.

	Sales in Tons.
Maritime Coal Co. Chignecto	12,493
Fundy Coal Co. Fundy	1,240
Canada Coal and Railway Co. Joggins	38,768
Minudie Coal Co. Minudie	29,068
Ripley & Blenkhorn Scotia	296
Cumberland Ry. and Coal Co. Spring Hill	450,056
Acadia Coal Co. Westville, &c.	346,632
International Coal Mining Co. Drummond	225,221

PRODUCTION, NOVA SCOTIA. — *Con.*

	Sales in Tons.
N. S. Steel and Coal Co. Marsh	46,384
Dominion Coal Co. Dominion	2,900,004
Gowrie & Blockhouse	22,338
N. S. Steel & Coal Co. Sydney	345,492
Sydney Coal Co. Indian Cove.	12,071
Cape Breton Coal Mining Co. New Campbellton.	4,883
Port Hood Coal Co. Port Hood	65,631
Mabou Coal Mining Co. Mabou	107
Inverness Ry. and Coal Co. Inverness	119,390
Total.	4,621,074

This coal was distributed as follows :

	Tons.
Nova Scotia (by land)	520,445
“ (by sea)	1,085,032
Total.	1,605,477
New Brunswick.	370,722
Newfoundland	133,062
Prince Edward Island.	78,472
Quebec	1,403,916
West Indies	Nil.
United States	968,832
Other countries	54,493
Total.	4,621,074

The following are increases in sales over 1902 :—

Nova Scotia	222,914 tons.
Quebec	159,936 “
United States	217,450 “

BRITISH COLUMBIA COAL AND COKE PRODUCTION.

Of the output of 1903, 1,168,194 tons were sold as coal, while 282,469 tons were converted into coke, of which latter were produced 165,543 tons.

COAL.

	Quantity Tons	Value
1860	14,246	\$56,988
1870	29,834	119,372
1880	267,595	802,785
1890	678,140	2,034,420
1900	1,439,595	4,318,785
1901	1,460,331	4,380,993
1902	1,397,394	4,192,182
1903	1,168,194	3,504,582

COKE.

1895-6	1,565	\$ 7,825
1900	85,149	425,745
1901	127,081	635,405
1902	128,015	640,075
1903	163,543	827,715

The following table indicates the markets : —

SALES—COAL.

	Tons Coast	Tons Crows Nest	Total
1892—Sold for consumption in Canada.	310,765	111,701	422,466
1893— " " " "	353,166	173,949	527,114
1902— " export to U.S.	673,524	101,776	775,300
1893— " " " "	400,713	146,010	846,723
1902— " other countries	1,508	.....	1,508
1903— " " " "	2,725	.....	2,720
COKE.			
1902—Sold for consumption in Canada.	3,998	81,073	85,071
1903— " " " "	19,490	122,006	141,504
1902— " export to U.S.	12,016	26,764	38,780
1901— " " " " .....	.....	27,758	27,758

The shipments of coal from British Columbia to California have largely fallen off owing to the increased use of oil in the arts. The opening of oil wells at Bakersfield, which is 285 miles from San Francisco, has led to the sale of oil in that city at 85 cts. per harrel, which is estimated to equal \$2.25 per ton for coal. This has proved a great stimulant to manufacturing enterprises. The retail price of steam coal is \$7.00 and for house coal \$10.00 in that city.

CHANNELS OF DISTRIBUTION.

The transportation to the consumers of this enormous quantity of coal has called into existence an interest of colossal magnitude.

New York, Philadelphia and Buffalo are said to represent three points in a triangle which form the chief area of the consumption of anthracite coal. They may be also considered the chief centres of distribution of bituminous coal as affecting Canadian markets.

These three centres receive their Allegheny supplies by rail.

Buffalo is about fifty miles nearer the mining regions than Philadelphia, and the latter a hundred less than New York. From these points coal is transhipped by water. New York and its environs receive, approximately, 35 millions, 12 of which are consumed, and 18 millions were distributed coastwise; Philadelphia receives 12 millions, 7 millions of which are shipped to Atlantic ports. Buffalo shipped in 1903 to various lake ports $3\frac{1}{2}$ millions of tons, and to Canada $2\frac{1}{4}$ millions of tons, of all kinds.

The eastern gateways for bituminous coal from United States are :

Ogdensburg and Murrhistown from which the C. P. railway transports; Massena and Cecile Jet., used by the Canada Atlantic; Massena, used by the Grand Trunk; Norwood, by the Rutland & Vermont. A large quantity comes up the Hudson to Albany, and thence by canal to Lakes George and Champlain and from there by the Richelieu river to Sorel.

ALL RAIL.

The leading all rail routes in Canada are the Intercolonial Railway for Nova Scotia coal and the Canadian Pacific Railway for Rocky Mountain coal. In United States, the roads leading into New England and those leading to Chicago are the only ones with which this present enquiry is concerned.

The distance from Lethbridge to Brandon is 629 miles; to Winnipeg 762 miles. The price of coal at Lethbridge is \$2.00 f.o.b. cars. The freight to Brandon is \$4.50 ton in carloads; to Winnipeg \$4.55.

The Intercolonial Railway carries a small quantity of coal west during the winter months when navigation by the St. Lawrence is closed. This business commenced in 1878-9, when 300 tons were carried. In 1880-81, 4,022 tons were shipped to St. John, N.B., to go west of that point. The maximum of this trade was reached 1886-7, when 220,407 tons were shipped west. The business then declined so that in 1901-2 only 136 tons were carried. In 1901-2, 10,000 tons were carried, and in 1902-3 16,000 tons were shipped. This business was from Spring Hill mines and Picton. The regular rate for through coal is $\frac{3}{10}$ cents ton per mile. No coal is shipped by this mode west of Montreal.

The I.C.R. carried to local stations, 1902-3, 725,727 tons.

Coal rates to New England points via Boston & Maine, for Clearfield coal, gross tons, (Sept. 17th, 1900) :—

	From Rotterdam.	From Troy.
Boston (1).....	\$3.15	\$3.05
Lowell.....	3.35	3.25
Exeter, N.H.....	3.45	3.35
Dover, ".....	3.45	3.35
Beddeford, Me.....	3.45	3.35
Saco, ".....	3.45	3.35
Chelsea, Mass.....	3.14	3.05
Portsmouth, N.H.....	3.45	3.35
Portland, Me.....	3.45	3.35
Concord.....	3.35	3.25
Nashua, N.H.....	3.35	3.25
Manchester, N.H.....	3.35	3.25

Rail rate from Clearfield \$1.85 per gross ton.

(1) Coal from Beech Creek district, via N.Y. Central & H. Ry. R.R. Co., transferring at West Albany to B. & M. Ry., has a Boston rate to meet competition of bituminous coal reaching these points by water of \$2.60 gross ton, and does not apply to intermediate points (April 1st, 1903).

Boston from Punxsatawney or Clearfield to Boston, 656 miles, made up as follows :

Punxsatawney to Bradford per B. R. & P. Ry.	105 miles.
Bradford to Rochester.	124 "
Rochester to Albany (N. Y. C.). ...	228 "
Albany to Boston (B. & M. or B. & A.)	199 "
Total.	656 "
Portland from Punxsatawney.	771 miles.
New York to Boston (N. Y., N. H. & H.).	232 "

CHICAGO AND THE WEST.

Chicago formerly received all its coal by lake and canal. During the past thirty years the railway receipts have been increasing rapidly, so that now over 90 p.c. is taken there by rail, the remainder by water.

The receipts at Chicago in 1903 were 11,950,000 tons, of which 9,139,000 were bituminous. The shipments were 3,166,000 tons of which 2,184,000 tons were bituminous. The local consumption was 8,345,000 tons.

Bituminous coal came in as follows :—

Pennsylvania.	617,000 tons.
Ohio.	666,000 "
West Virginia and Kentucky.	809,000 "
Indi. na.	2,610,000 "
Illinois.	4,301,000 "

Chicago is one of the great consuming centres of coal and its distance by rail from the producing districts is of interest.

	Miles.
Northern Illinois.	65
Central "	171
Southern "	275

	Miles.
Eastern Illinois	129
Indiana, Miss.	195
Brasil Block	185
Jackson and Webster	401
Hocking Valley and Shawnee	379
Ohio, miscellaneous	291
Kanawah	523
New River	556
Pocahontas	648

ALL WATER.

The Nova Scotia mines are all at tide water. The distance from Louisburg to Boston is 565 miles. The freight varies from 45 to 60 cents, cargoes being carried in large colliers. The growth of the New England trade is handicapped first by the duty and next by the lack of dock and discharging facilities at the leading ports, to provide which would involve large expenditures. Capital could not be found for these works except on the basis of a permanent business. With such facilities, New England could be supplied with Nova Scotia coal by the All-Water route at a much cheaper rate than it is at present by the All-Rail or mixed rail and water routes from west.

A route that may be considered All-Water is for coal from New York up the Hudson river to Albany, through the Champlain canal to Lake George, Lake Champlain, Richelieu river to the St. Lawrence. A good deal of hard coal is shipped in barges, carrying about 100 tons, by this route in competition with rail shipments. The rate to Montreal from New York is \$1.60 per ton; to Ottawa, \$1.85. It is not necessary to refer to the Erie canal as a coal route further than to say that its depth, which controls the size of its barges, is rendering it, in comparison with rail transportation, yearly a less important factor in the business.

At Norfolk, coal from Pocahontas, Clinch Valley, and other coal carried by the Norfolk and Western Railway, last year the shipments were 2,000,000 tons.

In Baltimore an immense water front is being utilized for coal shipment purposes. Largest vessels can be loaded with great facility. The B. & O. Ry. ships here the product of Maryland, Elk Garden and Fairmont of West Virginia, Somerset of Pennsylvania. The Penn. Ry. ships Clearfield coal. The Wabash Ry. is also making it a shipping point. The following are the shipments for 1903:—

B. & O	3,500,000 tons.
N. C. Canton.....	700,000 "
Foreign	400,000 "

Newport News is the loading port of the Chesapeake & Ohio Ry., from which over four million tons were shipped in 1901.

These three ports furnish a million tons of bunker coal.

North Pennsylvania supplies Blossburg and Barclay coal. It is taken to market by the Erie & N.Y. Central Ry.

"Cumberland" coal from the Meyerdale district in Somerset is sold at the Atlantic seaboard. The Penn. Ry. and the B. & O. both carry this coal.

Mercer and Butler counties sell in Buffalo for Canada trade.

Foreign shipments in 1901 from the three largest ports for coal:—

Baltimore.....	2,750,000 tons.
Norfolk	2,300,000 "
Newport News.....	2,400,000 "

The exports from United States in 1903 were six million tons, with 400,000 tons of coke and two millions of anthracite. Of this quantity, six and a half million tons were shipped to Canada, 846,000 tons to Mexico and 660,000 tons to the West Indies.

LAKE SHIPMENTS.

The leading ports on the great lakes from which coal is shipped are :—

	Bituminous. Tons.	Miles hauled to Port.
Ashtabula (from Pittsburg) ..	2,138,000	124
Buffalo (from Punxsatawney).	404,000	183
Chicago.	80,000	Av. 320
Cleveland (from Pittsburg) ..	2,223,000	150
Conneaut (from Pittsburg) ..	323,000	186
Erie (from Pittsburg).	440,000	147
Frankfort.	172,000	112
Lorain	948,000	164
Ludington	315,000	499
Sandusky.	780,000	201
Toledo	2,671,000	261
Other ports.	435,000	...
Total.	10,876,000	

In addition, Anthracite, about 4,000,000.

DISTANCES OF LAKE PORTS FROM MINING CENTRES.

	Miles.
Conneaut from Pittsburg.	186
Cleveland "	150
Erie "	147
Toledo "	261
Ashtabula "	124
Buffalo from Punxsatawney ..	183
Dunkirk "	168
Tonawanda "	197
Rochester "	229

Buffalo receipts by rail in 1903 were 8,000,000 tons, one-half anthracite.

The shipments from Buffalo to lake ports were :—

Chicago	1,396,000 tons.
Milwaukee	1,517,000 "
Duluth	403,000 "
Superior	439,000 "
Other ports	422,000 "

The shipments to Canada were :—

Anthracite	458,000 tons.
Bituminous	1,606,000 "
Coke	176,000 "

This trade has increased as follows :—

1901	1,548,000 tons.
1902	1,522,000 "
1903	2,240,000 "

From Niagara Falls there was also shipped to Canada :—

Anthracite	408,000 tons.
Bituminous	13,000 "

Coal has been delivered at Fort William for railway purposes at \$2.43 per ton, duty not paid, and as low as \$1.85. The present price this season is \$2.12. This coal comes one thousand miles by lake vessel and 140 miles by train.

Marks & Co., and others, steamship owners of Port Arthur, transport coal from Cleveland, Ohio, to Port Arthur (800 miles) for 40 cents a ton. The vessels register 3,000 tons. The rail freight from the mines to Cleveland, O., is ordinarily 78 cents a ton. Port Arthur takes about 700,000 tons of soft coal, 95% of which is used by the railways. The above vessels usually have return cargoes of grain.

The rates of freight from Cleveland and Ashtabula to Depot Harbor are 35 cents. Charters have been made as low as 25 cents per ton. The carrying is done in 3,000 ton vessels which are loaded by machinery in five hours and discharged in 30 hours.

Railways at Fort William and Port Arthur are at present receiving supplies of coal at \$2.12 per ton duty not paid. This

price has varied from \$1.85 to \$2.40. This coal is carried by rail about 140 miles and by lake about 800 miles.

Shipments of Bituminous coal to Lake Superior ports in July last were 260,000 tons, against 769,000 tons last year, owing it is said to the fact that Western coals are supplanting Eastern coals in the Northwest. This has been facilitated by the railways leading from the eastern mines to Erie ports and the railways from Lake Superior port to Minneapolis maintaining their rates of freight.

COASTWISE SHIPMENTS.

During the year 1903 the following ports shipped :—

New York.....	18,040,094 tons.
Philadelphia.....	6,215,321 "
Baltimore.....	1,731,896 "
Newport News.....	1,790,479 "
Total.....	<u>27,777,790</u> "

During the half year ending 30th June, the shipments were :—

New York—Anthracite.....	6,555,946
Bituminous.....	3,941,764
Total.....	<u>10,497,710</u>
Philadelphia—Anthracite.....	980,717
Bituminous.....	1,582,137
Total.....	<u>2,562,854</u>
Baltimore—Anthracite.....	102,136
Bituminous.....	989,416
Total.....	<u>1,091,552</u>
Norfolk, Va.—Bituminous.....	999,720
Newport News, Va.—Bituminous..	896,264
Total Anthracite.....	<u>7,638,799</u>
Total Bituminous.....	<u>8,409,301</u>
Grand Total (half year).....	<u>16,048,100</u>

BOSTON.

By water—

Anthracite (from Atlantic ports)	2,139,989 tons.
Bituminous.....	2,063,691 "
Foreign (including Nova Scotia)	538,031 "

By rail—

Anthracite.....	23,569 "
Bituminous.....	47,139 "
Total	<u>4,812,419</u> "

RAIL AND WATER.

The coastwise shipments from New York and other leading ports amount to over twenty-seven million tons. Of this, about one-half goes to New England points.

The three leading ports on the Atlantic coast from which coal is shipped are Baltimore, Norfolk and Newport News, all on Chesapeake Bay, and New York. The following are the lines of railway which feed them respectively, and also the average distance in each case from the mines to the port:—

Norfolk, by Norfolk & Western Ry....	519 miles.
Newport News, by Chesapeake & Ohio Ry	380 "
Baltimore, by Baltimore & Ohio Ry ...	338 "
New York, by New York Central Ry....	444 "
Philadelphia, by the Tyrone and Clearfield division of Pennsylvania Ry. from Clearfield'	225 "
South Amboy, by the Tyrone and Clearfield division of Pennsylvania Ry....	322 "
Baltimore	227 "

Pittsburg trade in coal is increasing yearly, as follows :—

Shipments to and through Pittsburg—

1897	1898	1899	1900	1901
15,887,000	18,407,000	20,075,000	20,718,000	23,001,000

Local consumption—

7,226,000	8,188,000	10,700,000	9,431,000
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Chesapeake and Ohio Ry. carried from collieries along its line in the Kanawah and New River districts located from 365 to 399 miles west of Newport News 5,000,000 tons ; to tidewater 2,000,000 tons ; to other points 3,000,000 tons.

The four millions of tons produced by Maryland were shipped as follows :—

By B. & O. Ry.	2,745,000 tons.
C. & O. Canal	222,000 "
Penn. Ry.	766,000 "

North German Lloyds use Cumberland coal exclusively. It is shipped to Bremen to be used as a return fuel.

About 15 millions of Westmoreland (Penn.) gas coal is distributed by the Pennsylvania Ry. and Baltimore & Ohio Ry. A large portion of this is used for coke.

Chicago receives and ships about three millions of tons of this coal.

CONSUMPTION.

The largest consumer is New York State, and within that state, New York City, but no figures are at hand giving an approximate estimate of the consumption. The following estimates are made by a coal expert:—

New England.....	20,000,000 tons.
Philadelphia.....	11,500,000 "
Chicago.....	8,500,000 "
Buffalo.....	4,000,000 "
Lake cities.....	15,000,000 "
Canada.....	8,500,000 "

NEW ENGLAND.

The consumption of the New England States is about twenty and a half million tons made up as follows:—

	Bituminous.
Maine.....	850,000 tons.
Massachusetts.....	4,350,000 "
Rhode Island.....	530,000 "
Connecticut.....	1,950,000 "
Vermont and N. Hampshire..	600,000 "
Total.....	<u>8,285,000 "</u>

The above is an estimate for large concerns using over 1,200 tons each. Adding three millions of tons for small consumers there would be a total of 11,585,000 tons.

Anthracite used for domestic purposes amounts to 8,675,000 tons, making the grand total 20,525,000 tons.

It is estimated that the 2,200,000 people of Massachusetts, Connecticut and Rhode Island consume for domestic purposes $1\frac{3}{4}$ tons per head, or 6,225,000 tons. The 1,454,000 people of Maine, New Hampshire and Vermont take 1,450,000 tons additional.

The writer has as yet been unable to obtain statistics of the all rail shipments to New England, but they are made principally to interior towns, chiefly by the Boston & Maine and the New York, New Haven & Hartford railways. Adding the imports from Nova Scotia and elsewhere, the receipts by water are not less than fifteen million tons.

Boston receipts of coal for six months ending June 30th, 1904, in tons:—

Sources.	Anthracite.	Bituminous.	Total.
Baltimore.....	.....	242,692	242,692
Cornwall, N.Y.....	15,483	5,800	21,283
Edgewater, N.J. ...	31,022	.....	31,022
Elizabethport, N.J. ...	569	.....	569
Guttenberg, N.J.	5,361	1,504	6,865
Hoboken, N.J.	85,959	4,039	89,998
Newport News.....	.....	242,798	452,798
New York, N. Y. ...	163,106	3,903	167,009
Norfolk.....	.....	221,398	221,398
Perth Amboy.....	95,204	850	96,054
Philadelphia.....	446,741	142,806	589,547
Port Johnson, N.Y. ...	87,622	.....	87,622
Port Liberty, N.J. ...	5,935	.....	5,935
Port Reading, N.J. ...	7,672	3,407	11,079
Staten Island.....	2,045	.....	2,045
South Amboy, N.J. ...	56,398	1,094	57,492
Washington.....	...	1,198	1,198
Weehauken, N.J.	28,263	.....	28,263
Total domestic (by water).....	1,031,380	1,081,489	2,112,869
Domestic by rail....	24,391	86,320	110,711
Grand total, domestic	1,055,771	1,167,809	2,223,580
Foreign coal (sea)...	.....	282,788	282,788
Grand total.....	1,055,771	1,450,597	2,506,368

CANADA.

The imports for home consumption, with duty in 1903, were as follows :—

	Tons	Value	Duty
Anthracite coal and dust.	1,456,713	\$7,028,664	.....
Bituminous	3,511,412	7,776,717	\$1,849,808.84
Dust, net	550,883	420,317	64,522.08
Charcoal.....	.....	19,087	3,141.07
Cinders .....	.....	.....	.....
Coke.....	256,723	1,222,756	.....
Totals.....		\$16,467,541	\$1,917,471.99

The imports of coal, coke, etc., were :—

1899	\$10,579,488
1900	11,656,449
1901	14,160,341
1902	14,150,653
1903	16,923,139

The sales from coal mines for the fiscal year were :—

Nova Scotia, 1903.....	4,621,074 tons.
British Columbia, 1902.....	1,199,274 "
Total for Canada.....	5,820,348 "

Of this quantity the Canadian consumption was :—

Nova Scotia coal.....	2,597,749 tons.
British Columbia coal.....	422,466 "
Total.....	4,020,215 "

The balance of it went to United States and other countries as follows :—

N.S. coal to United States..	968,832 tons.
" " other countries..	54,493 "
B.C. " United States..	775,300 "
" " other countries..	1,508 "
Total.....	1,800,133 "

About 75 per cent. of the above British Columbia found a market in United States and about 20 per cent. of Nova Scotia, against a duty of 53 cents

This statement shows the balance of trade very largely against Canada, but the figures for ten months up to 1st April, 1904, are still more to the disadvantage of Canada. This country's imports ran up in the ten months in 1903, to that period from 2,897,278 to 3,542,661; increase 745,383. Anthracite, from 887,278 to 1,387,025; increase 499,747. At the same time the exports decreased from 1,625,156 to 1,149,529 tons; decrease 475,527 tons.

Values of entries at following ports of bituminous coal, 1903:—

Sault Ste. Marie	\$395,736
St. John, N.B	13,768
St. John, Q	9,229
Toronto	1,078,985
Vancouver	20,884
Victoria	13,917
Windsor, Ont	539,495
Winnipeg	90,765

Values of entries of anthracite, 1903:—

Sault Ste. Marie	\$35,632
St. John, N.B	122,064
St. John, Q	411,593
Toronto	1,591,941
Windsor, Ont	44,485
Winnipeg	6,828

The following is a statement of the consumption of the two leading Canadian cities for 1903:—

Toronto:—

Anthracite	581,000 tons.
Bituminous	444,000 "
By vessel	171,000 "
By rail	694,000 "

Montreal :-	1900	1903
Anthracite (imported) . . .	275,000	250,000
Bituminous " . . .	19,000	173,000
" from Nova Scotia	681,000	947,000

The Ontario consumption in 1903 was as follows :—

Bituminous coal	3,088,648 tons.
Dust	436,636 "
Anthracite	1,094,690 "
	<hr/>
	4,619,974 tons.

Canada, 1903 :—

Bituminous	8,303,350 tons.
Dust	559,438 "
Anthracite	1,456,713 "
	<hr/>
Total	10,319,501 tons.

New Brunswick and Nova Scotia imported 65,000 tons of anthracite in 1903.

PRICES AND FREIGHTS.

Clearfield coal costing at the mines say \$1.00 per ton has (1903) been shipped to Charlotte for transhipment to Prescott for Ottawa with the following charges :—

Two transfers at Charlotte and Prescott	\$0.30
Rail freight from Clearfield to Charlotte	
½ cent a ton per mile about	1.20
Lake freight . . . . .	.80
Rail freight from Prescott to Ottawa . . . . .	.40
	<hr/>
Total cost of transportation	\$2.70
Cost of coal	1.00
Duty	53
	<hr/>
Total cost on cars at Ottawa	\$4.23
Price in 1904	3.65

The general rates established in 1903 at the mines were as follows :

Clearfield region	\$.00
At Philadelphia	3.20
At New York.....	3.35

This was an advance of about 50% over the prices of 1902. These prices dropped in 1904 to about the old standard, which was about one-half.

Ordinary rates of freight on Pennsylvania railway for soft coal from the mines to Conneaut, Ashtabula, Cleveland, Erie and Lorain are 90 cents. On hard coal the rate is 45 cents more. To Buffalo, Dunkirk and Toledo \$1.15; to Rochester, Tonawanda and North Tonawanda, \$1.30. The lake freights on soft coal are :—

	Depot Harbor.	Milwaukee.	Escanaba.	Duluth.
1902	\$0.40	\$0.46½	\$0.41½	\$0.34½
1903	.35	.50½	.45	.41½

The prices of coal in Boston alongside dock (on 1st June, 1904) :—

Clearfield	\$3.10
Best George's Creek	3.65

At New York, by cargo :—

Poahontas	3.75
Clearfield	3.20
Cumberland	3.70
New River	3.57

At Chicago, December, 1903, the prices were:—

Youghiogheny (lump).....	\$3.75
Indiana "	3.05
Bloosburg (smithing)	4.00
Anthracite	6.25

On 1st June, 1904, the rates of freight to New England points were :—

Newport News to Portland	\$0.90
" " Bangor	1.10
Norfolk to Providence .....	.80
" Boston .....	.90
Philadelphia to Boston .....	.90
Dalhousie " 	1.00
Philadelphia to Jacksonville .....	.85
" Mayport .....	.80
" Somerset .....	.85
" Saco	1.05
" Charlestown .....	.90
" Camden .....	.90
" Newbury Port	1.05
" Portsmouth	1.00
" Augusta	1.15
" Portland .....	.85

The rates of freight for bituminous coal from the leading producing regions in Pennsylvania, West Virginia and Maryland to shipping ports are from \$1.35 to \$1.50 per ton. (June 1, 1904.)

CONCLUSIONS.

The growth of the imports of coal and coke from United States has been almost phenomenal, as the following figures (from United States Statistics) shew:

1903	\$16,294,329
1893	7,023,757
Increase 10 years.....	<u>\$9,270,772</u>

In comparison with this startling increase, note the exports to United States:

1903	\$4,950,047
1893	2,403,823
Increase.....	<u>\$2,546,224</u>

The figures from the Canadian Blue Books differ from the above:

Canada imported from United States in 1903:		
	Tons.	Value.
and exported:	5,589,140	\$14,921,522
	1,719,027	<u>4,640,064</u>
	3,870,119	\$10,281,458

Thus Canada imports 325 per cent. more coal from United States than she exports there.

In cost the balance is against her ten millions of dollars.

While our exports to United States of coal and coke have increased by 2½ millions of dollars in ten years, our imports from there have increased 9¼ million dollars in value.

No Canadian can say that this condition of things is satisfactory.

Let us first consider what are the natural markets for Nova Scotia coal; secondly, the limits in Canada of the natural market for United States coal.

An analysis of the distances from the competing mines to the consuming regions of New England and Ontario affords proof that the proximity of Nova Scotia mines to the centre of trade and manufacturing in the Eastern States, and that the American coal deposits to the prosperous and rapidly expanding territory between Montreal and Winnipeg, makes New England the natural market for Nova Scotia coal and Ontario for American coal.

From the table of distances in the appendix, it will be seen that Louisburg, the chief shipping coal port of Nova Scotia, is nearer Boston than is Clearfield by the following distances :

	Miles.
Via New York	57
“ Philadelphia	167
“ Baltimore	303
“ Newport News.....	330

To Portland, the differences are :

	Miles.
Via New York	101
“ Philadelphia	261
“ Baltimore	397
“ Newport News.....	424

The advantage in distance in favor of Nova Scotia, however striking, is accentuated by two important factors, to wit :—

1st.—The transportation from Nova Scotia is entirely by water, and is therefore cheaper than the mixed rail and water carriage of the American route.

2nd.—The cost of transshipment from rail to vessel is saved.

While the rates are variable, the following are the ordinary ones from Clearfield to Boston :—

Rail (according to port of delivery) . .	\$1.35 to \$1.50
Water.....	1.00 to .90
Total	\$2.35 to \$2.40

Note in contrast to that rate the water rate from Louisburg to Boston from 45c. to 60c.

Next, what are the limits of the Canadian market for American coal?

The rail rate from the American coal fields to Montreal is from \$3.20 to \$4.00 per ton. The water rate from Sydney is from \$0.90 to \$1.10 per ton. These rates are variable, but the advantage must remain always with the water-borne freight from Sydney. As a matter of fact, coal has the past season been selling in Montreal at a price less than the American rail freight. Thus Nova Scotia bituminous coal practically enjoys a monopoly at Montreal. Proceeding further west to points on Lake Ontario, the conditions change. The rail rate becomes reduced and the St. Lawrence water carriage increases.

The proximity of the mines of the United States to the markets of Ontario renders a comparison of distances and rates almost as favorable for transportation to that province as from Louisburg to New England points.

	Miles.
Sydney to Montreal (water)	815
Punxsatawney to Montreal (rail)	654
Saving "	161
Sydney to Brockville (water)	940
Punxsatawney to Brockville (rail)	509
Saving	431
Sydney to Kingston (water)	989
Punxsatawney to Kingston (rail)	459
Saving	530
The distance from Sydney, C. B., to Toronto by water is	1112
Punxsatawney to Toronto via Buffalo (rail)	321
Saving	791

	Miles.
Distance from Clearfield to Ottawa (145 miles water).....	436
Distance from Sydney to Hamilton (water) .	1154
" " Puuxsatawney to Hamilton (rail).....	259
Saving	895

No comparative rates between American and Sydney coal are quoted for points west of Montreal, because, practically, there is no business west of Montreal for Sydney coal. Notwithstanding the duty of 53 cents per ton, the American dealers enjoy a substantial monopoly of the entire territory from Montreal to Winnipeg. West of Winnipeg, Lethbridge and other coals shut off the American supply.

A quarter of a century ago, Canada adopted a protective Customs Tariff. "Canada for Canadians" has since been the national watchword. The corner-stone of this policy was a duty on flour for the benefit of the western grain producer, and a duty on coal for the eastern coal producer. This policy has since been steadily maintained by both political parties, and it is safe to say that the people will not permit these or any of their great protected interests to be sacrificed.

It is, however, to be noted that the coal owners of Nova Scotia never asked for protection pure and simple. They asked that the duty imposed by the United States Government, and which had shut them out of the New England market, should be "neutralized" either by a "bounty or a duty." (See their memorial in the appendix.) They did not fear competition on equal terms with the producers of United States; on the contrary, they welcomed competition, claiming they asked for legislative aid in the interests of "Free Trade." The position that the Nova Scotia coal owners assumed in 1877, they are in 1904 well able to maintain.

The past twenty-five years has been one of development.

Consolidation has been going on, and interests have been created and grown up almost of national consequence. The plant and equipment of some of these mines cannot be surpassed anywhere in the facilities they afford for the mining and shipping of coal, so that the output has more than quadrupled. The cost of mining has generally been reduced, and important economies effected in management. The increase in the size of carriers has led to a very material reduction in freights. In 1877, the vessels employed measured from 200 to 400 tons. Now they are 3,000 tons or more. In 1876, the freights to Boston were \$1.75 per ton. An unusual figure was \$1.50. (See evidence of Mr. Belloni before the Select Committee of Parliament on Interprovincial Trade, 1877.) The rate now is from 45c. to 60c. The rates of freight in 1877 from Sydney to Montreal were \$1.90 to \$2.00 per ton. To-day, the rate is from \$0.90 to \$1.10 per ton. In 1877, Nova Scotia coal owners had to meet a drawback allowed by the Pennsylvania railway on all coal shipped by rail from Baltimore to Boston. In consequence of the efforts on the part of that great railway corporation to destroy the Nova Scotia coal market in New England, American coal was sold in Boston cheaper than in New York, and cheaper by 75c. per ton than in Philadelphia! Thus the Nova Scotia mine owners were obliged to relinquish attempting to maintain a foothold in that market.

To-day the conditions are changed, and while Nova Scotia is enabled to mine, ship and market its product at a vastly less price than a generation ago, West Virginia has also been able to make corresponding advances. Transportation rates by both rail and vessel are but a fraction of what they were, which operates to the advantage of the American mines, and enables the latter to compete successfully with Nova Scotia mines for the possession of the Ontario markets. The statement of the sales agent of the Dominion Coal Company, quoted at page 42, is evidence on that point. It is true that the St. Lawrence canals, now 14 feet deep, can be deepened to allow a class of colliers on the Sydney-Montreal trade, to proceed to the lake cities without breaking bulk, and

doubtless that will be done hereafter should important interests demand it. Such vessels might become competitors for western grain freights. With the advantage of return cargoes, Ontario would become practically independent of United States for her supply of Bituminous coal. That Province could well consider the economy of appropriating a portion of her contribution to coal duties to the work of deepening the canals to secure cheaper coal from the deposits at the seaboard. The argument is therefore strong that her material interests require her either to seek the removal of the duty on coal in both countries, or failing that to adopt the policy of deepening the St. Lawrence canals.

APPENDIX.

THE DEMANDS OF THE N.S. COAL OWNERS.

On January 18, 1877, a petition was presented to the Dominion Board of Trade by Mr. George H. Dobson from coal owners of Nova Scotia and persons interested in the trade and shipping of the Dominion. It stated that in 1867, the first year of the Dominion legislation, the necessity for counteracting the hostile policy of American coal monopolists was brought before the House of Commons by a petition from the Nova Scotia coal owners.

"After a prolonged agitation public opinion throughout the Dominion warranted the legislation in 1870 in imposing a duty of 50 cents on American coal and of 25 cents on American flour * * * The effect of these duties was immediate and most beneficial ; and, had they been tested for a few years, they would not only have developed a most important and profitable trade between Ontario and Quebec and the Lower Provinces, but would have also led to the repeal of the American duty on our own coal. In proof of this, we may point to the fact, that almost immediately after these duties were imposed, the American duty was lowered from \$1.25 to 75 cents.

"Your memorialists deeply regret * * * that influence of the American monopolists and those who sympathize with them was sufficient to bring about a repeal of the duty. * * * The coal trade has been declining and at present is in a ruinous state which justifies the fears expressed in 1867. * * * There is no alternative open to them but to remit the royalty (10c.) which cannot now be paid in the present depressed state of the coal trade ; and to call upon the Dominion Government either to compensate the Province for its heavy loss, or to abandon a commercial policy which is crushing a most important industry and cutting off the main source of provincial revenue.

"The policy of the Dominion, though so hostile to our coal interests, has largely contributed to develop the mining industry of our American rivals.

Hon. Elijah Ward said in the House of Representatives last year :—

"Coal is found on the sea coast of Canada whence it is advantageously exported to New England states and New York. The interior and well settled portions depend upon our mines for a supply and obtain it free from all duties, principally from Pennsylvania, Virginia and Ohio. Our exports the last three years were \$7,272,964, being four times as great as from '63 to '67. Our imports last year were \$697,675,—exports \$2,034,527. Under these circumstances any imposition of a duty on coal from the Dominion is manifestly unjust.

"We do not ask for protection ; we ask that American protectionists should not be enabled to cripple and crush our trade. The prohibiting American duty of 75 cents has been imposed by Pennsylvania monopolists, not out of hostility to the Dominion but simply for the purposes of keeping us from competing in their markets. The moment we can make the duty unprofitable to them it will be repealed. We therefore ask in the interests not of protection, but of free trade, that you request the Legislature to neutralize the hostile duty of 75 cents by giving an equal bounty on all coal sent U.S. ; or else to impose a duty of 50c. on all imported coal."

HISTORY OF DUTY.

From 1850 to 1854 coal was admitted to United States at a duty of 24 per cent. *ad valorem*. In 1853 the tons shipped were 120,764.

From 1854 to 1866 it was admitted free when the exports rose from 139,125 tons to 404,252 tons.

In 1867 a duty of \$1.25 was imposed, when the shipments fell to 165,431 tons.

In 1872 the duty was reduced to 75c. and the exports gradually fell until 1893 when the entire shipments amounted to 16,099 tons only.

In 1894 the duty was changed to 40c. for round coal and 15c. for culm or slack, at which rate it continued for three years.

In 1896 the shipments rose to 174,919 tons.

In 1897 the duty was made 67c., since which date the sales have increased until they reached 968,832 tons in 1903.

The present duty is 53 cents, net tons.

NOVA SCOTIA'S WESTERN MARKET.

The geographic position of the Canadian and American coal fields, and the conditions governing the distribution of the product, have defined the boundaries of the competitive markets, and any large increase in the consumption of Nova Scotia coal will now depend on such improved transportation facilities as will enable us to invade the Ontario market. The proximity of the inland provinces to the American coal fields, and the cheap transportation afforded by the great lakes, at present renders this almost impossible. In this connection the deepening of the canals has been strongly urged, and with better facilities in this respect some progress might reasonably be expected. Of the Nova Scotia coal shipped to Quebec a considerable quantity was transhipped at Montreal and distributed over the eastern counties of Ontario, but this trade is limited, and is only preserved to Nova Scotia by the duty on American coal. Territorially, therefore, the Canadian market for Nova Scotia coal under existing conditions may be said to have reached its limitations.—[*Alexander Dick, General Sales Agent of Dominion Coal Co., in Nova Scotia Mining No., page 8, 1903.*]

COAL RECEIPTS AT NEW ENGLAND PORTS.

The following shipments were made to New England points by water from New York, Philadelphia, Baltimore, Newport News, &c.:—

	Tons.
Beverley, Mass.	12,084
Boston	3,085,000
Bradford, Conn.	6,031
Bridgeport, "	135,106
Calais, Maine	5,873
Charlestown, Mass.	53,295
Commercial Point, Mass.	2,518
Connecticut Point.	294,599
Dorchester.	9,674
East Boston.	38,826
East Cambridge.	30,574
Edge Water.	3,344
Fall River, Mass.	102,764
Greenwich, Conn.	10,450
New London.	59,524
Newport, R.I.	42,442
Norwalk, Conn.	10,088
Norwich, "	28,056
Pawtucket.	99,991
Portland, Maine.	1,003,000
Portsmouth, N.H.	276,906
Providence, R.I.	453,306
Revere, Mass.	2,181
Rhode Island Point.	92,356
Rockport, Me.	12,460
Salem, Mass.	202,828
Saylesville, R.I.	1,164
South Norwalk, Conn.	17,233
Stamford, Conn.	43,222
Lynn	64,043

COAL RECEIPTS AT NEW ENGLAND PORTS.—*Con.*

	Tons.
Maine Points.....	54,851
Massachusetts Points.....	1,109,556
Nepset, Mass.....	8,209
New Bedford.....	134,140
New Haven.....	758,959
Taunton.....	67,146
Wareham.....	6,430
Westport, Conn.....	5,426
Wickford, R.I.....	2,270
Walden, Mass.....	1,776
Quiney Point.....	11,551
Allyns Point, Conn.....	47,371
New London.....	13,793
Norwich.....	933
Wiscasset, Me.....	691
Bradford, R.I.....	2,790
Fall River, Mass.....	188,978
Total.....	8,503,798
Destinations not specified, vessels for fuel, etc., total 6,401,000.	
Proportion for New England..	4,500,000
Total.....	13,003,798

COAL RATES TO CANADA.

Canadian points by rail, via Pennsylvania Ry., Michigan Central, G. T. Ry., and C. P. R. (April 1st, 1903):

To	From (Net Tons)				
	Toledo	Pittsburg	*Ohio No. 1	†Ohio No. 2 Sherrods-ville Massillon	
Hull, Q	\$2.35	\$3.25	\$3.65	\$0.00	\$0.00
Kingston, Ont.	2.40	2.50	3.20	3.10	2.95
London	1.10	2.15	1.80	1.70	1.55
Montreal	3.20	3.25	4.00	3.90	3.75
Ottawa	2.85	3.25	3.65	3.55	3.40
Owen Sound	1.50	3.35	3.20	2.20	2.05
Perth	2.85	3.25	3.65	3.55	3.40
Peterboro	2.00	2.50	2.80	2.70	2.55
Quebec	3.40	4.25	5.00	...	...
Prescott	2.90	2.75	3.70	3.60	3.45
Smith's Falls	2.85	3.25	3.65	3.55	3.40
Toronto	1.20	1.85	2.00	1.90	1.75
Woodstock	1.20	2.15	2.00	1.90	1.75
Windsor . . . . .	.65	2.25	1.45	1.35	1.20
St. Thomas	1.10	2.15	1.80	1.70	1.55
Galt	1.20	2.15	2.00	1.90	1.75
Guelph	1.20	2.15	2.00	1.90	1.75
St. Catharines	1.20	1.65	2.00	1.90	1.75
Niagara Falls (B)	1.20	...	2.00	1.90	1.75
Waterloo	1.20	2.15	1.95	1.90	1.75
Sarnia	1.15	2.25	1.95	1.85	1.70
Goderich	1.20	2.35	2.00	1.90	1.75
Port Colborne	1.20	1.85	2.00	1.90	1.75
Galt	1.10	2.15	2.00	1.90	1.75

* From Hocking Valley, Wheeling Creek, Tunnel, Jefferson Co., Jackson Co., Corning, Sunday Creek, Shawnee, Redfield, Brook Creek districts.

† From Sherrods-ville, Tuscarawa Valley, Coshorton and Massillon districts.

COAL RATES TO CANADA. *Con.*

To	From		(Net Tons)		
	Toledo	Pittsburg	*Ohio No. 1	†Ohio No. 2 Sherrods-ville Massillon	
Lindsay	2.15	2.50	2.95	2.85	2.70
Orillia	2.25	2.35	3.05	2.90	2.75
Whitby	1.80	2.10	2.60	2.50	2.35
Bomanville	1.95	2.15	2.75	2.65	2.50
Port Hope	1.95	2.15	2.75	2.65	2.50
Coburg	1.95	2.15	2.75	2.65	2.50
Colborne	2.15	2.15	2.95	2.85	2.70
Belleville	2.15	2.15	2.95	2.85	2.70
Napanee	2.40	2.35	3.20	3.10	2.95
Brockville	2.90	2.75	3.70	3.60	3.45
Morrisburg	3.00	3.00	3.80	3.70	3.55
Cornwall	3.10	3.00	3.90	3.80	3.65
Collingwood	2.25	2.35	3.05	2.90	2.95
Brantford	1.20	1.95	2.00	1.90	1.75
Dundas	1.20	1.75	2.00	1.90	1.75
Hamilton	1.20	1.75	2.00	1.90	1.75
Petrolia	1.15	2.25	1.95	1.85	1.70
Sarnia	1.15	2.25	1.95	1.85	1.70
Walkerville . . . . .	.75	2.25	1.55	1.45	1.20
Chatham . . . . .	.90	2.25	1.70	1.60	1.45
Stratford . . . . .	...	2.15	1.95	1.85	1.70
Oshawa Jet	1.95	2.10	2.75	2.55	2.50
Peterboro	2.00	2.50	2.80	2.70	2.55

* From Hocking Valley, Wheeling Creek, Tunnel, Jefferson Co., Jackson Co., Corning, Sunday Creek, Shawnee, Redfield, Brook Creek districts.

† From Sherrods-ville, Tuscarawa Valley, Coshocton and Massillon districts.

TABLE OF DISTANCES BY WATER.

	Nautical Miles.
New York to Boston	300
" Portland	362
" Halifax	581
" Charlottetown	828
Philadelphia to New York	229
" Portland	529
" Boston	477
" Halifax	735
" Charlottetown	982
Baltimore to New York	404
" Boston	641
" Portland	693
Newport News to New York	281
" Boston	515
" Portland	567
Boston to Halifax	383
" Portland	441
" Quebec	861
Charlottetown to New York	828
" Portland	575
" Boston	627
" Halifax	873
Halifax to Portland	339
Sydney to Portland	593
" Boston	605
Quebec to Portland	1,161
Pictou to Portland	553

TABLE OF DISTANCES BY WATER.—*Con*

	Statute Miles.
Sydney to Quebec	675
Quebec to Montreal	140
Montreal to Toronto	297
Charlotte to Prescott	145
" Kingston	85
" Toronto	90
Buffalo to Fort William	862
Cleveland to Fort William	712
Toledo "	662
Detroit "	605
Clearfield to Rochester	293
" Oswego	339
Oswego to Prescott	103
" Kingston	52
" Toronto	230

RAIL.

	Miles.
Buffalo to Niagara, Ont.	22
" St. Thomas	123
" Petrolia	186
" Sarnia	194
" Stratford	116
" Brantford	76
" Hamilton	76
" Toronto	118
" Montreal, Q.	451
" Coburg	189
" Belleville	231
" Kingston	276
" Brockville	326
Wheeling to Frankport	513
" Ludington	499
" Sandusky	201
" Lorain	164

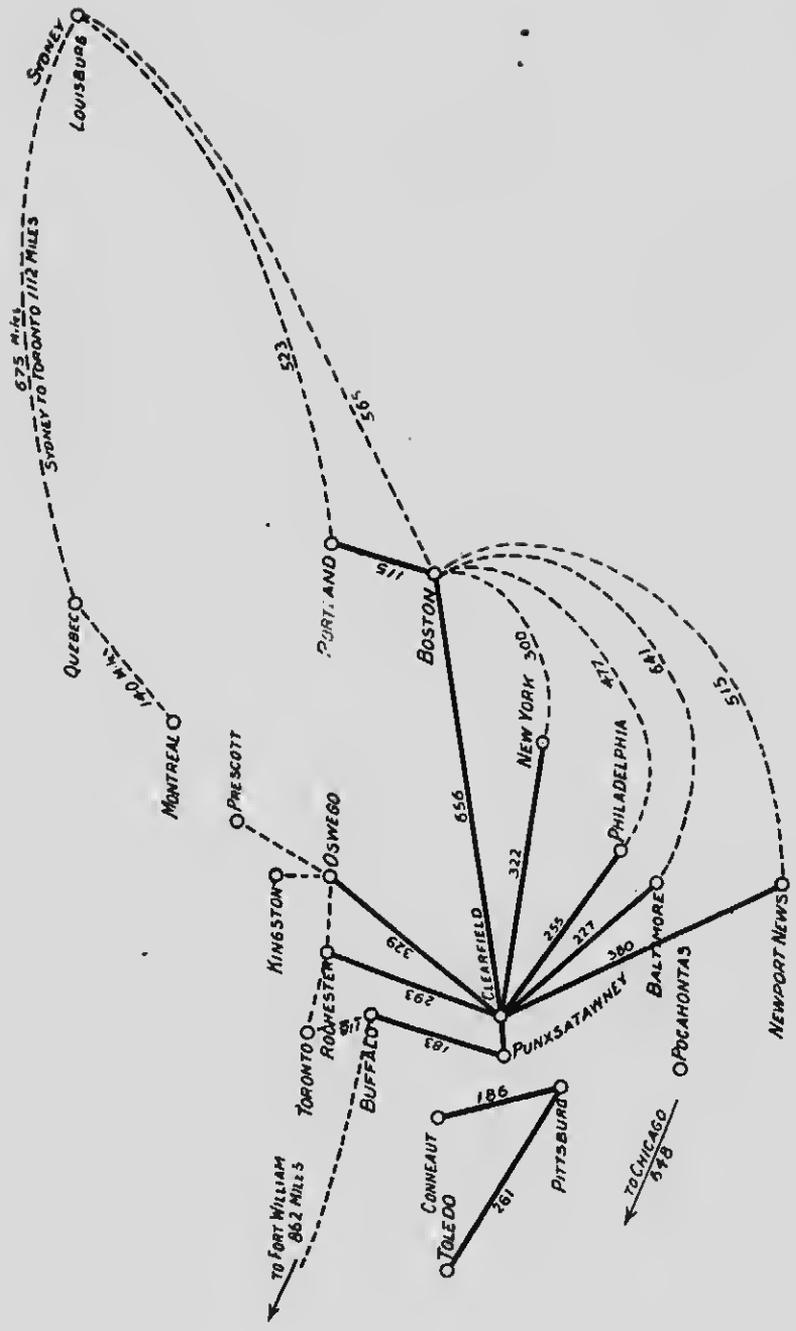
	Miles.
Clearfield to Newport News (rail).....	380
Newport News to Boston (water).....	515
Total.....	895
Newport News to Portland (water).....	567
Total from Clearfield to Portland....	947
Clearfield to Baltimore (rail).....	227
Baltimore to Boston (water).....	641
Total.....	868
Baltimore to Portland.....	693
Total.....	920
Clearfield to Philadelphia (rail).....	255
Philadelphia to Boston (water).....	477
Total.....	732
Philadelphia to Portland (water).....	529
Total to Portland.....	784
Clearfield to New York (rail).....	322
New York to Boston (water).....	300
Total.....	622
New York to Portland.....	362
Total to Portland.....	684
Distance Louisburg to Portland.....	523
" " " Boston.....	565

IMPORTS AND CONSUMPTION OF BITUMINOUS COAL
AND COAL DUST FOR FISCAL YEAR ENDING
30TH JUNE, 1903, BY PORTS.

PORTS	BITUMINOUS COAL		COAL DUST	
	Tons Imp.	Tons Cons.	Tons Imp.	Tons Cons.
Amherstburg.....	16,266	....	1,280	....
Belleville.....	6,991	....	2,334	....
Berlin.....	22,445	....	6,912	....
Bowmanville.....	2,976	....	291	....
Brantford.....	24,885	....	4,102	....
Bridgeburg.....	365,026	....	3,987	....
Brockville.....	159,973	....	....	....
Chatham.....	37,850	....	17,908	....
Cobourg.....	5,253	....	792	....
Collingwood.....	15,179	....	49	....
Cornwall.....	2,220	....	689	....
Deseronto.....	20,471	....	3,006	....
Fort William.....	387,815	....	34,990	....
Galt.....	24,413	....	2,824	....
Gananoque.....	1,286	....	407	....
Goderich.....	17,352	....	14,738	....
Guelp.....	19,127	....	1,555	....
Hamilton.....	143,763	....	31,469	....
Ingersoll.....	6,201	....	3,256	....
Kingston.....	26,008	....	11,306	....
Lindsay.....	4,463	....	....	....
London.....	73,327	....	21,783	....
Midland.....	12,626	....	733	....
Morrisburg.....	830	....	....	....
Napanee.....	816	....	....	....
Niagara Falls.....	32,055	....	1,558	....
Oshawa.....	1,636	....	3,156	....
Ottawa.....	35,379	....	24,041	....
Owen Sound.....	24,695	....	13,407	....
Paris.....	5,419	....	696	....
Parry Sound.....	65,909	....	....	....
Peterboro.....	9,326	....	8,524	....
Picton.....	1,901	....	96	....
Port Arthur.....	84,180	....	....	....
Port Hope.....	3,601	....	86	....
Prescott.....	87,353	....	....	....
St. Catharines.....	33,957	....	17,547	....
St. Thomas.....	119,041	....	26,567	....
Sarnia.....	526,446	....	47,572	....
Sault Ste. Marie.....	185,114	....	16,122	....
Simcoe.....	4,048	....	1,821	....
Stratford.....	35,823	....	23,523	....
Toronto.....	427,642	....	167,156	....
Trenton.....	13,999	....	1,461	....
Wallaceburg.....	3,154	....	2,196	....
Whitby.....	1,793	....	532	....
Windsor.....	419,430	....	27,469	....
Woodstock.....	10,195	....	2,757	....

IMPORTS AND CONSUMPTION OF BITUMINOUS COAL AND COAL
DUST—*Continued.*

PORTS	BITUMINOUS COAL		COAL DUST	
	Tons Imp.	Tons Cons.	Tons Imp.	Tons Cons.
QUEBEC.				
Abercorn	3	.....	.....	.....
Coaticook	63	.....	.....	.....
Cookshire	662	.....	.....	.....
Hemmingford	2,583	.....	.....	.....
Mansonville	10	.....	.....	.....
Paspebiac	17,333	.....	11	.....
Quebec .....	.....	.....	.....	.....
St. Armand	844	.....	.....	.....
St. Hyacinthe	1,949	.....	.....	.....
St. John's	2,504	.....	473	.....
Sherbrooke	10,201	.....	166	.....
Sorel	328	.....	.....	.....
Stanstead	66	.....	.....	.....
Three Rivers	531	.....	.....	.....
Valleyfield	1,728	.....	291	.....
Montreal	123,414	.....	7,611	.....
NOVA SCOTIA.				
Digby	3	.....	.....	.....
Parsboro .....	.....	.....	20	.....
Weymouth	26	.....	.....	.....
Windsor	815	.....	.....	.....
Yarmouth	3	.....	.....	.....
Halifax	1,024	.....	.....	.....
NEW BRUNSWICK.				
Campbellton	15	.....	.....	.....
Chatham	57	.....	.....	.....
Dalhousie	175	.....	.....	.....
Fredericton	116	.....	.....	.....
Newcastle	72	.....	.....	.....
Moncton	5	.....	.....	.....
St. John	1,950	.....	.....	.....
St. Stephen	814	.....	.....	.....
Woodstock	4	.....	.....	.....
Bathurst	30	.....	.....	.....
BRITISH COLUMBIA.				
Grand Forks	437	.....	.....	.....
Kaslo	30	.....	17	.....
Nanaimo	1,241	.....	.....	.....
New Westminster	1,612	.....	100	.....
Nelson	783	.....	.....	.....
Rossland	2,268	.....	.....	.....
Vancouver	20,953	.....	.....	.....
Victoria	4,528	.....	.....	.....
Winnipeg	24,923	.....	53	.....
Dawson	170	.....	.....	.....







NORTHERN APPALACHIAN
 COAL FIELD
 WITH
 COAL FIELDS OF NOVA SCOTIA
 ALSO
 Leading Distributing Railways for Bituminous Coal

- Railway Lines marked thus*
- N. Y. C. & N. H. R. Ry
 - N. Y. Ontario & Western
 - Erie
 - Central Ry. of New Jersey
 - Chesapeake & Ohio
 - Norfolk & Western
 - Baltimore & Ohio
 - Canada Atlantic
 - Can. Pac. Ry.
 - Boston & Maine
 - Grand Trunk Ry.
 - Central Vermont
 - N. Y. N. H. & Hartford
 - Delaware & Hudson
 - P. M. & O.
 - National Ry.
 - Maine Central
 - Intercolonial Ry.

- Coal Fields shown thus*
- Coal Fields of N.S.
 - Appalachian Coal Fields
 - Upper Productive Measures

SCALE—100 MILES, 1 INCH.

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