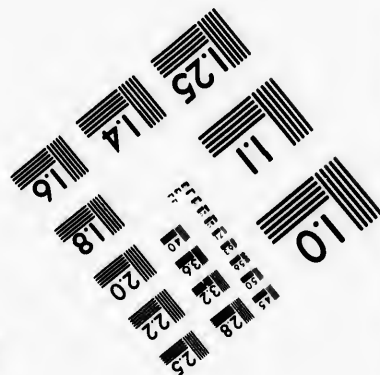
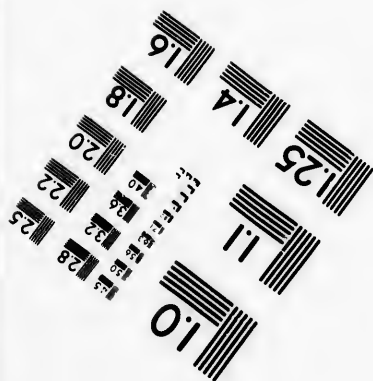
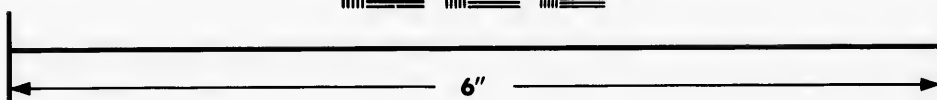
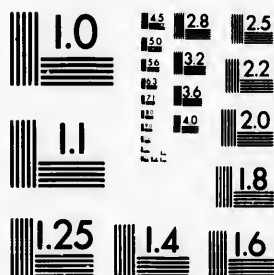


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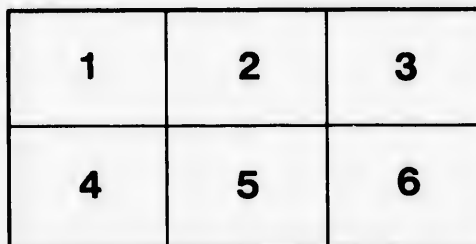
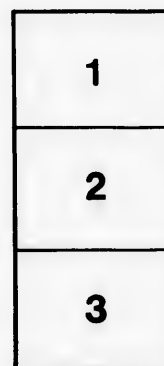
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A FORECAST

OF THE

FUTURE OF THE MARITIME PROVINCES.

BEING A LECTURE DELIVERED BEFORE THE ST. JOHN MECHANICS'
INSTITUTE, JANUARY 17, 1876,

BY

HENRY YOULE HIND, M. A.

Geologist to the Canadian Red River Expedition of 1857.—In charge of the Assiniboine
and Saskatchewan Expedition of 1858.—Author of Narrative of the Canadian
Expedition to the North West.—Explorations in the Interior of the
Labrador Peninsular.—Report on the Geology of New Brunswick,
&c.—Reports on Waverly, Sherbrook, Mount Uniacke,
Oldham, and Renfrew Gold Districts of
Nova Scotia, &c., &c.

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(Reprinted from the St. John Daily Telegraph.)

A FORECAST OF THE FUTURE OF THE MARITIME PROVINCES.

BEING A LECTURE DELIVERED BEFORE THE ST. JOHN MECHANICS'
INSTITUTE, JANUARY 17, 1876.

By HENRY YOULE HIND, M. A.

It has been the boast of the people of the Maritime Provinces of the Dominion that they own a ton of shipping for each inhabitant. This is a remarkable and unexampled standpoint from which to estimate our wealth and commerce, but at the same time it must be remembered that in the aggregate we do not raise three-quarters of a bushel of wheat for each individual of our population.

Therefore, however high we may rank as shipbuilders and ocean carriers, we can but claim a very inferior position as agriculturists supplying ourselves with food.

As a remarkable illustration of the opposite extreme, in which agricultural industry claims overwhelming pre-eminence, we find in the State of Minnesota a still greater effort determined in one direction. Seven-tenths of the cultivated area of Minnesota is put in wheat, and more than one-half, or 57 per cent., of her population, is engaged in its cultivation, and 8 per cent. in sending it to market—thus making about two-thirds of the entire population of that State chiefly engaged in the one operation of cultivating and sending wheat to market. But this is not all: There are in Minnesota 14 per cent. of her people occupying themselves as mechanics and manufacturers; but in what kind of industry do they find their chief employment?—in the building of mills for the grinding of wheat into flour. But where so large a proportion of the population is engaged in one kind of industry, the remaining portion (which, in the case of Minnesota, amounts to 21 per cent. of

professional men) expect much of their income from the sale of the wheat crop. If these statements were not based on high authority, which is no less than that of the statistician in the U. S. Department of Agriculture, we should scarcely credit them.*

Newfoundland furnishes us with another illustration of a people devoting themselves almost exclusively to one branch of industry; and for the purpose of this evening's lecture I shall consider Newfoundland as one of our Maritime Provinces. Possibly the time is not far removed when it will be allied to us by stronger ties than at present bind it, and form an integral part of our wide-spread Dominion.

In the 'Maritime Provinces' we usually include Nova Scotia, New Brunswick and Prince Edward Island, but in a general review of the industry of an entire State, such as the Dominion of Canada, we cannot isolate certain parts of the Province of Quebec which border on the ocean, just as much as many parts of New Brunswick. Nor in a forecast of the future can we forget the Island of Anticosti or the vast extent of coast line which affords harbors for our fishing craft on the Labrador, and which, like Newfoundland, may become of great importance in relation to mineral wealth.

Therefore, in attempting to penetrate, however feebly, the veil which hangs over the future of the Maritime portion of the Dominion, I do not think that the subject can be fairly dealt with,

*Address on Agricultural Statistics, by the Statistician of the Department of Agriculture, 1874.

unless we take into consideration, much of that extended coast line which forms so grand a front to the almost illimitable expanse of territory which spreads so far towards the west.

The Territorial Expanse of the Dominion.

In order to form a true conception of the vastness of the domain lying within the limits which may be occupied by civilized man, let us lay the map of the Dominion over similar and isometrical parallels of latitude in Europe, and roughly trace the route which would be followed by two travellers journeying by leading lines of communication, as near as convenient to the *locus* of the southern boundary of the Dominion, the one on the Western or American Continent, the other on the Eastern or European.

On the Eastern Continent the traveller would start at Brest, and taking advantage of the French, Swiss and Italian railways, reach the Gulf of Venice, and there attain the most southern limit of his journey. Meanwhile, the Canadian traveller would start at Picton or Louisburg, and push along the Intercolonial railway to Riviere du Loup on the St Lawrence, thence by the Grand Trunk and Great Western to Windsor, opposite Detroit in the State of Michigan, where he would reach his most southern point. From Detroit his course would be through Lakes Huron and Superior to Thunder Bay, thence by steamer, with a few intervening portages, to the north-west corner of the Lake of the Woods, when he would have accomplished one-half of his journey.

The European traveller would cross the Gulf of Venice, and entering Turkey pass through to Belgrade, and thence by the Danube and Black sea to Odessa, when the half of his journey would be over. Starting again from Odessa, he must traverse Southern Russia for fifteen degrees of longitude to the Volga, and thence on through the deserts of Astrakhan, seven degrees of longitude farther, to the confines of Tartary; and he must still journey ten degrees towards the east through Tartarian Deserts to the longitude of Bokhara, before he would arrive at the end of his weary route.

The Canadian traveller enters the great Prairie country of Manitoba after leaving the Lake of the Woods, and he may, so to speak, gallop to within sight of the Rocky mountains through a beautiful and fertile wilderness; cross the mountains on horseback and reach the Cariboo gold region, where he would find an excellent wagon road, a telegraph line, and steam communication to New Westminster on the shores of the Pacific ocean, and the last four hundred miles of his journey would be through the grand

Alpine scenery of forest-clad and river-abounding British Columbia.

The difficulties and dangers of the eastern traveller during the last half of his journey would be vastly greater than those which might beset his Canadian rival.

The comparison is instructive, for we may view the uninhabited and but partially known part of a broad Zone of the Dominion as it now is, and also, as it may become in less than a generation, side by side with the vast isometrical arid area in Asia, which has been known for upwards of seventy generations, and on the sides, has been encompassed by a succession of powerful Empires, which have risen and declined without leaving their visible mark on those broad and desolate wastes.

Territorial Expanse of the Maritime Provinces.

Knowing, after this fashion, the territorial expanse of the vast country to which the Maritime Provinces form the Atlantic front, we may now leave for a while those wide-spreading inland areas, and turn our attention to the dwellers by the sea.

Limiting ourselves for the present to the four Provinces, Nova Scotia, New Brunswick, Newfoundland, and Prince Edward Island, we have the following approximate aggregate:

AREA POPULATION, TONNAGE AND FISH CATCH OF THE MARITIME PROVINCES.				
Province.	Area.	Population.	Tonnage.	Catch.
Nova Scotia.....	21,731	429,000	527,635	6,652,300
New Brunswick....	27,322	315,000	307,020	2,685,700
P. Edward Island...	2,133	104,400	54,223	288,800
Newfoundland: ...	36,000	16,244	63,318	8,246,000
Total.....	87,168	1,005,644	956,705	17,872,400

In point of tonnage the Dominion with Newfoundland stands as follows:

TOTAL VESSELS AND TONNAGE OF THE DOMINION IN 1873, 1874, 1875.				
1873		1874		1875
Vessels	Tonnage	Ves's	Tonnage	Estimate
6,780	1,073,781	6,930	1,158,303	1,250,000
Newf'land.	1,301	67,185	1,305	798,8
Total...	8,084	1,140,966	8,235	1,223,181

The tonnage of 1874 and '75 entitles the Dominion, with Newfoundland, to rank fourth among the nations of the earth in point of maritime strength.

The foregoing tables expressed in words mean that the area of the Maritime Provinces named is about the same as that of Great Britain, that their tonnage in ships, very nearly amounts to one ton to each inhabitant, and that the fish catch is nearly equal to the population.

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Maritime Area and Population of the Dominion, including Newfoundland.

Province.	Maritime por- tion, sq miles.	Population	Tonnage.	Fish Catch in %.
Quebec.....	22,000	150,000	218,946	1,600,600
Other Maritime Provinces and Newfoundland	87,186	1,005,611	974,884	17,873,657

rand total..... 110,186 1,655,611 1,493,840 19,481,617

Which stated in words is, that the area of
the Maritime Provinces of the Dominion is
10,000 square miles, or about that of Great
Britain and Ireland, with a population of eleven
hundred thousand, a tonnage exceeding eleven
hundred thousand, and a fish catch of about
twenty million dollars yearly. The phrase
fish catch, 20,000,000 of dollars," implies an
immense local industry on the sea, altogether
distinct from that of ocean carriers, and is here-
after represented.

Work of the past Half Century.

Let us glance at the tonnage of vessels built
in Nova Scotia and New Brunswick during
even years:—

	Nova Scotia	New Brunswick
1868.....	31,038	24,419
1869.....	26,679	31,972
1870.....	33,659	35,598
1871.....	41,307	33,553
1872.....	52,822	36,464
1873.....	63,001	42,701
1874.....	74,769	46,063
7) 326,335		7) 251,171
Mean.....	46,619	35,881

*This estimate, as it observed, does not include the
land tonnage or fish catch of Ontario: it is essen-
tially applied to the Maritime portion of the Dominion.

Let us also look back and see what New
Brunswick was doing in the way of building
ships half a century ago. Taking the years
from 1825 to 1845, we have the following tonnage
registered in the Province, including vessels
built for owners in the United Kingdom:

Year	Reg'd. Tonnage New Vessels	Year	Reg'd. Tonnage New Vessels
1825.....	28,893	1830.....	21,013
1826.....	31,620	1831.....	27,288
1827.....	21,806	1832.....	33,067
1828.....	15,956	1833.....	45,864
1829.....	8,459	1834.....	64,101
1830.....	9,242	1835.....	7,40
1831.....	8,571	1836.....	22,840
1832.....	14,081	1837.....	41,550
1833.....	17,837	1838.....	51,541
1834.....	24,140	1839.....	23,972
1835.....	25,706		
11) 266,92		10) 331,41	
Mean.....	18,735		31,411

It thus appears that New Brunswick has built
on an average the following annual amount of
tonnage during the several periods named in the
following table:—

From 1825 to 1835.....	18,735 tons
" 1837 to 1845.....	31,411 "
" 1838 to 1874.....	35,881 "

Average during the last half century from the
above periods, 29,310 tons, or in the whole pe-
riod about 1,467,000 tons of shipping, and this
within the memory of people even now in the
full vigor of life. The value of this tonnage
may be, at the least, estimated at \$30,000,000,
and it represents only a portion of our industry
in the forests of this Province alone, and is an
index of what we owe to them, but is it not also
a suggestive finger post on the road to ultimate
impoverishment, if means are not taken to con-
serve what remains of the fountain of our
wealth.

It is worthy of note that in estimating our
tonnage, there is a great difference between the
statistics of tonnage of vessels built in the Pro-
vinces and vessels registered in the Provinces, the
difference being latterly in favor of the tonnage
built, as may be seen in the following tables:—

Nova Scotia.			
Year	T'ge Built	T'ge Reg'd.	More Reg'd than Built
1868.....	31,038	47,672	16,634
1869.....	26,679	44,821	18,142
1870.....	33,659	41,643	10,984
1871.....	41,307	47,070	5,763
1872.....	52,822	45,764	7,058
1873.....	63,001	55,393	7,608
1874.....	74,769	57,200	17,569
New Brunswick.			
Year	T'ge Built	T'ge Reg'd.	More Reg'd than Built
1868.....	24,419	29,353	4,934
1869.....	31,972	25,843	5,129
1870.....	35,598	31,571	4,027
1871.....	33,553	36,737	3,184
1872.....	36,464	43,654	7,190
1873.....	42,701	45,549	2,848
1874.....	46,063	49,27	3,206

In Quebec the difference is always very con-

siderably in favor of the tonnage registered compared with the tonnage built.

Condition of Our Agriculture.

In strange contrast to the remarkable development of everything that pertains to the sea, is the agricultural industry of the Maritime Provinces. Yet even this is far from being unfavorable in relation to capacity or productive capability, it is rather in the direction which industry has taken which appears to render agriculture so much in the back ground. Neither Nova Scotia nor New Brunswick raise on an average more than three-quarters of a bushel of wheat per head of population, and the contrast with their great shipping, lumbering and fishery interests is very striking, and it does not I think altogether arise from an unsuitable climate, but from causes under our control.

Taking the Maritime Provinces as a whole, including Newfoundland and the estuary portion of Quebec, the relative value of the several leading industries stand thus:—

For every head of population...	\$20 worth of shipping
" " "	" 20 worth of fish.
" " "	" Sixty acres of land.
" " "	" One bushel of wheat.

But with regard to Nova Scotia and New Brunswick it is only $\frac{1}{4}$ of a bushel of wheat per head of population, and this involves the importation of about one barrel of flour for each man, woman and child in the country.

In order to contrast the varied and far-reaching character of our industry with the industry of a leading Western State of the Union, such as Iowa or Minnesota, the following figures showing the relative production of wheat are interesting.

NOVA SCOTIA.

Population.	Wheat.	Oats.	Butter.	Cheese.	Indian Corn.
1851† 276,117	297,157	1,384,437	3,613,890	652,069	37,475
1861† 330,857	312,081	1,978,137	4,532,711	901,296	15,529
1871† 387,800	227,491	2,190,099	7,161,867	881,853	23,349

NEW BRUNSWICK.

Population.	Wheat.	Oats.	Butter.	Cheese.	Indian Corn.
1824 74,176	.....	.....	.....	.....	.....
1834 110,457	.....	.....	.....	.....	.....
1840 154,000	.....	.....	.....	.....	.....
1851 193,800	200,555	1,411,164	3,050,939	.....	62,225
1861 252,047	270,775	2,656,833	4,591,477	218,067	17,420
1871 285,564	204,911	3,044,134	5,115,047	154,758	27,658

Production of Wheat in Iowa and Minnesota, in contrast to the Maritime Provinces.

IOWA.			Average per acre.
	Yield of Wheat.		
1866.....	14,035,520		14
1868.....	16,009,072		14
1872.....	22,080,000		12.6
1873.....	31,600,000		13

†Census returns.

MINNESOTA.

187.....	10,011,828
1868.....	15,381,022
1869.....	17,000,467
1872.....	23,100,000
1873.....	28,056,900

But listen to the comments of the statistician published in the Report of the U. S. Commissioner of Agriculture for 1873. "Minnesota only happy when the people of Great Britain supposed to be in danger of starvation." "Minnesota, meanwhile, as the crop is maturing can never ascertain whether the want will be 40,000,000 or 90,000,000, whether the home price will be 50 cents a dollar, or the ultimate result debt or counter-balance." "Minnesota, meanwhile, as the crop is maturing can never ascertain whether the want will be 40,000,000 or 90,000,000, whether the home price will be 50 cents a dollar, or the ultimate result debt or counter-balance."

How much brighter is the outlook of the Maritime Provinces than is pictured in those words! owing to their varied industries.

Our Maritime Industries and Resources.

Now let us see how the 'Shore folk,' the dwellers by the sea, are represented in their peculiar industry, which all European nations desire to foster to the utmost, as lying at the foundation of their maritime strength.

NUMBER OF VESSELS, BOATS AND MEN EMPLOYED IN FISHERIES IN 1874.

Vessels.				Boats.	
Number.	Tonnage.	Value.	Men.	Number.	Value.
N. Scotia 529	20,163	756,128	4385	8023	267,777
New-Brk. 131	2,518	68,354	614	3351	100,857
Quebec 174	11,776	105,410	719	4052	157,573
Newfld. 1061	56,274	8,340	15,838
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Total.....	1895 80,731	14,058	33,064

Thus giving, exclusive of Prince Edward Island, of which no returns were available, a total fleet of 90,731 tons engaged in fishing, by 14,058 sailors and fishermen, together 33,064 boats, manned by 61,856 fishermen; grand total of men on the sea, engaged in industry of 73,475, deducting 2,439 shoremen. This is the nursery of that marine which is the Dominion of Canada such promising abroad and such power at home.

Our Coast Line

But while enumerating the area of the several Maritime Provinces that important element, their coast line, where their fish most abundant, must not be omitted, nor the area of their waters and the portion of the ocean they enclose, which is in a certain measure their own inheritance.

The lineal extent of sea coast, not including the indentations of the land, is thus given: the census returns for 1871:

1,011,828	1	bec.....	1, 64 Stat Miles
5,381,922	1	Brunswick.....	545 "
7,000,407	1	Scotia.....	1,170 "
4,500,000	1	Edward Island.....	340 "
8,050,900	1	Newfoundland.....	2, 00 "
		Total.....	5,250

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acres of forest land per head; Sweden, 8 acres;

Russia, 4 acres; and no other country in Europe comes nearer than six-tenths of an acre of forest per head of population. Now the question which we ought to be able to answer in view of our commercial future is this—what proportion of really valuable forest land do we possess per head of population, so that our shipbuilding may be continued without difficulty, and our lumber exports brought under such control by forest conservancy that the forests, or what is left of them, may be utilized in such a manner as to maintain a perennial supply.

I think these questions can be approximately answered and in most particulars favorably to the maintenance of those great industries which have led to the present Maritime position of the Dominion. But in attempting to answer them we must fearlessly examine the results of past widespread and apparently utter neglect of the future which has seemingly characterized the past history of all the Provinces with regard to their forests. I say apparently and seemingly, because it does not strike me that our predecessors, or even those who now rule the country, can be blamed for neglect in this particular, and this immunity from blame arises from the circumstances of the country, from the very superabundance of the forest growth which has made the Provinces what they are. Suppose we had to begin over again with the full knowledge we possess of the present necessity for preserving the forests. How could the country be occupied without removing them; how could we have arrived at the position of owning a ton of shipping for each inhabitant, and thus producing on a grand scale a commercial condition such as history cannot parallel, if our forests had not been almost ruthlessly invaded. We have now shipping, commerce and wealth and we have paid for them out of our forests; with wise economy for the future, properly directed, the investment will be immensely valuable, and we may preserve a large share of our capital and improve it. But the time has arrived, no doubt, when we must seriously consider the questions involved in the maintenance of that marine which springs from our forests, in its full condition of efficiency, for as ocean carriers we may maintain our standing and preserve our influence, but the conservancy of our forests is the key to this supremacy.

Our Forest Area.

Let us endeavor to find out even approximately the present area of our forest in relation to the entire area of the country and thus gain premises from which we may draw rational conclusions.

According to the Census of 1871 the superficies of New Brunswick and its inland waters, such as Miramichi Bay, is as follows:—

Acres.	
Area of New Brunswick	17,486,280
From this deduct area of inland coast water (Miramichi Bay).....	92,870
Area of Rivers, Lakes, Roads and Railroads.....	650,000

Total..... 16,743,410
Deduct area of improved land..... 1,171,157

Leaving total area of land in natural condition. 15,572,257

Or 92 per cent. of the entire land superficies of the Province still in a natural condition.

Let us now take Nova Scotia.

The area of this Province, exclusive of inland waters, lakes, rivers, roads and railroads, is about.....	12,000,000 acres
Area of improved land.....	1,027,000 "

Total land area in a natural state.... 10,973,000 "

Or about 85 per cent. of the Land superficies in a natural condition.

But it must not be supposed that the 92 per cent. of land in a state of nature in New Brunswick, or the 85 per cent. in Nova Scotia is forest clad. We must deduct the Rocky area where no soil exists, the Rocky area where a thin but now burned-out soil exists, the barrens where a forest once grew but by repeated fires the soil has been rendered unfit for many years to come to bear forests; similarly for present estimates we must deduct the burned districts on poor land, where a new growth will be very slow, and finally we must make allowance for those terrible scourges, the conflagrations, which annually sweep through and destroy so many thousand acres of our finest forests.

I think that when these causes of present forest improvement are deducted, there will not remain more than two-thirds of the area of wild land clothed with available and growing trees, and this perhaps is too favorable an estimate. It would leave us 61 per cent. for New Brunswick and 56 per cent. for Nova Scotia, but certainly not all bearing trees fit for lumbering or ship-building.

Assuming these data to be approximately correct, and the error lies probably in the estimate being too high, our forest capital compared with other countries stands thus:—

	Proportion of Forest Land to aggregate area.	Proportion of Area of Forest Land per head of population.
Norway.....	66.01	24.61
Sweden.....	63.00	8.55
New Brunswick	61.00	27.00
Nova Scotia....	56.00	9.00
* Maine.....	46.09	18.00
† Russia.....	30.90	4.28
Germany.....	26.58	0.66

* U. S. Census.

† Heutzsch—Authority for the European countries.

Belgium.....	18.52	0.186
France.....	16.79	0.470
Sweden.....	12.20	0.224
Norway.....	9.44	0.138

Our forest Wealth Compared with other Countries

But in order to arrive at a result which will even approximately show the amount of forest capital, we must compare the area population of the different countries, and present purposes it will suffice if we take four leading states, namely Norway, Sweden, New Brunswick, Nova Scotia, and compare them with Quebec, assuming the forest area of Quebec to be 60 per cent. of the entire superficies, which, it will be remembered, takes a large part of the Labrador peninsula to height of land when trees only grow in secluded valleys.

	Population.	Land Area in Acres.	Ratio of Forest Area.	Ratio of Population to Forest in Acres.	Tonnage.	Ratio of Forest to Tonnage.
New Brunswick	1,795,821	76,029,718.00	21.61	1,365,834		
Sweden	1,201,177	88,115,762.00	8.55	215,470		
N. S.	375,000	17,333,410.00	27.00	291,741		
N. S.	425,000	13,382,101.50	9.00	479,630		
Quebec	1,300,000	20,000,000.00	55.00	2,800,000		

This table, interpreted, appears to bear following meaning: Norway has 53 millions acres of forest capital, with which to build her ships, exporting lumber, and carrying on the business of ocean carriers; Sweden has 52 millions of forest capital to carry on the same business; New Brunswick has but 27 millions of forest capital; and Nova Scotia but 74 millions. Yet Nova Scotia tonnage exceeds that of Sweden, and the forest capital of New Brunswick is but a fifth part of that of Sweden or Norway.

Is it not a fair question to ask whether, under existing circumstances, and at the wonderful wood-cutting rate at which both Nova Scotia and New Brunswick are consuming their forest capital, the end is not in sight, unless measures are taken to protect the forest capital and to increase it?

Taking another view: The aggregate tonnage of Sweden and Norway is 1,800,000 tons; Nova Scotia and New Brunswick 770,000 tons. The forest capital of Sweden and Norway is 102,000,000 acres; of Nova Scotia and New Brunswick 77,000,000 acres.

* The water area in Norway is not deducted—(H. Sidenbladh), secretary of the Royal Swedish Bureau of Statistics.

† Deducting water areas as stated in the census of Statistics, and stating the population as in 1871.

‡ Obtained by multiplying total area by per cent of forest area.

nswick, 17,250,000 acres. The ratio of ton-
to forest capital in Sweden and Norway is
is to 57; in Nova Scotia and New Brun-
as 1 is to 22.

orway, with her 1,795,823 people, has only
nt three quarters of a ton of shipping per
d of her population, but she has an enor-
is forest capital, and preserves it strictly.
a Scotia has over a ton of shipping per head,
a very small forest capital, and she does
erve it. New Brunswick has very nearly a
of shipping per head, and a moderate forest
ital, but she takes no steps to preserve it.
way and Sweden are old countries. A hun-
land twenty-five years ago Sweden and Nor-
had more than three times the present po-
tion of New Brunswick and Nova Scotia, and
coal. They have an immense charcoal iron
natry, a very extensive lumber industry, and
e been a prominent maritime power for cen-
es; but they look to their forest capital with
eye to the strictest economy, regarding the
ire, and they have recently practically laid
embargo on the exportation of lumber.
at, it may well be asked, is our future to be
e continue to consume indiscriminately, with-
any attempt at conservancy? Every year
drain upon the forest becomes greater. Let
look at the causes of consumption. Setting
aside shipbuilding and lumbering—the great
dubs of the country (for it must be observed
t with the decline of shipbuilding our indus-
as ocean carriers declines also)—for our ships
the sea are equivalent to paying railroads on
d, and are earning an enormous annual rev-
e, which is too lightly thought of.

Area.	Ratio of Popul- ation to Forest in Acres	Tonnage.	Ratio of Forest Capital to Popul- ation
24,611	1,385,844	1,385,844	1
8,555	415,453	415,453	1
27,000	291,741	291,741	1
9,000	479,679	479,679	1
55,000	2,829,415	2,829,415	1

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YEARLY INCREASE IN A GROWING FOREST.

he first question we have to consider is, how
much wood grows every year upon an acre of
at the wonderful wooded land? A computation, resulting
ova Scotia and No careful observation and measurement, en-
their forest capied Mr. Fleming, the chief engineer of the
on of that canda Pacific Railway, to determine that the
unless measures al growth amounted to three quarters of a
capital and to; or, to produce a cord of wood each year
the ordinary process of tree growth, requires
and one-third acres. Hence, every mile of
road requires for fuel, replacement of cross
fencing, and the general maintenance of
rolling stock, as much wood as grows each
on three hundred acres in order to keep up
eternal supply; 1,000 miles of railway, con-
sing wood as fuel, requires the annual growth
100,000 acres of first-class forest to keep it in
king order; and if the fuel used be coal, it
ld require 200,000 acres to be preserved in

order to keep up a perpetual supply for cross
ties, etc.

The popular idea of the quantity of wood for
all purposes still available in Europe and Ameri-
ca is not, I think, based upon any correct data.
In "The Forester" for 1871, Europe, the United
States and the Dominion are credited with the
following acreage of forests:—

	Acres.
Dominion of Canada.....	300,000,000
United States.....	500,000,000
Europe.....	500,000,000

Let us examine this statement, for it is all-
important to us.

	Acres.
The area of the four Provinces—Ontario, Quebec, New Brunswick and Nova Scotia, after deducting inland waters, 18.....	215,892,000
Deduct improved lands.....	17,335,818
Roads, Railroads, Rivers and lakes not included in inland waters.....	10,000,000
	27,335,818

Total supposed forest area.....388,556,182

Applying to this area a proper reduction for
bare rock, burned districts, etc., say, one fourth,
considering that a vast area near the height of
land is burned over, and the soil destroyed for
many generations in that severe climate, and
there remains, in round numbers, 140,000,000,
or 35 acres of forest land to each head of popu-
lation—not much more than half the percentage
of Sweden or Norway, in the four Provinces.

It cannot be said that we may eventually
draw supplies from the Basin of Lake Winni-
peg; the quantity of lumber there will all be
required for that comparatively treeless area,
and the quantity of available timber in British
Columbia is greatly overestimated, as well as
its permanency. For all practical purposes as
effecting commerce, and making all allowances
for Ontario, we are not justified in estimating
our timber resources in the Basin of the St.
Lawrence, at more than 35 acres per head, and
with our rapid increase in population and an-
nual waste of the forest, through fires, enormous
exports and consumption, this ratio is rapidly
diminishing.

How much land do we annually deprive of
trees by our lumber exports? The answer to
this question will show how fearfully rapid our
forests are being consumed.

The following is from the census of 1871, for
the four Provinces:

	Cubic Feet.
White Pine.....	24,236,821
Red Pine.....	1,954,372
Oak.....	3,302,043
Tamarac.....	5,635,963
Birch and Maple.....	1,939,357
Elm.....	1,832,654
Black Walnut.....	117,589
Soft Walnut.....	102,981

Hickory	197,827
All other timber.....	21,200,264

In round number 65,600,000 cubic feet; or at 50 cords an acre, (equal to 6400 cubic feet to the acre,) a quantity which would be produced on 10,250 acres of first class forest land.

But to this we must add the following items, also from the census of 1871 :

Pine Logs	Cubic Feet.
Other Logs	12,416,408
Masts, Spars.....	9,315,557
Lath Wood.....	21,685
	3,200,000

25,052,650

or what would grow on 3914 acres of first class forest land.

Again to this we add the cordwood for fuel, amounting to 8,713,083, or what would grow on 174,261 acres, at 50 cords to the acre.

Adding these items together—

	Acres.
White Pine, &c.....	10,250
Logs, &c.....	3,914
Cord Wood.....	174,261
Total.....	188,425

which being expressed in words, means that our consumption of the forest amounts to the absolute clearing of 188,425 acres every year for fuel and lumbering. At this rate, in 100 years, we should clear an area of forest land of the first quality, producing 50 cords an acre, larger than the entire superficies of the Province of New Brunswick, and that we do invade the forest in much greater ratio that is thus represented, is evident from the fact that every year considerably more land is cleared for farming purposes alone. We may arrive at an approximate estimate of the annual quantity of land cleared, by comparing the result of the census of 1851 with that of 1871, for the Provinces of Ontario and Quebec, and we find the average annual quantity of cleared land to be for that period, about 365,000 acres, taking as the basis of the estimate, the increase in the cultivated land; this is at the rate of 1000 acres a day.

Hence, we may infer that the average annual clearing of the forest in the Basin of the St. Lawrence portion of the Dominion, amounts from all artificial causes, to 553,000 acres, which would make a area nearly equal to that of the land superficies of New Brunswick, altogether denuded of trees in 30 years, or one generation.

It is now thirty years since the late Mr. M. H. Perley wrote an admirable treatise on the forest trees of New Brunswick, in which much valuable information was given, and hints thrown out. I do not know to what extent this information has been used, or whether it

has in the remotest degree influenced the conservancy of their forests, but I know the information is far penetrating, and of use to us now with peculiar force. I shall not attempt here to point out the vast importance of knowing the true meaning of the word 'Forest,' but it will suffice to mention that the difference is as great between an aspen and a pine, or between a forest of maple and beech, as between a forest of maple and birch, or between a forest of pine and a forest of northern spruce and stunted

Weight of a cubic foot of	Pounds	Sp. Gr.	Heating Power.
Dried Aspen*	26	..	..
Gray Oak.....	52	..	..
English Red Oak.....	50-54	..	..
N. B. Red Oak.....	44	0.675	..
White Maple.....	38	..	..
Red Flowering Maple.....	44	..	..
Sugar Flowering Maple.....	46	0.6	..
Black Birch.....	45	0.65	..
Red Beech.....	43-53	0.672	..
White Ash.....	34-52	0.616	..
White Elm.....	33	..	..
White Pine.....	28	0.46	..
Black Spruce.....	20	..	..
Hemlock.....	..	0.45	..
Hickory.....	..	0.929	..

The numbers in the first column are from Perley's excellent report published in 1871 referring to New Brunswick trees. Columns 3 and 4 are from a paper published by Charles Robb in 1859, and the authorities are Dr. Gray and Holtzapffel's *Manual of Manipulation*. The table is very interesting and intended for illustration only. Even years ago Mr. Perley called attention to the wanton destruction of certain kinds of trees in this Province. Speaking of a tree in general terms without describing its character and the climate in which it grows, is like saying a tree, in reference say to shipbuilding, without stating whether it is an oak or a birch, or a pine or a soft pine, a black spruce or a

The Forests of the United States

Now let us examine into the condition of the forests of the United States, and see what the official state on this subject.

By reference to the Report of the Secretary of the Bureau of Agriculture, for 1871, we find that the whole of the United States contains 10 per cent. of forest, and this estimate includes Alaska, which is supposed to embrace 10 per cent. of the entire forest area.

* Perley

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Acres.

571,937,112
119,858,889

451,079,032

assuming the population to be 40,000,000
this area would give eleven acres for each
bitant, and is diminishing at a rate fearful
temple, so that the imports from Canada
assuming a very large and rapidly increasing
nitude, as the following table exhibits.

TABLE OF TIMBER FROM THE DOMINION TO THE UNITED STATES.

Pounds.	Sp. Gr.	Heading Power.	Value of the Timber exported.
26	0.675	5,003,040	8,282,922
52	0.675	6,431,060	6,727,003
50-54	0.675	7,208,536	8,670,702
41	0.675	8,264,837	8,410,917
38	0.675	11,124,950	
44	0.675		
46	0.675		
45	0.675		
43-53	0.672		
34-52	0.610		
33	0.610		
28	0.46		
29	0.45		
10	0.929		

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Report of the Statistician to the Commissioner of Agriculture, 1873.
United States Geographical Survey of the Territories
74, page 239—(Hayden) Prof. C. Thomas.
Ibid.

purposes, but this is far from being the case; even in Idaho, although in the adjoining Province of British Columbia the forests are magnificent in many parts, but there a humid region supervenes.

Fort Hall in Idaho is situated on a tributary of Snake River, in lat. 43° 8' 51, lon. 112° 6' 30, or about due South of Edmonton, and on the west side of the Rocky Mountains. Its altitude above the sea is 4,751 feet, or upwards of 4000 feet below the limit of timber on the mountain in that region. "As a general thing lumber is scarce throughout this entire region, that of value for lumber being found only in those mountains whose summits are covered with snow all or a great part of the summer, and here as elsewhere in the whole Rocky Mountains belt, when the forest is once destroyed, it is never restored. Most of the best lumber used in the buildings at the fort, as I am informed by Capt. Wilson, the police officer in charge of the fort, was brought from Truckee, California, and most of the other sawed lumber from Corinne. About fifteen miles to the southeast some tolerably good pine and fir timber can be obtained in the mountains."

As we proceed more to the north, and attain a colder and more humid region, this destruction of timber by fire is not followed by a desert area or a plain, or necessarily a prairie, for in many parts the forest, in the form of pine, spruce, fir or aspen reasserts its supremacy.

Fires in the forests of the Rocky Mountains, within Dominion territory, have continually occurred over small areas and sometimes have been widespreading and destructive, but there is the young growth now to be seen rapidly clothing the burnt district once again with forest. But avalanches and land slides are most destructive in the humid Alpine region of British Columbia, as in all humid Alpine countries, and yet these really terrible phenomena do not appear to have merited a title of the attention they demand in relation to the Canada Pacific Railway, throughout the humid regions of the Rocky Mountains.

Dominion Forest Wealth.

But what is our Dominion timber supply to be estimated at, as a whole? It is really 100,000,000 acres, as stated by the influential European authority quoted.

The sub arctic forest of coarse white spruce, birch and aspen, exclusive of the eastern shore of Lake Winnipeg, in the Basins of Lake Winnipeg and the Mackenzie, is estimated by Richard-

[Ibid, page 240.

son, to be 600 miles deep on the Canoe track or from the 50th to the 55th parallel. It follows the course of an isothermal line, and forms a forest zone across the Continent about 500 miles long. This enormous area of 300,000 miles is in the widest acceptance of the term a forest-clad country, but when we examine into the character of this vast forest, we shall find that the reductions to be made are enormous, not only on account of the poor quality of much of the timber, but also because of the existence of immense prairies, plains and barrens throughout the vast expanse. To these we must add the burned districts where, owing to the thinness of the vegetable soil, the forest once burned, is lost for many generations. Then again, we must bear in mind that the limit of perpetually frozen soil passes through this zone. This limit is roughly represented by the isothermal line of 32 degrees, which approaches in the Basin of Lake Winnipeg, much nearer the fertile valley of Red River than is generally supposed, and although trees spread their roots over the permanently frozen soil like over a rock, yet their growth is very slow on such an icy substratum, and when destroyed, it takes a very long series of years to recuperate the forest growth.

Hence, we may reject from the above area fully one-half as the extent of the available forest in the North West Territories, exclusive of the Hudson Bay slope. This gives us 150,000 square miles of forest or 95,000,000 acres.

Turning to British Columbia, we have surely there a grand forest-clad country as large as France, or the Empire of Germany. This is true in point of area, but we must remember that an immense portion of British Columbia is a "Sea of Mountains," and that the limits of trees are determined by altitude. How much of the area of British Columbia lies above 7000 feet over the sea level, I am not able to state, but it is very considerable, for we find glaciers over a considerable portion of that alpine country, and hundreds of miles apart. But where glaciers exist there is an index of climate and altitude which cannot be misunderstood, as well as of the limit of trees.

The following table shows the altitude of forest growth; or the timber line, in the Rocky Mountains. Under any circumstances, we ought not to assume that the timber-producing area of British Columbia is greater than three-fourths of its entire area, or the same as on the opposite and in part sub arctic slope of the Rocky Mountains; and I very much question whether it nearly approaches this estimate, after proper deductions are made for arid districts,

rocky districts, area above the timber line, glaciers, lakes, rivers, etc.; and it must be borne in mind that even as a glacier on the summit of a mountain tells a tale of climate in unmistakable language of physical fact, so does the growth and renewal of forests up and the very snow line show the absolute necessity of humidity, without which they cannot be produced.

THE TIMBER LINE IN THE MOUNTAINS.

Locality	Latitude	Elevation
<i>Dominion Territory.</i> * .. 53 to 49		
Mixed Forest	"	5,000
Forest of Balsam Spruce (Abies balsamea)	"	4,000
Abies Alba	"	7,000
Alpine Region		7,000
<i>Montana Territory, U.S.</i> 1		
Hollder's Peak	45° 47'	9,000
Mount Delano	45° 42'	8,781
Ward's Peak	5° 30'	9,150
Mount Blackmore	45° 25'	9,550
Second Canon, Madison River	45° 00'	9,775
Near Henry's Lake, Idaho	44° 55'	9,368
Cascade Range, Oregon	44° 00'	7,000
Mount Shasta, California	41° 15'	8,000
Long's Peak, Colorado	4° 50'	11,190
Peak's Peak	38° 53'	12,000
<i>New Hampshire.</i>		
Mount Washington	44° 00'	5,200

The Dominion forest wealth stand thus, rough approximation towards its true influence and commercial character:—

	Acres of Forest Land
Basin of the St. Lawrence, (Quebec	72,000
including New Brunswick	10,000
and Nova Scotia	7,000
Total	129,000
Basin of Lake Winnipeg and the Mackenzie	96,000
British Columbia	93,000
Hudson Bay Slope	35,000
Total forest area of the Dominion	350,000

This estimate, which is about one-third of the European authority before quoted, gives seventy-eight acres for each head of population, or three times more than the estimate in any country in Europe, and sometimes more than the estimated proportion in the United States.

And in relation to the ratio of the forest to the entire area, we have the following interesting proximate result, neglecting, of course, the Arctic area north of the forest zone.

Area of the four Provinces.	
(Basin of the St. Lawrence)	215,000
Area of the Basin of Lake Winnipeg and Mackenzie, south of the limit of trees	422,000
Area of British Columbia	130,000
Area of Hudson Bay Slope, south of the limit of trees	100,000
Total area of Dominion within the limit of the forest growth	867,000
Total forest area	260,000

* Hector.

† United States Geological Survey, s.

We are now enabled to arrive at a rough approximation of our Dominion forest wealth, as compared with that of other countries; and yet in making this comparison we are liable to be deceived, for, as already stated, it is the kind of timber which gives value to the forest for very many purposes, and a very large portion of our forests will not compare favorably with those of more southern climes, especially the forests of the great western portion of the continent, where a coarse white spruce and the white birch and aspen reign supreme. But self-deception in these matters is folly now-a-days.

and, therefore, when we speak of forests, we must also think of the kind of forests we speak of.

DOMINION FOREST WEALTH COMPARED WITH OTHER COUNTRIES.

Country.	Ratio of Forest Land.	
	To entire area.	To population.
Norway.....	61	24.61
Sweden.....	60	8.55
Dominion of Canada.....	42	78
United States, with Alaska.....	25	14
United States, without Alaska.....	23	10.1
Province of Quebec.....	63	55
Province of Ontario.....	63	25
Province of New Brunswick.....	61	27
Province of Nova Scotia.....	56	9

The capital invested, the number of hands employed in, and the total value of the products of the saw mills compared with the grist mills in the Dominion, according to the census of 1870-71 was as follows:—

	Capital invested	No of hands	Total value of products.
Flour and Grist Mills.....	\$ 9,929,898	4,992	\$39,135,939
Saw Mills.....	16,040,589	35,691	33,256,247
Agricul. Implements.....	1,104,308	2,516	2,685,393
Shipyards.....	1,084,425	6,046	4,432,262

Forests of Europe according to European estimate.

Country.	Area occupied by Forest.	
	Arees.	
Europe.....	50,000,000	
France.....	18,000,000	
Russia.....	300,000,000	
Switzerland.....	500,000	
Norway and Sweden.....	80,000,000	
Spain and Portugal.....	6,000,000	
Netherlands.....	579,000	
Germany.....	50,000,000	
Italy.....	5,000,000	
Turkey and Greece.....	10,000,000	
Danmark.....	500,000	
Belgium.....	1,400,000	
England—Crown Land.....	40,000	
America—Dominion of Canada.....	300,000,000	
United States.....	560,000,000	

Proportion of Forest Land in Europe according to Rentzsch.

Country.	Ratio of forest to entire area.	Ratio of acres per head of population
Norway.....	66.0	24.61
Sweden.....	60.0	8.55
Russia.....	30.00	4.28
Germany.....	26.58	0.6638
United States.....	25.00	
Belgium.....	18.52	0.186
France.....	16.79	0.3766
Switzerland.....	15.0	0.396
Sardinia.....	12.29	0.223
Naples.....	9.43	0.138
Holland.....	7.10	0.12
Spain.....	5.52	0.231
Denmark.....	5.50	0.22
Great Britain.....	5.0	0.1
Portugal.....	4.40	0.182

The Fishing Industry of the Maritime Provinces.

In this branch of industry we stand unrivalled.

*Estimate of James Brown, Esq., LL. D.—"The Forester" 1871.

led, and in proportion to our population the area and value of our vast sea pastures, being absolutely unapproachable. I shall content myself with enumerating a few facts of importance referring to the able Reports of the Commissioner of Fisheries, Mr. W. F. Whitely; to the Inspector of Fisheries for New Brunswick and Nova Scotia, Mr. W. H. Venning, relative to the voluminous records contained in the Report of the U. S. Commissioner of Fish and Fisheries for 1872 and 1873. However, here state that there are to be found in the annual reports of the Department of Marine and Fisheries, for many years, numerous valuable papers and essays, subjects connected with our fisheries which it would be most desirable to have revised, reprinted, distributed far and wide among our people interested in the fisheries, and among the intelligent and enterprising of our practical fishermen. There are documents embracing records of the Department of the high importance in relation to that vast and permanent interest, which may become, under wise management, a perennial source of wealth to the maritime part of the Dominion. And a revision of these, supplemented with the ledger which has been accumulated during the past few years in many different countries, would be a boon to the State in any form if coupled with practical suggestions from experience, it would be seed to a soil which could not fail to yield a harvest the hundred fold.

In order to estimate the value of our fisheries we must compare them with those of other nations, and for the purposes of illustration the following will serve:—

UNITED STATES FISHERIES.	
1871.....	1871.....
1872.....	1872.....
1873.....	1873.....
1874.....	1874.....
1875.....	1875.....
DOMINION FISHERIES (INCLUDING EXPORTS OF SEA-FOOD).	
1870.....	1870.....
1871.....	1871.....
1872.....	1872.....
1873.....	1873.....
1874.....	1874.....

These enormous sums represent approximately the value of fisheries which come under the notice of the returning officers, add to the fish consumed, the fish sold as bait, and the fish of the Newfoundlanders, the fresh fish of which very imperfect cognizance can be taken, shall not fall far short of the mark, if we estimate the actual value of our fisheries to the people for the purposes of trade and before

to our population the enormous sum of \$2,000,000 annually, vast sea pastures, giving employment to 74,000 men on the coast. I shall content a fleet of 90,000 tons, and 33,000 open boats of importation. The reports of the Committee were to arrange these open boats in a file, touching one another, they would be as a series for New Brunswick from St. John to beyond Shediac.

Mr. W. H. Venning, relative catch of the Provinces is thus shown in the following records collected:—

	1874.
U. S. Commission	\$8,240,000
1872 and 1873.	6,062,391
1874.	2,085,793
1875.	1,608,660
1876.	288,863
Total.	\$19,481,674

For many years the Government sends about 1900 sailors (1874) to all our fisheries which have revised, reprinted, and among our fisheries, and among the fisheries of our practical fishermen embrace the element of the high seas.)

to that vast and permanent source of wealth, under which the Dominion. And the accumulated wealth of the fisheries, the Irish fisheries may be mentioned as having decreased to a remarkable extent in the past twenty five years, so well explained in the following table:†

	Vessels and Boats.	Men and Boys.
1846.	10,883	114,673
1857.	15,257	68,739
1868.	12,381	49,208
1879.	13,758	53,673
1890.	13,402	55,640
1901.	9,509	40,936
1912.	9,332	38,444
1923.	7,914	31,311
1934.	7,181	29,307
1945.	6,246	26,924

the value of our fisheries with those of the vessels and boats are less by considerably more than one half as compared with 1846, and crews have been reduced to one-fourth. This fearful and sudden falling off in a national industry should not be contemplated by us, without enquiry as to the cause, for it may be, similar agencies are at work which might to reduce our fisheries, although I trust is not even probable.

STATES FISHERIES. The Fisheries of the United States Commission of Fish and Fisheries. The Fisheries of the United States Commission of Fish and Fisheries. The Fisheries of the United States Commission of Fish and Fisheries.

THE DEVELOPMENT OF OUR FISHERIES. The Fisheries of the United States Commission of Fish and Fisheries. The Fisheries of the United States Commission of Fish and Fisheries. The Fisheries of the United States Commission of Fish and Fisheries.

of our fisheries to report of the Inspectors of Irish fisheries for 1873. before the famine.

The movements of the fish at different periods of the year, are still but little known, yet observation points to an all pervading law which appears to guide and direct them, namely temperature and barometrical pressure. It appears to be the temperature of certain currents on the coast which determines the movements of the fish at certain seasons, and the temperature of certain coastal marine areas which determine the periods of spawning.

The herring spawns earlier or later, according to the coldness of the waters, as far as is now known. The shad comes with the increase of warmth, the herring spawns with the gradual diminution of warmth.

The shad in the spring appears first in the Rivers of Florida, then in order in those of the Carolinas, New York, New England, and last of all New Brunswick. The herring begin first to spawn in the Bay of Fundy and the Gulf of St. Lawrence, and as the warmth of the coastal waters diminishes towards the fall going South, its period of spawning appears to be extended into December. But to know all facts in relation to this most valuable fish over the vast area of our fishing grounds in the Gulf, simultaneous observations with the thermometer conducted by practical fishermen all along their fishing grounds, as is done by the Dutch, is the only way of obtaining serviceable knowledge. It is upon the current of cold and warm water which circulate about our coasts that the migration of certain species of fish are supposed to be dependant, and we can only obtain the knowledge of these currents and their relation to fish migration, by the simultaneous and concerted action of practical fishermen.*

In Norway the Government causes information to be given to their fishermen by the telegraph reporting the movements of the cod and herring to their shores, so that the fishing fleets may direct their movements accordingly,† and this can be greatly facilitated and extended by communicating the intelligence to the public press.

In Newfoundland as well as on our own coasts the winter fishery is becoming a very important industry, and if telegraphic information of the approach of storms from the West could be conveyed to large fishing stations much loss arising from the destruction of nets could be avoided, and also information conveyed of a sudden change from cold weather to warm weather, like the changes which have occurred in such a

* See a note, page viii, in the Report of the United States Commissioners of Fish and Fisheries.

† Page x (ibid).

marked degree this winter, by which the frozen fish could be preserved from destruction. Such a system prevails at Eastport, on the other side of the International boundary.

How little we know about the value of the herring fisheries may be inferred from the following information, for which I am indebted to a friend in Newfoundland.

"The herrings of Fortune Bay are of inferior quality, and are largely exported in a frozen state in the month of January, principally to New York markets, and also for bait for Cape Ann fishermen. There is also a large export of them to the French Island of St. Peters during the months of April and May, for bait for the French Bank fishery, probably 40,000 barrels are taken to St. Peters annually, not reported at the Customs, and do not appear in returns, as is also the case with Bay of Islands, Bonne and St. George's Bays. The small settlements of St. George's Bay takes yearly, in the month of May, about 30,000 barrels; Bay of Islands and Bonne Bay, in the months of November and December, about 25,000 barrels, each of large and fine quality."

And with regard to the cod fisheries he says: "Nothing will better illustrate the easy-going style prevalent here, more than the fact that those great Bank fisheries, not more than 50 or 80 miles from us, are frequented by vessels which have crossed the Atlantic or have come 800 or 1,000 miles from Maine or Massachusetts or Nova Scotia, while not one vessel can be found there to represent Newfoundland."

Recent N. S. papers notice the departure of of the American fishing fleet for the Grand Banks, and also for LaHave Bank, off Nova Scotia. Already numerous vessels from Europe have arrived at St. Peters, and an immense supply of bait, supplied by Newfoundland fishermen accumulated.

COAST SIGNAL AND LIFE SAVING SERVICE.

I ought not to conclude this portion of my subject without some slight reference to the importance of a Coast Signal and Life Saving Service, in relation to our marine and fisheries. Elsewhere and referring to another subject, namely a "Baie Verte Gut," I have alluded to this all important adjunct to our Maritime prosperity, and an enumeration of the results of three and of two years experience in different parts of the coast of the United States will suffice to illustrate the good likely to result from it.

"The Life Saving Service has now been in operation under the present system three years

on the coasts of Long Island and New d are s
and two years on the coast of Cape Cod are in
statistics of disasters upon these coasts art of
this time are reported as follows: ation

Number of wrecks.....	.....	.....
Number of lives imperilled.....	.....	.....
Number of lives saved.....	.....	.....
" " lost.....	.....	.....
Number of shipwrecked persons sheltered.....	.....	.....
Number of days shelter afforded.....	.....	.....
Total value of property imperilled.....	.....	.....
" " saved.....	.....	.....
" " lost.....	.....	.....

Almost all the disasters which occur on these coasts are from the stranding of vessels, and it is against death and loss of property and m
sulting from this class of disasters that usually
saving service, as thereon established, is socie
to afford protection."

Report of the Secretary of the Treasury (W
S.) 1874.

Comparing this statement with (by sho
losses during 1874, without any signal ported
saving service, the contrast is remarkabld of ou
it must at the same time be observed, aid as
details are only approximately comparame by

Number of casualties.....	.....	.....
Number of lives lost.....	.....	.....
Value of property lost.....	.....	.....

Owing to the absence of a life-saving comm
it is impossible to say how many lives a to be
much property might have been saved, n carri
of the casualties occurred when no ordinat sea
saving service could have affected the retening
it is well to bear in mind that much mig the
been accomplished if we had possessed ab their
most frequented portions of our coast wher va
ualties prevail, even a modified service can ex
surate with our status as a Maritime people t
beginning at two prominent points were Jute
the results would bring the importance of th
service so pointedly before the public, t
extension would be merely a question of INCL

WHAT INDIVIDUAL PROVINCES MAY

The history of fish culture shows in ould
manner what can be done by different abjec
and even individuals, in replenishing extat the
rivers with valuable fish such as the shad, specti
&c., once abundant and an important some Ph
employment, food and income to the inh's.
The field for this kind of enterprise in shor
branches is very considerable in the Me pro
Provinces and has become an important phical
to the great sea fishing industry we cont and is
But the bare fact that our sea fisherie aty c
us in an annual income of about \$20,000 follow
and have increased rapidly during the Wash
See an article in the *Monetary Times*, Novemb
on "Wrecks and Casualties to Canadian Ship"

g Island and New d are susceptible of very much greater
coast of Cape Cod are in themselves sufficient to demand
upon these coasts art of each Province, the most careful
as follows: ation, wholly independent of that excel-
lence, increasing supervision extended to them
General Government.
are, however, many different ways in
the Local Government, acting in concert,
er afforded, and supplement the exertions of the
Government in the work of improving
saved, Fisheries, ameliorating the condition of the
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disasters which occur are there to be found among that
the stranding of e are there to be found among that
and loss of property and most industrious population which
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d encouraged by the State among our

etary of the Treas? Why should not fishery societies be
ged just as much as agricultural socie-
statement with (by should not the industry be cherished
without any signal ported which brings in not less than \$20
contrast is remarkab of our population, and which may be
time be observed, ided as to double that amount in a few
roximately comparame by careful education and training.

dissemination of valuable information?
our fisheries, so with our forests, with
se or decline, will be the rise or decline
ence of a life-saving commercial marine. Permit the forest
ay how many lives to be wasted and the end of our career
t have been saved, carriers will soon loom in sight. Permit
urred when no ordinat sea fisheries to decline, and the same
have affected the reteneing prospect lies before us, and what
mind that much misbe the future of the Maritime Provinces
if we had possessed all their lumber, without their ships, and
tions of our coast where their vast fishing grounds depleted? And
a modified service can an example of the last named result we
is as a Maritime people us the present exhausted condition
minent points were United States fisheries on their Atlantic
bring the importance and the efforts they are making to restore
before the public,

merely a question of INCIAL PROPRIETARY INTEREST IN THE
AL PROVINCES MAY FISHERIES.

culture shows in ould be doing a great injustice to the
done by different subject of our fisheries if I were to fail to
s, in replenishing exlat the views entertained by high author-
fish such as the shad, specting the responsibilities of the several
and an important some ne Provinces in the preservation of their
nd income to the inha's.

ind of enterprise in onshore fisheries of each Province are the
siderable in the Me property of the Province to which they
ecome an important bically belong. This is a most important
ng industry we cont and is expressly stated in the protocols to
that our sea fisheries, aty of Washington.

ome of about \$20, following extract from the 36th protocol,
rapidly during the Washington, May 4th, 1871, establishes
oints:—
onetary Times, Novem
ities to Canadian Shippi

"The subject of the fisheries was further dis-
cussed at the Conferences on the 7th, 20th, 22nd
and 25th March. The American Commissioners
and stated that if the value of the inshore fisheries
could be ascertained, the United States might
prefer to purchase, for a sum of money, the right
to enjoy, in perpetuity, the use of these inshore
fisheries, in common with British fishermen, and
mentioned \$1,000,000 as the sum they were pre-
pared to offer.

"The British Commissioners replied that the
offer was, they thought, wholly inadequate, and
that no arrangement would be acceptable of
which the admission into the United States,
free of duty, of fish the produce of the British
fisheries, did not form a part; adding that any
arrangement for the acquisition, by purchase, of
the inshore fisheries in perpetuity, was open to
grave objection.

"The American Commissioner inquired
whether it would be necessary to refer any ar-
rangement for purchase to the Colonial or Pro-
vincial Parliaments.

"The British Commissioners explained that
the fisheries within the limits of Maritime
jurisdiction, were the property of the several
British Colonies, and that it would be necessary
to refer any arrangement which might affect
Colonial property or rights to the Colonial or
Provincial Parliaments, and that legislation
would also be required on the part of the Impe-
rial Government."

It will be observed that this acknowlege-
ment of the exclusive property right of the
several British Colonies to the inshore fisheries
on their coasts was made long after Confedera-
tion had been established, and as will be shown,
subsequently, this view was taken by the Nova
Scotia House of Assembly on the 17th February,
1871.

PROVINCIAL RESPONSIBILITY IN RELATION TO THE
FISHERIES.

It is also particularly urged by the Colonial
Office that each of the Maritime Provinces
should furnish every information respecting the
values of their fisheries in relation to the con-
templated "Fishery Commission" which has
been so long delayed; and in this particular
nothing can be clearer than the statement made
by Mr. Odo Russell, in a despatch addressed to
the Under Secretary of State for the Colonies,
bearing date, "Foreign Office, Aug. 31st, 1871,
or three months after the Treaty of Washing-
ton was signed:—

"I am to add that, as regards the desire ex-
pressed by the Government of Prince Edward
Island that some person should be appointed

to attend the Commission at Halifax, it appears to Lord Granville that it would not only be permissible, but highly desirable, that Prince Edward Island AND THE OTHER PROVINCES should furnish the fullest information before the Commission as to the value of the inshore fisheries ON THEIR COASTS. The 24th article of the Treaty provides that the Commissioners shall be bound to receive such oral or written testimony as either Government may present; and it will, consequently, be competent for the Government of Prince Edward Island to send to Halifax any person who may be selected as best capable of giving evidence on its behalf.

FORMER WANT OF INFORMATION WITH RESPECT TO THE FISHERIES.

By way of illustrating the manner in which our great fisheries have been dealt with, I introduce at the outset an extract from the "Correspondence between the Government of the Dominion and Imperial Government, on the subject of the fisheries, with other documents relating to the same," laid before the House of Commons, 20th Feb., 1871. Sessional papers, No. 12, 1871. Correspondence covers the years 1866 to Feb., 1871.

The first extract is from the document which is placed first in the series and styled "Minute of the Canadian Government," dated Montreal, 21st March, 1866.

"The take of fish by Provincial fishermen, irrespective of Nova Scotia now amounts annually in value to from \$4,000,000 to \$5,000,000, employing upwards of 20,000 men and boys, and providing a nursery for larvy seamen, &c."

Turning to the tables of Nova Scotian exports for 1865 and 1866 we find that they amounted in those years as follows:

1865.....	8,476,431
1866.....	3,378,766

In the years 1871, 1872, 1873, the ratio between the fish exports of Nova Scotia and the total catch credited to that province is as follows:

	Exports of Nova Scotia	Total catch.
1871.....	22,852,255	6,560,739
1872.....	3,258,578	6,016,835
1873.....	3,791,152	6,577,086

In all cases bearing the ratio of nearly 1 to 2 between "exports" and "catch."

Applying this rule to the statement of exports for the years 1865 and 1866, the total catch which ought to be credited to Nova Scotia for those years is about \$6,500,000, and yet in the minute of the Canadian Government dated 1866, the total take of fish by all the Provinces was

then estimated at from \$4,000,000 to \$5,000,000 only, which does not nearly amount to the probable catch of Nova Scotia alone during 1865 and 1866 according to the ratio which exists now between "exports" and "catch"—if that ratio possesses the value it *appears* to indicate.

Conclusion.

It seems to me that notwithstanding many apparent drawbacks, there is a promise under Providence of a bright and hopeful future for the Maritime Provinces, in spite of the growing scarcity of lumber in our forests for exportation and shipbuilding. Our climate is such that the forest recuperates itself with wonderful rapidity. Look at the vast tract destroyed by the Miramichi conflagration. We have a favorable answer there.

The condition of our coast and deep sea fisheries is abundantly satisfactory in most particulars, for with us, there is yet opportunity and space to prevent depletion, and vast accessible fields for operation so as to give time to those which have been abused to recover themselves. But these hopeful promises are altogether dependent upon a well established principle which finds best expression in *unity of action*.

Our forests must be cherished and preserved, that they may continue to support the magnificent lumbering and shipbuilding interests from which our commercial marine derives so much of its support. Our fisheries must be nurtured with every care which science and experience can suggest, that they may not only remain elastic and fruitful sources of annual income, but a grand training school for our seamen. Our industry as ocean carriers, which is dependent upon the industry of the forest and the industry of the sea to a very large extent, must be aided by every economy and every reasonable facility, which legislation can confer. But to do all this unity of action on the part of the several Maritime Provinces is absolutely essential. We have the same interest to protect and advance, the same industries to foster and encourage, the same depletion to fear and deprecate.

We have the same great ocean pastures to study, oversee and preserve, and in our forests the same strict economy to learn and pursue, in order to prevent the industries which are dependent upon them from suffering a decline. With a view to arrive at this result, which promises a bright future for the Maritime Provinces, we require a unity of purpose which can only be secured by unity of administration.

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