

Conservation

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Who Pays the Parcel Delivery Charges?

A Needless Waste of Money and Labour in Retail Merchandising

The cost of delivering parcels is approximately four per cent of the total sales, and about one-half of those sales are delivered. Sales of, say, \$35,000 per annum would, therefore, have a delivery cost of \$1,400, the delivery customers paying \$700 and the carry customers also paying \$700, though receiving no service therefor.

The carry customers, however, are doing more than this. Had all the parcels been delivered, the delivery cost would have been doubled and the delivery customers would have had a delivery charge of eight per cent added to the original cost of the goods.

Under the delivery system, the service rendered and paid for is as follows:

The carry customer receives \$1.00 worth of goods and pays \$1.04.

The delivery customer receives \$1.00 worth of goods and eight cents worth of delivery service—\$1.08, for which he pays only \$1.04.

Another phase of delivery cost is the number of small orders delivered to one customer. If the cost of each delivery, which averages six to ten cents, were added to each small order, the customer would object. Consequently, it is added on a percentage basis, and thus the customer who groups his wants and places an order of larger amount is included in the delivery cost of the service supplied to the less considerate customer.

Thus, under the present delivery system, a sur-tax is placed upon the customer who carries his parcels and is considerate in ordering, while the customer who requires delivery service does not pay for the service received.

Canada is suffering from a shortage of man-power; all available help is required for production. Deliveries should be restricted to one per day; all parcels of reasonable weight should be carried home, and, so far as possible, co-operative deliveries should be established.

A nation may cease to exist as well by the decay of its resources as by the extinction of the patriotic spirit.—Dr. B. E. Fernow.

Serious Fires and Insurance Profits

Big Fires are Not Always Unprofitable to Insurance Companies

The only years in which actual underwriting loss was sustained by fire insurance companies doing business in Canada were 1900 and 1904, the years of the Ottawa and Toronto conflagrations, respectively. Contrary to general belief, such fires are not always unprofitable to the insurance business as a whole, however disastrous they may be to individual companies. The total profit balance in 1905 following the Toronto fire was greater than in 1899 before the Ottawa and Toronto fires occurred. Nevertheless, the average premium rate for Canada, which increased from \$1.23 in 1899 to \$1.60 in 1904-5, did not decline to the level of 1899 till twelve years later.—J.G.S.

Electric Smelting

An Example of the Benefits of Scientific Investigation

Shortly after Dr. Eugene Waaand, the present Director of the Mines Branch, became connected with the public service at Ottawa, he was authorized to make an investigation into the question of electric smelting. The investigation was conducted in a most thorough and scientific manner, and its results were published in a report which has become a standard work in all technical libraries which aim to keep on their shelves up-to-date works upon modern industrial processes. At the time when this investigation was made, the general opinion prevailed that, while the investigation was interesting, the time was very distant when electric smelting would be carried into practical operation in Canada. It was regarded as more or less of a fad; by some newspapers as somewhat of a joke. It is, therefore, worthy of special mention that the fruition of the efforts which were made in connection with that investigation has arrived and that electric smelting is now in full operation in Canada. Nothing could better demonstrate the usefulness of such scientific investigations when properly carried out.—Sir Clifford Sifton.

Growing of Clover For Seed Profitable

What a Farmer in Dundas County Learned by Experience

The high price paid by farmers for clover seed this year should be an incentive towards its production on the home farm. In many parts of Canada where it has been thought for many years that clover seed could not be grown, it has been repeatedly proven of late that seed could be the finest and hardest strains produced. Seed of excellent quality is now grown in the Kenora district of Northern Ontario.

One farmer in Dundas county, where the Commission of Conservation is conducting illustration work, was induced to keep a small field of second crop red clover for seed. When ripe it was cut with the binder and left unbound in the swath. After it had been rained on several times and blown about by an exceptional windstorm, the farmer decided that he certainly would not grow a clover seed crop again. However, when threshing yielded 16 bushels of first-class saleable seed which he sold at over \$20 per bushel, he afterwards found that it was the best paying crop grown on his farm, because he had already stored away a good crop of hay from the same field. This experience could and should be repeated on thousands of farms where clover seed is not now grown and where the farmer is taking a risk of introducing noxious weeds every time he buys clover seed.

In order to get best results in seed production, the first crop, for hay, must be cut early. This gives the second crop, from which the seed is secured, an opportunity to start early and to blossom and ripen the seed before the killing frosts of autumn.

It is well to cut or pull noxious weeds in the second crop clover in order that the seed may be clean. Clean seed is better to sow on the home farm and will command a higher price when put upon the market.—F.C.N.

Eggs produced by the backyard flock cost very little, as the fowls are fed largely upon waste materials.

Present Aspect of the Coal Situation

Every Consumer Should Make Provision for Fuel During Summer

A sense of false security is one of the most subtle and dangerous conditions that afflict society. During the winter of 1917-18, Canada and the United States narrowly escaped a fuel famine. Owing to the entrance of the United States into the war, matters were decidedly worse in 1918 than in the year previous, in spite of the efforts to remedy the situation. The coal was not available because transportation in the United States was held up for weeks at a time, in order to facilitate the shipment of troops and war materials.

There are indications that we may experience the same shortage next winter. Already large shipments of coal are being stalled in American railway yards. This, in turn, is making itself felt at the mines. Most coal mines have no storage yards, and, if cars are not available to remove the output, the mines close. As a result, labour conditions at the mines are being seriously upset. The scale of wages is based on the tonnage mined, and any falling off in production results in a serious hardship to the miners. It has been stated that miners who formerly earned \$50 to \$60 a week are now earning only \$10 to \$12. During the past winter, many of them would have been almost destitute if the mining companies' stores had not advanced them credit for goods. The continued lack of work is driving great numbers of miners into other industries, and, even if transportation improves, it will be difficult to get them to return to the mines.

These conditions should be faced fairly. A false feeling of security, with its inevitable corollary of laziness and suffering next winter. Central Canada, from Montreal to the western boundary of Ontario, is entirely dependent on the United States for its coal supply. Every consumer should during the summer put in the maximum permitted by the Fuel Controller, namely, 70 per cent of his normal consumption. In addition, wood and other fuel to replace the 30 per cent deficiency should be procured.

Controlling Fires on Settlers' Clearings

Admirable Working of Permit System, Wherever It Has Been Applied

The permit system of regulating settlers' clearing fires is now in effect throughout nearly all the forest regions of Canada. Last year, legislation to bring it into force was adopted in Ontario, Manitoba and Saskatchewan. This year, the new Fire Act in New Brunswick makes the plan effective throughout that province. In Nova Scotia, Quebec and British Columbia, the system has been in effect for years. Alberta is now the only forest province without it.

Wherever the setting out of settlers' clearing fires has been regulated under the permit system, with an adequate staff for its enforcement, it has worked wonders in reducing the forest fire losses, with no real setback to agricultural development.

The disposal of logging slash by fire, under control, is a problem closely related to that of slash resulting from settlers' clearing operations. In various parts of Canada, the safe disposal of logging slash is receiving increased attention, due to the rapidly increasing stumpage value of timber and to the realization that our forest resources are by no means inexhaustible.—C.L.

HOW TO SAVE ELECTRICITY

Tungsten lamps give about three times as much light as carbon lamps for the same amount of electric energy consumed. They should, therefore, be used wherever possible. The reason why carbon lamps have not disappeared altogether is that they are more rugged than those with tungsten filaments and are, consequently, more suitable as portable lights. They are also used to advantage in cellars, storerooms and other places where little light is required and at infrequent intervals.

The following table shows the efficiency of the tungsten over the carbon lamps:

	Carbon	Tungsten
Watts (power required),	50	50
Candle Power (horizontal)	16.8	48.1
Lumens (light in all directions), 174	476	

—L.G.D.

FOREST STUDIES IN N. BRUNSWICK

Prof. R. B. Miller, of the University of New Brunswick, will be employed jointly this summer by the New Brunswick Forest Service and the Botanical Division of the Dominion Department of Agriculture, in making a study of forest tree diseases in New Brunswick. —G.H.P.



CLEARING LAND WITHOUT DESTROYING ADJACENT TIMBER. Col No. 171

The lower picture shows the slash resulting from clearing operations, the same area after the slash has been burned under permit from the Ontario Forestry Branch. Precautions were taken which have preserved from destruction the adjoining valuable pulpwood forest. At present prices for pulpwood, settlers in forest sections possess an extremely valuable resource in the timber on their lands.

Factors in Production

7. Why Not Buckwheat?

Convenient and Valuable Substitute for Wheat

Try a field of buckwheat this year.

It is a wheat substitute and will be needed more than ever next winter.

Buckwheat will be sure to have a more important place in the human diet. It is useful for feeding purposes, especially for poultry.

In addition, buckwheat is a 'handy' crop. It can be grown on a great variety of soils and under many different conditions. If oats, barley or corn fail in some parts of the fields, try buckwheat. If you have a field that dries up late, try buckwheat. If you have a sandy corner on the farm, try buckwheat. If you have an acre that has just been cleared, try buckwheat. It is easy to grow, and will often give good returns on soil where other crops will scarcely survive. It must also not be forgotten that buckwheat will respond readily to the richer soils and to good cultivation. There are several varieties that are good, among them being Rough or Rye, Silver Hull and Tartarian.

Buckwheat will, as a rule, do well if sown any time during June. It is best to have the soil well worked in order to start the crop growing quickly. Three to four peeks per acre should be sown with the ordinary grain drill, and don't sow too deep. About one inch in heavy soil and not more than two inches in light soil is the proper depth.

The crop should be harvested when the large proportion of the seed has turned dark. It can be

cut with the binder into loose, small sheaves and stooked as other grain. In threshing, it is best to lower the concaves to prevent crushing the seeds.—F.C.N.

EXTRACTING ENERGY FROM THE ELEMENTS

The generation of electricity by means of the sun's rays, tides and the wind is quite possible mechanically. But, as such power is only available intermittently, extensive methods of storage are necessary. Again, while many storage methods are possible, unfortunately, none has so far proved economically feasible.

In the case of compressed air storage, for instance, the reservoirs necessary, whether wells in the ground or steel tanks above, would have to be of enormous size. The cost of these and the required electrical and mechanical machinery, together with the cost of energy in the numerous transformation steps necessary, would make the cost of the relatively small amount of power prohibitive.—L. G. D.

CONSERVATION OFFICIAL GETS IMPERIAL POST

Col. Charles A. Hodgetts, who recently resigned as Commissioner of the Canadian Red Cross in England, has been appointed Deputy Commissioner of Medical Services under the Imperial Ministry of National Service. Before going overseas, he was Medical Adviser of the Commission of Conservation. Of Col. Hodgetts' new appointment the Ottawa Journal Press says: "In his new capacity his rare energy and capability will be employed for the whole Empire. It is an honour to Canada that his qualifications should have resulted in this appointment."

Estimate Pulpwood Resources of Canada

Accessibility an Important Factor in Development

The following table shows the approximate amounts of certain classes of pulpwood material now standing in the several provinces of Canada. All sizes of the species named are included. It represents, to some extent, a compromise between the guesses made by various individuals or organizations in the past, and information relating to partial areas based upon investigations actually made in the field.

	Cords
New Scotia	30,000,000 (approximate)
New Brunswick	35,000,000 "
Quebec	300,000,000 "
Ontario	200,000,000 "
Total for Eastern Canada	605,000,000 cords.
Pacific Provinces	\$5,000,000 (approximate)
Prarie provinces	100,000,000 "
British Columbia	285,370,000 (with spruce, fir, balsam, hemlock, larch, pine and cottonwood)
Total for Western Canada	470,370,000 cords.
Total for All Canada	1,075,370,000 cords.

In considering this table certain allowances must be made in arriving at commercial possibilities. In the first place, vast amounts of material of suitable size for pulpwood are so situated as to be commercially inaccessible. In other cases, bodies of timber of limited size are so scattered as to make profitable operation impracticable. Further, balsam does not float readily for long distances, and heavy losses result from sinking where long drives are necessary.

Another factor, sometimes overlooked, is the heavy demand upon these forests for purposes other than the cutting of pulpwood. The greatest of these is for the manufacture of lumber, for which very large amounts of spruce and balsam are used annually in eastern Canada.—C.L.

GOITRE INVESTIGATION

Dr. F. J. Shepherd, late Dean of the Faculty of Medicine of McGill University, Montreal, and an authority on goitre, has just completed an investigation of the prevalence of this disease in Alberta for the Commission of Conservation. The investigation was undertaken as a result of representations made to the Commission that goitre was becoming unduly prevalent in that province.

PETS AND PIGS

Away with the pets
That provide us no fats;
Canaries and parrots,
And puppies and cats.
Keep a pig.

Every fire makes every man struggle harder for a living by compelling him to spend for his neighbour's waste.

Commission of Conservation CANADA

SIR CLIFFORD SIFTON, K.C.M.G.
Chairman
JAMES WHITE
Assistant to Chairman and Deputy
Head

CONSERVATION is published the first of each month. Its object is the dissemination of information relative to the natural resources of Canada, their development and proper conservation, and the publication of timely articles on town-planning and public health.

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CONSERVATION, A MORAL ISSUE

The conservation issue is a moral issue. When a few men get possession of one of the necessities of life, either through ownership of a natural resource, or through unfair business methods, and use that control to extort undue profits, as in the recent cases of the Sugar Trust and the beef packers, they injure the average man without good reason and they are guilty of a moral wrong. It does not matter whether the undue profit comes through stifling competition, by rebates, or other crooked devices, through corruption of business officials, or through seizing and monopolizing resources which belong to the people. The result is always the same—a toll levied on the cost of living through special privileges.

—Gifford Pinchot.

Primitive Methods of Handling Coal

Great Waste in Mining and Coking
of Coal in Canada

Upon the whole question of coal Canada is woefully behind the times. Dr. Adams, the chairman of our Committee on Minerals, a considerable time ago, after studying the question, moved for the appointment of an inspector of mines in Western Canada. This proposition was laid before the Government and it concluded to make the appointment. Instead, however, of consulting Dr. Adams and the Committee on Minerals in making the appointment, the Government made an appointment which it can only be said was entirely inadequate and unsatisfactory. It still remains a fact that wasteful methods of mining are permitted throughout western Canada. No serious attempt has been made to grapple with the problem of preventing the serious and irreparable waste which is constantly going on in the mining of our western coal areas. Provision for inspection to prevent the loss of human life has been made by the provinces; but the permanent waste of very large quantities of valuable coal still goes on. What is required

is a competent public service of technically trained men who will undertake the supervision and control of the mining of coal upon Dominion lands and put an end to the waste which is going on at the present time.

In another respect, we are, as I have frequently stated, greatly to blame for pursuing wasteful methods. There are in the Dominion of Canada at the present time approximately 2,600 coke ovens. Of these, 910 only are by-product ovens. The rest, amounting to about 1,700 ovens, convert the coal into coke without saving the by-products. We are thus using coal in the most wasteful way and throwing away great sources of wealth.—Sir Clifford Sifton at the Ninth Annual Meeting of Commission of Conservation.

COMING HOME



Col. No. 172

Hero-worship in some form is characteristic of every civilized people. It is important, therefore, that the national conception of the heroic should be a high and worthy one. Consequently, there is reason for pride in the fact that Canadians are honouring as their heroes the men who have sacrificed much in defence of national freedom and justice. The country-wide rejoicing at the release from German prison-camps of Hon. Dr. H. S. Bédard, a member of the Commission of Conservation, is a striking proof of this. Few, if any, distinguished Canadians have suffered more than he has as a result of the war. He was on his honeymoon in Belgium when war broke out and at once enlisted in the medical services of the Belgian army. While engaged in caring for both Belgian and German wounded, he was taken prisoner, and, for more than three years, was subjected to the refined cruelties of German military prisons; not even being allowed to visit his wife on her death-bed, nor, she died, to attend her funeral.

Dr. Bédard was born at Louisville, Quebec, in 1869, and was edu-

cated at Three Rivers College and Laval University. He was first elected to the Quebec legislature in 1893, and to the House of Commons in 1902. He has been a member of the latter house ever since. In August, 1911, he was sworn in as Privy Councillor and Postmaster-General, an office he held until the following October. He was one of the Canadian representatives to the North American Conservation Conference at Washington in 1909, to consider the conservation of natural resources. Upon his return to Canada, he was appointed a member of the Canadian Commission of Conservation, and, prior to his imprisonment in Germany, took a leading part in all its activities. Conservation desires to add its quota to the general rejoicing upon his liberation and prospective return to Canada.—A.D.

Fish Names as a Factor in Marketing

Extent of the Demand Depends Largely
on the Popularity of the Name

"What's in a name?" is a modern question implying a negative answer. There are instances, however, where a name is of prime importance. For example, take such a common product as fish. More than 560 species, including subspecies, of fish are found in Canadian waters, but only a few dozen are used for human food. Some, of course, are not suitable for food, but in many cases only the name that has been given to the species prevents them from being utilized. In such instances, the obvious thing to do is to discard the bad name and apply a good one. Dogfish, for food as dogfish, was quite impossible in the United States, but it was re-named 'grayfish', and cleverly advertised and was soon in demand. In Canada, about the only use that is made of these "ocean pests" is to reduce them for their oil and for fertilizer. Such "trade names" have long been applied to other more commonly used fish. Thus, ling are sold as cod, and the bulk of the canned sardines sold in Canada are really not sardines at all, but small herrings.

Again, there are certain fish that have "made names for themselves." This is one reason why such a comparatively small number of species of fish are used as food. Everyone knows that salmon and halibut and flounder have the name of being good fish and so everyone buys them. It would be to the advantage of consumers to remember that dogfish or catfish, or other ill-named fish, are not necessarily objectionable as food. At the same time, dealers might profitably apply new and more attractive names to hitherto unused food fish as a step toward making them more attractive to the consumer.—A.D.

Organization to Solve Fuel Problem

Labour Situation Must be Considered
What U. S. is Doing

The severe labour shortage renders it inadvisable to undertake a vigorous campaign for the increased production of wood fuel at this particular time, in view of the imperative need for increased agricultural production. At the same time, sight should not be lost of the fact that the output of coal in the United States has fallen seriously behind expectations, and that the bulk of the coal supplies for eastern Canada must come from that country.

A vigorous campaign has been consistently carried on by the United States Fuel administration, both through the head office at Washington and the Fuel Administrators for the respective states, urging that all possible measures of fuel conservation be adopted, and that full use be made of all possible substitutes for coal, including wood. The movement for the increased production of wood fuel in the United States has been thoroughly organized, through the assignment of a large number of men to this particular activity. Warnings have been officially issued that the situation promises to be even more serious next winter than last.

In Canada, provision has now been made for a comprehensive organization to handle the whole fuel situation. The regulations of the Fuel Controller, approved by Order in Council under date of March 21, provide for the appointment by each province of a Provincial Fuel Administrator, with Local Fuel Commissioners to be selected by the respective municipalities. In addition to supervising the distribution of coal and other fuel imported into or made available within the respective provinces, the Fuel Administrators are charged specially with the duty of developing the demand for and supply of wood and other coal substitutes to the greatest possible extent, as well as the collection and compilation of statistics dealing with the production and consumption of fuel of all kinds within the province. The full execution of this programme will unquestionably go very far toward relieving possible distress and economic dislocation next winter.

So far as wood fuel is concerned, experience has shown that, in many cases, the establishment of municipal wood yards offers the most practicable solution of the problem to supplement the efforts of the regular dealers. This has already been done by a number of the municipalities of eastern Canada, but the situation justifies the further extension of this movement.—C.L.

Wise wives will not waste.

Fires on Railways

Government Railways Should be Under Regulations of Railway Commission

"The requirements of the Board of Railway Commissioners have been well observed on the whole, and the loss to our forests for which the railways can be held responsible is but a small fraction of the total fire loss," stated Sir Clifford Sifton at the Ninth Annual Meeting of the Commission of Conservation. "This, as compared with the situation ten years ago," he continued, "is an improvement of the first magnitude. I should here explain that we secured the adoption of legislation by which the Board of Railway Commissioners was authorized to impose fire protection measures upon the railways, and we then assisted the Board in drafting the regulations. When these were adopted, the Board appointed our chief forester as its chief inspector in the enforcement of fire protection regulations for all the privately-owned railways of Canada. The jurisdiction of the Railway Commission now extends to approximately 85 per cent of the railway mileage of Canada.

"There are still 4,087 miles of Dominion Government railways and 350 miles of provincially chartered railways in Alberta not subject to regulation and inspection by the Railway Commission, and the fire prevention service applicable to these two classes is not comparable to that applied under the Board of Railway Commissioners. The Minister of Railways has, so far, declined to take the progressive and effective step of adopting the regulations of the Board of Railway Commissioners in full and putting their enforcement in charge of our chief forester, unquestionably the best qualified man in Canada for the work. We trust this will soon be done. The situation at the present time, is, therefore, that the Parliament of Canada, in its zeal for the public good, requires all privately-owned railways, such as the Canadian Pacific railway, the Canadian Northern railway and the Grand Trunk railway, to submit to the regulations which are imposed for the public good by the Board of Railway Commissioners, but they will not allow the Intercolonial railway, which they themselves own and manage, to be put under those regulations. The result is that on the Government's own railway the fire protective service is the worst that we have in Canada. Urgent necessity exists for dealing with the northern railways in Alberta, and it is to be hoped that the government of that province will fall in line with the progressive spirit which has been adopted throughout the remaining portions of Canada."

FORESTRY FORETHOUGHT

Taking no thought for the morrow has been characteristic of Canada's forestry policy in the past. In the early days, the forest was looked upon as an impediment to development, and great areas were ruthlessly destroyed by fire to make room for farms. Then for many years the lumber industry cut and culled the choicest timber without a thought as to the reproduction of the crop. Gradually, however, it was realized that only scientific cutting, combined with careful replanting, could prevent the exhaustion of the country's timber and pulpwood resources.

This realization was followed by a generation of debate concerning the methods of forest management that should be adopted. In spite of that, however, it was possible for Dr. C. D. Howe, one of Canada's leading forestry experts, to

of Quebec. Quebec has, however, the most important pulpwood area in Canada. The transportation facilities of the province, both natural and artificial, are excellent for the delivery of pulpwood and pulpwood products on the important markets in America and England.

Much additional information as to the amount, distribution and accessibility of these pulpwood areas should be ascertained. Then, measurements of each tree in typical areas set apart for that purpose, should be made from time to time to ascertain the natural annual increase in diameter under normal conditions in the forest. This information would make possible a close estimate of the probable duration of the supply.

But, unless there is a replacement of the trees removed, it is obvious that the supply can only last for one generation of trees. In a study of a limited area in the St.

FIRE WASTE AND HOW TO PREVENT IT

CURTAINMENT of fire waste is one of Canada's greatest problems.

OVER \$25,000,000 in property values were burned last year.

NEGLECT of simple precautions was responsible for three-quarters of this loss.

STOVE pipes, should not pass through wooden partitions.

ELECTRIC wiring should be installed by competent men and should be regularly inspected.

RUBBISH should not be permitted to accumulate in attics and basements.

VIGILANCE in regard to these seemingly trivial matters will eliminate one-half of our fires.

ABOLISH the "strike anywhere" match and hundreds of children's lives will be saved.

TRAINED fire departments may extinguish fires, but they are helpless to prevent them.

INSURANCE partially indemnifies individual losses, but cannot restore the property destroyed.

ONLY individual carefulness can materially reduce Canada's fire waste.

Now is the time for action. Will YOU do your part?

say recently that: 'We are woefully ignorant of many of the fundamental facts, absolutely essential to the first tottering steps in the management of the timber resources of the country.'

There is urgent need for a definite stock-taking of the commercial timber and pulpwood now available. Mathematical accuracy is not essential, but sufficient cruising and gathering of data should be completed to permit of reliable estimates being made. Such work has already been done by the Commission of Conservation in British Columbia. Similar work will be done in Ontario, as soon as the funds are available and the necessary organization has been completed. Then, too, the provincial government of New Brunswick is engaged in making such a survey. As yet, however, only a partial mechanical stock-taking has been made of the available pulpwood supplies

Maurice valley. Dr. Howe found that balsam and hardwoods predominate in the new growths, and that spruce and pine are being steadily and surely depleted. By practising scientific forestry, and by discovering means for utilizing the hardwood forests profitably, much may be done to correct this defect. However, to improve upon nature, it is necessary to know how nature acts and reacts upon the thing we wish to improve. Thus far, no determined and sustained efforts have been made in Canada to get such data in regard to forests. It will be essential to discard the trust-to-luck-and-to-nature policy and substitute therefor a policy based on knowledge obtained by scientific studies of conditions.

Slightly over 79 per cent of the municipalities of Canada own and operate their own water supply systems.

Coal Supplies and Imports of Canada

Development Since 1874. Need Decreasing Imports

The coal supplies of Canada are second only to those of the United States in quantity, and compare favourably with those of other great coal-mining countries in quality, quantity and accessibility for mining purposes. The known coal beds in Canada underlain by worked coal beds is estimated by Mr. D. Dowling at 111,168 square miles containing over 1,300,000 million tons of coal. For convenience classifying, the coal-fields may be divided into four main divisions, follows:

(1) The Eastern Division, comprising the bituminous coal-fields Nova Scotia and New Brunswick.

(2) The Central or Interior Division, comprising the lignites of Manitoba and Saskatchewan, the lignites, sub-bituminous, bituminous and semi-anthracite coal-fields of Alberta, as well as the bituminous coal-fields of the Rocky mountains in southeastern British Columbia.

(3) The Pacific Coast Division comprising the bituminous fields Vancouver island, the bituminous and semi-anthracite fuels of Queen Charlotte island and the interior British Columbia, and the lignite of Yukon.

(4) The Northern Division, comprising the lignites and low-grade bituminous coal of the Arctic Mackenzie basin.

The coal-mining industry of Canada has developed at a very rapid rate. In 1874, the earliest year for which there is a reliable record, the production was 1,063,742 tons. In 1916, it amounted to about 10,500,000 tons. But in spite of this striking development, imports have increased faster than production. In 1916, they exceeded 17,000,000 tons, or over 53 per cent of the total consumption for that year.

When it is remembered that Central Canada is dependent on the United States for supplies of coal, the desirability of changing these conditions becomes apparent, both from a mining and a national standpoint.—W.J.D.

I believe, if we considered the ultimate object of cultivating land we would put more energy as well as wisdom into our attempts. The ultimate object is not merely to amass money from the crop now, but to ministering to civilization just as sincerely as a man does who sacrifices himself to win this war, and civilization may not perish.—Dr. J. W. Robertson.

It was estimated in 1907, after a full inquiry, that the annual average loss caused in Great Britain by each rat was \$1.80, in France \$1.40 and in Denmark, \$1.20.