

Conservation

A monthly bulletin published by the
Commission of Conservation, Ottawa, Canada.

VOL. IX

SEPTEMBER, 1920

NO. 8

Wasteful Making of Railway Ties

**Much Valuable Timber Wasted or
Rendered Unprofitable in Getting
out Hewn Ties**

In our timbered districts, the waste in making hewn or "axed" ties is causing much interest. This is a very wasteful practice, and is one to which government agents have been repeatedly calling attention.

The awakened interest in the subject is due, no doubt, to the growing market for jackpine lumber and the consequent operations of the small mills, which are sawing ties along some of the northern railway lines and also shipping lumber to the cities. The appearance of a woods where logs have been taken out for this purpose presents a contrast to an area where the ties have been hewn in the bush. On the former areas, all trees large enough to produce ties are cut and logs are taken down to a minimum top diameter of probably six inches. When the tree is down and bucked, all the wood material goes to the mill. For ties hewn in the woods, the tie-maker is paid at a rate per tie. Naturally, he will use only the most easily converted trees, consequently, the trees which would entail much work in removing limbs are left standing. If a tree is a little larger than is necessary to make a good tie, he discards several feet of the butt (the very best wood material). To make the tie he scores it on two faces, and the chips left in the woods represent much lumber which would be taken from the sides of the ties if sawn at the mill. Finally, he leaves on the top of the tree a lid that will not make a No. 2 tie, and this often means that an eight- or nine-inch top is left in the woods.

This actual waste, however, is not the only consideration. Operators taking out hewn ties necessarily skin over large areas, using only the choice material and leaving much good timber, but, in all probability, not enough to make a second operation over the same area a paying undertaking. These slashings also form a serious hazard, and when fire once gets on, nothing can save the remaining timber.

The waste in hewing ties will be admitted by all operators without question, but they contend that expediency demands it in

The Commission of Conservation

The Commission of Conservation was created by an Act of Parliament to consider all questions relating to the better utilization of the natural resources of Canada, to make such inventories, collect and disseminate such information, and to frame such recommendations as seem conducive to that end.



SLASH RESULTING FROM A RAILWAY TIE OPERATION
A fire under these circumstances would mean the practically complete
destruction of the forest.

some parts, due to the difficulty of driving the logs by water to the mills. The fact remains that there is much absolutely needless waste at present. In view of our rapidly disappearing timber supplies as few ties as possible should be hewn in the woods, and operators should take out both tie timber and pulpwood when logging areas where it is not commercially possible to take out after the area has been operated for the other.—A. V. Gilbert.

Another Fishery Threatened

To afford the declining scallop fishery of Nova Scotia reasonable protection, an order in council has been passed, whereby no one shall fish for, take or catch scallops in the province of Nova Scotia, for use outside the said province.

The scallop is a bivalve mollusk, found along the Atlantic coast. The fishery has become severely depleted and in Lunenburg county, where the industry is mainly centred, the decline in the taking of scallops is having a serious effect. Scallops may still be taken, but only to supply the demand within the province of Nova Scotia.

Genuine Conservation is Statesmanship

When any such undertaking as the development of a natural resource is proposed, if that development is to be made under government control and regulation, it at once appears to arouse the fear that it is to be somehow the beginning of a malevolent policy called "conservation," and conservation has had a mean meaning to many ears. It connoted stinginess and a provincial thrift, spies in the guise of Government inspectors, hateful interferences with individual enterprise and initiative, governmental haltings and cowardices, and all the constrictions of an arrogant, narrow, and academically-minded bureaucracy which cannot think largely and feels no responsibility for national progress. The word should mean helpfulness, not hindrance—helpfulness to all who wish to use a resource and think in large terms than that of the greatest immediate profit; hindrance only to those who are spendthrift. A conservation which results in a stalemate as between the forces of progress and governmental inertia is criminal, while a

Utilization of Canadian Coals

**Review of Different Problems Involved
in Their More Widespread
Distribution**

It is a considerable strain upon public patience to be subjected to severe shortages of fuel from time to time, and, on the other hand, to read frequent statements to the effect that about one-sixth of the total coal resources of the world is possessed by Canada.

To promote a more general understanding of the nature of the numerous problems involved in making greater use of our own fuel resources, the Commission of Conservation carried out a thorough survey of the whole situation, and, in 1913, published the results in a volume entitled *Conservation of Coal in Canada*, compiled by W. J. Dick. Mr. Dick made a very exhaustive study, covering the following problems:—

- (1) Improvement of Canadian mining methods;
- (2) Cheap power problem in the Prairie Provinces;
- (3) Domestic fuel problem of the Prairie Provinces;
- (4) Utilization of low grade fuels;
- (5) The coking of coal.

Perhaps the most illuminating feature of the report is the examination of the extent to which the use of Canadian coal is controlled by freight rates.

Conservation of Coal in Canada is one of a series of publications issued by the Commission of Conservation to afford the best possible understanding of Canada's fuel and power resources and problems. Copies are freely available on application to the Commission.

conservation which is based on the fuller, the more essential use of a resource is statesmanship.—*Former U.S. Secretary of Interior, Franklin K. Lane.*

In all future vessels for the Canadian Government merchant marine, Douglas fir will replace the Southern pine heretofore used in the laying of decks.

Fish ladders are to be placed in the Bow river, which will enable the trout, grayling and other food fishes to ascend the river. This will give fifty miles of additional fishing ground.

Must Our Timber Industries Close?

Unless Forestry is Practised, They Cannot Possibly be Permanently Established

The effect of progressive forest exploitation, without provision for succeeding crops, is being felt in parts of the United States. At a hearing before the House Committee on Foreign Affairs in Washington, W. E. Haskell, of the International Paper Company, made the statement that "the Underwood Resolution, which provides for a commission to negotiate for the removal of existing export restrictions on pulpwood cut on the Crown lands of Ontario, Quebec, and New Brunswick, is the only measure yet presented to Congress which contains any assurance of a sufficient quantity of pulpwood to perpetuate the present production of our paper mills, to justify the installation of new machines, and to save the great pulp and paper industry of the United States".

This is not an accurate statement of the situation. The facts are: (1) The labour and manufacturing cost of converting pulpwood into pulp is very much less than the cost of converting pulp into paper. (2) The amount of water-power required to manufacture pulp is relatively high and, from an economic point of view, the benefit to the community would be increased if such power were used for other purposes. Further, it is notorious that, in the Northeastern states, this power is required for more important industries and its release would ameliorate the present coal shortage. (3) The paper mills of the Northeastern states can purchase pulp from Eastern Canada, the Pacific states, British Columbia or Alaska and with anything like present prices, can conduct their operations at a profit. Col. Haskell's statement, however, affords further evidence of the serious extent to which the forests of the Eastern states have been depleted.

A recent report of the Louisiana Department of Conservation shows that similar conditions exist in that state in regard to lumber, and points out that Louisiana should and must practise forestry, in order that she may not be obliged to pay \$15 or \$20 per thousand feet for freight on lumber brought from the Pacific coast twenty years from now, and because her vast unproductive areas of cut-over lands are a heavy drag upon her prosperity.

With these examples of the disastrous effects of such methods in the United States, Canadians should not wait until an actual shortage overtakes us before we learn the lesson so plainly demonstrated.

Re-creating a forest is slow and expensive, but its productivity can be maintained by comparatively inexpensive means. These consist of, first, protection from fire and, second, proper methods of cutting.

No single system of cutting is applicable to all conditions, any more than the growing of all kinds of farm crops, and technical knowledge of the requirements of the different species is necessary. Under some circumstances, more complete utilization of the mature timber will result in satisfactory reproduction. In others, seed trees must be left in order to secure the kind of forest desired.

The increasing quantities of British Columbia lumber being sold in Eastern Canada is evidence of the already growing scarcity of available timber in the East, and, if the immense pulp and paper industry which has grown up in the last decade is to be permanent, steps must be taken at once to make provision for future crops instead of leaving cut-over lands as barren wastes.—R. D. Craig.

Fire Dangers of Electric Irons

Legislation Should Require Safety Attachments on Electrically-Heated Appliances.

An electric iron left turned on . . . Two stores and a cottage completely destroyed.—Winnipeg Free Press.

Electrical appliances in the home are of great convenience, but they are, at the same time, a fire danger. Familiarity with their use breeds carelessness, which has resulted in heavy fire losses. From reports received by fire marshals, these are rapidly increasing.

From tests it has been found that fire will break out in from 15 to 90 minutes when the electric iron is left in circuit on a table or ironing board, the time interval depending upon the surface material.

Many devices have been invented to make electric irons fire-safe. Unfortunately, however, price has been a ruling factor in the sale of this convenience, with the result that cheapness necessarily eliminated the safety attachments. In the absence of public regulation requiring their use, there is little hope of their general adoption. Until the enforcement of legislation requiring fire-safe attachments on all electrically-heated appliances, freedom from fires due to this cause must, therefore, depend upon educating the public to a recognition of the danger.

Municipal Bird Houses in St. Thomas

The City of St. Thomas recently erected 3 large bird houses for the housing of Purple Martins. Each house will accommodate 80 pairs of birds. The cost of each structure was about \$250. They are erected in different parts of the city and are all of the same design. On account of their size it was necessary to erect them on steel towers constructed of 1½ inch angle steel. The towers are 24 feet high each support being set into concrete abutments 4 feet deep. The base of the tower is 2½ x 2½ and 2' x 2' at the top.

Effects of Taking Immature Salmon

Estimated Loss of 10,000,000 Pounds Resulting from the Too Early Taking of Salmon

Prof. E. Victor Smith, Seattle, in a paper read at the meeting of the Fisheries Association at Vancouver, B.C., demonstrated the disastrous effects of the taking of immature salmon.

During the fishing season of 1919, which lasted 6½ months, American fishermen taking salmon on the feeding banks along the coasts of Washington and Vancouver Island, were responsible for very serious loss, by catching large number of these fish before they were mature. Not only did the loss run into millions of pounds, but the quality of the food produced was decidedly inferior.

A fishing fleet of 1,500 trawlers, operating off the mouth of the Columbia river, caught chinook salmon which, if left in the ocean until mature, would have weighed 5,000,000 pounds more than they did. Added to this the same fishermen were responsible for a loss of 850,000 pounds of silver salmon, due to taking the fish before they were mature.

A fleet of 500 trawlers, with headquarters at Neah Bay, fished on the feeding banks along the Northern Washington and the Vancouver Island coasts. This fleet took chinook salmon which at maturity would have weighed 970,000 pounds more than they did, and the loss through their taking silver salmon before maturity was 600,000 pounds.

These two fleets were responsible for a total loss of more than 7,400,000 pounds of fish. In addition to this great loss was the loss caused by scores of purse-seine boats fishing on the same banks. Their season's operations were hard to follow, but an idea of the waste due to them may be estimated when, by actual record 12 of these boats in 10 days brought in from the Vancouver Island banks, fish taken before maturity that represented a loss of over 100,000 pounds.

Again, in the Puget sound, during April, May and June, many tons of silver salmon were taken that weighed from one to six pounds each, which would have weighed six to eight pounds if left until September of the same year. The loss from this source could not have been less than 1,000,000 pounds.

Besides the American fleets fishing on the feeding banks of the salmon there was also a considerable fleet of Canadian fishermen. A very conservative estimate would place the entire loss due to taking immature salmon on the coasts of Washington and Vancouver island at not less than 10,000,000 pounds.

The Canadian Colliers, at Nanaimo, B.C., has shipped a cargo of coal to Sweden, the first shipment of British Columbia coal to the European market.

The Forest's Tribute to the Newspapers

1,000 Square Miles of Pulpwood Forest Denuded Annually to Supply Newsprint

The newspapers of the United States and Canada consume 2,150,000 tons of newsprint annually. Stated in this way, it probably conveys little information to you respecting the effect upon our forests. You will better appreciate the situation when I say that it represents the denudation of the mature trees on an area of 1,000 square miles of forest land each and every year. This will give you an idea of the enormous amounts that newsprint manufacture is making upon the forests of North America.—James White, in address to the Vancouver Rotary Club.

Convention at Ottawa

Jubilee Meeting of American Fisheries Society

A joint Convention of the American Fisheries Society and the International Association of Fish, Game and Conservation Commissioners is to be held at Ottawa September 20 to 24 inclusive.

The membership of both societies is international in character, including many of the leading authorities throughout Canada and the United States who are engaged in the administration and scientific investigation of natural resources. The annual meeting furnishes an admirable opportunity for the interchange of ideas and experience and for the co-ordination of effort in regard to such resources as are of mutual concern. The forthcoming Convention will be the semi-centennial meeting of the American Fisheries Society and a programme of exceptional interest and value is being prepared.

Pulverized Fuel

Lower Grade and Unmarketable Coals May be Utilized in This Form

Several months ago the Commission of Conservation published a pamphlet by W. J. Diek, M.Sc., on Pulverized Fuel, Its Use and Possibilities. The exceptional demand for this pamphlet, notably from fuel engineers throughout Canada and the United States, reflects the constant search that is being made for a lower priced fuel of high efficiency.

Mr. Diek, formerly Mining Engineer to the Commission of Conservation, is a recognized authority on Canada's fuel and power problems, and his research work has gone far towards indicating the methods by which these problems must be solved. Extension of the use of pulverized fuel is one phase of the solution.

Copies of the pamphlet dealing with this subject are freely obtainable on request to the Commission of Conservation.

Commission of Conservation CANADA

HON. W. C. EDWARDS
Acting Chairman

JAMES WHITE
Assistant to Chairman and Deputy
Head

CONSERVATION is published monthly. 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 business and town planning.

The newspaper edition is printed on one side of the paper only, for convenience in clipping for reproduction.

OTTAWA, SEPTEMBER, 1920

Commission of Conservation an Intelligence Department

Mr. Leo Ward, President of the C.W.V.A. of Manitoba, at the Conference on Soil Fertility and Soil Fibre, held at Winnipeg by the Commission of Conservation in referring to the work of the Commission of Conservation as it affects the returned soldier, said: "We have an interest that closely parallels that of the Conservation Commission. We are going to have to extend the policy of our association, and we are getting considerable of our inspiration and guidance from the Conservation Commission. In Manitoba, we have returned men who are operating about three-quarters of a million acres of land and these men are in need of much information.

"I would just draw a parallel between the Conservation Commission and the soldier. As soldiers, we fought that the finer things in life might be preserved to this world, and, as Canadians, that meant to us that we fought to bring about a more livable future for Canadians in a greater and better Canada. In fighting for those principles we expected to receive interest on those principles in the form of greater opportunities. Those greater opportunities exist in our resources. We had in the army an intelligence force, and probably it is not understood by many that one of the factors of the great success of the Canadian army was the splendid service performed by its intelligence department. The purpose of that reconnaissance or survey was to bring forward information whereby we could anticipate eventualities and in anticipating those eventualities adapt our forces to combat and to meet successfully those eventualities. In the resources of our country, we look on the Conservation Commission here as the intelligence forces of Canada. You as experts are seeking to anticipate eventualities and the reconstruction or readjustment of our Dominion and of our province is dependent to a great extent on the information that you as intelligence officers will bring forward to the people of this country. The basic need of reconstruction is conservation. We realize that unless our resources are opened up, and, after they are

opened up, properly worked, we will not be able to hand this great natural wealth down,—that is, the principal of it,—in a better form than that in which we received it, and we look to your Conservation Commission to guide us.

"The returned soldier was privileged to be introduced to many new aspects of life in his experience as a soldier and he comes back with an accumulated growth, but that accumulated growth, if it is going to be effective and of benefit to our country, is dependent upon proper guidance; if we can guide that growth to the best interests of our country, the war will not have been so great a catastrophe as many people are led to believe. We will have gained something in our experience."

Fire Prevention Day Saturday, October 9

The Governor General has, by proclamation, set aside Saturday, October 9, as a day on which to particularly emphasize the great loss which Canadians, individually and collectively, are sustaining through destruction by fire of both natural and created resources.

At a time of high building costs and acute scarcity of material, we are burning buildings at a criminal rate. Our fire loss of last year, viz., \$23,500,000, or approximately \$2.90 per capita, was the highest per capita in the world.

Not only is this a complete loss of national wealth, but its replacement creates increased competition for available building supplies, thus enhancing prices for new building. How can we hope to overcome the housing shortage when, in Ontario alone, last year 5,804 dwellings were damaged or destroyed, causing a loss of \$1,753,337? There were also 744 farm barns destroyed, at a loss of \$1,189,009, of which \$557,736 was uninsured.

Lightning damaged or destroyed 1,102 buildings in Ontario, involving a loss of \$506,885, of which \$212,778 was not covered by insurance. None of these farm buildings was equipped with lightning rods, whereas but two buildings protected by lightning rods were damaged and these to the amount of \$22 only.

Matches were again responsible for the largest number of known fires, 1,148 in Ontario originating therefrom. Practically every fire due to matches is the result of carelessness.

Public education and a recognition of personal responsibility are essential to a reduction of the fire waste. It is particularly essential to interest the younger generation, through the Canadian teachers, in the efforts being made towards a reduction of the fire loss.

Fire Prevention Day will give a splendid opportunity for bringing this subject to the attention of pupils and should produce good results.

Conservation of Cascara Bark

Commission of Conservation Takes
Action to Secure Measures Necessary to Maintain Supply

The attention of the Commission of Conservation has been called to the increasing difficulty of securing sufficient cascara, or barberry, bark to meet the demand for medicinal purposes. Until recently, practically all of the cascara used on this continent came from the Pacific States, but, as a result of waste and ruthless exploitation, this region has been practically exhausted and attention is being turned to British Columbia as a possible source of supply.

Though this species of tree, or shrub, is confined to the valleys in the southern coastal portion of the province, there is a considerable amount available and, if thoroughly and properly harvested, it could be made the basis of a permanently profitable industry. Though there is a ready market for cascara bark, through lack of knowledge of its value, large quantities of cascara are destroyed in logging and clearing operations. At present, the Japanese seem to monopolize the industry in British Columbia.

One large Canadian drug company alone uses about twenty tons annually for its own use in addition to a large foreign trade.

The cascara tree reproduces prolifically by seeds or by sprouts from the stump, if the trunk is cut. But the prevailing method of stripping the bark from the standing tree results in the death of the whole tree. The berries are carried by birds and, if protected patches of trees were established, they would serve as distributing centres for natural reproduction. Attempts to grow the tree under cultural conditions have not met with much success.

In order that this industry may be developed on a permanently productive basis, the Commission of Conservation has secured the services of Prof. John Davidson of the University of British Columbia, in preparing a bulletin on the subject, which will give a full description of the tree and its habits, method of collecting the bark, and measures necessary for maintaining the supply.

Conservation His Main Proposal

New Premier of Quebec Stands Firmly
for Efficient and Economic Development
of Natural Resources

Hon. L. A. Taschereau, Premier of Quebec, in making his initial address as Premier, outlined his policy in regard to the natural resources of the province. He said, in part:

"The first article of my programme . . . will be a zealous care and vigorous conservation of our natural resources. We have 80,000,000 acres of unleased forests which need fire protection. Hydroplanes have begun their patrol to locate fires at the outset. They will

be supplemented by observation posts with wireless telegraphy.

"The time has come, it appears to me, to regulate the cutting of limits by fixing a maximum of the annual cut to prevent the destruction of the forests and a minimum to stop speculation and a reasonable revenue from the cutting rights. Reforestation should be immediately undertaken and encouraged with energy."

"Relative to this important question of our natural resources, my programme may be briefly summarized as follows: To draw from our immense natural resources all that they should and can give, open wide our doors to capitalists, discuss their plans in a business-like manner, and, when our answer is in the negative, to tell them right away, and when their projects are good, to accept them without any delay."

Tree Planting on the Prairies

Despite the extensive publicity which has been given to the advantages of planting shelter-belts on the prairies, and to the assistance offered by the Dominion Forestry Branch to farmers who wish to establish them, there is still misapprehension in regard to the methods to be followed.

The Forestry Branch distributes annually, free of charge, about 5,000,000 trees and cuttings. Each applicant is given sufficient trees to plant about half an acre annually if he follows the methods which experience has shown to be necessary for success.

When planting a shelter-belt, care should be taken to so locate it that it will protect the home and stock from prevailing winds. Sufficient space should be left between the shelter-belt and the buildings to keep the snow from drifting around the buildings and to give room for a lawn and garden.

Many failures have resulted from planting on soil not properly prepared, and, to insure as far as possible the success of the trees sent out, the Forestry Branch stipulates that the land be summer-fallowed the year previous to planting. In order that the planters may have the benefit of personal instruction, inspectors of the Forestry Branch visit each applicant before the trees are furnished.

To secure trees for planting in the spring of 1921 it is necessary that application be made before March 1 1921, to the Forest Nursery Station, Indian Head, Sask.

A very instructive bulletin entitled "Tree Planting on the Prairies" is issued by the Forestry Branch.

Provincial police reports to the Game Board of British Columbia are to the effect that the numbers of beaver are very low in districts investigated in that province, and that a closed season is extremely advisable.



GOOD SEED PAYS

Corn grown on a Commission of Conservation Illustration farm in Dundas County, Ont.

Good Seed to Increase Crops

What good seed means to Canada was very clearly shown by a few figures submitted by Mr. I. H. Newman, Secretary of the Canadian Seed Growers' Association, at the Conference on Soil Fertility and Soil Fibre, held at Winnipeg by the Commission of Conservation.

Each spring Canada requires approximately 65,000,000 bushels of seed grain and 9,000,000 bushels of seed potatoes, or about 8 per cent of her annual average production.

About 41,000,000 acres are annually planted to these crops in Canada. An increase of but one bushel per acre of this area would add approximately \$80,000,000 to the wealth of the country. One of the chief methods of increasing production is by the more general use of seed of better breeding and of varieties better suited to the districts where sown.

Utilization is Conservation

The tree that comes to maturity in the forest, decays, and falls to the ground, only furnishes food for insect pests and fungi which destroy other trees; the fruit that ripens, falls to the ground and rots benefits no one; the surplus fish that is utilized by man serves no useful purpose; but the utilization of the tree, the fruit, and the fish is pure conservation. On the other hand, to transport to lake Superior—as we did in 1918—3,250,000 bushels of weed seeds which occupied space in cars equivalent to a train over 20 miles in length, is not conservation in any shape or form.

Metallic arsenic, running \$200 in value to the ton, has been discovered on the Queen Charlotte islands.

Crop Rotation

Dr. Grisdale Emphasizes This Necessary Factor of Permanency in Prosperous Agriculture

"The maintaining of the farm in a condition free from weeds and keeping the moisture-holding power of the land as high as possible are factors that are of prime importance. A crop rotation, therefore, that is satisfactory makes preparations both by getting the soil in right shape and by cultural methods to hold that moisture as well as it possibly can be held, by storing all the moisture that comes along.

"Another advantage in crop rotation is the conservation of the fertility and the maintenance, if not the increasing, of the fibre content of the soil.

"Nearly all farmers are following rotations. They get into the habit of following some kind of a system, and if you are handling some land year after year you are bound to have some kind of a scheme worked out. Unfortunately we have too many farmers with a bad scheme—a bad rotation. What we want to get introduced on every farm is a good rotation, and what is a good rotation on one farm is not necessarily the best rotation on another. That we appreciate this is shown by the fact that we have on trial on our experimental farms some twenty-odd rotations in the West.

"I think the most important step in progression to be made on these prairies is the introduction of a better rotation. We have a rotation now, but it is a bad one. What we want to do is to change it and put a better one in, and that is what we are trying to reach at this Conservation meeting. If we could get that change—if we could get the farmers of this country thinking along that line, the change from that three-year rotation in the West or four-year in the eastern part of these prairies, including a summer-fallow in each case, and considering all the possibility of our hood or cultivated crop, we shall have done more for agriculture in these provinces than any other convention or meeting of men has ever done in the history of the Prairies."—From address of Dr. J. H. Grisdale, at Conference on Soil Fertility of the Commission of Conservation at Winnipeg.

Fox Breeders' Association

Important Step to Promote Welfare of Canadian Silver-Fox Ranching Industry

In February last the Commission of Conservation called a conference in Montreal of all interested in the fur trade. As one result, a Dominion charter has recently been granted to the Canadian Silver Fox Breeders' Association. The formation of this association, which has been organized by leaders in the Prince Edward Island fox-ranching industry, is an important step in advancing

the welfare of commercial fur-farming throughout the Dominion. The production of valuable pelts in captivity has become a scientific and well-established industry and should become an increasingly valuable one, not only in Prince Edward Island, but in all the other provinces where a substantial start has already been made. Perhaps the most immediate benefit which the association can bestow on the industry is the establishment of a proper standard of registration, such as is maintained for every other branch of live-stock breeding.

The objects of the new body are as follows:—

The Association shall have for its object the encouragement, development and regulation among its members of the raising of pure-bred silver foxes in Canada.

(a) By keeping a record of the breeding and origin of all foxes held in captivity by members of the Association, and by collecting, preserving and publishing data and documents relating to the same.

(b) By establishing standards of breeding and by carrying out a system of registration for its members.

(c) By adopting means from time to time for the protection of its members engaged in propagation and breeding of pure-bred silver foxes in compliance with the Live Stock Pedigree Act or any regulations or by-laws thereunder.

(d) By maintaining an efficient inspection among members of the Association to prevent, detect and punish fraud.

(e) By compiling statistics of the industry and furnishing official and authentic information in regard thereto.

Wasting of Coal During Carry

Shortening Periods of Use and Efficient Operation of Furnaces to Offset Shortage of Coal

Eastern Canada is facing a serious coal shortage. Due to labour troubles, the output is below the average, while railway companies are handicapped by shortage of cars. Hon. Frank Carvell, Chairman of the Railway Commission, which is now in control of the fuel situation, has stated that we will be fortunate to get coal, regardless of price. Every effort must be made to reduce the consumption, and to secure the greatest heat efficiency possible from the supply available.

Much coal is wasted by the too early starting of furnaces. The first chilly weather brings the furnace into use. This fall in temperature is almost invariably followed by a warm period. If, by the use of other heating appliances, such as kerosene or electric heaters, or by burning wood in the furnace, the period for consumption of coal could be shortened, a considerable saving of coal could be effected. During 1919, Canada

imported 4,758,419 tons of anthracite coal in chestnut, stove and egg sizes. Our heating season is approximately seven months, a portion of which at the beginning and end is comparatively mild. By an average lessening of the coal-burning period of 20 days say, five per cent of this anthracite would be saved, or 238,000 tons. With coal selling at an average price of \$15 per ton, this saving would represent upwards of \$3,500,000. All of this coal has to be hauled by rail. To move this 238,000 tons requires 4,760 cars of 50 tons each.

Economy in furnace operation would also considerably reduce the coal consumption. Much unconsumed carbon is discarded with the ashes, and much of the heating efficiency of the coal is also wasted through carelessness in firing or in defective installation.

The Mines Branch of the Federal Department of Mines has issued a bulletin, No. 28, "The Economic Use of Coal for Steam Raising and House Heating," by John Blizard, B.Sc., which gives valuable information regarding the economic and efficient operation of steam boilers and heating furnaces.

Every care should be exercised in the use of coal. With the limited supply available, the extravagance of some means that others will suffer.

Exhibition of Live Fur-bearers

As a result of the Fur Trade Conference called by the Commission of Conservation in February last, an exhibition of live silver foxes and other fur-bearers will be held in Montreal the latter part of October or early in November. Details have not as yet been completed, but further announcement will be made in October Conservation.



GOOD SEED PAYS

An increase of one bushel per acre in the crops of Canada would add approximately \$80,000,000 to the wealth of this country.