

# Conservation

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## Sowing Good Clean Seed Pays in Results

Net Profits from Same Area Increased by Planting only Best Seed

Increasing the acreage of crops grown on the farm does not always mean greater net profits. The latter, per acre, are very frequently quite small. If the yield, per acre, can be increased without raising the cost of production the increase in yield will all go towards increasing the net profits. Let us assume, that a farmer's wheat crop yields 24 bushels per acre, and that it takes 20 of the 24 bushels per acre to pay rent or interest on capital invested, and the cost of preparing the land, seed, harvesting, threshing, etc. This would leave 4 bushels from each acre as the net profit.

On a large proportion of Canadian farms uncleaned or improperly cleaned seed is sown. There is no excuse for sowing so much dirty and poorly graded seed. The fanning and grading can be done in the slack time and well ahead of the busy spring seeding. This grading would not add to the cost of production of the crop and the larger yield secured would substantially increase or, in many instances, double the net profit. Experiments conducted with oats at Guelph over a period of seven years showed the following results:

Large seed . . . . . 62 bush per acre  
Medium seed . . . . . 54 " "  
Small seed . . . . . 47 " "

Similar experiments with wheat, barley, rye and peas gave much the same results in each case. The small, shrunken and split kernels are much more valuable for feed than for seed. Another great advantage obtained by fanning and grading the grain for seed is that weed seeds are cleaned out. One way to prevent having weedy crops is to sow seed grain free from weed seeds. One weed seed sown may mean thousands of weed seeds produced in the next crop. Many of our worst weeds produce thousands of seeds per plant.—  
F. C. Nunnick.

What is supposed to be the saltiest lake in the world is at Senlac, Sask. Its salt content runs from 53 to 55 per cent, as compared with 10.7 for Salt Lake in Utah. The lake covers an area of 185 acres, but is only 18 inches deep. It is, however, fed by living salt springs, and its level is thus maintained.

## OUR NATIONAL WASTES

### Fire Losses and Cost of Protection

One of Canada's most inexcusable wastes, a waste which at the same time removes not only the product of our natural resources, but the result of human effort both of brain and hand, is the fire loss of life and of property.

When it is definitely known that at least 85 per cent of the total of this loss is due to no other cause than carelessness, it should shame the self-respecting Canadian into giving much thought to ways and means for overcoming this defect in our national life.

During the past ten years, 1911-1920, Canada's fire waste, from destruction of property alone, has been almost \$230,000,000, as follows:—

1911 . . .	\$21,459,575	1916 . . .	\$20,487,509
1912 . . .	21,083,819	1917 . . .	20,086,085
1913 . . .	23,305,408	1918 . . .	31,815,844
1914 . . .	21,583,118	1919 . . .	23,207,647
1915 . . .	19,022,332	1920 . . .	27,800,000

The above value has been entirely destroyed; there is nothing to show for it.

To guard against fire loss, in one form only, that of insurance, the insurance companies collected in premiums approximately \$311,506,000, out of which they returned in payment to policy holders for losses approximately \$161,100,000.

During the year 1920, Canada's fire loss in property destroyed amounted to \$27,800,000, in addition to which approximately \$26,000,000 was paid in insurance premiums over and above the amount returned to policy holders.

But this is not all. Interest and upkeep of waterworks for fire protection represents an annual expenditure of \$6,200,000, while to provide fire protection by fire departments, including interest on capital invested in equipment, maintenance, etc., calls for \$7,640,000 annually.

Private fire protection, which is a rapidly growing form of insurance against fire loss, entails an annual cost, principally upon business interests, of \$6,350,000.

With this total of \$73,990,000 as the 1920 cost of fires and protection, the lack of interest by the general public in fire prevention is amazing. With an estimated population of 8,000,000, Canada is paying a tax of \$9.25 per capita, or on an average family of five, \$46.50. This tax is collected in various ways, being included in the cost of food, clothing, amusements, etc. But no matter how it is paid, it is inescapable.

Last year Ontario spent \$6,664,989 on the construction of public highways. This created general public interest, and was a highly commendable work. But, last year, Ontario's fire loss, covering 9,221 fires, was \$10,883,000, and yet so little interest was taken in this heavy fire waste that it hardly received a second thought. During the recent municipal election in a large Ontario city, one of the leading questions discussed was the addition of a number of firemen to the fire department, but, strange to relate, not once was the matter of collective effort at fire prevention suggested.

A particularly regrettable feature of the fire record of this country is the loss of life. During the same ten year period as above, over 2,500 lives have been lost by fire. Last year 224 lives were lost in this way, and practically no amelioration of this condition is in sight.

Only one method to overcome public apathy on the subject of our fire waste appears to promise results, namely, personal responsibility for fires and sufficiently aggressive and reliable officials to see that the laws are enforced.

## Cost of Inefficiency in the Use of Coal

Losses of By-products and Damage from Smoke Due to Use of Bituminous Coal in Raw State.

What Canada wastes through the use of raw bituminous coal for heating and power purposes may be estimated from a statement by Mr. Joseph E. Pogue, industrial economist, New York, on behalf of the committee of the American Society of Mechanical Engineers, which has been enquiring into fuel conditions in the United States. Mr. Pogue states that the waste occasioned by the firing of raw bituminous coal in that country, including the loss of by-products and damage by smoke, might be represented by an assessment of \$150 for each and every family in the United States. In 1905 Hon. F. A. Rollo Russell estimated the damage from smoke in London, England, at \$26,000,000 per annum, of which amount \$10,750,000 represented extra washing and wear and tear of linens.

Raw bituminous coal is burned in factories and locomotives, all in some homes, and dense black columns of smoke are allowed to contaminate the atmosphere and besmear the surrounding areas with soot and grime, damaging health and property. The value of the benzol, tar, ammonia and gas which are lost through the burning of the raw coal, is enormous.

The Commission of Conservation has always been a strong advocate of the establishment of central cooking plants near large centres of population, where a market would be available for the gas for cooking and heating. "As a domestic fuel and for all ordinary industrial

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Fire loss and fire protection cost Canada \$73,990,000 during 1920, subdivided as above.

## Forest Growth on Cut-over Pulp Lands

Recent studies made by the Commission of Conservation have developed valuable information concerning the growth of trees on cut over land. A detailed study of 23,000 acres was made in the Algoma district of Ontario to learn the history of the area during the ten years which have elapsed since the timber was cut and to determine its probable future growth. The forest is softwood in character on the lower lands, mixed with birch and maple on the slopes, and appears as pure hard maple growth on the north side of the ridge tops. The trees which give character to this as a pulp producing forest are white spruce and balsam fir, in the softwood zones.

The thrifty character, young age and rapid growth of the white spruce and balsam combined with the minor competition of birch trees sharply distinguishes this forest from the red spruce forest farther east and promises to yield quicker returns than the slower growing red spruce forest.

Three characteristics of the Central Ontario forest examined should be considered in gauging its future worth for pulpwood production. First, that the forest is young, has never been seriously checked by dense crowding, and the crowns of the younger trees are well developed and capable of quick recovery after a cutting. Second, there is good representation of young trees on the ground to produce the new crop and most important in softwood types of the forest, there is less severe interference by hardwoods with growth than is found where beech and maple are mixed through the forest as is the case in certain parts of Canada.

A large percent of the trees left after cutting, some of which were decayed at the base, have fallen in the past ten years. The balsam suffers more than the spruce. As a result the new forest coming in on cut-over land will have sounder trees than much of the old stand. The cutting has left spruce and balsam trees scattered over the softwood type with sufficient room between them to allow for the spreading of their crowns. Since the tree grows in volume in direct proportion to the size and thriftiness of its crown, the trees of this section promise to re-establish a forest cover if protected from destruction by fire. The actual growth in diameter found in more favourable sites is about one inch in five years. It is believed that the increase in rate of growth due to the opening up of the forest will also result in decreasing the amount of decay to which the trees have been subject in the past.

### INFLUENCE OF FIRE ON GROWTH

Fire has unfortunately followed the cutting operations in areas where softwoods have been logged. The condition established by logging is a very considerable fire hazard. The result of such fires

was studied on some older burns where it was found that paper birch and aspen came in first after the fire. Subsequently the softwoods after considerable delay found their way underneath the aspen and paper birch stand. If sufficient time is allowed, these burnt areas will doubtless re-seed but, in the meantime, the only crop produced upon the land is one of paper birch and aspen, which is not used extensively for pulp purposes.

### HARDWOOD PORTION.

A considerable portion of the area studied was covered with a forest of pure hardwood or a forest in which hardwood was the principle specie. Such areas due to the lack of the hardwood market had not been cut over at the time the softwoods were removed from the lower lands. The value of maple and birch may soon increase to a point which will allow the harvesting of this crop. But conversion of this hardwood forest into a stand of softwood will be accomplished with great difficulty. The cutting of the old stand of hardwoods will, however, allow the production of a much more thrifty and better formed young hardwood forest.

The study shows the value of the young forest growth left by logging operations and the very considerable loss resulting from its destruction by fire. A future crop of pulpwood can be secured more economically by the protection of the young forest than by the cleaning and planting of these same areas.

## True Game Guardian

The true game officer today is more concerned in protecting such game as remains than in issuing licenses for its destruction. If we are to retain our game resources their conservation must necessarily constitute the main function of the game officer; he must be truly a game guardian or warden.

### Cost of Inefficiency

*Continued from page 9.*

purposes," says W. J. Dick, in "Conservation of Coal in Canada," published by the Commission of Conservation, "coke is fully equal to anthracite coal; it lights quicker and holds the heat as well, while its smokelessness renders it easily superior to bituminous coal. It requires no special appliances to burn it, and only a slightly different adjustment of draughts."

With the known possibility of overcoming one of the chief urban nuisances, namely, the heavy black smoke from bituminous coal, and of converting it into an asset, it is to be hoped that private enterprise will establish coal refining or by-product coking plants in the vicinity of the larger cities. Such plants would provide a source of smokeless fuel to offset the shortage and high price of anthracite coal, while, at the same time, saving the smoke-forming constituents in the form of valuable commodities.

## Gypsum

Wide Range of Uses—Building Trades are Large Consumers

Gypsum, or hydrated sulphate of calcium, is one of the important non-metallic minerals of Canada. It is found in all the provinces, with the exception of Prince Edward Island, in one or more of its three forms, selenite, a crystallized variety; satin spar, a fibrous variety, consisting of long silky crystals; and alabaster, a fine-grained white variety.

Gypsum occurs in beds, often of great thickness, and is usually mined by the open quarry method, after which it is crushed to the degree of fineness necessary for the product for which it is required.

The principal uses of gypsum are as wall plaster and in the manufacture of plaster of paris. For these products gypsum, after being finely powdered, is calcined, or heated to drive off the moisture. It possesses the valuable property, however, of being able to absorb moisture again. This permits of its being spread or moulded when in a wet state and of quickly hardening. As plaster of paris it is used for a variety of purposes, such as a plaster finish coat, for mouldings and patterns and for casts of art objects. In the making of cold water paints it supplies the body that carries the colour; it also forms the base for paris green and other insecticides. For fireproofing safes, etc., calcined gypsum is used between the metal walls. Moulds for casting babbit metal, for making rubber stamps, hat blocks, etc., are made of gypsum, while the finest grade of plaster of paris is used for surgical casts and in dentistry for taking impressions for plate work. It is occasionally used as a filler in the manufacture of textiles and paper, and in asbestos wallboard and pipe and boiler covering. In the making of portland cement gypsum is used as an ingredient for the purpose of regulating the period of setting.

As a fertilizer, gypsum has long been used, either alone, when it is known as land plaster, or as an ingredient of many artificial fertilizers. It has the property of liberating plant food in the soil.

New uses are constantly being found for this adaptable mineral, and the revival of the building industry will no doubt result in an increased production. In 1920 429,144 tons were mined, of a value of \$1,876,595.

The Nanaimo, B.C., Fish Meal and Oil Refinery has commenced operations, with a capacity of twenty tons of fish per day, five tons of fish making one ton of meal and producing fifty gallons of coarse oil.

A large western United States tire company, as a result of initiating a saving of waste department, after four months of business showed a return equal to \$1,000,000 annually from salvaging waste materials.

## Famine as a Result of Deforestation

China is now face to face with one of the worst famines in her history. Approximately 15,000,000 people are in imminent danger of starvation. The area affected is some 100,000 square miles in extent, and, as only the most primitive means of transport exist, it is impossible for millions of the miserable inhabitants to get out of the stricken districts, in spite of frantic efforts to do so. In addition to the scarcity of food, there is an equally terrible scarcity of fuel. The poorer classes have always to rely on grass roots and stubble to keep their little fires alight and this year there is no stubble. As a result, the rigorous climate of Northwestern China is taking its toll and thousands are perishing from the cold.

The immediate causes of the famine were disastrous floods followed by a long period of drought, which resulted in the complete failure of three successive crops. These calamities, in turn, were caused in large part by a reckless wastage of natural resources. The Chinese have been extremely unscientific and wasteful in the handling of their forests. The rich agricultural lands of the lower plateau were stripped of tree growth probably centuries ago, but until within even a hundred years ago great forests covered the mountain plateaus and slopes of Central China. These have been utterly destroyed over great areas and no attempt made at reforestation either by natural or artificial means. As a result, the slopes have been so eroded by heavy rains as to be veritable deserts. Moreover, the lack of forest cover on the uplands has made possible alternate floods and droughts, the very factors that have brought disaster to so many millions of people in China this year. An area about one-quarter the size of Ontario, fertile enough to maintain a population of over 50,000,000 people has become, as a result of human folly and shortsightedness, a place where men must ever be haunted by fear of destruction.—A. Donnell.

## Wild Life, Destroyed, Cannot be Replaced

No natural resource needs the application of greater foresight for its conservation than our wild life. It cannot be replaced once it is destroyed, and its destruction can only be avoided by wise prevision. In the past it has been an almost invariable rule to wait until serious depletion of wild life has taken place before considering its protection. The Migratory Bird Treaty, the Northwest Game Act, and the more stringent provincial game acts, together with the stricter enforcement of these regulations by game guardians with an appreciation of the value of wild life are evidences of a more sympathetic public interest in what is one of Canada's valuable and most interesting natural resources.

## Commission of Conservation CANADA

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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 housing and townplanning.

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

The Commission of Conservation was created in 1900, by Act of Parliament, to promote the economic use of Canada's natural resources. Authentic information respecting the character and extent of such resources, and with reference to the problems associated with their efficient development and their conservation, is freely available on request to the Commission.

OTTAWA, MARCH, 1921

## Canada's Trade in Forest Products

Its Importance Emphasizes Necessity  
of Greater Protection of Forests  
to Ensure Continuance

What Canada's forests represent in her foreign trade is emphasized by contrast with the conditions in New South Wales, where, during the year ending June 30 last, the imports of timber exceeded the exports by nearly six and one-half million dollars. The imports were principally softwoods for building purposes, while the exports were hardwood.

To overcome the extreme shortage of softwoods the New South Wales Forestry Commission is energetically undertaking a policy of converting the hardwood forests into conifers, having in hand at the present time areas totalling 60,000 acres. It is hoped to be able more fully to supply the home requirements for the softwoods and thus overcome the adverse balance in the timber trade of that country.

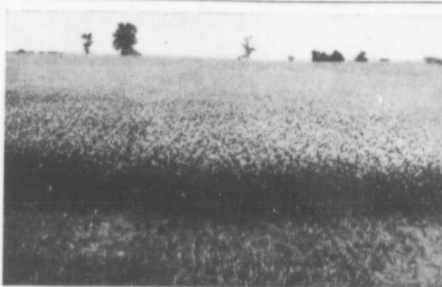
For the year ending December 31 last, Canada's imports of wood, wood products and paper amounted to \$56,783,361, as against exports to the value of \$295,715,852. With such an immense forest products trade balance in favour of Canada, every section of the business community in the Dominion should be intensely interested in the protection and most efficient utilization of the forests of this country. Whereas New South Wales must take aggressive action to overcome a trade balance of approximately six and one-half million dollars, Canada must, by the exercise of scientific forestry methods in cutting and the enforcement, without fear or favour, of adequate fire protection measures, provide, as far as is humanly possible, for the continuance in perpetuity of her large trade advantage in forest products.

A wallboard made of sawdust and calcined magnesite with a binder, that is fireproof and moisture proof, and that can be painted and kalsomed, has been produced by a British Columbia roofing plant.

## Fight Weeds with Profitable Crops

One Farmer's Success in Cleaning  
Field shows what can be done

Why should human labour be wasted in fighting weeds? With an ordinary single-furrow walking plough, turning a 12 inch furrow, a man will walk over 10 miles in ploughing an acre once over. Add to this the walking necessary for harrowing, cross harrowing and cultivating, and then calculate how much has been wasted when the yield is only half or two-thirds as large as it would have been had it not been choked by weeds. This will give some idea of the cost of weeds to the farmer. Many weeds are able to survive the ordinary cultivation given in preparing the seed bed. These veteran weeds



A BUCKWHEAT CROP THAT KILLED THE WEEDS.

are among the worst enemies the farmer has to fight. Quack or couch grass stands out very prominently in this class.

Weeds of this kind should be fought with profitable crops. This has been done on many of the farms in Dundas county where the Commission of Conservation is conducting illustration work. One field of seven acres which was badly infested by quack grass was ploughed in the autumn of 1919 and in the spring of 1920 was thoroughly cultivated frequently to keep it from showing green until well into June, when it was sown to buckwheat at about double the amount per acre as is sown on clean land when a grain crop is the sole end in view. The farmer conducting this work reports his results as follows: "The buckwheat grew so rank and heavy that we had to let it get dead ripe before we could cut it with the binder. We threshed 40 bushels to the acre in spite of the fact that some shelled on the ground. There is not a spear of quack to be seen this fall. The soil is very mellow and we have cultivated it two or three times since harvest. We intend to sow grain on it in the spring and seed it to alfalfa as the field is naturally well drained and is now in good condition."—F. C. Nunnick.

In order to uncover an area 1,000 by 1,300 feet of asbestos-bearing ground, 600,000 cubic yards of overburden has to be removed at the King Mine, Thetford, Quebec.

## Power Conditions Require Close Study

There is now under way in the United States a power survey covering the mechanical, electrical and other forms of energy used in the area situated roughly between Washington and Boston, and extending some 150 miles inland.

The great necessity of giving closer study to power problems has been fully demonstrated by the results already obtained. The conditions revealed, which are doubtless no worse than would be found in many portions of Canada, demonstrate that the money spent in the investigations has been well worth while. The figures given out are somewhat startling. The total amount of power required in the territory under study is esti-

over one acre or less. Merchantable timber destroyed included 3,160 acres; young growth, 1,570 acres, and previously burned and slash land burned over included 9,789 acres, or a total of 14,519 acres burned over. Fires occurred in May, June, August and September only, the greater number being in June; heavy rains in July accounted for absence of fires in that month.

A classification of causes of fires places responsibility for the greater number of those occurring from known causes upon the settlers, with lumbering operations second, and railways third, with 10.5 per cent.

This report emphasizes in a striking manner the effectiveness of forest fire protection. It is an old axiom that "all fires are the same size at the start," and it is only lack of opportunity that prevents each becoming a large one; the fact that over fifty per cent of the fires were confined to one acre or less demonstrates the efficiency of the Protective Patrol. Credit is given by Mr. R. L. Seaborne, the efficient manager of the association, to the clergy of the district for valuable co-operation in impressing upon their church members the importance of exercising the greatest care with fire in the woods.

## Attacking the Gopher

How to reduce the number of gophers is a problem that seems near solution in Saskatchewan. The Department of Agriculture of that province, in 1920, conducted a gopher contest in the schools, with the result that 1,798 schools entered, and 2,019,233 gophers were destroyed, at a cost to the department of \$3,159.75, or .156 cent each. What this reduction in the number of gophers means in the saving of foodstuffs is hard to estimate, but it would be very great, as an analysis of the pouches of one pocket gopher showed 357 kernels of whole oats.

## Large Taking of Whitefish Eggs

The Dominion Fisheries Branch reports that upwards of 50,000 whitefish eggs have been placed in the Smoke Island hatchery, lake Winnipegosis. These eggs were collected at the mouth of the Waterhen river, which carries the discharge of lake Winnipegosis to Waterhen lake, thence to lake Manitoba. With lake Winnipegosis freezing early in November, the greatest difficulty was experienced in securing the eggs, the tug and outfit finding it necessary to winter at the egg-collecting camp. The collection of 1920 is treble the quantity collected the previous year.

A plant for the manufacture of wood alcohol, acetate of lime, charcoal, creosote and other wood-tar products has been established at South Westminster, B.C. It will use alder wood that will be obtained from the reaches of the Fraser and Pitt rivers.

## Effective Forest Protection

A review of the annual report of the Laurentian Forest Protective Association shows some interesting features. The area covered by the protection staff was 7,795,507 acres, at a cost for patrol of .006 cents per acre. There was a total of 105 fires, 53 of which burned

## Miles of Cars Used to Ship Weed Seed

According to the chief grain inspector at Winnipeg, Man., enough weed seed to fill a freight train 48 miles long was shipped out of the three Prairie Provinces during the last three years. This at a time when the cost of production of crops was at its highest point; seed, implements and farm help were high; yet the farmers grew this weed seed, harvested it, threshed it, at a cost proportionate to that of the highest quality of grain, afterwards shipping and paying the freight on it to market, where, owing to the presence of the weed seed, the grade of the wheat was lowered. Further, when these 48 miles of grain cars were being used to ship weed seed there was an almost universal demand for cars which could not be satisfied. Clean seed, cultivation to kill the weeds, and the cleaning of grain before shipment will overcome such waste.

## Rural Electric Supply Should be Extended

The supply of electrical energy to the smaller villages and to farmers has recently been commanding special study. Such questions as adequate charges and other details relating to the construction and upkeep of the special transmission lines necessary, have been given closer study with very satisfactory results. In most cases, it has been found that to supply only one or two consumers, relatively long lines and individual transformers are required. In urban centres, these are made to supply hundreds of households. This difficulty has been overcome in various ways, such as the farmer paying for the portion of the line used for himself alone, or paying a special fixed charge covering the cost of same.

Where water-powers are abundant, rapid progress along the above lines is to be noted, but extensions could also be provided on systems supplied from large steam power plants. The greater portion of the prosperous farming communities of the Prairie Provinces requires to be supplied with electric energy derived from large steam power plants, and rural lines there would prove a great boon, both for convenience and increased production.

The experience of a steam plant in England may be cited in this connection. The plant had never been successful financially until its activities were extended to rural distribution. This greatly increased its output, the plant was placed on a sound basis, and its lines now cover a radius of from 12 to 15 miles in all directions. The load is reported to be steadily increasing in lighting, appliances and small motors for farm use. It is interesting to note that under somewhat unfavourable circumstances electrical service has been extended to cover a large farming community and that the enterprise has succeeded.—*J. G. Denis.*

## Important Forest Trees of Canada

### White Pine

(*Pinus Strobus*)

White pine was once the premier lumber tree of Canada, but the effects of wasteful cutting and of fire are being reflected in decreasing cuts and increasing prices. The production of white pine lumber in Ontario has been reduced by two-thirds in the last twenty years. Throughout the Dominion, white pine has fallen far behind spruce in quantity cut and is almost equalled by that of Douglas fir. It is still, however, and doubtless will continue to be, the highest priced softwood.

The distribution of white pine is confined to the region lying south of a line running approximately from the southeast corner of lake Winnipeg, through lake Nipigon, along the height of land north of lake Timiskaming, through lake St. John to Point des Monts on the St. Lawrence, and Cape Breton Island. The Ottawa valley was, perhaps, the most important centre of white pine production, and the history of the district is intimately associated with that of the lumbering operations conducted principally for the taking out of this valuable wood.

In the early days of lumbering in eastern Canada, white pine was considered the main, if not the only, tree of value in the forests, and in the old timber leases the right to cut the pine was all that was granted. The reason for this preference over the other species is the superior quality of the wood and the larger size of the trees.

Though no reliable data as to the remaining supply of white pine are available as yet, it is doubtful if more than fifty billion board feet is left. The annual cut is now approximately three-quarter billion board feet.

### Forest Revenues

Revenues from Crown forests are playing an increasingly important part in the several provinces. In New Brunswick, for the fiscal year ending October 31, 1920, the forest revenues to the provincial treasury aggregated \$1,387,005, or more than double those of the previous year. This increase was due partly to an increased cut, partly to increased stumpage dues, and partly to a closer scale.

In Quebec, for year ending June 30, 1920, the forest revenue amounts to \$2,604,456.26, or 28.6 per cent greater than during the previous year. It is estimated that during the current fiscal year the forest revenue to the provincial treasury will aggregate around \$3,000,000, which may be increased to \$3,500,000 during the fiscal year following.

In Ontario, for fiscal year ending October 31, 1920, the forest revenue was \$2,684,843, an in-

crease of nearly 50 per cent over the previous year.

During the calendar year 1919 the British Columbia Government received in forest revenue a total of \$2,755,739.

The importance of perpetuating these revenues, to say nothing of increasing them, is obviously so great that all of the provinces would be amply justified in expending larger sums than at present upon the protection of the forests from fire, insects and disease, upon reforestation, and upon an administration calculated to ensure cut-over areas being left in the best condition to produce continued crops of the more valuable tree species, so far as that may be consistent with the economics of the situation.—*Clyde Leavitt.*

The farm home of John Logan, southwest of Moose Jaw, was destroyed by fire, due to a dog upsetting a lantern that had not been hung up. This should be a warning to others.

## Census of Fur Farming

An analysis of the preliminary fur-farming statistics for 1911, recently published by the Bureau of Statistics, throws some interesting sidelights on the industry.

That fur farming, at present, is practically synonymous with fox farming is shown by the fact, on December 31, 1919, there were on the fur farms of Canada a total of 7,966 foxes, 77 minks and 9 raccoons. The foxes were divided as follows: silver, 6,878; patch or cross, 831; red, 255; blue, 1; gray, 1.

One question on which fox farmers are somewhat reticent is the number of pups raised to maturity. The returns throw some light on this matter. Taking silver black pups only, the number born during 1919 was 4,877 and purchased, 296, a total of 5,173. The number sold was 1,144 and killed for pelts, 918, a total of 2,062. There is thus a difference between those disposed of and acquired of 3,111. The number reported as being on the farms at the end of the year was 1,111. This leaves 2,000 unaccounted for and, if we presume this number to have died, the mortality was over 40 per cent of the number born. Some ranchers probably included pups as adults in making their returns of stock on hand at the end of the year, as they would then be about 9 months old. Allowance should be made for this but, even so, the figures indicate that there is great room for improvement in methods of management on some ranches.

Turning now to the foxes bought and sold and again taking account of silvers only, we observe that the numbers sold greatly exceed the numbers purchased. It may be assumed that the difference represents the number exported or sold to new ranches. The figures are: sold, 1,594; purchased, 487; difference, 1,017.

The U. S. Commerce Reports of Jan. 12, 1921, show that 594 live silver foxes were exported to the United States from Prince Edward Island in 1919, having an average value of \$358.

The average values of silver foxes as determined from the figures of the Bureau of Statistics are: of animals purchased, \$428; sold, \$329; on farm, Dec. 31, 1919, \$438. The fact that the animals purchased averaged considerably higher in price than the animals sold indicates that the ranchers are not usually disposing of their best stock but, on the contrary, are acquiring better stock whenever possible.

The silver pelts sold numbered 2,028, valued at \$481,824, an average of \$237 per skin. Fox pelts of all kinds numbered 2,490 and the average price realized was \$204. The average value of mink pelts sold was \$18 and of raccoon, \$15.

Maskakee Lake, Sask., is being developed for epsom salts, glauber salts, magnesium carbonate, sodium chloride and potassium salts.