

Conservation

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Education Direct to the Farmer

A provincial officer of the largest agricultural college in Canada has stated that some farmers who have gone past his institution for a lifetime are still farming after the methods of their fathers. Progress will be very slow until actual demonstration of the profitability of the improved dairy cow, of the spraying of fruit trees and of selecting seed, is driven home to the farmer on his own farm or to a local group of farmers. The problem is, for instance, to convince the dairyman, whose herd produces only 3,000 pounds of milk per cow per year, that, through selection, it may, in a few years, be producing 10,000 pounds and that without any additional labour.

In 1912, the Commission of Conservation, recognizing that the most effective results could be secured only by taking the instruction in improved methods of farming direct to the farmer, initiated illustration farms throughout Canada. These were conducted under the direction of the Lands Committee of the Commission for four years, when, having demonstrated their usefulness and the advisability of increasing their number, the work was transferred to the Department of Agriculture.

In the House of Commons, on May 14, Hon. Dr. Tolmie, Minister of Agriculture, in answering a question as to the extension of the system of illustration farms to Cape Breton, said: "These illustration farms are doing excellent work. An illustration farm operated under the management of an ordinary farmer, who is selected on account of his ability, and the suitability of his farm for the purpose. He works under the direction of our Experimental Farm Branch, he carries on the best system of rotation; he uses nothing but the best seed, and the farmers of his neighbourhood have an opportunity of profiting by the work that is carried on."

The Commission of Conservation is conducting community illustration work in the County of Dundas, Ont. The work has been carried on for four years, and the outstanding results have been secured, not only in crop increases and better farming methods, but also in improvement in education and opportunities for recreation and the development of social life throughout the County.

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.



TAKING THE ILLUSTRATION FARM TO THE FARMER

Neighbouring farmers listening to the Commission of Conservation's Agriculturist explaining results of comparative tillage methods on this Illustration Farm. They are in the field where the tests were made and see for themselves. Seeing is believing.

Waste Paper Pays Vacation Expenses

Boy Scouts thus Obtain Funds to
Finance Summer Camp

The enormous demand for paper-making materials is causing a drain upon the supply which threatens a very rapid depletion of our forest resources. With all the newsprint mills running to full capacity, some of our Canadian newspapers have had to suspend publication for lack of paper.

The Commission of Conservation has corresponded with paper mills and dealers and will gladly furnish information to any locality respecting the address of the nearest buyer of waste paper.

What the Boy Scouts of Brockville have done can be done by others. When they required funds for their summer outing, they undertook a paper-collecting campaign to raise the money.

Mr. A. J. Trail, Scoutmaster, Brockville, states that notices in the local press informed householders that the Boy Scouts would make a house-to-house canvass

for old newspapers and magazines in order to raise funds for the local branch and requested them to telephone Mr. Trail when the papers were ready for collection.

The collection was made during the Easter holidays. Three senior scouts were sent out with a horse and wagon. The papers were brought to Scout headquarters and the magazines and all smooth paper were separated from the newspapers. They were tied up in neat bundles and weighed, 10 or 12 at a time, on a small platform scale.

As a Toronto waste paper dealer quoted a satisfactory price, it was loaded on a car and shipped, collect freight, to Toronto.

Mr. Trail says: "We shipped 9½ tons of paper and received a cheque for \$325.44. Expense for twine, notices in press and cartage was \$36.85, giving to the Scout treasury net proceeds of \$288.59."

"We were 4 days in collecting and tying up paper and magazines, and about 6 hours in loading car. We did not bale any paper; the scrap paper left over we sold to a local junk dealer, receiving \$1.00 for it."

Our Food Supply Depends on Birds

Do we appreciate our birds? The west is threatened with a grasshopper plague, while in the east the caterpillar is causing havoc among the trees.

Man, by his insatiable slaughter of the birds, has so reduced the balance of nature that the destructive insects are getting the upper hand. Dr. Tolmie, Minister of Agriculture, in introducing his estimates in the House of Commons on May 24, stated that Canada's annual loss from parasites amounted to \$125,000,000, and that in preparation for the expected grasshopper plague alone, there had been purchased 100,000 pounds of arsenic, 2,000 tons of bran and 50,000 gallons of molasses from which to make poisoned bait.

To overcome, or at least to minimize, the caterpillar plague, various methods of attack are being adopted, chiefly that of spraying.

Recently, a woodpecker was noticed at work upon a tree which was being defoliated by caterpillars. With the aid of binoculars, it was found that, in one visit to the tree, it secured twenty-four caterpillars. This bird, or another, returned at about quarterly intervals, each time disposing of a number of caterpillars.

Birds are the natural enemies of insects and bugs and, without them, we could not successfully combat the pests which destroy our food supplies.

By protecting the birds, we protect ourselves.

Douglas Fir Railway Ties

During the war, Douglas fir railway ties were introduced on railways in the eastern United States but only as an emergency measure. Some authorities were dubious respecting the durability of this timber when used in the comparatively dry climate of the eastern states but, thus far, experience is largely favourable to its use for this purpose. The immediate result may be a demand for Douglas fir ties, particularly in view of the high prices now obtaining in the markets of eastern Canada and eastern United States for ties of hemlock, jackpine, etc.

Canadian Coals for Power Production

Super-power Stations at Coal Mining Centres to Develop Cheap Power

Canada is well supplied with water power, with the exception of the central portion of the middle West, which must produce its electrical energy and other forms of power mainly from coal or other fuel. As some of the largest coal reserves of the world are found in this and adjacent territory, however, we may anticipate that with proper organization, the power can be produced and offered to industries at rates as low as if derived from the most favourable water-power sites.

The importance of Canada's coals is pointed out in *Power in Alberta*, by James White. The author points out that "Alberta contains 87 per cent of the coal in Canada, but the estimate in *Coal Resources of the World* states that 82 per cent of the coal in that province is lignite or sub-bituminous. Practically the whole of the settled portion of the province is underlain by this valuable fuel, and the statements in the preceding paragraphs respecting the relative costs of steam-electric and hydro-electric power, indicate the desirability of investigating the economics of steam-electric power generated at super-power stations and transmitted to the municipalities within easy transmission distance, say 100 miles or more."

In *Coal Resources of the World* it is stated that southern Saskatchewan contains lignite seams, many of which, especially in the valley of the Souris river, are being mined. A seam in the Estevan field is reported to be 15 feet in thickness in places, while, north of this field, coal has been reported near Cullen, Arcola and Waupchoe. West of the Souris river, coal-seams of workable thickness are found over a very large area. It is estimated that, in Saskatchewan, an area of 11,840 square miles is underlain by coal seams.

Recently, a super-power plant has been constructed in Germany to supply electrical energy to Berlin. The energy is entirely produced from lignite. The plant, which has been designed and installed in accordance with the most modern practice, has a capacity of 180,000 h.p., which compares approximately with the size of our larger plants at Niagara Falls.

Conservation of Coal in Railway Service

The enormously increased cost of coal has induced attention to the possibilities of fuel economy in the firing of locomotives. During the year 1917 alone the average value per ton of bituminous coal at the mine increased 94 per cent in the United States and there have been further increases since. A comparison of the amount of smoke emitted by a locomotive on an English railway and a locomotive

on a Canadian or a United States line demonstrates that, on this side of the Atlantic, there is a lamentable and unnecessary waste of valuable fuel.

On the Pittsburgh division of the Pennsylvania railroad it was found that a fireman on a certain freight train of 46 cars and weight 2,490 tons, burned 1,127 shovelful of coal as compared with a fireman on another train of 50 cars, weight 2,520 tons, over the same territory who burned only 810 shovelful.

Pacific Salmon First Canned on Fraser River

The first salmon canned on the Pacific coast were put up at New Westminster in 1863, by a Mr. Annandale. His operations that year, however, were on a very limited scale. In 1864, he became associated with Mr. Alexander Ewen, who, from that date till his death in 1907, was the recognised leader in the salmon industry in British Columbia.

The first salmon canning on what may be termed the commercial scale occurred, however, on the Sacramento river in 1864. The first pack of 2,000 cases was in cans soldered by hand. It sold for \$15 per case but the high costs and the deductions for defective tins precluded any profits. In 1866, the operator, a Mr. Hume, transferred his activities to the Columbia river. He lived to see the peak in that district increase from his pack in 1866, 4,000 cases, to 656,000 cases in the "banner" year, 1884.

In 1876, there were three canneries on the Fraser and the combined pack was 9,347 cases. In 1901, there were 48 canneries on the Fraser and 25 in Puget Sound waters canning Fraser River salmon, or 73 in all. In the "banner" year 1913, the total pack of Fraser River sockeye was 2,392,000, or over 115 million pounds (57,600 tons). This represented 30 per cent of the entire world's production of canned salmon in that year. At present prices, it would be worth about \$50,000,000.

Owing to a disastrous rock slide in the Fraser river in 1913 and to the overfishing of the depleted "runs" of sockeye, the total pack of this fish in 1919 was only 74,000 cases or 3½ million pounds.

Fishing on the Skeena river commenced in 1877. To-day, owing to the eclipse of the Fraser fishery, it is the principal salmon river of British Columbia.

Commencing in 1878, with a pack of 8,159 cases by two canneries, the Alaska fishery increased till, in 1918, 134 canneries put up 6,678,000 cases. Overfishing, however, has created a situation which demands drastic changes in the regulations. (Condensed from *History of the Pacific Coast Salmon Industry*, by Mr. Henry Doyle at the Vancouver Fisheries Convention).

Protecting Residential Areas

Residents should be Secured against Encroachment of Business Interests

The following advertisement recently appeared in a Halifax paper:

"Notice is hereby given, that application has been made to the Building Inspector by the undersigned for permission to erect a shop on west side of Elm street between Chebucto road and Oak street. Any person objecting to the erection of this building within the residential district, should lodge a copy of said objections with the Building Inspector, City Hall."

The City Council of Regina, Sask., has before it for consideration an amendment to the fire limits bylaw, which, if passed, will prohibit the opening of business places in the residential districts of the city.

This legislation is in harmony with the efforts of the Town Planning Branch of the Commission of Conservation, which, for the protection of residential areas, has consistently advocated the zoning of towns and cities.

Unless a property owner has some guarantee that his investment will be safeguarded, there is little inducement to build or improve a home, even in the best residential districts, in most of our cities. In an eastern city, a permit was recently issued for the erection of a wood-working factory in the heart of a residential section. Although the residents formally protested against such construction, urging that the area was purely residential and that the insurance rates on adjoining property would be considerably enhanced, the permit was not revoked.

All building laws in cities should contain provisions to protect residential areas and for the securing of neighbourhood assent to the erection and operation of business properties which were considered undesirable by those resident in the locality.

Under the amended bylaw in Regina, it is proposed to provide for such conditions by requiring the signatures of a substantial proportion of the property owners in any block, in which it is proposed to operate business premises, before permission will be given by the city.

The requirement that proposals to erect such structures in a residential district be publicly advertised before a permit is issued also seems to be a desirable public safeguard.

Annihilation of the Whale

A century ago New Bedford, Mass. and other Atlantic ports, sent out a fleet of whalers and fortunes were made from their operations. As whales became scarcer trips involved more distant voyages, and many of these New

England vessels found their way into Pacific waters. To-day the California Gray whale, the Right whale, the Sperm whale, are almost exterminated, and the Humpback species is rapidly following. In 1911 the pinnacle was reached in whale fishing, over 21,000 of these slow-growing animals being destroyed that year. To-day the Finback whale, a species formerly considered unworthy of notice—is the principal object of pursuit, and it too bids fair to soon follow in the pathway of the more valuable species. Future generations have a poor chance of utilizing the whale, save as museum specimens.—Mr. Henry Doyle at the Fisheries Convention, Vancouver, June 4, 1920.

Conservation Means Development

The service that the Commission of Conservation has been endeavouring for over a decade to render to Canada is that of studying the facts in regard to the extent and use of our natural resources, so that public opinion and action in regard to them may be founded upon conditions as they actually exist. The Commission has never subscribed to the narrow interpretation which has often been placed upon the word "conservation" and which has given many business men a decided prejudice against the conservation movement. Unfortunately, the ranks of conservationists have not been free from the scaremonger, who is constantly seeing blue ruin and doing more harm than good. He preaches such extremes that the business man, devoting his brains, energy and capital to the development of our resources, concludes that the average conservationist is merely a faddist who, if he had his way, would lock up resources and kill development. Let it be unmistakably understood that such is not and never has been the attitude of the Commission of Conservation in regard to any resources.

It has been the guiding principle of the Commission that the only proper way to conserve any resource is to develop it to the point of highest productivity, and to use every means to maintain its productivity at that pitch. To withhold any natural resource from use under proper conditions—whether it be a fishery, water-power, timbered area or any other resource, is waste in the grossest form. The person who preaches any other policy under the guise or label of "conservation" is misrepresenting and injuring the real policy for which that word stands.

The sole purpose of the Conservation Commission is to seek to conserve our natural wealth against avoidable destruction—not against development. The crying need in Canada, to-day and for years to come, is to increase the use of our resources, and the efforts of the Commission in the past have been directed primarily to that end rather than toward hampering or restricting exploitation.

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 housing and townplanning.

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

OTTAWA, JULY-AUGUST, 1920

Make Life on the Farm Appealing

Since the war a problem which has been worrying agriculturalists all over the country is that of keeping the boy and the girl on the farm. All the literature that I have seen on the subject shows quite plainly that no panacea has been discovered to meet the difficulty in connection with the exodus of the boys and girls from the farms. I think that hon. gentlemen will all agree that we can at least go a long way towards solving the problem by adopting better farm methods; by making the home more attractive; by keeping better livestock; by making more profit on the farm, which will make possible more comfortable conditions such as will be conducive to happiness and contentment; by making conditions tolerable for the farmer's wife; and generally by doing everything we can to make life on the farm appealing. In addition to this, I think that good roads and cheap automobiles should play a very great part in helping to keep the young people on the farms by rendering very valuable assistance to the farmer in different ways in connection with his work and by enabling him and his family to move around and mix with the neighbours, thus obtaining some social pleasure out of life.—Hon. S. F. Talmie, in House of Commons, May 14, 1920.

Moving Houses to Improvements

Calgary has a new plan of assessment, under which much of the surrounding land heretofore lying sterile, owing to its subdivision into building lots far in advance of requirements, will be constituted an agricultural belt, and will be assessed as such. While this assessment basis is operative no local improvements will be instituted. Consequently, many houses built on outlying lots can have no hope of securing municipal conveniences for years. This condition is creating a house-moving boom. The Calgary Herald estimates that upwards of 200 houses will be moved into the improvement area within the present season.

Many municipalities are struggling under indebtedness incurred for the purpose of providing roadways, sewers, sidewalks, water, lighting, etc., to widely-separated homes. By controlling and consolidating building areas much of this excessive extension of services would be avoided. The moving of buildings to the area where conveniences are available has much to commend it: it obviates expenditures to install services, and thus reduces the tax rate; it prevents the dissatisfaction of residents in outlying areas who are deprived of conveniences, and it permits of the return of the land to general agriculture or to use as market gardens.

Municipalities in which boom periods have left homes in the outlying areas without municipal improvements should give this matter serious consideration.

Information on our Forest Resources

**Inventories of our Forest Wealth
Discounting Extravagant State-
ments**

The absence of reliable information in the past has given rise to ludicrously inaccurate and extravagant estimates of our forest resources. For years it was the regular pastime of a certain class of orators to dwell on the boundless resources of Canada in forest wealth. We have had a long, uphill fight to combat the evil effects of such misleading statements and, in some quarters, it has been a decidedly unpopular fight. We are still far from possessing anything like satisfactory knowledge of our timber supplies but we have made or are making steady progress.

The Conservation Commission has completed and published the results of its studies of British Columbia forest resources. We know, beyond any doubt, that the Pacific province has tremendous resources of timber and that exploitation can be vastly increased without any fear of encroaching upon capital stock, provided that loss from fire and other destructive agencies can be checked. The Commission have made similar studies in Saskatchewan and the Dominion Forestry Branch is in a position to estimate conditions in the Prairie Provinces as a whole.

Within a few years we should have a working knowledge, sufficient for all practical purposes, of the forest resources of the entire Dominion. Until that stage is reached, the work of national stock-taking will continue to be a first claim upon those who are engaged in the promotion of forest conservation, and particularly upon the Commission of Conservation, by whom it was inaugurated. We have no reason to feel particularly proud of our progress in this connection but we have shown the way in this matter to the United States, where they have only recently realized the necessity for a nation-wide survey of their timber possessions.

Fur Farming

Raising Rabbits for Profit

On this continent, the rearing of rabbits is mostly in the hands of fanciers and people who keep them merely as pets. In Europe, however, rabbits form an important item of the food supply. In North America, owing to prejudice, dressed rabbit only brings about half the price of chicken.

Rabbit fur is also low in price. Although certain breeds of rabbits, e.g., the so-called Siberian hare, produce a fur which is quite handsome, only very low prices are obtainable as compared with the price paid for the fur of the muskrat, etc.

In New Zealand and Australia, wild rabbits, which were formerly a pest, are now a source of profit. At present prices, a hunter and trapper, with a good dog, can make from \$20 to \$40 a day. In 1919, New Zealand alone exported 14,153,982 rabbit skins, valued at \$3,734,280, as compared with 7,854,152 skins, valued at \$1,458,806, in 1918. Most of the skins were shipped to the United States. In addition, 1,372,860 frozen rabbits were exported to European countries for food, valued at \$235,270. Some landowners find that rabbits are more profitable than sheep. Winter skins have sold as high as \$2.15 a pound. Canadians who raise rabbits in captivity thus have to face competition from Australia and New Zealand.

Rabbit-rearing in this country may develop: (1) By supplying choice fresh meat and skins of extra fine quality; (2) by merely raising enough for domestic use and disposing of the skins for what they will bring. They can be raised in the backyards with less trouble and expense than are required by chickens.

Rabbits must have only clean food. They thrive best on clover, alfalfa, dandelion, oat and wheat straw, carrots and hay. They may also be given such weeds as coltsfoot, couch grass, shepherd's purse, vetches and plantain. Fresh water should be available at all times. In winter they may be given mashes of oatmeal, barley meal, etc., with milk, fed warm, and potato peelings, boiled soft. Young rabbits, under two weeks old, should be kept from green food, grain or roots.

Hutches are simply well-fitting boxes, closed top and bottom, both ends and back, and having two doors in front. One of these will be a wire-covered door, the other of wood, the latter opening into the sleeping chamber, which should be partitioned off from the other portion. A smooth round hole in the partition will allow the rabbits ingress and egress. The dimensions of the hutch will vary with the size and number of rabbits but should have not less than 12 square feet of floor space and a height of 2 feet.

City Shade Trees Need Protection

**Conditions in one City an Index of
Almost General Disregard of
Municipal Trees**

As an illustration of the lack of care and appreciation of shade trees in some cities, a statement by Ald. Rubenstein, of the Administration Commission of Montreal, is enlightening. He says: "Vandalism on all sides is rampant; no care whatever is being taken of the trees already existing; they are being ruthlessly dealt with by all persons, even by the public utility companies, and nothing is done by the authorities to look after them or to replace those that have been cut down or have died through ill-treatment or otherwise." He also requests the said Commission "to state what instructions have been given in this connection, how much has been included in the budget for this purpose, and whether they propose to give their attention to this important matter."

It is this question were asked of many municipalities, the answers would show the almost utter disregard of one of the greatest blessings of the pedestrian during the sultry period and one of the most important amenities of urban populations.

Metering City Water

In 1908, 49 per cent of the services in the city of Omaha were metered. In 1919, 91 per cent were metered and, if the city services and unused services are deducted, 98 per cent were metered.

In the year 1908, the city pumped 6,144 million gallons of water. In 1919, although the population had increased to about 199,000, as compared with 145,000 in 1908, the consumption had only increased to 7,616 million gallons. Had the consumption not been fully metered, it would probably have been at least 10,000 million gallons, or 30 per cent greater than it actually was. This increased consumption would have necessitated additional pumps, new and larger mains, greater expenditure for upkeep and maintenance, and larger sewers to carry off the extra water.

The Omaha consumption is unusually high for a metered service, but this is due to the large use of water by the stock yards and packing houses which accounts for 36 gallons per head of population of the total consumption of 107 gallons.

The Omaha consumption of 107 gallons per head per day may be compared with the consumption in Ottawa of 175 gallons per head.

A pulp and paper company will construct dams and erect mills at Tobique Narrows, N.B. The company has purchased 1,700,000 acres of timber lands from the New Brunswick Railway Co.

Our Timber has Been Wasted

Present High Prices for Wood Products Emphasize our Previous Disregard for our Forests

Owing to the low market prices in the earlier days of the lumber industry only the better grades of timber could be removed from the forest with profit to the operator. This fact coupled with the very general belief that the forest supplies were inexhaustible led to logging methods that would now be considered wasteful, even profligate. Giant pine and spruce were felled and only one log taken, the rest of the tree remaining to decay in the bush. Often trees were felled and entirely discarded because of slight imperfections.

The earlier lumbering operations very materially reduced the forest capital stock of the country by wasteful methods. With the present high prices and with a well reasoned doubt that the forest supplies are inexhaustible, the economic pressure for raw materials is so great that there is danger of reducing the forest capital to the point of exhaustion by too extensive cutting.

Most of the timberlands of reasonable accessibility in Eastern Canada have already been cut over several times. There are thousands of square miles of such lands. A large portion of the future supply should come from these areas. Will they ever furnish a future supply; if so, what kind, how much and when? These are questions which the Commission of Conservation of Canada is attempting to answer through its forest regeneration surveys. The work is being carried on through the co-operation of the Provincial Forest Services of Quebec and New Brunswick and various pulp and paper companies, the latter being represented by the Abitibi Power and Paper Company in Ontario, the Laurentide Company and the Rirdon Pulp and Paper Company in Quebec, and by the Bathurst Lumber Company in New Brunswick. It is planned to extend the investigation over a sufficient number of representative districts throughout Eastern Canada, so that general conclusions as to growth conditions on cut-over lands may be reached. So far as the investigations have gone, however, applying them only to the areas studied, the indications are that the original white pine has not reproduced itself on cut-over unburned lands. Extensive areas that yielded large quantities of white pine timber are at present practically without young trees. The results of the forest regeneration surveys also indicate that spruce is being crowded out of the forest by balsam fir. In some cases there are only one third as many young spruce trees to make the future crop as were removed by the logging operations. The young balsam fir trees usually out-number the young spruce trees 4 to 1 and in some cases 20 to 1.

If our valuable spruce is to be maintained in the forest in its former quantities some change must be made in the present logging operations, for they apparently encourage the reproduction of the less valuable balsam fir.—Dr. C. D. Howe.

Our Fire Losses

January-May, 1920	\$11,557,944
" 1919	10,026,419
Increase in loss this year.....	\$ 1,531,525

Canada's fire loss for the current year bids fair to exceed any thus far recorded, with the exception of that of 1918, when heavy losses were entailed through the destruction of munition plants. If the average of the first five months of the current year is maintained, our fire loss for 1920 will reach almost \$28,000,000.

Canada cannot afford this waste and the consequent destruction of money and effort. The Government is earnestly seeking new revenue; there is a shortage of help for building purposes and many factories are hard pressed to supply the market for manufactured goods; yet we are burning up our capital at the rate of 2½ million dollars per month.

According to the *Monetary Times*, from which the above figures of fire losses are taken, 103 residences were damaged or destroyed. The serious shortage of houses is thus accentuated by the fire waste.

The toll being taken by fire is a charge which must be met by the people of Canada. In 1919, insurance companies collected \$40,000,000, or over \$22 for each family of five members. Had the Minister of Finance, Sir Henry Drayton, announced in his budget speech that to replace the fire loss, a direct tax of \$22 would be levied upon each family there would have been a storm of protest from one end of Canada to the other. We are, however, silently paying this tax, which includes the loss by fire, \$15, and the charges of the insurance companies to cover business costs, dividends, etc., \$7. Everything we buy carries its percentage of this tax, and will continue to do so as long as we allow our national wealth to be burned up at its present rate.

A proposed Winnipeg factory will manufacture boxes from a wood fibre. The fibre will be made of pressed waste paper and wood screening, reinforced with metal.

From 32 letters of silver black foxes, Mr. George Calbeck, of Summerside, one of the leading fox farmers of Prince Edward Island, secured 156 living pups. The breeding season has been very satisfactory on the island.

Electricity for the Farm Home

Concerted Action by Municipalities Would Provide for Wide Distribution of this Convenience

The necessity for a more adequate supply of electric energy to the smaller communities, particularly in the Prairie Provinces, has often been pointed out by the Commission of Conservation. Concerted action would bring this most beneficial utility to every town, village and practically every farm within reach.

The middle west of the United States is very aggressive in this respect. Central stations are building lines as rapidly as possible, and are planning more for the immediate future. Regarding the construction and cost of these the *Electrical World* states:

"In general the construction is of two sorts for two very different purposes. The first consists mainly of 33,000-volt and 66,000-volt lines, interconnecting generating stations and taking on new towns or industries. The second consists of 2,300-volt and 4,600-volt lines, designed to serve groups of farmers and small villages.

"While it is difficult to generalize on prices when the metal markets are so unstable, it may be said that farm lines cost at present from \$600 to \$800 a mile and the 33,000-volt and 66,000-volt lines cost from \$3,500 to \$4,500 a mile. Moreover, the cost factor seems at present to be one of the most important items in determining how long this era of construction may last. Certainly the demand for service will not limit the activity for some time to come, especially in the farm-line extensions."—L. G. Denis.

Co-operative Surveys

Commission of Conservation Experts Assist the Provinces

Mr. G. H. Prince, Provincial Forester, in the Annual Report of the Crown Lands Department of New Brunswick for 1919, in referring to the work of the Commission of Conservation in that province says:

"Before dealing with the different details of the survey work (forest survey of the Crown Lands of New Brunswick), I would respectfully call your attention to the able assistance rendered by the Conservation Commission of Canada to this Department both in the matter of advice and actual investigation of the various problems that have come up from time to time. Most especially do I wish to acknowledge the aid given through their Forestry Division in directing growth study and regeneration work in connection with the determination of the annual growth on the Crown Lands, while the advice and instruction rendered by their Agriculturist in soil classification work in his two trips to this

province has been highly appreciated. Much credit is due the Commission, as they have shown this Province every consideration and have personally taken a keen interest wherever scientific investigation and expert advice would further the development of the Forest Survey in any way. We look forward with much satisfaction for the continued co-operation of the Commission in the future."

The volume also contains the report of "Forest Regeneration Surveys," by Dr. C. D. Howe, and "Soil Survey," by Mr. F. C. Nunnick, of the Commission of Conservation.

Diseases of Fur-Bearing Animals

The more common diseases affecting fur-bearing animals are enteritis or inflamed intestines, pneumonia, diarrhoea, and degenerated kidneys, all of which may largely be prevented by judicious care in housing and feeding. Pneumonia results from exposure, and is likely to attack animals that have recently been trapped or shipped. It rarely occurs when they are kept in dry and well-ventilated quarters. The symptoms of pneumonia are loss of appetite, dry nose, and rubbing of throat and chest on the ground. Very little can be done for animals suffering with this disease beyond giving them clean, dustless bedding and keeping them in pens that are warm and airy but free from direct draughts.

Diarrhoea is caused by improper feeding. It should be the invariable duty of keepers to take note daily of the excreta of animals under their charge, and to change the diet of any showing signs of disease. An excessive proportion of vegetable food, fats, and impure water, fermented or putrid food, and over-feeding are among the causes of this malady. A diet of milk, eggs, and fresh lean meat, given in moderate quantities, if begun promptly, is usually sufficient to correct any kind of bowel trouble.

Animals that are allowed to become fat and remain so are almost certain sooner or later to die from degeneration of the kidneys. In its later stages this disease is characterized by emaciation, nervousness, and a bloodless appearance of the tongue and gums. When an animal has reached this condition there is very little chance of saving its life. This disease may be avoided by not allowing animals to become fat and by keeping those showing a tendency to do so mainly on lean meat, fish, and milk.—Dr. Ned Dearborn.

It is proposed to establish a whitefish canning industry in northern Alberta. It is said there is no finer fish in fresh water than the whitefish of the far north rivers and lakes.