

Conservation

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Every Sugar Maple Should Be Tapped

Interesting and Profitable Facts
About Canada's Initial Sugar-
Making Process

Canada's dependence on imported sugar, now a scarce commodity, can be materially lessened by increased production of maple sugar this spring. Except in farm homes in Quebec where it is used on the table, maple sugar has been regarded as a luxury. This should not be so, as it can now be produced on a small scale where no additional help has to be paid for, at a somewhat lower cost than the present retail price of the sugar ordinarily used.

Every pound of granulated sugar that can be exported is needed overseas, and Canadian farmers should increase the production of maple sugar and syrup this spring by tapping every maple tree that is large enough. The sap runs at a time when farm work is at a minimum and no increase in the labour supply is therefore needed.

A mature, thrifty maple will yield about 12 gallons of sap, composed of about 95 per cent water and 3 per cent sugar, with a residuum of mineral matter. Large-crowned trees, or trees grown in the open bush, with long trunks, produce the most sap. The ideal weather conditions for sap flow are moderately warm days and freezing nights.

To tap a tree, bore a half-inch upward-sloping hole one inch deep, on the sunny side of the tree. There are many varieties of sap spouts available. The best spouts are made of tin or galvanized iron, with covers. The sap is gathered at least daily, and boiled down in the boiling house, or in the farm kitchen. The process is simply one of evaporating the water content until the sap becomes of the consistency of syrup, or of a weight of 11 pounds to the gallon. The syrup should be strained through flannel, which leaves the product perfectly clear.

In making sugar, the syrup should be re-boiled until it begins to crystallize, or "sugar-off". This point may be determined by pouring a little into ice-water or on the snow. If the syrup becomes waxy,

it has been boiled sufficiently. It is best to reduce the syrup to sugar in small quantities. Before pouring it into moulds, stir slowly to reduce the temperature, and thus avoid granulation.

Where production is undertaken on a larger scale, much more elaborate equipment is necessary.

Technical Training for Boys and Girls

Proper Development of Resources Will
Require Skilled Labour

Probably 100,000 boys and girls from 14 to 16 years of age annually leave school in Canada to engage in some occupation connected with manufacturing, agriculture, mining or transportation. The present general plan of education does not provide sufficiently for these young people. They are stepping out into the world to find their way, with an almost entirely literary education. The apprentice system in our industries is almost a thing of the past, and the youth in our factories and other business organizations is left to pick up a smattering of his future occupation as best he may. Notwithstanding this, every manufacturer will agree that properly trained help is the best investment. Germany, in the past few years, has amply demonstrated the value of technical training.

Canada has very important natural resources requiring capacity to develop them. What are we doing to produce this capacity? How many of our farmers' children know the qualities of soil and the proper fertilizers to use for best results? Mgr. Choquette has told us of the Belgian farmer's knowledge of his land and his scientific use of it. Can we hope to meet him on even terms? How many metal workers know the composition and working qualities of their raw materials. Do our carpenters, textile workers, employees in our ceramic and other industries know why they perform certain operations and why they secure the results they do?

We are not doing justice to the rising generation. At the close of the war, Canada will no doubt see an influx of immigrants from the European countries. Their system of industrial training has put them

in a position to understand the theoretical as well as the practical side of their means of livelihood. Canada will have to meet these European countries in competition for trade, and, to do so successfully, her manufacturing and other lines of activity must utilize all trained help available; to secure this result it will be necessary to give the most important positions to our foreign-born residents. We may then realize, too late, that we have been unfair to our own children. Industrial training schools with night classes should be a part, and an important part, of all educational work, and attendance of pupils, up to at least 18 years of age, should be compulsory.

Binder Twine Made Out of Flax Straw

New Process Said to be Completed to
Use Prairie Flax Straw Formerly
Burned

The Flax Fibre Development Association of Regina, Sask., announces that it has discovered a process for manufacturing flax straw into binder twine, commercial twine and yarns for weaving into heavy sacking and towelling. Heretofore, the flax straw of the three western provinces, amounting to over 1,000,000 tons annually, has been burned after threshing.

It is said that experiments carried out this autumn with the new binder twine showed that it bound 99 per cent of the sheaves perfectly, a better result than was obtained with sisal twine. A co-operative company is being formed to manufacture the new twine.

COLOUR vs. QUALITY IN SALMON

The sale price of tanned salmon depends more on the colour of the meat of the fish than upon its flavour.

Because the colour is pale, the best flavoured salmon on the Pacific coast is least in demand upon the market. The inferior salmon, of a rich red colour, brings the best price, and takes the lead because of its colour, this having no relation to excellence of flavour or edible superiority. — Dr. E. E. Prince, Chairman of the Biological Board of Canada.

Should Pay Only for Heat Value in Coal

Government Would Save Money by
Purchasing Coal by Test

It is estimated that the Dominion Government burns over \$1,000,000 worth of coal yearly, and yet scarcely any of this vast quantity is purchased under rigid, detailed specifications. Private corporations as well as governments in Canada buy coal mainly on its reputation or trade name, rather than under contracts specifying the heating value of the coal, its ash and moisture contents and other characteristics. To get proper value for his money, the consumer must know the heating value of the fuel he purchases.

The United States government spends \$8,000,000 annually on coal, all of which, since 1906, has been bought on rigid specifications and subjected to chemical analyses and heating tests. If coal not up to contract is delivered by a contractor, he is paid less than the standard price for it.

DOWN WITH PATRONAGE

The greatest single obstacle to the efficient conservation of Canada's forest resources has been the patronage system of making appointments in fire-protection services.

PREPARE FOR NEXT WINTER

Unless all signs fail, the coal shortage next winter will be more acute than this winter, and every effort should be exerted to provide a supply of dry hardwood. Farmers and villagers will be expected to look after themselves, but in cities and towns the responsibility is devolving upon the municipal authorities. These should lose no time in organizing to have wood cut, hauled and stored to dry during the summer. If this is not done, the situation next winter promises to be very serious indeed.

(See also page 6, "Getting Wood Fuel for Next Winter.")

Getting Wood Fuel For Next Winter

Coal Shortage Likely to be More Acute Than This Winter—Municipalities Should Act at Once

The fuel situation in Eastern Canada will be fully as bad if not worse next winter, and it is imperative that steps be taken at once to provide substitutes for coal. With an increasing labour shortage in the United States, increased demands upon the railways, increased requirements for American coal for domestic and export purposes and the placing of Canada on 'war rations' by the United States Fuel Controller, it will be fortunate if Canada secures as large supplies of coal as she has this season.

We must fall back upon our forests. Ontario, Quebec, and New Brunswick contain vast quantities of hardwood which has little present value except for fuel purposes. A cord of seasoned hardwood, such as hard maple, beech or birch, is approximately equal in heating value to a ton of anthracite. Under normal conditions, coal has been cheaper, but, at present prices, the difference in cost is not very great. What is needed now is immediate action on the part of municipal authorities to lay in an emergency stock of wood fuel, both on account of the shortage of labour for cutting and hauling, and the necessity for having the wood cut to dry during the summer. The city of Winnipeg laid in a reserve supply of 14,000 cords of wood this season, and the Mayor reports this was an important factor in averting a fuel crisis. Ottawa also has decided to establish a civic fuel yard.

To supplement the efforts of city and municipal governments, co-operation of the provincial governments is, in many cases, essential. Where timber on Crown lands is sufficiently accessible, a special organization is needed to facilitate the completion of arrangements, including the organization of labour for cutting on a large scale. The Provincial Forester, or some one working under his direction, should take the whole matter up vigorously with the respective city and municipal governments, and assist in determining the needs of the local situation in each case, and how best to meet them. A beginning in this direction has already been made in Quebec, and it is reported that Ontario is offering wood in Algonquin Park free to municipalities and is co-operating with them in organizing production.

Experience has shown it is quite feasible to materially relieve the coal shortage by a more extensive use of wood in the following directions:

1. By farmers and rural communities generally, within easy reach of wood supplies, making as

general use of this fuel as possible, to relieve the demands for coal and freight cars alike.

2. The general substitution of wood for coal in furnaces and stoves during early autumn and late spring, as well as during mild weather in winter.

3. The heating by wood of churches, lodge rooms, halls, etc., where warmth for only a limited period of time may be necessary.

4. The eking out of limited stores of coal by burning wood in the day-time, reserving coal for holding the fire over night.

5. Running furnaces low to keep the house in general only warm enough to prevent water pipes from freezing, and supplementing this by using wood in stoves or grates to keep the living and dining rooms comfortable.

6. Using wood much more generally than at present as a substitute for coal in cooking.

7. By making windows and doors tight and by insulating furnaces, boilers and piping, as suggested by Senator W. C. Edwards, who also advocates that slabs and mill waste, instead of being burned in incinerators, should be reserved for domestic heating.—C.L.

Factors in Production

2. Value of Manure

Careless Handling is Resulting in Serious Losses

The Commission of Conservation has found by actual investigation on 3,000 farms, in Canada, that the majority of farmers exercise no special care to prevent waste of manure. This means that out of the \$200,000,000 worth of manure produced annually in Canada, fertilizing elements to the extent of millions of dollars are being lost every year. While manure is only a by-product on the farm, it is the farmer's greatest asset in the maintenance of soil fertility. On account of it being a by-product, it is not given the care and attention which the so-called principal products receive.

What would we think of a farmer who would wilfully allow some of his live stock to wander away and become lost, or, who would not repair a hole in the granary floor

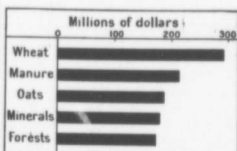
through which he knew grain was leaking out? In these times of stress and food shortage, the avoidable wasting of anything that will contribute towards increased production is unpatriotic and little less than criminal. Every pound of plant food in the form of manure should be jealously guarded for use on the land. Every avenue of waste and loss should be closed.

Losses occur principally from over-heating, leaching and drainage. To prevent over-heating, which causes a loss of nitrogen by the escape of the ammonia gas formed, the manure should not be piled too deep and should be kept well packed, or put on the land as made. It is also well to mix the cow manure with the horse manure, if the manure is to be piled.

Leaching takes place when the manure pile is placed under the eaves. The water running over and through it washes out the quickly soluble, and hence the most valuable, elements, causing them to be lost. To allow the urine or liquid manure to run away is extremely wasteful, a fact which the accompanying table from Bailey's Cyclo-pedia of Agriculture graphically illustrates. Under average conditions, the weight of urine from farm animals in general exceeds that of the solid dung. This means that, when the liquids are allowed to escape, a portion of the most costly fertilizing elements is lost. Absorbents should be used, or a pit made to hold the liquid. Dry horse manure can be advantageously used in the cow stable to absorb the liquids when there is a shortage of straw.

Since it is almost impossible to secure potash, and, as nitrogen and phosphoric acid are high in price, the wisdom of preventing their loss from the animal manure on the farm cannot be too emphatically urged.—F.C.N.

ESTIMATED VALUE OF MANURE IN CANADA COMPARED WITH THAT OF OTHER NATURAL PRODUCTS. (Estimate based on U.S. Statistics.)



Total Value, 1916

COMPOSITION OF FRESH EXCREMENT, 1,000 POUNDS

		Water (Pounds)	Nitrogen (Pounds)	Phosphoric acid (Pounds)	Alkalies (Poun %)
Horse	1,000 lbs. solid dung contain.	700	5.0	3.5	3.0
	1,000 lbs. urine contain.....	890	12.0	0.0	15.0
Cow	1,000 lbs. solid dung contain.	840	3.0	2.5	1.0
	1,000 lbs. urine contain.....	920	8.0	0.0	14.0

3. Variety of Grain Sown

Choosing Tested Varieties Always an Advantage

Agricultural investigations made by the Commission of Conservation in various parts of Canada have repeatedly and abundantly proven that there are too many varieties of the different crops being grown on farms. In Waterloo county, it was discovered that 28 varieties of oats were being grown among a group of 100 farmers, and among 50 farmers in Lanark county 19 varieties were found.

There are some varieties of oats, such as Banner, O.A.C. 72, or Siberian, which have given the best results at the Experimental Farms in Canada, and are much superior in every way to the varieties being grown on many farms, particularly in the older provinces of the Dominion. The 'trying-out' process in connection with varieties of grains is expensive and is being conducted by the Experimental Farms for the express benefit of farmers. In spite of this, many farmers continue to ignore the valuable information which has been obtained for them in this matter, and continue to pay fancy prices for something new which is lauded and praised by those who have it to sell. This is illustrated by the recent statement of an Ontario farmer in Dundas county who said that he had just paid \$2.25 for 32 pounds of a new variety of oats which was said to give a wonderful yield. This man knew nothing about the agent, nor the suitability of the so-called new variety of oats for his farm. It might be weak in the straw, thick hulled, very susceptible to disease and in any or every way undesirable so far as he knew. Why take these chances?

Many farmers do not even know the names, let alone the suitability, of varieties of grain grown on their farms. Know what you are sowing and sow one of the tried and proven varieties. It is one of the easiest, most inexpensive and surest means of increasing production of cereal grains which are so urgently needed at the present time.

—F.C.N.

PROPAGATING MUSSELS FOR MAKING BUTTONS

The United States Bureau of Fisheries has been conducting extensive work on the Mississippi river and its tributaries in the propagation of the pearly mussel, which supports an important button industry. Larval mussels are inoculated on common fishes, which are then liberated in open waters. After a time, the mussels drop off the fishes and begin their independent existence on the bottom. In 1917, upwards of 250,000,000 mussels were inoculated on 110,000 fishes at a cost of less than three cents per thousand mussels produced.

**Commission of Conservation
CANADA**

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

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OTTAWA, FEBRUARY, 1918

OLD GENERAL HUNGER

Mr. Hanna says Allied Europe is short 500,000 bushels of wheat. On Dec. 1 last, Canada had 110,000,000 bushels for export. On the same date, the United States, after allowing for the normal consumption of her own people, had not a single bushel, although Mr. Hoover thinks that, by economy and substitution, they will be able to export about 100,000,000 bushels. Where will Allied Europe procure the balance of 290,000,000 bushels to keep her from starving?

On account of the shipping situation it must come from America and Canada, as the granary of the Empire, must put forth a supreme effort. The farmer must have additional labour. He is doing his best now, and no amount of talking at him will induce him to put in a larger crop this spring. Provide him with extra help in seeding if you will, but he will not increase his crop acreage unless he is assured of enough help in harvest. Even in old-settled Ontario there has been for years a large acreage uncropped for lack of help. It is equally true that there are in our cities and towns many farm-trained men at work not as essential as farming, who would assist in the crucial periods of seed-time and harvest if the law protected them in their positions and possibly made up a part of the difference between their ordinary earnings and what they would receive as farm labourers. We have conscripted men for overseas; what are we going to do to feed our Allies?

Man-power is needed for fighting, for munition working and for food production, and whichever is the most urgent should have the most men allotted to it. In such times as these, it is given only to those in high authority to know conditions fully, but, if the food administrations of Canada and the United States portray things as they are, the food situation is the most serious we have yet had to face. It is only when the ordinary citizen realizes this that the problem can be solved.—M.J.P.

IN SYMPATHY WITH OUR WORK

"I am in sympathy with the great work you are doing", writes a rural minister to the Commission of Conservation, "and, as a country pastor studying and endeavoring to make my contribution to the work of conservation and reconstruction of Canadian life, especially Canadian rural life, I have been helped by your reports."

Conservation has its enemies as well as its friends, and a word of appreciation such as this is most encouraging.

A TRIUMPH FOR PUBLICITY

OVER a year ago the Commission of Conservation began an active publicity campaign for the adoption of measures to prevent the spread of venereal diseases. At the Eighth Annual Meeting of the Commission much attention was given to the subject, and by pamphlets and through the columns of CONSERVATION, which goes to every newspaper and every clergyman in Canada, the "hammering away" process went on. The campaign was taken up by influential newspapers, public organizations and public-spirited citizens. To-day we can announce that Saskatchewan has made compulsory the reporting of venereal diseases to the provincial health authorities, and it is stated that the Ontario Government will at its next session, introduce similar legislation.

**Burning Food Stuffs
While Europe Starves**

Heavy Losses from Elevator Fires in Western Canada

Attempts at conservation are frequently too concerned with the leakage at the spigot to notice the real waste at the bung. This is especially true of the destruction by fire of vast quantities of food products in factories, storages and warehouses. In a letter recently received by the Commission of Conservation, Mr. F. J. L. Harrison, manager of the Western Canada Grain Association, Winnipeg, points out that, during 1917, at least 50 country elevators, 2 hospital elevators and 2 large flour mills have been burned in western Canada. He says: "In these fires not far short of 750,000 bushels of grain have been rendered unfit for human use. This would be bad enough in normal times, but, under present conditions, the waste seems almost criminal. The United States Government, through its Food Administration bureau, is asking its

citizens to save wheat to the extent of 25 per cent of normal requirements, or about one bushel per head per annum. We, in Canada, may be asked to make a similar sacrifice. On this basis, our fire loss would absorb half the saving of the entire population of the three prairie provinces."

According to figures compiled by the Commission of Conservation, fires in properties most closely affecting our food supply numbered in the past three years as follows: Grain elevators 145, flour and grist mills 45, bakeries and confectionery works 59, packing houses and cold storage plants 26, canneries and butter and cheese factories 36, miscellaneous warehouses and storerooms 334, farm barns 3,746, and corn stacks 117.

The value of the food products damaged by these fires amounted to over \$15,600,000. At the present time when the welfare of Canada and her allies depends upon the conservation of every ounce of food and productive energy, the question of fire waste is one of grave importance and one demanding prompt remedial action. Records show that the immediate causes of fires are physical defects in property, carelessness on the part of occupants of property and incendiarism. The efforts of insurance companies, fire departments and provincial fire marshals, while worthy of commendation, are not resulting in any appreciable diminution of fires. As a war measure the Dominion government should appoint an official with power to enforce regulations for the prevention of fire in food products factories, storerooms and munition plants.—J.G.S.

TO UTILIZE OLD TIN CANS

Application has been made to the Board of Control, Winnipeg, for a four years' franchise to utilize the old tin cans accumulated in the city dumps. The project contemplates the separation of the solder, tin and iron in the cans, and the melting of the last-mentioned into bars.

MAKING CORN INTO HOGS

It takes 12 bushels of No. 2 corn to make 100 lbs. of average live hog under average farm conditions. This is the finding of the Commission appointed by the United States Food Controller to investigate the cost of hog production and to suggest plans for stimulating it. The figures given above are based on a survey of ten years' production, ending 1916. The Commission reported that, to bring production back to normal, it would be necessary to pay at least the equivalent value of 13.3 bushels of corn for 100 lbs. of average hog, and recommended that a minimum emergency price of \$16 per cwt. at the Chicago market be established immediately.

**Expansion of Mineral
Industry Essential**

Instead of Importing, Canada Should Export Mineral Products

Canada pays out more money for imported mineral products than she receives from her mines. The value of the mineral production for the calendar years 1913, 1914 and 1915 was \$145,600,000, \$128,865,000 and \$137,100,000 respectively. The imports of products of the mine and manufactures of mine products for the same years were valued at \$259,300,000, \$181,676,000 and \$146,224,000. As the imports also include manufactured, or partly manufactured products, they are much more valuable than the minerals we produce. If, however, Canadian minerals were turned into manufactured products in Canada, the present trade balance in minerals would be reversed.

It is only fair, though, to point out that Canada is under serious disadvantages in the matter of manufacturing. The relatively small and scattered population makes distribution from points of production to points of consumption both difficult and costly. Similarly, where, for example, coal is essential for reducing ore and for manufacturing, the cost of transportation necessary to bring the two raw products together, bears heavily on manufacture. Copper, zinc and lead are produced principally in Western Canada, while the manufacturers and chief markets are in Eastern Canada. In spite of these handicaps, a comparison of the figures for imports and those for production shows the opportunity that exists for developing a home market that will increase as the war goes on. Premier Lloyd George in his recent address stated that 'Economic conditions at the end of the war will be in the highest degree difficult. . . . There must follow a world shortage of raw materials, which will increase the longer the war lasts, and it is inevitable that those countries which have control of raw materials will desire to help themselves and their friends first.'

The mineral resources of Canada, if developed, could supply not only our own needs but also permit the exportation of a surplus to other parts of the British Empire. There is, in Canada, an urgent need for production to pay for our war debt and borrowings before the war, and if we are to get the greatest value out of our mineral industry it is necessary that our metals and minerals be refined and made into manufactured or partly manufactured products in Canada. The production of certain mineral products in Canada has been stimulated by the war and new industries created. In the period of reconstruction, after the war, it will be necessary to safeguard and provide for the further extension of these industries.—W.J.D.

How We Waste Fish in War Time

Several Excellent Kinds Are Thrown Away Because the Public Does Not Know Them

Paradoxically enough, war is compelling economy. If the conflict continues, it will be difficult to avoid world hunger. Food conservation is especially essential. This implies greater production, the prevention of waste in every form and the substitution of hitherto unused products for those that were formerly staples.

In the fishing industry, there is room for considerable substitution. Many varieties of excellent food fish are not only not fished for, but, if caught with other fish, are thrown away and wasted. Prof. Prince stated recently before the commission investigating the salmon fisheries of British Columbia that 'there must be forty or fifty varieties of edible fish in British Columbia waters that could be put on the market . . . but, of those forty or fifty excellent fish, at the outside limits, only eight or nine are utilized . . . and five or six of those belong to the salmon family.' Many 'flat' fishes, as well as varieties of the cod family, have not been utilized at all, and, as they abound in our Pacific waters, they could be turned to excellent account in relieving the food shortage. In like manner, the herring fishery is capable of great expansion.

Concerning the fisheries of the Atlantic coast, Prof. Prince has drawn attention to the wastage of such fish as the tuna or horse-mackerel, a fish greatly prized on the French markets, but which is merely thrown away by Canadian fishermen for lack of a home market, and the failure to cultivate a foreign one. One species of this fish has been marketed to some extent in the United States. The wolf-fish or sea-cat is another fish of the Atlantic that is caught in large numbers, and thrown away as useless. The British market, always a fastidious one, has had a demand for these fish for a number of years.

In brief, the Canadian market has confined itself to a few of the well-known varieties—not always the best—and the greater number have been neglected or wasted. The result has been a steady depletion and the consequent need for artificial propagation of the oyster and lobster and such fish as the white-fish, shad and salmon. By using more varieties of fish the strain on the older fisheries would be relieved and, at the same time, great quantities of excellent food, at present neglected and wasted, would be turned to good account at a time of national and international need.—A.D.

Chicken fat is often wasted. The French housewife thinks it is the finest shortening for cakes.

CONTINUITY NEEDED IN WATERWORKS CONTROL

Under our somewhat clumsy system of municipal administration, the waterworks of a city or town is usually managed by a special committee of the council, composed, in most instances, of business men with little knowledge of the essential requirements of a waterworks system. Efficient management is rare unless a competent engineer is permanently employed. As the committee is elected annually under the ward system, its membership is constantly changing, and frequently the position is sought in order to obtain special advantages for particular neighbourhoods.

There are so many objections to the committee system as applied to the waterworks department, that, in all the larger cities, the tendency is to abolish it and to substitute a commission therefor. There is everything to be said in favour of the commissioner plan, since, not only is the work in the highest degree technical, but, in a department which so intimately concerns the health and safety of the people, bi-partisanship and the interplay of local politics should have no place. In the smaller cities and towns, where the cost of employing a commissioner is out of the question, a permanent unpaid board has a very great advantage over the committee plan.—From *Fire Waste in Canada*, soon to be published by Commission of Conservation.

Keep Chickens

'Keep chickens' is a slogan that should appeal to nearly every householder in Canada. The scraps from the table of an average household will provide most of the food necessary to keep half a dozen hens in flourishing condition, and these, if properly housed and cared for, will reciprocate with a surprisingly large number of nice fresh eggs for the family table. Fifteen dozen eggs per hen per year is by no means an impossible production.

Nearly every back yard is big enough to accommodate half a dozen hens, and they are most cheerful and agreeable backyard tenants. The far-seeing householder will put up his little hen-house as soon as the snow is gone, and will make arrangements for his stock of hens at once.

A NEW COMMISSIONER

Mr. W. F. Tye, the well-known consulting engineer of Montreal, has been appointed a member of the Commission of Conservation in the place of the late Sir Sandford Fleming.

Settling the Returned Soldier on the Land

The problem of placing ex-service men on the land does not differ in any material sense from that of placing any other class of settlers on the land. Any system of land settlement, which is sound for one class is, generally speaking, sound for another and should first be determined because of its soundness, irrespective of any class. Settlement should not be forced under any conditions, but should be permitted to proceed naturally after the right conditions of land development are laid down. The obligation of the nation to ex-service men should not be confused with the question of land settlement, but should be determined on its own merits as a distinct problem. Government aid to returned soldiers, or others, by means of loans or education, will fail in its object, unless there is more scientific organization and planning of the beginnings of development. New towns and suburbs combining opportunities for returned soldiers should be promoted by government aid in locations where they can be successfully established on economic lines and without artificial pressure.—From *Rural Planning and Development*, by Thomas Adams.

ELECTRIC SMELTING IS NOW A REALITY

Not many years ago, the opinion prevailed in Canada that while electric smelting was interesting, the time was far-distant when it would be put into practical operation. The situation, however, has radically changed. There are, at the present time, 32 Heroult electric furnaces in Canada and 22 of other types—in all 54 furnaces using the electric process. These furnaces have a capacity of 173,000 tons of iron and steel, 50,000 tons of ferro-silicon, and 8,000 tons of other ferro-alloys per annum. The British Forgings plant at Toronto has ten electric furnaces of the Heroult type and a total capacity of 60 tons per heat, or about 72,000 tons per annum, making it the largest electric-process steel plant in the world.

WANT TO CATCH MORE FISH

The Alberta branch of the Canadian Fisheries Association wants to take larger quantities of white-fish and other fish from Lesser Slave Lake and Lac la Biche than the present law allows. It recently sent a representative to Ottawa to confer with the Fisheries Branch of the Naval Service Department on this subject.

WOODLANDS SECTION PULP AND PAPER ASSOCIATION

Of great general interest is the recent organization of a woodlands section of the Canadian Pulp and Paper Association. This section has for its objects the stimulation of interest in more economical and efficient methods of protection and utilization of raw materials for pulp, paper and lumber industries, the providing of means for the interchange of ideas among its members, and the encouragement of investigation of woodlands problems.

It will concern itself definitely with the production of the forest crop, just as the technical section of the same association concerns itself with the manufacture or utilization of the crop, after it is produced. This is a notable step in advance, since it involves definite recognition, through specific action on the part of the private interests most directly affected, that the forest is a crop which may be reproduced time after time upon the same soil; that the rate of production of this crop may be stimulated or retarded, depending upon whether the methods of cutting are favourable or unfavourable; that the determination of such methods may be facilitated through investigation, co-operation and free discussion; and, finally, that such action is made necessary by the depletion of the most accessible supplies of pulpwood over large areas in all of the provinces of eastern Canada. It is to be anticipated that the Commission of Conservation will be able to secure valuable co-operation from the new section in connection with the continuation of Dr. C. D. Howe's investigations of conditions on cut-over pulpwood lands in Quebec.—C.L.

PROBLEM AND SOLUTION

Our problem is to feed our Allies by sending them as much food as we can of the most concentrated nutritive value, in the least shipping space. These foods are wheat, beef, pork, dairy products and sugar.

Our solution is to eat less of the food and more of other foods of which we have in abundance—and TO WASTE LESS OF ALL FOODS.

WOOD IN COAL FURNACES

Where wood is to be burned in a furnace intended for coal it will be found desirable to partly cover the grate with iron or firebrick, in order to reduce the draft. If this is not done the wood is wasted, being consumed too fast and making a very hot fire which, in a furnace, may damage the firebox.—*Engineering and Mining Journal*.

Seventeen thousand acres of arid land are being irrigated by the city of Las Vegas, New Mexico.