

Conservation

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

VOL. VI.

OCTOBER, 1917

No. 10

Canada's First Model Town Is Mapped Out

Large Paper Company Acting under
Conservation Commission's Advice
is Fathering the Scheme

Canada's first model town will be built on the Upper Ottawa. A splendid site overlooking lake Timiskaming has been laid out according to modern principles of town planning by the Commission of Conservation, through its Town-planning Adviser, Mr. Thomas Adams, who has acted as consulting engineer. Building operations will be started shortly by the Riordon Pulp and Paper Co., who are to erect a large sulphite mill and paper plant nearby and for the accommodation of whose employees the town is intended.

A contour map showing the levels of the site was first prepared and the streets were then laid out so as to secure easy grades, directness of route, and absence of sudden deflections. If the usual method of rectangular survey had been adopted, the most important streets would have had grades of from 10 to 18 per cent, but, under the plan, the maximum grades have been reduced to 3 and 5 per cent in most cases, with a maximum of 8 for short lengths.

Before any buildings have been erected the line of each street has been blazed through the forest so as to fix the best street locations and to secure the best aspects for the dwellings. Areas are being set aside for open spaces, social centres, churches, schools, etc., in advance. The main approach to the town will be by a street, 80 feet wide, passing through a square on which the stores and public buildings will be erected.

It is proposed to make the town a model of its kind, as it is recognized by the promoters that healthy and agreeable housing and social conditions are of vital importance in securing efficiency of the workers, and that large employers of labour have a direct responsibility in providing proper living conditions for their workers.

IT PAYS TO CONSERVE

In view of the failure of the sockeye run in Puget Sound and other points in the Pacific North-

west, the trade in New York looks forward to an advancing market with record prices before the snow flies.—*The Fishing Gazette.*

This, ultimately, is what the careless exploitation of natural resources always means. It is regrettable that most of us do not realize it until matters reach this final stage. This year the value of the Fraser River sockeye salmon run was \$7,000,000 less than the last "big year."

Farmers Expected To Take War Loan

They Are Prosperous and Public
Opinion Expects Them to Help

Farmers should subscribe for a substantial portion of the forthcoming war loan. Crops have been uniformly good throughout Canada, prices were never so high and the margin between selling price and cost of production has ensured a splendid profit. Mr. E. L. Pease, vice-president and managing director of the Royal Bank of Canada, in a recent interview, gave it as his opinion that an active campaign should be carried on among the farmers of the West. The farmers of that section of Canada and Ontario, according to Mr. Pease, are the best class to canvass for the loan.

The *Manitoba Free Press* also urges that an active campaign be carried on to get the farmers to invest. It suggests that the Minister of Finance send a letter to 100,000 Western farmers, personally appealing for their support of the loan.

Venereal Diseases a National Menace

Canada Must Face the Facts and
Adopt Preventive Measures

In Canada we are rapidly reaching a condition not much better than that in the old world, where venereal diseases have played such a prominent part in the degeneration of the race. Toronto General Hospital reports 12 to 14 per cent of public ward cases as syphilitic. This tells only part of the story. In these are included latent cases and those so far incapacitated by the disease as to be confined to bed.

It takes no account of the greater percentage of cases, with or without symptoms, which can only be definitely diagnosed as syphilitic by laboratory tests, nor of inmates of asylums, homes for incurables, and other institutions, who are afflicted.

Although the immediate effects of venereal disease upon the individual are serious enough, their great importance, from the standpoint of race conservation, lies in their delayed effect upon the individual or his, or her, offspring. Syphilis is a disease which is transmitted from the parent to the child before birth. The result is that either the mother miscarries or gives birth to a dead child, or, if the child is born alive, it may die early from the infection. The loss of child life through sterility, non-productive pregnancies, early death and mental deficiency is such that no country can afford to view these diseases with unconcern.—J.D.

SMALL FIRES MOST NUMEROUS

An investigation being conducted into fire losses in the United States by the National Board of Fire Underwriters has shown that 60 per cent of the fires cause losses of less than \$100 each, but that these small amounts represent a large proportion of the total.

Important New Use Is Found for Cobalt

Discovery of Great Interest to Canada
Which Produces Nearly All
Cobalt Used

Widespread interest has been aroused by the announcement of the discovery of a tool steel stated to be equal in durability and hardness to high-speed steel, but of which tungsten, always difficult to obtain, is not a component. "Cobaltron", as the new steel is called, is made by adding cobalt to chromium-carbon steel. Thorough tests of the new alloy have been made in a large number of important works in England.

The world's supply of cobalt formerly came from Germany and New Caledonia, but, since the discovery of the rich silver-cobalt ores of Cobalt, Ontario, that pro-

(Concluded on page 39)

Keep Water-Power For Public Benefit

New Order-in-Council Prevents Per-
manent Alienation of Powers
on Dominion Lands

A most important order-in-council has just been passed to preserve to the public the ownership of water-powers on Dominion lands. It provides that, when any Dominion lands are disposed of in future, that portion of them necessary for the protection of a water supply, or bordering on, or close to, a water-power and necessary for its development, will be conveyed only on a year-to-year lease. A provision to this effect is to be inserted in all letters patent.

This is in harmony with the principles which the Commission of Conservation has been contending for since its inception in 1910. At its first annual meeting in that year, it recognized the danger in the alienation of valuable water-power privileges to private corporations and individuals and laid down the following principles:

"That in future, no unconditional titles should be given to water-powers, but that every grant or lease of powers should be subject to the following, among other, conditions:

1. Development within a specified time;
2. Public control of rates;
3. A rental with the power to revise same at later periods."

Our Vital Statistics Are Being Improved

Dominion and Provinces Getting To-
gether to Provide Annual Returns
of Births, Marriages and Deaths

Canada is much in need of an efficient and uniform system of vital statistics, and the Census and Statistics Office, under the energetic control of Mr. R. H. Coats, the new Dominion Statistician, is making a strong effort to remedy existing defects.

"One province," says Mr. Coats, "has no vital statistics at all. In the others, legislation and methods differ in the widest degree. The statistical year is not uniform; only six of the provinces use a common

(Concluded on page 38)

Forestry Operations When War Is Over

Europe and America Must Adopt Scientific Reforestation Principles

Canada alone has sent more than 10,000 men overseas in forestry battalions. Besides, many men already overseas have been formed into forestry companies. These facts alone show the importance of an adequate supply of timber for military operations.

These foresters are working in both England and France. While exploitation is the first consideration in the cutting operations to supply the timber so urgently needed in modern trench warfare, the interests of the future are being considered, so far as practicable.

The cutting in Great Britain is, however, so close that the satisfactory re-establishment of the forest can be expected only as a result of extensive planting operations. It is even now being urged that definite plans be formed at once for the systematic reforestation of the large areas of non-agricultural lands in Great Britain that will have been despoiled of their forest for war purposes. Undoubtedly, the present situation will greatly stimulate the adoption of a broad-gauged policy of governmental forestry in Great Britain after the war.

In France, heavy cutting of timber for war purposes has also taken place. France, however, unlike Great Britain, has for many years pursued a systematic policy of scientific forest management, including reforestation. Her forests have suffered severely as a result of war operations, both by the allies and the enemy, but it will be accepted as a matter of course that this damage will be repaired after the war, through systematic planting, as rapidly as circumstances will permit.

In Canada, the war has thrown a greatly increased burden upon our forests, particularly those suited for the manufacture of pulp and paper. The pulpwood supplies of the Eastern States are becoming rapidly depleted, and it becomes of the greatest importance to Canada that the productivity of her forest areas be retained, so that, for all time to come, successive crops of timber may be harvested from the vast areas of non-agricultural lands. This means increased efficiency in forest fire protection, toward which we have an excellent beginning, but with the goal still far in advance. It means also the adoption of stricter regulations governing cutting.

Only by the adoption of these measures can our forests be made to contribute their proper share toward the payment of the great war debt with which the country will be confronted, while at the same time playing their full part in the industrial and social development of the Dominion.—C.L.

IS YOUR CHIMNEY SAFE ?

Defective chimneys are the greatest single source of fires. The investigation being conducted by the Commission of Conservation discloses the fact that, for the year 1916, of the places reporting, no less than 640 fires were due to faulty chimneys. This is exclusive of fires resulting from dangerous stovepipes or chimney sparks.

Before winter weather necessitates pressure upon the heating apparatus, the householder should carefully inspect all chimneys, as well as stove and furnace pipes, and have them put in good condition. Rarely, if ever, does the occupant of a house make an examination of the chimney where it passes through the attic. Yet, this portion of the building is probably the source of the great majority of fires which start from defective chimneys. Changes in weather conditions and vibration have a deleterious effect upon the mortar in the brickwork, causing it to disintegrate and leaving openings through which sparks may readily pass.—J.D.

Our Vital Statistics

(Continued from page 37)

The Bertillon, or international, classification of deaths is wholly or partially adopted by seven provinces, but not by the eighth. Still more unsettling, each province has its own separate scheme for the collection, compilation and presentation of these statistics. Take the highly important matter of the form of the death certificate—one of the several that could be cited: of the twenty-four items which such a certificate should cover two of the provinces omit sixteen, another fifteen, and another thirteen, whilst the lowest number of omissions is three, and this does not include other items of the twenty-four which are incomplete in what they call for.

The Census and Statistics Office, of course, takes the decennial census, but it must look to the provinces to collect and compile annual vital statistics. Provincial information is of no value for comparative purposes if all the provinces do not have the same system of compiling and reporting. The efforts of the Census and Statistics Office are therefore directed towards getting all the provinces to adopt one system. It has drawn up a memorandum of vital statistical information and legislation gathered from all over the world and is discussing it with the provinces so that the subject may be viewed from every possible viewpoint. Then, negotiations will be formally opened with the provinces to secure ratification of a plan of compilation that will enable international comparisons as well as meet our own needs. According to this plan the Census Office will act as an inspecting agency and will compile the resulting statistics on a national basis.

THE VANISHING ELK

Next in importance to big-horn sheep, though least in numbers, among the Rocky Mountain big game, is the American elk or wapiti. It once ranged nearly the entire continent in millions, but is now reduced so greatly that it has become possible to take a reasonably accurate census of its numbers. Its habitat was originally from Mexico to the Peace river and from the Pacific to the Atlantic, between the St. Lawrence and the coast of South Carolina. To-day, a few scattered bands along the Rockies between Colorado and the Brazeau river and some isolated herds in the forests of northern Manitoba and Saskatchewan, comprise the entire wild elk left in North America. Probably the total does not exceed 60,000 head, less than 5,000 of which are found in Canada. In the Rockies there are probably from 175 to 365, of which the insignificant remnant in the valley of the Brazeau is the last of the original elk herds of Alberta. Those now found in the south are British Columbia elk that have migrated to the East slope since the inauguration of a closed season on elk in Alberta some five or six years ago.

Elk are grazing animals, but have been forced to become forest dwellers. They live principally on grass, weeds and low brush, such as small poplar, birch and willows. This dependence upon grass and weed range and the inability to subsist on browse alone introduces some important elements into the problem of their permanent protection which are not prominent in relation to the other big game of the Rockies.

They are the largest round-horned deer in the world, and, except in Yellowstone park, and, possibly in Alberta and British Columbia, where closed seasons have been established just in time, are rapidly following in the wake of the buffalo and antelope. Only very drastic measures taken at once will save them from total extermination in Canada. — Adapted from an Address by W. N. Miller, published in "Conservation of Fish, Birds and Game."

Get ready for the War Loan.

ADVANTAGES OF TREE PLANTING IN AUTUMN

Though undoubtedly spring is the safest time to set out trees in Canada, autumn planting in the eastern Canada and British Columbia is quite feasible. In the Prairie Provinces, spring planting is safer except where shelter is provided and a good covering of snow is assured. Spring brings with it a rush of work, both in town and country, and, as a consequence, tree planting is often neglected. Furthermore, the shortness of the period, between the time the frost leaves the ground and the leaf buds of the trees open, militates against spring planting.

It is not safe to move young trees until growth has ceased, and in the case of broad-leaved trees until the leaves have fallen. At that late date the roots do not become firmly attached to the earth, and frost may heave them from the ground. This is the greatest danger from autumn planting. On the other hand, autumn-planted trees get a better start in the spring, which is of special advantage on light, dry soils.

Cultivation of the soil in the autumn preparatory to spring planting is advantageous: it makes earlier planting possible, and leaves the soil in good condition for the roots of the young trees.—R.D.C.

FOR EXTERMINATING RATS

"I noticed how quickly I hastened from a room treated with 'formal,'" writes L. M. England of Inkermann, Ont., to *Conservation*, "and thought I would try it on rats. I saturated some rags with it, put them in the rat holes and covered the latter with paper and earth to prevent the fumes returning. The rats, which had long outwitted me, did not return. In another place, I tried the same remedy with success."

TUESDAY THE NEW FISH DAY

Tuesday, October 31, has been selected as national fish day in Canada. It is hoped to establish Tuesday as a regular fish day, thus separating fish from Friday, to which it has been so long attached.

Idaho has adopted a close season for sage grouse until 1921.

PEOPLE cannot be forced to economize by government regulations. The human individual is not made that way. The average individual must, for himself, or herself, see the bottom of the flour barrel, or some equivalent indication, before there is economy. The pinch of high prices seems necessary to enforce economy in the consumption of food and the elimination of waste. Every Canadian must say "I WILL HELP."

**Commission of Conservation
CANADA**

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

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

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

OTTAWA, OCTOBER, 1917

OUR BOYS OVERSEAS

Every unmarried man on the staff of the Commission of Conservation is on active service overseas. One of these, Mr. James Carroll, has recently been reported killed in action, but in a later report was listed as missing. Mr. Allan Donnell, assistant editor, was badly wounded in the foot last April by a gas shell and is still in a hospital in England. Col. C. A. Hodgetts, medical adviser of the Commission, has from the beginning of the war been head of the overseas Canadian Red Cross.

Approximately 40 per cent of the male members of the Commission's staff is overseas. As nearly all of these were trained men, for whom substitutes cannot be found, the Commission is labouring under a great handicap. In the face of this, and also of a reduced appropriation, it is doing its utmost to keep abreast of its work, fully realizing that its efforts to eliminate waste and promote efficiency in the utilization and development of our natural resources are of no small service in winning the war, and that the information it is gathering will be of inestimable value in solving the many after-the-war problems that are already beginning to clamor for solution.

IMPERFECT FRUIT SEALERS

The following letter received by the Editor of *Conservation* contains valuable and seasonable warning to housewives:

"The article 'Saving the Surplus' in a recent issue of *Conservation* and the admirable bulletin on 'Home Canning of Vegetables' issued by the Ontario Department of Agriculture presume the possibility of obtaining on the ordinary retail market, glass jars that will seal hermetically.

"It would be interesting if some expert would obtain a sample dozen of each kind of jar so offered and test them, say with hot water. He would find an alarming percentage that would not seal. I think if he got 25 per cent he would be in luck.

"The glass covers for jars made in recent years are badly warped. Not only that, but the rubber rings in many of them will flavor the contents so as to make them most unpalatable. Jar covers were more carefully made some years ago and sold ready fitted with much better rubber rings.

"The splendid advice given to the people, if acted upon, will be productive of great waste both of material and labor, and such disappointment that house-keepers will be most reluctant to try again."

When we first received this letter we thought our correspondent had been the unfortunate but isolated victim of a bit of ill-luck, but since then we are inclined to think that he was not the only victim. In recent purchases which have come to our attention only 15 to 25 per cent by actual count would seal perfectly.

New Use Found For Cobalt
(Continued from page 37)

vine has produced almost the entire world's supply. The ores and concentrates of this district contain from 4 to 10 per cent cobalt per ton.

During the early days of mining in this district much ore was exported to the United States and treated for its silver contents alone. During the past few years the smelting industry of Ontario has progressed at a rapid rate and can now recover as refined product all of the valuable mineral content of the ore, viz., silver, arsenic, nickel and cobalt. The latter is largely marketed as cobalt oxide, but it is also produced in the metallic form and in the form of salts.

The output of the cobalt products in Canada is largely controlled by the market demand, as the capacity for production is considerable. Cobalt was formerly

**Alcohol Made From
Waste and Sawdust**

Ton of City Garbage Makes Nearly Five Gallons at Profit of \$2.40

Ethyl alcohol, or grain alcohol, as it is usually called in Canada, has, hitherto, been chiefly manufactured from molasses and corn in North America and from potatoes in Europe. The molasses has had to be imported from Cuba and Porto Rico, but, owing to the present high freight rates, it is more profitable to burn the molasses on the spot in order to recover the potash. A plant with a capacity of 100 gallons of alcohol per day would use the following: 200 gallons of molasses, or one ton of shelled corn, or 4 tons of potatoes, or 6 tons of wood waste.

The use of sawdust is very much cheaper than grain or molasses and does not involve the consumption of valuable raw material.

In 1912, a North Carolina plant produced 310,000 Imperial gallons of 95 per cent alcohol from the equivalent of 35,000 cords of pine sawdust and waste and, since 1914, has increased its production.

The sawdust is 'digested' with sulphuric acid, the soluble constituents are extracted with hot water and, after neutralisation with milk of lime and clarification, are pumped into fermenting vats. Yeast grown in wood liquor is added and, after fermentation, the fermented liquor is distilled.

In three paper mills in Sweden, the utilization of the sulphite liquor produced about 1,250,000 gallons of alcohol per annum. Two plants have been established in the United States and produce 15 gallons of 95 per cent alcohol per ton of sulphite pulp. It is estimated that a plant with a capacity of 2,500 to 3,000 gallons of alcohol per day, and operating under favourable conditions, could produce at a cost of 14 to 20 cents per gallon.

A municipal plant at Columbus, Ohio (population 182,000), is manufacturing alcohol from city refuse. The grease extracted from the refuse is cooked with sulphuric acid and steam, the acid is neutralized, the liquor fermented with yeast and the alcohol is recovered by distillation.

One ton of Columbus 'green garbage' yields 4.8 gallons of 95 per cent alcohol and it is estimated that a plant costing \$36,000 would treat 20,000 tons of refuse annually and produce 80,000 Imperial gallons of alcohol, giving a profit of 50 cents a gallon at war-time prices, or 37 cents under normal conditions. Thus, one year's refuse would yield as much alcohol as could be produced from 33,600 bushels of shelled corn, 39,500 bushels of wheat or 110,350 bushels of potatoes.

Ten thousand pounds of rough fish were sold in one day recently at five cents a pound on the public market in Milwaukee.

WHAT THE NEWSPAPER MEN SAY

THERE is no doubt that the newspapers appreciate the printing of the "newspaper" edition of CONSERVATION on one side of the paper only. Since our last issue letters from all over Canada have poured in, urging against any change and, incidentally, speaking highly of the service we are giving the press. Here is one from the editor of a bright Western Ontario semi-weekly, that is typical of the others:

Editor, CONSERVATION,
Ottawa

"Dear Sir:

I wish to put in a decided demurrer to a return to the plan of printing the "newspaper" edition of CONSERVATION on both sides. I well remember the satisfaction I felt when you commenced the one-side plan, and the satisfaction I have since experienced in being able to clip one item without destroying another. I read CONSERVATION carefully, and consider it educative for any one; and I clip from it all I can possibly make use of. It is one of the most practically educative publications we receive, if not the best one. It is good ready-made stuff for many like myself, and we can use it to the best advantage far better as it is and thus help you in your educational propaganda. By no means spoil the good scheme by returning to the old way. The critics would knock for something else then. They evidently are not capable of appreciating the things a newsy man can."

The printing of the "newspaper" edition on one side of the paper only, will be continued.

**OF UNUSUAL INTEREST TO
THE PUBLIC-SPIRITED CITIZEN**

The Commission of Conservation is soon to publish three reports of more than usual public interest. They are:

1. *Rural Planning and Development* by Thomas Adams, town-planning adviser of the Commission.
2. *Fire Waste in Canada*, by J. Grove Smith, and
3. *Urban and Rural Development*. This is a report of the proceedings of the conference on this subject held in Winnipeg under the auspices of the Commission of Conservation and the Civic Improvement League of Canada.

Get ready for the War Loan.

used for its colouring properties, but in the past few years new uses have been found for it. It has advantages over nickel for electroplating and is used to considerable advantage in the manufacture of high-speed tool steels. Stellite, an alloy of cobalt, chromium and tungsten, has proved to be superior to high-speed steel for many operations and it is claimed that it will allow of increasing the rate of cutting on the lathe from 20 to 50 per cent and requires less time for sharpening the tools thus increasing the efficiency of shop production.

The increasing importance and use of this metal, in the production of which Canada has a monopoly, again emphasizes the importance of our mineral resources to Canada and the Empire.—W.J.D.

