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Lumbering a Science

Logging Engineering at the University of British Columbia

That lumbering should properly be regarded as a science and as a profession is the substance of resolutions recently adopted by the British Columbia Lumber and Shingle Manufacturers' Association and by the Canadian Forestry Association, favouring the establishment of a course in logging engineering at the new University of British Columbia. The success which has attended the agricultural colleges of Canada and the United States in equipping the farmers' sons with a scientific knowledge of husbandry, is evidence of what might be expected from similar courses devoted to logging engineering. The courses of study in our agricultural colleges have been intensely practical and helpful. The lumber industry deserves the same consideration for those who desire to become expert loggers and lumbermen, in the broadest sense of the term. Logging is rapidly coming to be recognized as one of the most important features in the lumber industry. Each year the difficulties increase, and the consequent demand for knowledge grows more apparent.

WATER POWERS OF BRITISH COLUMBIA

A good example of what can be done in developing and, at the same time, conserving water-power resources is given by the Jordan River plant of the British Columbia Electric Railway Co., on Vancouver Island. Although the average precipitation over its watershed reaches the excessive figure of 80 inches, the Jordan river, like the majority of our streams, has a wide variation between summer and winter flow. The company has had the flow of this river systematically gauged since 1907 and the results obtained justified the building of large storage reservoirs for the purpose of impounding waters which would otherwise go to waste. The total capacity of these reservoirs, of which there are five, is 1,500,000,000 cubic feet, and they provide ample storage, within reasonable cost, for an ultimate maximum plant output of 24,000 h.p. to 36,000 h.p.

HAZEN'S THEOREM

"Every life saved from death by typhoid means two or three persons saved from death by other causes."

Chimneys and Flues—A Fable for Builders

Last Summer a Good Citizen of a certain town not over a hundred miles from almost Everywhere, built a wooden house for a woman and her children. He built the chimney of brick because he had to. The chimney was able to stand alone, so he did not have to prop it with wood. But the floors of the house would not stay up without props. The Good Citizen saved a dollar by using the chimney as a support to the floors. He nestled the ends of the floor joists nicely in the brick of the chimney. He covered up the job and got his money.

The rains fell and the winds blew in the most biblical manner, and winter came after its fashion. The chimney settled a little; and there was a tiny crack.

One morning the woman woke up with fire all about her. She tried to get to her children. If she got to them no one ever knew it. The Good Citizen who built the house was not arrested for manslaughter. He is building other houses of the same kind for other women and children.

He is making his living by it.—*Courtesy National Fire Protection Association, Boston.*

Water Supply of Cities

Work of the Great Lakes International Pure Water Association

How to procure pure water, is one of the most vital problems confronting the cities and towns of America. The practice of discharging sewage and industrial wastes into streams and lakes has become so prevalent and general as to be intolerable. Indeed, to these disgusting practices, is largely attributable the relatively high morbidity and mortality rates of American and Canadian cities, as compared with those of Europe.

It is a hopeful sign that organized efforts are being made to improve these conditions. One of the latest organizations to be formed for this purpose is the Great Lakes International Pure Water Association. This Association held its organization meeting in Chicago in September, 1911. It has for its object the careful study of pure water supplies, and to interest legislative bodies in the water supply of municipalities in the Great Lakes basin.

It is proposed to base the study mainly on the following points:—

(1) The need of a uniform policy in the location of water intakes.

(2) The disposal of sewage.

(3) The prevention of discharge of ship sewage.

(4) The study and control of typhoid fever.

An annual conference was held jointly with the National Association for the Prevention of the Pollution of Rivers and Waterways on October 23 and 24, 1912. The conference was held in Cleveland, Ohio, and a number of Canadian health authorities were in attendance. Dr. Chas. A. Hodgetts, Medical Adviser of the Commission of Conservation, represented the Federal Government. The meeting was addressed by distinguished sanitary engineers and medical men, and much valuable information was elicited.

Industrial Diseases

Danger in the Use of Lead in Paint—Substitutes Should Be Found

Occupational diseases and accidents are a very serious feature of modern industrial life. Almost every industry presents some danger to the employees engaged in it. It is fortunately true that these dangers have in many cases been reduced to a minimum, but, on the other hand, there are some forms of employment where but little progress has been made in this regard. One of such occupations is that of the painter. Lead poisoning is now a well recognized disease. In some of the countries of Europe it is true that almost drastic measures are being taken to stamp out the disease.

According to an article in a recent number of the LABOUR GAZETTE lead poisoning is engendered by the entrance of the lead through the skin, the lungs and the alimentary canal. The presence of the metal itself in the form of shot or a bullet in the body has resulted in lead poisoning years after the date of injury. The symptoms of lead poisoning include pallor, sallowness, distaste for food, sickness, constipation, lassitude, and several minor ailments.

Causes of Lead Poisoning

The causes for excessive lead poisoning among painters may be traced to a variety of removable conditions, as well as to others which will exist so long as carbonate of lead is used for paint, and red lead for making gas joints. Painters, too frequently, fail to realize the seriousness of the dangers to which they are exposed. Such lack of care as holding between the teeth a tool to which lead paint adheres; taking of meals without properly cleaning the hands, and various other practices which permit of lead entering the system, make the subject liable to the disease.

Efforts have been made to find a finished substitute for poisonous materials. So far, however, nothing of a satisfactory nature has been discovered, although zinc pigments have been found to be fairly satisfactory for interior work. It is interesting, however, to note that a number of European countries are carrying on investigations, with a view to obtaining substitutes, so as to eventually prohibit the use of white lead for interior work, and the use of red lead for all painting work.

Herring Fisheries of Eastern Canada

Although the herring fishery falls below some others in money value, it is in some respects the most important of all the Eastern Canadian fisheries, inasmuch as the success or failure of the great hook-and-line fisheries depends to a great extent on the abundance or scarcity of the supply of herring for baiting purposes.

In the spring of each year, without fail, large masses of herring move close in to the shore, and are literally washed on to the beaches, in many parts of the gulf of St. Lawrence, especially. The mode of capture is by fixed trap and gill nets set close to the shore, and so long as the mass of fish remains inshore, large quantities are taken. The spring herring is poor in quality; but it provides an abundant supply of fresh bait for the cod fishing fleet in its first voyage to the "banks," while much of it is salted and stored for baiting lobster traps throughout the lobster fishing season.

In the summer and fall, herring of an extremely fine quality abound; but they do not come so near the shore as in the spring, and as a consequence of the use of the same fixed fishing gear, the summer catch is a small one. Thus, not only are the operations of the great cod fishing fleet seriously hampered for want of a steady supply of bait when most needed, but an insignificant quantity only of this summer herring of unsurpassed quality is prepared for consumption as food.

Practically Undeveloped

It has been demonstrated by an experiment conducted by myself, that by the use of what are known as drift nets such as are used in the British herring fisheries, abundant supplies can be secured through all the summer months, ten, twenty or thirty miles from shore; and if our fishermen could only be prevailed upon to generally adopt similar methods, a great increase in the value of this fishery would be insured.

The total value of the herring fishery of Eastern Canada in 1910 amounted to $1,702,493; but it has to be recorded that twenty-five years earlier the value obtained from this fishery by the four eastern provinces amounted to $2,016,019.

In the light of the extreme abundance of herring on the Atlantic coasts, it is to be deplored that this branch of the fisheries is as yet practically undeveloped. Of the comparatively small proportion of the annual herring catch that is smoked and cured in pickle, part is consumed in Canada and part exported to the United States and the West Indies; but owing to careless packing and badly made barrels, the price obtained is not such as to induce those engaged in the business to increase the output.

Plan to Raise the Standard

I have placed in the hands of the Honourable, the Minister, a scheme with all the necessary details, for raising the standard of curing and packing by a system of inspection and branding, on the model of the Scottish one, and for introducing a more substantial barrel for transporting the cured article to market.

The scheme is at present under consideration, but it may be permissible to say here that its salient features are:

(1) The payment of a bounty to fishermen or other packers, on all barrels made in accordance with requirements, and filled with pickled herring, mackerel, alewives or salmon; in order to bring into common use a strong standard barrel.

(2) The branding of such barrels with a particular mark as a guarantee of the quality of their contents, provided the fish are, as a result of careful examination, deemed worthy of such brand or mark.

(3) The creation of a sufficiently qualified staff to undertake the work of inspection and branding.

Should the scheme be adopted and the necessary legislation secured for its operation, I am confident that it will give to the pickled fish industries a much needed and long overdue fillip.—*From an address by J. J. Cowie, of the Dept. of Marine and Fisheries, before the Committee on Fisheries of the Commission of Conservation, June, 1912.*

Electric Smelting In Canada

Experiments Would Seem to Have Been Successful

A report demonstrating that electric smelting of Canadian ores is now a commercial possibility will be issued early in the year by the Mines Branch of the Department of Mines. It will cover the results obtained from the use of the 100 ton electric furnace that was installed at Sault Ste. Marie, in 1906, for experimental purposes. In addition, the perfecting of the process as carried out in Sweden will be dealt with.

Such an announcement is of great importance to Canada, and especially to Ontario. Hitherto, the extensive iron deposits in Ontario have been scarcely touched, for two reasons: first, Ontario has to import all its coal; second, Ontario iron ores contain a relatively high percentage of sulphur, which could not be removed by the blast furnace. The new process will eliminate both these objections. Electricity will not only smelt the ore, but, by means of the greater heat that it will provide, it will volatilize and drive off practically every particle of the sulphur. The country surrounding the important iron deposits possesses valuable water-power resources, which, for the most part, have not yet been developed. It is thus easily seen that the introduction of an economical electric smelter will make possible an industry of vast importance to Canada.

Practical Conservation Through Litigation

The orange growers in a certain district in Southern California complained of the dust thrown out from the rotary kilns of a large cement plant operating in the vicinity.

The company was very desirous of abating the nuisance and installed the Cottrell process* on one of the kilns. The process proved to be so satisfactory that the remaining nine kilns are being equipped with similar installations.

An interesting result of this installation has been the finding in the collected dust of considerable amounts of potash-salts soluble in water. This suggests the possibility of definitely seeking high-potash raw materials for cement manufacture, for the sake of the by-products.

In this connection the following points are to be noted:—

1. The Cottrell process would not have been developed to the extent it has been except from the pressure which was brought upon it to avoid litigation.

2. Fear of litigation forced the company to install this process in order to prevent the dust nuisance complained of by the orange growers.

3. Valuable potash-salts are being recovered from the dust collected.

4. Selling potash-salts to the orange growers who claimed the original dust was a nuisance, will now assist the company to make an additional profit on its operations.

*This process is briefly described in another article in this issue, entitled "The Smoke and Fume Nuisance."

Brush Disposal in Ontario

An excellent start toward better methods of forest fire prevention has been made in Ontario through the fundamental requirement in two timber licenses recently issued, that the lessors must remove or destroy all limbs, brush and other debris arising from lumbering operations, under the direction, and to the satisfaction of, the Minister of Lands, Forests and Mines. Since it is well known that old slashings are the most prolific source of fire danger, this is attacking the forest fire problem at its source. The adoption of this policy will greatly decrease the danger of forest fires, it will facilitate the permanent utilization of non-agricultural lands for the growing of timber crops and will furnish a large source of future revenue which would otherwise be largely destroyed. Since the additional work was taken into consideration in making the tenders to the Provincial Government, the requirement is no hardship upon the lessors.

"It is within the power of man to rid himself of every parasitic disease."

Utilization of Flax Fibre in Canada

During a recent visit to Ottawa Mr. W. J. Robinson, a British subject resident at Chicago, and an authority on the growth and manipulation of flax, was good enough to furnish this Office for publication in the Census and Statistics Monthly with a statement respecting a newly-discovered process, which, it is claimed, renders possible the utilization of the flax straw now annually wasted and the establishment in Canada of an important linen manufacturing industry.

"The only obstacle," Mr. Robinson said, "in the way of producing good spinning and weaving fibre from the flax grown in Canada and the United States for seed alone lies in the question of a proper method of retting the flax, in order to get away from the deleterious gums, which make it impossible of use by the cordage and linen manufacturer. Many attempts have been made at different periods of history to accomplish this result by other than the water or dew retting methods in use; but every succeeding attempt has proved more discouraging than the last. It has remained for a prominent American chemist, viz., Dr. R. R. Roberts, of Washington, D.C., who has devoted over 30 years of his life to the solution of this problem, to invent a very simple, chemical process and one that is reasonably inexpensive, by which the flax straw grown in America and Canada can be converted into a commercially spinnable and weavable fibre, and by which is put within the pale of certainty the development of the linen business in Canada and the United States. The time consumed under the water or dew retting process varies from ten days to several weeks according to temperature and weather conditions, and frequently the entire crop is lost; but this chemical retting process does the entire work in a little less than five hours and is under such control that it is impossible for the flax fibre to suffer during its manipulation.

"The process has been under investigation for two years at enormous outlay by some of the most prominent financial and business interests in the United States. The fibre has been shipped to Ireland and spun into yarns and woven into cloth with the result that Irish spinners have pronounced this fibre, produced from Canadian flax grown in the Province of Ontario, to be as good as the best Russian flax that they have been able to obtain and to be capable of being manufactured into table linens, napkins, towels, dress goods, underwear and all forms of linen textile and cordage. They are not only anxious to have the fibre shipped to Europe for their use there, but are looking to Canada to find locations for linen mills where they can come out and found an industry which is probably more important from an agricultural and commercial standpoint than any other

industry which could come to this country. Canada is absolutely dependent upon the few southern States which grow cotton for all its vegetable fibre textiles, and the inauguration of this industry would make it possible for linen mills to spring up all over the Dominion and bring to Canada a type of immigration from the north of Ireland and from Scotland which the country has never been able to obtain before, because these people who have been trained in the linen business and knowing nothing else were afraid to come to Canada where the industry to which they had been trained from their youth was unknown.

"Canada in 1911 grew 1,500,000 tons of flax straw, which straw would have yielded under manipulation 300,000 tons of commercially spinable flax fibre. This fibre at Canadian prices would have yielded last year $60,000,000 in Canadian exports. The seed alone on the flax grown yielded only $11,855,000, while the entire value of rye, peas, buckwheat, mixed grains and flax in 1911 was only $33,948,000.

"It is hoped that the Government will make a close investigation into these statements and these figures and try to obtain for Canada the results possible under the inauguration of a flax and linen industry in the Dominion, which would affect every part of the country, because, as has been proved, flax for seed and fibre can be grown in every part of the Dominion of Canada that has been broken to agriculture from the Atlantic to the Pacific."—*Census and Statistics Monthly.*

Sub-divisions and Farmers in Saskatchewan

During the summers of 1910 and 1911, agricultural investigation work was conducted by the Lands Committee of the Conservation Commission on the farms in township No. 36, range 6, of the province of Saskatchewan. This township lies west of the city of Saskatoon and, in 1910, was being used for agricultural purposes. In 1911, some of the farms in the north-eastern part of the township were beginning to change hands for real estate purposes but, in 1912, it was found that a great part of it had been sold to speculators and was being sub-divided and sold for building lots. Many of the farms are grown up to weeds of all kinds and produce nothing of value. Sub-division signs are to be seen on both sides of the road leading west from the city as far as Cory on the C.P.R., which is eight miles out. Many of the farmers who have not sold are contemplating doing so. On account of these circumstances, the Commission did not establish an Illustration Farm in this previously surveyed district but chose a farm near Kinley, which is about 35 miles out and which, it is hoped, is beyond, for a few years at least, the would-be Saskatoon city limits.

Legumes and Crop Rotation

Legumes such as clovers, vetches, beans and peas are excellent builders of soil fertility. Those of greatest importance, perhaps, are the clovers. The value of clover on the farm makes it desirable that a part of the area of the farm be at all times seeded to this crop. The possibility of obtaining a grain crop during the season when the clover is making its early growth, makes the utilization of this legume in maintaining soil fertiiity a thoroughly practicable one, not calling for an undue amount of special preparation, or of fertilizers to maintain successful stands on the ordinary farm. If the land be in a somewhat depleted condition as regards fertility, a 3-year rotation may be best, although on better soils a 4-year or 5-year rotation may be quite practicable. The length of the system and the crops grown in the rotation will depend on the branch of farming specialized in; the kind of soil, etc.

No hard and fast rules can be laid down as to what crops to grow. Different soils are adapted to different crops, and with the principles of systematic rotation ever in mind must be studied to find out the crops most suitable for them. When the land was newly cleared from the forest or was newly broken prairie, the cultivator was not so much perplexed as now, by baked soil after rains, dried-out soil after dry weather, or by blowing soils. It was full of vegetable decay, was mellow to cultivate, did not bake or wash, and retained moisture during dry spells. These difficulties have resulted from constant cultivation, and, in any system of improvement, we must make an effort to get back to the former new ground conditions. For this purpose, the legumes are the most efficient aid we can have. It would be easy to keep up these conditions if all farmers had an abundance of barnyard and stable manure each year, which is good humus forming material, the value of which cannot be gainsaid.

Clover Cheap Substitute for Manures

Clover is a cheap substitute for the vegetable matter in the manure. Even when the crop is sowed for forage, there will be a very considerable amount of the humus-making material left in the roots, as well as a goodly amount of the nitrogen which the roots have assimilated.

How Legumes Act on the Soil

The legumes have the power of fixation of free nitrogen gas from the air by bacteria within the nodules on their roots. This nitrogen is in a readily available form to be used by crops following. It must not be understood, however, that the growing of legumes and removing them from the land will permanently maintain the nitrogen supply. About two-thirds of the nitrogen contained in the clover plant is in the tops and when the hay crop is removed this is lost to the soil.

The peculiar value of legumes as forage and hay-making crops lies in the fact that they have far more protein than the more carbonaceous grasses, hence they make a more complete ration for stock. It is becoming more and more evident that the farmer of the future must be a legume farmer.

Railway Commission's Fire Inspection Work

Plan of Organizing Service—Work to be Extended

On account of the unusually wet weather which has prevailed during the latter part of the summer, there has been but little strain upon the organization of the Fire Inspection Department of the Railway Commission. Since June, few fires have occurred, and such fires as have occurred have, for the most part, been attributable to causes other than the railways. The work of the Fire Inspection Department of the Railway Commission has been organized in the Provinces of British Columbia, Alberta, Saskatchewan and Manitoba, under Order 16570 of the Board.

The requirements as to special patrols, reporting and extinguishing of fires by railway employees, and the disposal of inflammable material along railway rights of way, are being administered, and the work of the railway companies inspected, through a co-operative arrangement whereby certain officials of the British Columbia Forest Service and of the Dominion Forestry and Parks Branches, are appointed officers of the Railway Commission without additional salary. These officials handle the railway fire work as a part of their regular duties. The plan is working very satisfactorily, and it is hoped that when the work of the Fire Inspection Department is extended to the Provinces of Ontario, Quebec, New Brunswick and Nova Scotia, in the summer of 1913, similar co-operative arrangements will be made with these Provinces.

Weeds Poison Crops

It has been generally supposed that the principal effect upon the soil, of weeds in the growing crops, was that they took away moisture and plant food that should go to the crops. Recent investigation at Cornell University has demonstrated that they have a deleterious effect upon crops in that they poison the plants by the intermingling of their roots. Corn and weeds were allowed to grow side by side in similar soil but with partitions placed so that the roots were kept apart. The corn and weeds grew normally. In another box the corn and weeds were placed so that the roots could intermingle, with the result that the corn was stunted and its growth materially retarded. It is a case of incompatibility of association.

Forest Utilization in Relation to Conservation

Percentage of Waste in Production should be Lowered—Stumpage Value a Factor

To postpone the long threatened timber famine it is just as important to make careful use of our existing forest resources as to create new resources through the extensive operation of reforestation. In this connection some very interesting points were brought out by J. B. Knapp of the United States Forest Service at the Convention of the Canadian Forestry Association held at Victoria in September last.

In the older European countries, the primeval forests having already been exhausted, forestry consists largely of silviculture or the growing of timber. On the North American continent conditions are entirely different and our greatest forestry problem is the conservative utilization of the original timber crop which is still available to our use. We are endowed with vast quantities of merchantable stumpage, and it is our charge to utilize this stumpage according to the best economic practices. To waste an unnecessary quantity of timber by careless use, is as inexcusable as to destroy an equal quantity by fires carelessly set. The promotion of close utilization is as important an item of conservation as the growing of trees or the prevention of their destruction by fires.

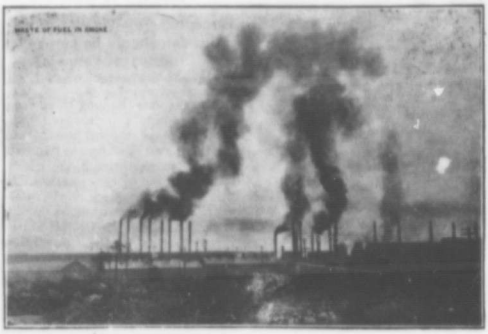
Waste Larger Than Necessary

It is estimated that not more than 40 per cent. of the gross volume of the timber now being harvested reaches the consumer. Of the remaining 60 per cent., much of the so-called waste is necessary, and will always be so, because of the nature of the products manufactured from wood and for which wood is serviceable. However, the larger percentage of this waste will be unnecessary with the development of methods for utilizing it, and increased efficiency in the manufacture of lumber and other forest products.

Close utilization in lumbering is entirely dependent upon the value of stumpage and the price of lumber and other forest products to the consumer. Future high stumpage values and the higher cost of lumber will not be chargeable to increased costs of production or greater profit to the manufacturers, but will depend upon the cost of growing trees to merchantable size and the necessity for the use of wood by the trades regardless of the substitutes which are developed. Therefore, it may be said that high stumpage values and high lumber prices are the greatest incentive to close utilization.

The so-called "cause of death" given in death certificates is only the terminal cause. It is merely the "last straw" of the terrible load accumulated through life.

PHOTOGRAPHS THAT SPEAK FOR THEMSELVES



Showing the waste of fuel in smoke and the nuisance arising from hand-fired boilers. See Article on the Smoke and Fume Nuisance.

An almost total absence of smoke. A 2,700 h.p. boiler plant in operation. This plant is fired by mechanical stokers and the coal used is "slack" and crushed splint. The photograph illustrates normal conditions.

The Smoke and Fume Nuisance

Something About the Causes —The Cottrell Process as a Remedy

During recent years much public attention has been given to nuisances arising from improperly burned fuels, fumes from smelter plants, acid works and pulp mills, dust from cement works and other plants which give off obnoxious and destructive fumes and solids.

Smoke Nuisance in Cities

In many cities, anti-smoke laws have been passed for the purpose of abating this nuisance.

Dense black smoke from power and other plants is due to the improper and partial burning of the fuel. The only efficient manner in which this may be overcome is to use boilers adapted to the class of fuel on hand and firing them in such a manner as to obtain almost perfect combustion.

The use of briquettes also tends to lessen the smoke nuisance.

Fumes and Dust a Nuisance

The question of dust and fume condensation is a more difficult one to deal with. The effects of allowing fumes to be freely expelled into the air is most destructive. In the case of smelter fumes, the forestry and agricultural interests are generally damaged.

Among the different methods used for collecting the fumes and solids may be mentioned the different filter methods and electrical fume-precipitation.

The Cottrell Process Described

The Cottrell process of electrical fume-precipitation is of considerable interest on account of its wide range of application and because of the fact that the net profits resulting from these patents are to be used for scientific research. The following is a brief description of the principle involved in this process:—

The precipitation of suspended matter in gases or liquids may be accelerated by either alternating or direct current. The former acts by agglomerating the suspended particles so that, constituting larger bodies, they settle by gravity more rapidly. In other words, the electrically charged small particles take positive and negative signs and these attract each other to form larger bodies which settle more rapidly by reason of their weight. This principle has been used for settling fog by sending powerful Hertzian waves into foggy air and also for separating emulsified water from crude petroleum.

For the voluminous and rapidly moving gases of smelters this agglomerating process is too slow and direct current of high potential is used. If a needle-point, connected to one side of the direct current line, be brought opposite to a plate connected to the other side of the line, the space between, and any insulated body contained in it become highly charged with electricity of the same sign as the needle, whether positive or negative; and such body, if free to move will be attracted to the plate of opposite sign. Suspended particles of fume may thus be precipitated, not slowly by gravity, but instantly, by electricity upon electrodes.

This process has been used successfully for precipitating sulphuric acid vapour from powder works, and lead and silver refineries; solid dust and fumes with sulphuric acid from smelters; and dust from cement plants; and for many other purposes.

The amount of electrical energy used is comparatively insignificant and depends, not on the amount of matter to be precipitated, but on the volume of the gases to be treated.

Vital Statistics of Canada

A Question of National Importance—Better System of Compiling Required

The collection of vital statistics and collaboration of the same is a national matter and should in some way be directed or controlled by the Federal Government.

The present method of the registration of births, marriages and deaths is very imperfect and unsatisfactory. Being performed by the various Provincial Governments, the methods are not uniform and are not as complete as they should be.

To serve any useful purpose, vital statistics returns should be made at least weekly, to some central authority in order to permit of the compilation of monthly reports.

The system adopted in most of the provinces of Canada for the registration of births, marriages and deaths and the collaboration of the returns is under an official who holds the position of Chief Health Officer of the Province and Deputy Registrar-General. The reason for this is that the Vital Statistics Branch is the clearing house for the Health Department, and, if an intelligent use is to be made of vital statistics returns, these should be placed under the Health Branch of the Federal Government.

It might further be pointed out that all matter passing through the mails in reference to births, marriages and deaths is carried free, and, hence, a very considerable sum is saved to the Provincial Governments as well as to municipal authorities, and it would appear that, for this consideration, the Federal Government should at least insist upon a uniform system in the method of collection of data by the several provinces and upon the making of regular returns to the Public Health Branch of the Federal Government service, which branch should be required to collate the same and publish at least monthly bulletins.

It might further be pointed out that the registration of births, marriages and deaths is of national importance and is not confined to any city or province. The registration satisfies a most important legal requirement in the proving of age, paternity, etc., and it should always be considered as the brief life history of each individual in the community. Indeed, in many respects, it is of imperial, and, indeed, international importance.

If a system such as outlined is established it would obviate the necessity for the including of such information in a decennial census.

What Forestry Means

Hon. W. R. Ross Defines it Concisely

The true meaning of forestry, as it is intended to apply that science in the Province of British Columbia, was admirably expressed by Hon. W. R. Ross at the recent convention of the Canadian Forestry Association held at Victoria. He said:—"Forestry, as we practice it, means the scientific management of the Government's immense timber business so that the citizen who would otherwise have to pay $15 in taxes has only to pay $10; so that in years to come the citizen will have to pay still less; so that, while producing these effects on revenue, the system of forest finance will be so adjusted as to offer the maximum of encouragement to the growth of the lumber industry; and, above all other considerations, so that our forest capital, the source of our forest prosperity, may be preserved intact."