

Conservation of Canada's Forests

What the Commission of Conservation Has Accomplished toward Perpetuating Forest Industries

Dr. B. E. Fernow, Dean of the Faculty of Forestry of Toronto University, and Chairman of the Forests Committee of the Commission of Conservation, in commenting on the work of the Commission of Conservation in connection with Canada's forest resources, has this to say:

"I take advantage of the opportunity to congratulate the Commission on the work it has so far done through its Forestry Committee and through the Chief Forester of the Commission, who deserves unstinted praise for his active push, persistency and efficiency.

"The Commission has to its credit, first of all, the inauguration of most thorough control over forest fires along railways, which was brought about through co-operation with the Railway Commission and with Provincial and Dominion authorities. In this connection, it has to its credit the publication of some three volumes of discussion on means of suppressing fires and has successfully stimulated private endeavour in this direction.

"In this connection, also, the Commission has made an extensive study and demonstration of the result of cutting and subsequent fires on cut-over lands with regard to reproduction. This study was made on a 2,000 square mile sample, the Trent watershed, and a similar investigation has been made in British Columbia, showing that our optimistic anticipations of natural replacement of the valuable timber without human assistance are largely doomed to disappointment.

"The Commission was very properly engaged early in ascertaining the status of our forest resources and has completed and published exhaustive forest surveys of two provinces, Nova Scotia and British Columbia, and has surveyed part of a third, Saskatchewan. It has been also instrumental in bringing out, encouraging and aiding stock-taking in a fourth province, New Brunswick.

"These are all legitimate and praiseworthy activities of the Commission, whose functions are largely educative. But I would have particularly applauded the latest development of the Commission's forestry work, namely, the establishment of permanent sample plots to study in detail the results in reproduction and growth and different treatment and logging of our pulpwoods. This work has been conducted by Dr. Howe, in co-operation with several paper companies. The readiness with which this co-operation (financial and otherwise) was secured is proof of the practical value of this investigation. Indeed, this is the first systematic attempt to lay a basis for silvicultural practice, without which the forester is help-

less, and the Commission is the best agency for securing this fundamental knowledge, as could be readily argued.

"That this work of the Commission is done largely in co-operation with the staff and students of the Faculty of Forestry of Toronto University is, of course, specially gratifying to me.

"There is one more important political direction in which the Commission, in my opinion, should exert itself, namely, the transfer of the forest resources of the Middle Provinces to those provinces. Such transfer would undoubtedly lead to the exploitation of these resources. Forestry is provision for the future, and such provision means present curtailment of revenue or present outlay for the sake of future revenue. Will and can the provinces afford such a financial policy?"

High Tension Lines for Electric Power

Utilization of Water Power Resources Assisted—Mileage of Important Systems

That the high tension transmission of electric energy has been one of the most important factors in the utilization of our Canadian water power resources is plainly demonstrated in "Electric Generation and Distribution in Canada," recently published by the Commission of Conservation. The tabular statement on transmission lines contained in this report shows a total of 5,940 miles of pole line for transmission lines of from 10,000 to 100,000 volts. This, if stretched out in a continuous line, would extend about twice across Canada. Some of these lines, moreover, comprise a number of circuits each having three or four wires, and if we imagine the latter formed into a continuous length it would cover a distance of over 22,000 miles, more than seven and one-half times the mileage between Montreal and Vancouver over the Canadian Pacific Railway, or 88 per cent of the distance around the world.

Of the various high-tension networks in Canada, the Niagara system of the Ontario Hydro-Electric Power Commission is the most extensive. It includes a total of some 1,200 miles of transmission lines fed from one point, Niagara Falls, supplying over 120 municipal distribution systems. Another very important system is that of the Shawinigan Water and Power Company in the Province of Quebec, whose transmission lines, including those of subsidiary companies, cover a total of 760 miles and supply 76 distribution systems.

High tension transmission is also used in Canada to transmit electric energy from coal mines, notably in the Sydney and Amherst, N.S., districts. The company serving the latter district has adopted the slogan "Electricity from the mouth of the pit."

Some of the more important transmission systems described in the report are:

PRINCIPAL ELECTRIC TRANSMISSION SYSTEMS IN CANADA

Province and District	Pole line mileage
Ontario—	
Niagara System ("Hydro")	1,217
Severn " "	46
Waddell " "	103
Eugenia " "	47
Muskoka " "	26
Central Ont. " "	347
St. Lawrence " "	60
Nipissing " "	60
Esses " "	60
Colbalt and Engleheart (N. Ont. & P. Co.)	152
Copper Cliff " "	47
Port William " "	37
Hamilton (Dom. Pr. & Tr. Co.)	157
Lanarkshire " "	24
Toronto Power Co. " "	160
Orillia Municipal " "	40
Sudbury " "	26
Timmins (N. Ont. L. & P. Co.)	40
Quebec—	
Amqui " "	30
Theftford and Beauce (St. Francis W. P. Co.)	82
S. Can. Pr. Co. (Eastern Tps.)	116
Montreal (Mont. L. H. & P. Co.)	154
Montreal (Can. L. & P. Co.)	27
Quebec and Lévis " "	82
Shawinigan W. & P. Co.	761
Sherrbrooke Municipal " "	37
Nova Scotia—	
Amherst " "	25
Stoney " "	25
British Columbia—	
Cumberland (Can. Collieries)	26
Kanloms Kootenai " "	42
Rossland (W. Kootenay P. & L. Co.)	253
Victoria (B. C. Electric)	190
Vancouver (Western P. Co.)	90
Victoria (B. C. Electric)	110
Manitoba—	
Winnipeg Municipal " "	78
Winnipeg Electric Ry. Co.	60
Alberta—	
Calgary Power Co.	108
Edmonton " "	40
Dawson " "	39

New Uses Found for Waste War Material

British Government's Experts Make Ingenious Use of Shells and Other Military Goods

The Munitions Inventions Department of the British Government, near Esher, England, is stated to be using the most expert inventive genius and up-to-date business methods with a view to finding commercial uses for the vast quantities of waste war material which the country has in stock. The *Times* of July 8 gives some interesting results of experiments which are being carried out by the department in sheds specially erected on the riverside estate of Imber Court.

In the construction of special crane piles of wood and wire (piles having the strength of steel with only one-third its weight) for airplanes and airships, large quantities of wood sawdust accumulate. It has been found that this sawdust, on being mixed with glue and certain other substances and compressed, can be planed and worked in the same way as wood; by varying the pressure its solidity can be altered to suit the purposes for which it is required. Women's shoe heels, ear trumpets for airplane spotting machines, and many other articles can be fashioned from this sawdust material.

Shells of various calibre have been proved, by experimentation,

to have considerable commercial possibilities. The steel of which they are made is in many cases capable of being rendered glass hard, and milling cutters have been produced which are reported to have stood the most exacting tests. After a little manipulation in the lathe, an 18-pouner shell minus nose and copper band, makes an excellent shafting coupling, the copper bands selling at a good price for electrical and other purposes. A 6-inch shell of the same way becomes a most flexible coupling, and so on. Shells being already hollowed out, there is a great saving in labour and material by using them instead of solid steel for couplings and other articles, when the dimensions are suitable. A special lathe extension constructed from spare parts on obsolescent 18-pouner cartridge cases to be cut into strip brass and containers from shrapnel shells can be used, with a slight alteration, as lamps.

COMMERCIAL USES FOR AIRPLANE ENGINES AND TANKS

The most interesting and important experiments from a commercial point of view are said to be those in connection with the utilization of airplane engines for ordinary commercial purposes. By making an alteration in the carburetor it is possible to run the engines on coal gas, and with couplings from coal shells they have been connected to dynamos with very good results. While second-hand airplane engines have a limited market, it is believed that as stationary power units they will prove a useful innovation. The experiments made with them at Imber Court are said to have proved them to be most reliable and economical as motor-car engines, driving pumping apparatus, and for numerous other purposes. On one such machine an air bomb has been fitted as an expansion chamber and silencer; on another, a similar article is in use as a compressed-air chamber. A tank, with the unnecessary part cut away, and a bogey fitted at each end, has been made into a valuable workshop locomotive.

Artificial limbs and other devices also come within the scope of the Munitions Inventions Department. A portable bridge is one of the latest developments. A 50-foot length of this bridging can be carried easily on a Ford van, and, during test, such a length was unloaded, got into position, and crossed by 20 men within the space of 6½ minutes. — *U.S. Commerce Report.*

The forest fire situation in Alberta is the worst in years, according to E. H. Finlayson, forestry supervisor, who recently said that the flames were raging in many districts. Approximately 30,000 to 40,000 feet of valuable timber has already been destroyed, he announced. The most serious conflagration, in the northwest corner of Stony Indian Reserve, menaces the northern outskirts of Banff National park.