A series of small pamphlets describing the water powers of the several provinces of the Dominion have just been issued by thhe Water Power Branch of the Department of the Interior and these give the latest and most reliable information with reference to the power available in the water powers of Canada. This is set forth in the accompanying table.

	Total capacity of development.	Now developed.
Ontario	4,929,000	702,000 h.p.
Quebec	5,600,000	520,000 h.p.
British Columbia	*	230,000 h.p.
Prairie Provinces	several millions	100,000 h.p.
Maritime Provinces		38,500 h.p.

1,590,500 h.p.

One published estimation places the total available power from the waterfalls of Canada at 17,000,000 h.p., but Mr. Denis, of the Commission of Conservation, states that "this does not and cannot rest on any basis of reliable information." The statement, however, is made in one of the Government reports just mentioned that "The outstanding feature of the water power situation in Canada is the fact that practically all industrial and commercial centres in the Dominion from coast to coast have sufficient potential water power within easy transmission radius and of sufficient capacity and assured economic feasibility of development to meet all anticipated requirements for the future."

Ottawa now has developed from the Chaudiere Falls 36,000 h.p., which could be raised to 84,000 h.p.

The following is a statement of the water powers which supply power to the city of Montreal:—

	Capacity of	Now
	development.	developed.
Cedars Rapids	. 500,000	180,000*
St. Timothe	. 50,000*	20,000
Soulanges Canal		13,000
Lachine	. 400,000	13,000
Chambly		20,000
Shawinigan Falls, Grand Mer- and other falls of the St	e .	
Maurice	. 650,000	258,000
		504,000

\*On completion of present installation.

A recent report makes the statement that "having considered the leading sources of power in the Montreal district, it is not difficult to realize that this city enjoys a more bountiful supply of cheap power than any other city in the world."

The Grand Discharge of the Saguenay also is a water power from which it is estimated that 1,000,000 h.p. can be developed, while 240,000 h.p. can, it is estimated, be developed from the Lower Falls of the same river.

(Dr. Adams then describes the work and extent of the Hydro-Electric Power Commission. Lack of space prevents the inclusion here of this portion of the address, the subject having already been fully covered by *The Canadian Engineer*.)

Lest we should feel unduly elated by the consideration of the great amount of power to be found in Canada, we must remember that several very eminent foreign electrical engineers have expressed the opinion that only relatively few of our water powers would be found capable of furnishing large amounts of power at a price which would enable them to compete with the water powers of other countries as a basis for manufacturing industries.

These opinions were based on the undoubted fact that most of our falls have a low head and large discharge. From such falls the development of power is expensive. Then there is the long winter which reduces the flow of water and induces other complications as well. The remoteness of many of the falls and the high cost of labor are other adverse factors.

One eminent authority has gone so far as to say that Niagara Falls and Shawinigan Falls are the only two centres from which very large sources of power supply can be expected.

These opinions, expressed by Messrs. Dalemont and Pitaval and others, are, however, no longer valid, for through the advance of engineering knowledge and the improvement of engineering practice much more power can now be obtained from low-head falls than could formerly be obtained from water powers of this character. The statements of these engineers must, therefore, be very largely revised in the light of recent engineering knowledge and development. Many of the opinions which they expressed are now quite obsolete. It is well, however, for us to remember when we are considering the future development which may be expected from the water powers of the Dominion, that there is a certain element of truth in their observations.

(The author then outlines the development and extent of the Niagara power situation, dealing first with the concentration of ownership and control and then summarizing the outstanding features of each of the developments in operation there.)

Two very important questions are bound up with the subject of our water powers. (a) The first is the question of lease and ownership. (b) The second is the question of the right of exporting electrical power.

The title of all water powers within a province (with a few exceptions) belongs to the Provincial Government, the title of those in Dominion lands to the Dominion Government.

In the United States there has been, and still is, a very vigorous attempt on the part of big interests to get control of all the important water powers in the Republic. This has given rise to a very vigorous popular opposition in favor of government restriction. This agitation is now being carried on. The ideal aimed at is that the government should sell no power falls, but should lease them under proper conditions and with suitable restrictions. Thus the lease should run for a term of years, say, 20, and be renewable for a further term if conditions had been satisfactorily complied with-the royalty being at that time readjusted, if necessary. Further, the development of the power would have to be made within a certain specified time, and provisions should be made in constructing the dam so as to obtain eventually the maximum power which the waterfall will yield, otherwise the river may be so dammed as to produce a small horse-power and spoil the fall for the subsequent development of more power.

The character and value of the restrictions differ under the various Federal and State Governments, but the tendency of the government representing the interests of the people is to lease the falls under these and similar restrictions, while the tendency of the big interests is to secure the permanent control, and if possible, absolute ownership of all the water powers in sight, even although they cannot make use of them all at the present time.

The other important question for Canadians is that of the export of power derived from waterfalls. Under the Dominion "Electricity and Export Fluid Act" no one