to the Lake of the Woods. Convention and Protocol and Rainy lake Inc. orders. Two other sub-offices located in Ontario are one at Niagara Falls and the other at North Bay. The North Bay office is there to service that part of northern Ontario including the Abitibi, Mattagami, White river et cetera. We have to keep staff in the Niagara Falls sub-office in order to secure detailed information from the power entities on both sides of the border to ensure that the provisions of the 1950 Niagara treaty are being observed by both countries.

In Quebec province, the survey is operated in the Montreal district office with a sub-office located at Senneterre, for work in northwest Quebec and another sub-office at Rimouski for the lower St. Lawrence and Gaspe area. A further sub-office will be in operation at Seven Islands I expect this year.

In the Maritime provinces the district office at Halifax looks after all work in Nova Scotia, New Brunswick, with a sub-office at St. John's which does all the work for the island of Newfoundland.

The branch work in Labrador is covered by the Halifax office rather than from St. John's simply because with existing airline arrangements it is easier to get from Moncton to Seven Islands, the base of the charter planes at the present time, than it is to go from St. John's.

As Mr. Patterson has mentioned, in the hydrometric surveys there are about 1,200 gauging stations. I think at last count it was about 1,268. That is at March 31, 1959.

These are distributed by provinces; 332 in British Columbia, 154 in Alberta, 151 in Saskatchewan, 123 in Manitoba, 215 in Ontario, 194 in Quebec, 13 in New Brunswick, 18 in Nova Scotia, 20 in Newfoundland, 40 in the Yukon territory and 8 in the Northwest Territories. The reason, of course, for the disparity in numbers is that the gauging stations are installed normally for one of two over-all purposes, one, the desire on the part of the branch itself or upon the part of one of the provincial cooperating agencies for additional information on a particular river or rivers; secondly, in the territories the requirement that the branch along with other parts of this department of Northern Affairs and National Resources endeavour to appraise the water resources of those territories which are still under federal government control.

Now, with that short run down on the organization I would like to say a few things about factors affecting run-off, because these factors are the basis of the requirement for work of this nature.

Now, in the paper which has been handed around there is a short paragraph on this subject commencing at page 1 which states that water, as found in the lakes, streams and oceans, is being renewed constantly by precipitation in its various forms, and is transported from place to place in either surface or underground channels. On the other hand, it is being diminished constantly in quantity by the various agencies of percolation, transpiration, evaporation and run-off; these several agencies have widely varying effects from time to time and place to place. Consequently, the amount of water present at any specific time at any particular place is an extremely variable quantity because of the interaction of many inconstant factors.

An example of the great variability of stream flow at a particular place over a period of time occurs on the Red river at Emerson, Manitoba, where the drainage area is approximately 40,000 square miles, and the flow has been recorded systematically for 45 years. The river flow at this station varied from almost zero during several days in February 1937, to about 95,000 cubic feet per second in May 1950, and there is evidence that within the last 150 years there were floods which exceeded this recorded maximum.

The factors affecting stream flow, although they may be subject to direct measurement for any given instant of time, cannot be predicted beyond that