Outstanding Facts And Features Concerning N. B.: An Interesting Paper

The Province Has a Wonderful Coast Line, Which Is Well Sheltered—The Great Tides of the Bay of Fundy—Petitcodiac's Tidal Bore and Saint John Reversible Falls.

Following is the full text of a paper recently read by Rev. Dr. A. F. Wightman of this city, before the York-Sunbury Historical Society:

While the several provinces of Canada have much in common, they each also have their own individuality, physically, historically and in other respects. No doubt each has made its own special contribution to the country as a whole. Canada, being a country of continental proportions, striking contrasts and wide diversities, is taken for granted. But even in the lesser group, such as the Maritimes, there exists a wide range of interesting contrasts and contributions to each other and to the whole Dominion. In this connection it may justly be claimed that New Brunswick ranks second to none among a brilliant family of comely and illustrious sisters.

Of Human Interest

These distinctive features are varied and embrace almost every phase of human interest, such as nature, history, science, literature, invention, adventure and statesmanship. Some of these will here be discussed. This member of the Maritime group is frequently spoken of as the "Loyalist Province"—a term of which she is proud. She might just as truly be termed the "Cinderella" among her Maritime sisters, since with all her charms and achievements she has, with becoming modest, remained in the background. The facts, however, speak for themselves.

A brief paragraph concerning this little sister in the big Dominion family may here be given, by way of a general introduction. As compared with all the provinces west of the Maritimes, New Brunswick is not conspicuous in area. But, after all, size is merely relative. As compared with other members of the Maritime group, she has some thousands of square miles more than half of the combined Maritime area. To be more definite, she covers twenty-eight thousand square miles, being somewhat larger than the mainland portion of Scotland. and also slightly larger than the Irish Free State. Or, again is about equal in area to New Hampshire, Vermont, Massachusetts and Rhode Island combined more than double the size of the Netherlands, larger than Belgium and Denmark combined, and nearly twice the size of Switzerland. If her population were proportionately the same as Rhode Island, she would now carry about sixteen million people. So, while regarded as one of Canada's small provinces, she nevertheless, far outclasses many states of the neighboring Republic and some influential nations of Europe.

Natural History

Coming now to the sphere of natural history we find a number of features of unique and absorbing interest, some of which are peculiar to New Brunswick as among the Maritimes, and a few which are not duplicated in any part of the world. Wherever there is material substance there is a chapter of natural history and often of striking interest. In this connection New Brunswick may be said to furnish a complete volume rather than a mere chapter. These interesting features can, of course, only be briefly referred to.

Geologically the province represents about every known period. The oldest and the newest, in places, lie near together. Though separated by aeons of time, they are near neighbors in space. The land, in places, has been deeply furrowd by the desolating glacial ages, torn by earthquakes and scorched by volcanic fires. She has mountain peaks up to three thousand feet and large areas hardly above sea level. These features, together with mighty rivers, numerous lakes, vast forests and a long and varied sea coast, lend a variety to her scenery and resources, which are difficult to equal. In this respect, the contract with the neighboring province of Prince Edward Island, scarcely ten miles away, is striking indeed. While the charming Island Province has a peaceful pastoral beauty all her own, nature has touched her lightly. She is the new born babe beside her aged sister; neither glacier, earthquake or volcanic action have ever disturbed her new red sandstone foundations. Here, surely, are unique contracts side by side. But if New Brunswick has the rugged and broken type, she also has the low and level features in abundant measure. There is the extensive central basin, once a mighty lake, also the enormous areas of dyked lands reclaimed from the sea, and the broad river intervals of ancient silting processes. So rich are some of these latter that they have been appropriately called "Little Egypt."

Well Sheltered

Another natural peculiarity is that, while washed on three sides by salt sea water, she is at no point exposed to the ocean or its storms. Gaspe Peninsula, Prince Edward Island and Nova Scotia act as sheltering breakwaters and windshields, which afford complete protection from Father Neptune in his angriest moods. This sheltered position naturally reacts most favorably on climatic conditions. The summer isotherms, which circle the New England States, also embrace New Brunswick. This, in turn is reflected on the natural flora of the province as compared with the maritimes in general. Here, and here only, are found many types such as the wild grape vine, the satin walnut, American linden and arborvitae, all natives of New Brunswick forests.

Ice Free Harbor

To New Brunswick also belongs the rather unique distinction of having the most northerly absolutely ice-free harbor on the Atlantic coasts of North America. This is not wholly the result of a favouring climate but results from a combination of couses. The point to stress is that these causes are absolutely effective, so that when Portland, Boston and even New York, as at times occurs, are temporarily blocked with ice, Saint John and other New Brunswick harbors are as ice-free as in mid-summer. By this means New Brunswick is in a position to make a most valuable service contribution to the whole Dominion, by way of easy Atlantic winter connection with the open sea and the world at large. The value of this avenue was fully demonstrated during the war years, and is becoming increasingly appreciated for general commerce.

Highest Tides

Our coastal waters present other unique features and contrasts not generally known. It may be rather surprising to learn that the southern coasts have the highest tides in the world and the coldest sea water in the region, while the northern coast, two hundred and fifty miles away, have the warmest summer sea temperatures north of Matteras, and the least tidal disturbance in the East. The explanation of these peculiar contrasts in temperature is easy and simple, and it may be briefly summed up in the terms of extremes of tidal ebb and flow. In the south they are extremely high, rising at times to over thirty five feet in the perpendicular, while in the north, tides are at the minimum. The causes of these extremes would make an interesting story, but is too long for this article.

The Tidal Bore

Fundy's phenominal tides, which are shares by Nova Scotia, nevertheles furnish New Brunswick with a few freakish features, which are seldom or never duplicated in any part of the world. One of these is the "tidal bore" of the Petitcodiac River, which flows into the head of the Bay of Fundy. Into the broad funnel-shaped mouth of this river flow all the gathering force of Fundy's pent up tides. As the river narrows, the waters are compressed and soon form a tumbling wall of rapidly moving water at times, with a five-foot face. This moving and tumbling wall of water is a truly specacular sight as it hurries along at the rate of eight or ten miles an hour to be finally dissipated in the river's higher reaches. At a convenient point on the waterfront of Moncton City a small park has been set apart where this strange spectacle may be seen to advantage. As the time of the "bore's" passing varies with the ocean's tides, some three quarters of an hour later on each successive visit, the exact minute of its approach is pubished in the daily papers for the convenience of sight seers. There is an occurrence something like this in one of the rivers of China, but still New Brunswick's display is unusual and even unique.

Reversing Falls

A second tidal phenomenon, absolutely unique in all the world is the famous reversing falls at the mouth of the Saint John River and within the city limits. Here the mighty volume of the river and its many tributaries pour through a narrow rocky gorge into the harbour. Within this gorge, four brief periods each day, the water is placid, and large vessels may pass to and fro. But four times in twenty-four hours, there is a mighty fall or cataract, making navigation impossible and fatal to any craft attempting it. Two of these recurring falls are outward toward the sea, but the peculiar fact is that twice each day the fall revers,es itself and the sea waters tumble up stream.

A Puzzled Visitor

The story is told of a party of strangers visiting the city, to whom the existence of this reversing fall was unknown. From the hotel, one of the party sallied forth to see the sights, and boarding a street-car, was borne out to the bridge which spans the forge just over the falls. They were at their best, and the water was tumbling toward the sea in spray and foam, which seemed proper enough. On his return he told his friends of the wonderful spectacle he had discovered so near at hand, the result of which was that the whole party took the electrics the next day to see the sight. The falls were there all right, and all enjoyed the sight, but the leader of the party was disturbed and bewildered ;the water seemed to be going in the opposite direction to that at the previous visit. Could he be mistaken? He ventured to explain the cause of his bewilderment to his friends, but they made a joke of it and laid his confusion to lack of proper orientation in strange surroundings. A waterfall must always run in the same direction they argued; but he was unconvinced, and decided to return the next day in order to clear up the mystery. But, wonder of wonders! On this third visit there was no fall of any kind either out or in, and ships were passing through the quiet waters.

Why the Falls

This strange phenomenon of a reversing fall is easily understaad after a little explanation. Let is be remembered that the normal level of the river is approximately half way between high and extreme low water in the harbor where a difference of some thirty feet in the perpendicular is not unusual. The narrow gorge prevents any appreciable change in the level of the river by the changing tides of the harbour. This being so it will be apparent that at low tide the sea level is say, fifteen feet below the river level and the fall is outward; but at high watr in the harbour, the level is far above that of the river, and the fall is reversed, being inward or up river. The water does not actually run up hill, but it seems to be doing so. At half tide, or "slack water," the level of the harbour and the river is the same and there is a brief period when as stated there is no fall or current in either direction.

Of Great Value

This narrow gorge at the river's mouth, in addition to making possible this unique reversing fall, is of the greatest value to a large part of the country. If the river had a broad open mouth as rivers generally have, it would drain out at low tide, leaving shoals and mud flats far inland, to the detriment of navigation; and on the return of the tide, the water would rush far inland, inundating large areas of low land. As it is, this unique provision of nature prevents these tidal disturbances, to the economic and scenic advantage of the country, and without a cent of cost to government or people. The flat nature of a large section of the interior basin means that it can be slightly below sea level at high tide and yet be safe from inundation because of this narrow rocky through friendly, gorge at the river's mouth. This fact might rank as still another unique tidal freak of nature.

The Mineral Realm

Before turning from nature's freaks, another curiosity may be mentioned. This is found in the mineral realm. A mineral substance, not found in any other part of the world, and at one time extensively mined, is found here. Since this deposite exists in Albert County it has been given the name "Albertite," and is so designated geologically. At first sight it has the appearance of anthracite coal, being shiny black. But albertite differs greatly from any kind of coal, chiefly in specific gravity and texture. It is extremely light in weight and has no stratification or lines of cleavage. Scientists have decided that it was originally a deposit of crude petroleum but, lying near the surface, it lost its liquid form and became a solid mineral. It was very valuable economically, before the discovery of petroleum by boring in the oil fields Large quantities of this substance was formerly mined and distilled into paraffin oil before the days of the cheap-

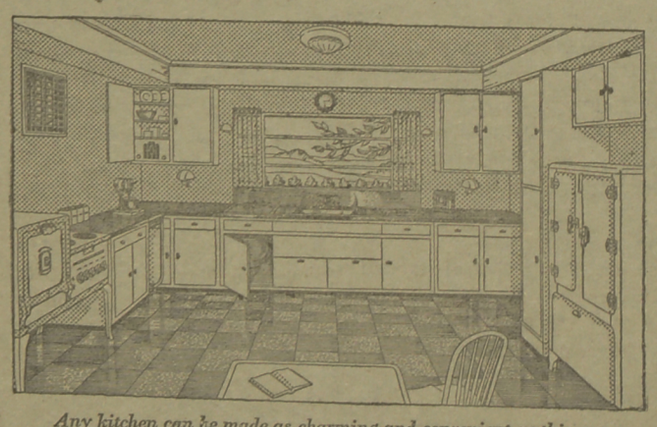
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