

tion of the surface it exhibits, constituting but a small portion of the whole, had been completed. The river St. Lawrence, in the whole distance, has been correctly mapped by Captain Bayfield, on the scale of nearly an inch to a mile; but above Portneuf there are no exposures of rock at the water's edge, and Bayfield's map extends little beyond the margin. In consequence of the want of a suitable map, it became necessary to go over the whole ground on foot, and to measure every road and line of exploration travelled. The bearings of these roads and lines were determined by prismatic compass, and the distances by pacing, care being taken to note, in their proper places, all exhibitions of the strata, all economic deposits, and other objects worthy of remark. The weariness resulting from the attention required to count one's paces accurately every day, and all day long, for five or six months of assiduous exploration, is best understood by those who have made the attempt. In that part of the country between Montreal and Three Rivers, I was aided by Mr. Richardson, a diligent explorer, mentioned in last year's Report; and as saving me some time, I have to express my obligation to Mr. Hale, of St.-Anne-de-la-Pérade, who was so kind as to supply me with a detailed and accurate map of the seigniory, as well as of a part of the seigniory of the Grondines. The map resulting from our own measurements, when protracted on a scale of one inch to a mile, brings out the distances of marked points on the river, to correspond very well in general with the same as laid down by Bayfield.

The country which lies between the upper end of the island of Montréal and Cape Tourmente on the left side of the St. Lawrence, and occupies the space intervening between the river and the flank of the metamorphic hills, to which Mr. Garneau in his History of Canada has given the name of the Laurentides, has a length of about 200 miles, and it gradually widens from a point at Cape Tourmente, to about thirty miles at Montreal, having thus an area of about 3000 square miles. It presents a general flat surface, rising in many places by abrupt steps, (the marks of ancient sea margins) into successive terraces, some of which are from 200 to 300 feet above the level of the river, and the whole have a general parallelism with it. These terraces are occupied by clay and sand, and, the latter predominating, gives them as a whole, a light soil. In some parts extensive swamps prevail on the terraces, but there is not a lake in the whole area. The rivers which cross it, (some of them large streams, of which the St. Maurice is the greatest) descending the flank of the metamorphic hills, all give a succession of falls and rapids before reaching the plain, affording a great variety of picturesque and beautiful cascades, and yielding a vast extent of water-power, capable of application to sawing timber and other manufacturing purposes. Quitting the metamorphic rocks, these streams at once cut deep into the softer deposits of the plains, sometimes at a leap attaining nearly the level of the St. Lawrence, and intersect the country by numerous nearly parallel ravines; they generally display steep banks of clay and sand, but in a few instances run in troughs, exposing perpendicular sections of slightly inclined strata of limestone or black shale, piled upon one another to the height of from twenty to eighty feet.

The name which has been given in previous Reports to the rocks underlying the fossiliferous formations in this part of Canada is the Metamorphic series, but inasmuch as this is applicable to any series of rocks in an altered condition, and might occasion confusion, it has been considered expedient to apply to them for the future, the more distinctive appellation of the Laurentian series, a name founded on that given by Mr. Garneau to the chain of hills which they compose.

The geological formations which underlie the district in ascending order would thus be as follows:

1. Laurentian series.
2. Potsdam sandstone.
3. Calciferous sandrock.