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Pocket's Rapids and the Allumettes Falls, to the flourishing settlement of Pembroke, making a short excursion up the Muskrat River on our arrival there. From this we examined the south shore of the Upper Allumettes Lake to the mouth of the Petewawe, and crossing over to Fort William, where we were welcomed by Mr. Brown of the Hudson Bay Company, in charge of this Post, we skirted the north side to the entrance of the Deep River. This splendid reach of the Ottawa was examined on the north side, and portaging at the Joachim Falls, we reached the mouth of Bennett's Brook, about five miles further up the river.

This constituted the highest point to which the Ottawa had been surveyed. It is somewhat under 150 miles above Bytown, and in the investigation of the country, as we passed through it, I was indebted to Mr. McNaughtan for the use of a map on the scale of four miles to an inch constructed partly from his own original Surveys and partly from compilation, which, being the only one I had seen representing the measured parts of the Ottawa and its tributaries with fidelity, proved of great value.

With a view to connect the geological features which might present themselves in higher portions of the river, it was considered expedient, in continuing our exploration, to dial and measure our course. In the determination of our distances we availed ourselves of Rochon's Micrometer Telescope, the instrument which had proved so serviceable and expeditious a means of measurement, on my previous year's exploration across the Peninsula of Gaspé, by the Chat and Cascapedia. A theodolite was used to determine our bearings; and proceeding from point to point on one side or other of the river, the form of that opposite was ascertained by cross-bearings on fixed objects from the extremities of our lines. Where rapids existed, the difference of level between smooth water at the foot and head was ascertained by means of a good levelling instrument and staff, with readings to the hundredth part of a foot; and the general rise in such parts of the stream as afforded no serious impediment to the progress of our canoes, was computed from the flow of the current. The quality and attitude of the rocks were registered as we advanced, after being minutely examined wherever occasion required, and Mr. McNaughtan materially aided the work, by entering in his field-book an eye-sketch of the river and banks, preserving many minor turns which would otherwise have been lost in the subsequent delineation. The measurements of the day were plotted in our tent at night, by which means we were always prepared by the inspection of our map the better to understand the geological relations of separate parts, and to take advantage of the conclusions such relations might suggest. This part of our Survey occupied seven weeks; and, notwithstanding the weather was of the most unfavourable description for upwards of one half of the time, there having been scarcely a day without rain, we were enabled to add to the topographical delineation of the country 150 miles of the main trunk of the Ottawa to the head of Lake Temiscamang, thirty miles of the upper part of which required a double share of measurement, in consequence of its breadth, which widened out to six miles; and about fifty miles on the chain of lakes constituting the Mattawa or Little River, (a tributary falling in on the right bank seventeen leagues above our starting point,) including the portage to Lake Nipissing, and a few miles on the shore of this on each side of the *débouché* of the Rivière à la Vase, which belongs to the Huron waters.

In our excursion up the Mattawa to Lake Nipissing we were indebted to the Agent in charge of the Hud-

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son Bay Company's Post at the mouth of the river, for the loan of a canoe of a size more easily managed than the larger one of our own, and its lightness saved our men some fatigue at the numerous portages we had to cross in ascending and returning. On reaching Fort Temiscamang, another of the Hudson Bay Company's Posts, situated about eighty miles above the mouth of the Mattawa, we experienced the attention of Mr. Severight, in charge of the Post, who, in addition to extending to us his hospitality, supplied us with much useful information, presenting us with a Register of Meteorological Observations, shewing the monthly mean temperature, with the state of the weather at the Fort for two years, to the end of October last; and permitting us to copy an eye-sketch of 200 miles of the main trunk of the Ottawa, from its sources to Lake Temiscamang, where our own Survey ceased; being the joint production of Mr. Cameron and Mr. McKay, gentlemen whose intimate knowledge of the interior renders their delineation of much value. Mr. Cameron, after having been many years connected with the Company, has, I believe, returned to Britain; but Mr. McKay is still in their employment, and his presence at the Post afforded us an opportunity of obtaining from him an addition to the map, comprising a considerable area on both sides of Lake Temiscamang, including the sources of the Rivière du Moine and Keepawa on the east, and those of the Montreal and Metabecchuan on the west, together with Lake Temagamang, the waters of which flow into Lake Huron by Sturgeon River and Lake Nipissing. On the sketches of this gentleman I am disposed to place considerable reliance. He appears to possess a remarkable precision of memory and facility of delineation in representing geographical facts. It is surprising to observe the close resemblance which his figure of Lake Temiscamang bears to that resulting from our admeasurements, and taking this as a criterion of the probable accuracy of other parts, I cannot but consider myself fortunate in the obliging readiness with which Mr. McKay has given me the benefit of his knowledge and skill. We were also indebted to Mr. Robert, and his brother, Mr. Naldo McConnell, the former residing about eight and the latter about sixteen leagues above the Mattawa, whose avocations connected with the timber trade have carried them much into the woods, for sketches of some of the interior water communications in the country on the east side of the Ottawa, ranging some distance below and above their *chantiers*.

As a test of the general correctness of the topographical part of our Survey, it may be remarked that there appear to be no discrepancies of any moment between our latitudes by observation and by account; they agree to within about thirty seconds at our starting point, the mouth of the Mattawa, the mouth of the Vase on Lake Nipissing, and the mouth of the Keepawa, about twenty-one leagues above the Mattawa on Lake Temiscamang, but we were not so fortunate as to obtain any observations at the most northern part of the lake, to which our measurement extended. It gives me pleasure to state that those measurements on the Ottawa and the various geographical details we have been enabled to collect, have been made available to Mr. Bouchette in the construction of a new edition of his Map of Canada, shortly to appear before the public; the details will fill a space which has hitherto been a considerable blank in the representation of that part of the Province to which they belong; and the past season's work of my Assistant, Mr. Murray, will contribute to the same map a correct delineation of the Matau, the St. Anne, and the St. John Rivers, three considerable streams in the District of Gaspé, in addition to the Chat, the Great Cascapedia, and the Bonaventure, in the same District, surveyed the previous year.