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THE GRAND FALLS OF LABRADOR.

A FUGITIVE article relating to a great cataract in Labrador, appeared in several newspapers during the early part of 1891. It referred to the stories current among the Indians and voyageurs which tended to prove the existence of such a great waterfall on the upper waters of the Grand, or Hamilton, River, and ascribed to it the stupendous height of 1500 feet. This attractive piece of geographical news, with its apparent flavor of aboriginal hyperbole, chanced to catch the eye of the present writer. An examination of the literature relating to Labrador which was accessible revealed the suggestive fact that although it was probably the first part of the mainland of America visited by Europeans, yet, in this last decade of the nineteenth century, one must seek there for the largest unexplored area on the western continent. Many generations of mariners and fishermen have sailed along Labrador's bleak coast, since John Cabot visited those shores in 1497 ; and all have borne abroad the fame of its arctic climate and desolate seacoast. The uninviting character of its rocky seaboard has thus given a bad name to the whole country, and in this we must find the reason why Labrador has received so little attention from explorers.

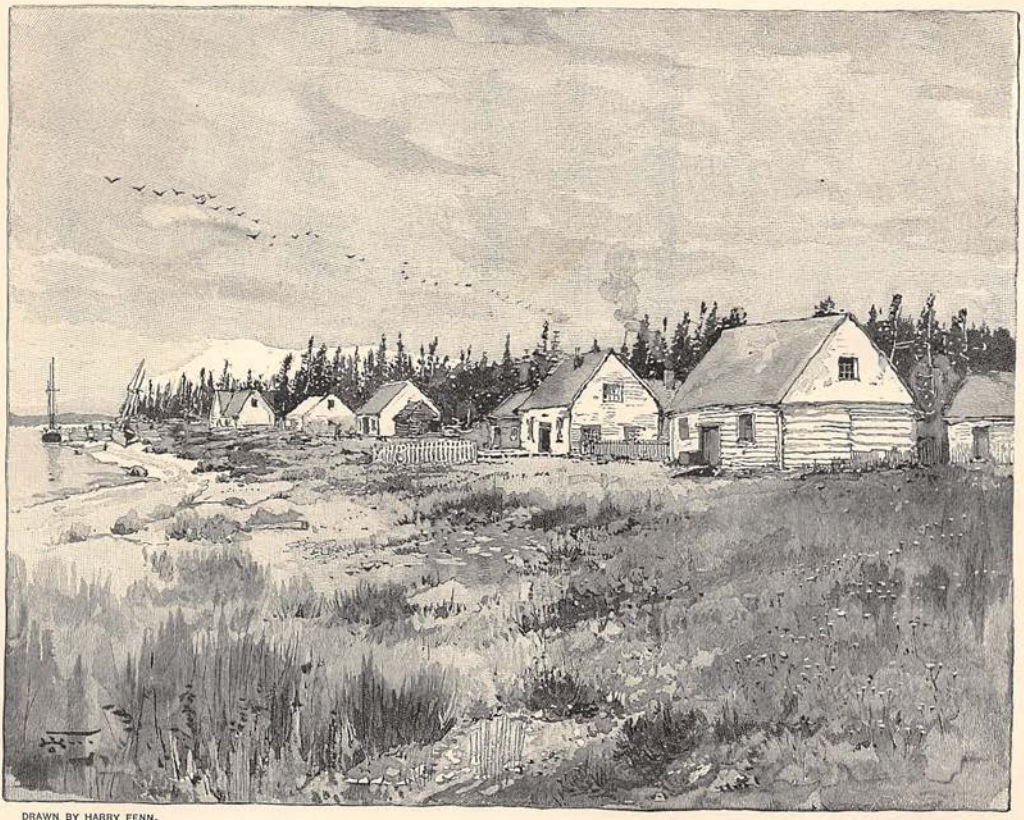
A glance at any of the maps of the peninsula which have been published will show them to be very defective specimens of chartography. None of the maps show the river-systems and lakes with any degree of accuracy. It has long been assumed, however, that the interior contains a great table-land. The highest portion of this elevated region is probably in the southern part of the peninsula, where its greater rivers have their source. The most important of these, the Grand, or Hamilton, River, rises in the lakes on this table-land, and flows in a general southeasterly direction a distance of nearly 400 miles into Hamilton Inlet, the great marine estuary which, under different names, penetrates the interior a distance of 150 miles. No scientific explorer has penetrated far into the country, and the imperfect knowledge of this vast territory (estimated to contain 289,000 square miles) rests entirely on the vague reports of Indians, a few missionaries, and information furnished by some agents of the Hudson Bay Company.

Interesting as these researches were, they yielded but little real information relating to the configuration of the interior. Enough was learned, however, to establish the existence of the Grand Falls, and to show that the time had long since passed when any enterprising traveler could claim the honor of their discovery.

The traditions of the Hudson Bay Company affirm that two officers of the Company visited the spot many years ago. The first of these, John M'Clane, was unquestionably the first white man to gaze upon this remote cataract, which he discovered in the year 1839 while engaged in seeking an inland route between two

posts of the Company. Twenty years after M'Clane's visit, Joseph McPherson was guided to the spot by an Iroquois Indian named Louis-over-the-fire, who is still living, an aged pensioner of the Company, at Northwest River Post. These are the only white men who, previous to the summer of 1891, are known to have seen the Grand Falls. Neither M'Clane nor McPherson measured the height of the Falls, and, in fact, it does not appear that the latter ever gave any account of his visit to this region.

To continue the brief record of Labrador exploration, mention should be made of the journey of Professor H. Y. Hind, who thirty-one years ago started from the Seven Islands, on the St. Lawrence coast, and ascended the Moisic River a distance of 120 miles. Strictly speaking, the territory drained by this affluent of the St. Lawrence is not in Labrador proper, but is embraced by the eastern borders of the province of Quebec. In the account of his explorations Professor Hind first advanced the statement that the interior plateau of Labrador attained a height of over 2200 feet, and this idea has been accepted by most writers on the subject. Then ensued a long period during which no traveler or trader disturbed the loneliness of this remote wilderness. Fort Nascopie, the only interior post of the Hudson Bay Company, was abandoned some twenty-eight years ago, and the inland trail to it, which passed within fifty miles of the Falls, was disused in the interval. No one endeavored to ascend the Grand River, and the dim tradition of the Falls was almost forgotten. At length, in 1887, a young Englishman, R. F. Holme of Oxford University, journeyed to Labrador and started up the Grand River, having the Falls as the objective point of his expedition. He relied on Professor Hind's statement that the cataract was 100 miles from the mouth of the river, and consequently found himself insufficiently equipped for what proved to be a much longer journey. With a boat and two men, he pluckily surmounted the difficulties of river navigation, and reached a point about 140 miles from the mouth of the river, when he was obliged by the failure of his provisions to turn back.



DRAWN BY HARRY FENN. NORTHWEST RIVER POST. (FROM A PHOTOGRAPH.) ENGRAVED BY P. AITKEN.

Believing a visit to the Grand Falls presented no insurmountable obstacles, and confident that such a trip would yield interesting geographical results and exciting sport with rod and

DRAWN BY HARRY FENN. ENGRAVED BY E. H. DE L'ORME.

PART OF THE LOWER OR MUSKRAT FALLS OF THE GRAND RIVER. (FROM A PHOTOGRAPH.)

gun, the writer determined to essay the voyage. Preparations for the journey were made in the early part of June, 1891. The various articles of equipment were gotten together with some care, and included, among other things, a Rushton canoe sixteen feet in length. An associate who entered with enthusiasm into the enterprise was found in Professor C. A. Kenaston, of Washington, D. C., and on June 23 we sailed from New York on the steamship *Portia* for St. John's, Newfoundland, where we arrived on the 29th of the same month. After an unexpected and vexatious delay here of over two weeks, we sailed from St. John's on the small steamship *Curlew*, the boat engaged by the Newfoundland Government to carry the mails on the Labrador coast during the summer. After calling at several ports on the northeastern coast of Newfoundland, our stanch little craft turned north, and, steaming through the dense fogs of the Strait of Belle Isle, soon revealed to our eyes the wild and desolate coast of Labrador. The four-days' sail along this coast proved to be most enjoyable, and formed an impressive introduction to the rugged northland which was to be the scene of our wanderings. On July 23, the *Curlew* landed us at Rigoulette, in Hamilton Inlet. This is the chief station of the Hudson Bay Company in Labrador, and at the time of our visit was in charge of Chief-factor Bell, a veteran officer of the Company. A small schooner having been placed at our disposal by Mr. Bell, the following day we continued our journey inland, sailing westward for ninety miles through the great interior basin known as Melville or Grosswater Bay.

Northwest River Post, at the head of the bay, where we arrived on July 27, is the most inland station of the Hudson Bay Company, and is the chief trading-point of the Montagnais, or Mountaineer Indians, who make annual visits to this post to meet the Roman Catholic missionary, and to exchange the outcome of their winter's trapping for supplies and ammunition. Many of the Indians had already visited the post and returned to the interior; but a number were still encamped in the neighborhood. A few half-breed "servants" here live in cabins, which cluster about the ancient storehouse of the Company. The Grand River flows into the bay twenty-five miles from here, and at this point preparations were made to ascend that river. Marvelous tales anent the raging rapids and dangers of the river met us at the post; but by securing the aid of a number of Indians and their canoes, we hoped to overcome all these difficulties of inland navigation and gradually to work our way up. A grievous disappointment as to this part of our plans was in store for us. In addition to their natural disinclination to engage in an undertaking involving so much hard work, we found that a superstitious dread of the Grand Falls obtained among the Indians. They believe the place to be the haunt of evil spirits, and assert that death will soon overtake the venturesome mortal who dares to look upon the mysterious cataract.

As is well known, the Eskimos of Labrador dwell on the coast, and seldom venture far into the interior. Hamilton Inlet may be regarded as the southern boundary of their habitat, which stretches north to the shores of Hudson Strait. Contact with civilization seems to lessen the vitality of this interesting race, and the Moravian missionaries declare that, like the Eskimos of Alaska, they are gradually decreasing in numbers.

The great wilderness of the interior is the home of the Indians. These belong to the Cree nation of the Northwest, and are divided into two families: the Montagnais, or Mountaineers, who are found as far west as Lake St. John, in the province of Quebec; and the Nascopies, a less numerous tribe, who dwell on the barren grounds extending to the far north.

All the Indians who resort to the trading-post are nominally Roman Catholics; but as the ministrations of the priest extend over a period of only three weeks each year,—during which all marriages and baptisms are solemnized,—there is time in the long interval for many of the precepts of the Church to be forgotten, and for inherent superstition to assert itself. The heathen element is exemplified in the survival of the native medicine-men, or "conjurers" as they are termed, who undoubtedly wield much influence over their followers. The priest exerts himself to lessen the authority of this savage hierarchy; but it is well known that, away from his watchful care, the old barbaric incantations and prophecies are still practised. As a result of their almost complete isolation, these Labrador Indians show but few evidences of contact with white men, and their mode of life and customs present many aspects of interest to the ethnologist. The Nascopies, who dwell about the lacustrine basins of the northern part of the peninsula, are closely allied to the Mountaineers in language and habits, but are a more hardy and primitive people. Their clothing is entirely composed of reindeer-skins, and many have no intercourse whatever with white men. Numbers of them, however, make annual visits to Fort Chimo, a station of the Hudson Bay Company near Ungava Bay, where, in exchange for their pelts, they obtain flour, ammunition, and a few other articles. We were informed, by one who lived two years at this fort, that the savage custom of killing the old and helpless still prevails among the Nascopies. The victim is not despatched outright, however, but is supplied with sufficient food to last a few days, and is then abandoned to a cruel death by starvation.

Thwarted in our project of Indian coöperation, we nevertheless resolved to make the best of the situation, and our party on starting up the river comprised, besides Professor Kenaston and the writer, John Montague (a strong young Scotchman, well acquainted with the lower part of the river, and the man who had accompanied Mr. Holme in 1887) and Geoffrey Ban, a full-blooded Eskimo, whom we had brought from the coast. Geoffrey was a typical specimen of his race, strong and of stocky build, with a swarthy, Tatar cast of features, and a cheerfulness of disposition which the vicissitudes of travel seldom ruffled. A strong river boat, eighteen feet in length, was obtained for the trip, and in this were placed the supplies, instruments, and other necessary luggage. The canoe, which contained the tent and a few smaller articles, was tied to the stern.

On August 3, our little company of four bade adieu to friends at Northwest River, and we turned our faces toward the wilderness. For two days a favoring wind filled our sail, and on the third day we reached the lower falls of the Grand River, which are called Muskrat Falls by the trappers, and are twenty-five miles from the mouth of the river. Parallel chains of hills here encroach on the bed of the river, contracting

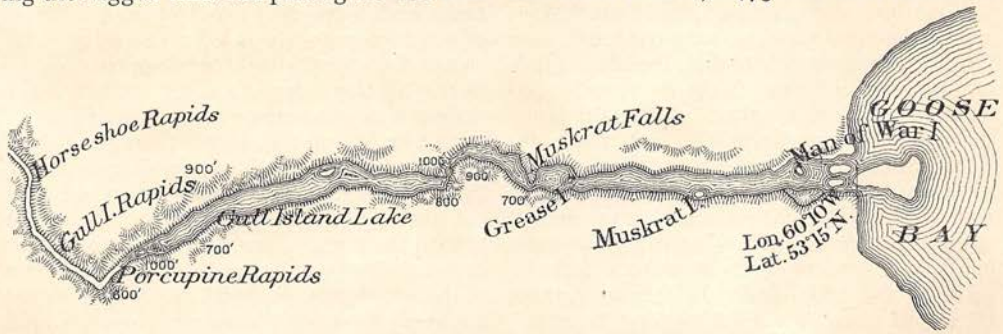
the channel and presenting a granite bulwark through which the stream has forced its way. There are two steps in the descent, and the total drop is seventy feet. To go around this fall, a long and steep "carry" was necessary. The unwieldy character of our boat, which weighed 500 pounds, was here a serious disadvantage. By means of a block and tackle, and with much laborious lifting and pulling, we dragged it up the precipitous banks. This operation and the packing occupied a day and a half. During the subsequent advance of 175 miles up the river, oars and paddles were, for the most part, of little use, owing to the swiftness of the current. The method employed was what is technically known as "tracking"—that is, a strong rope, about the thickness of a clothes-line, was tied to the gunwale of the boat just aft of the bow. To the shore end broad leather straps were attached. With these across their shoulders, three of the party tugged along the rocky bank, while the fourth man, with an oar lashed in the stern, steered a devious course among the rocks and shallows of the river.

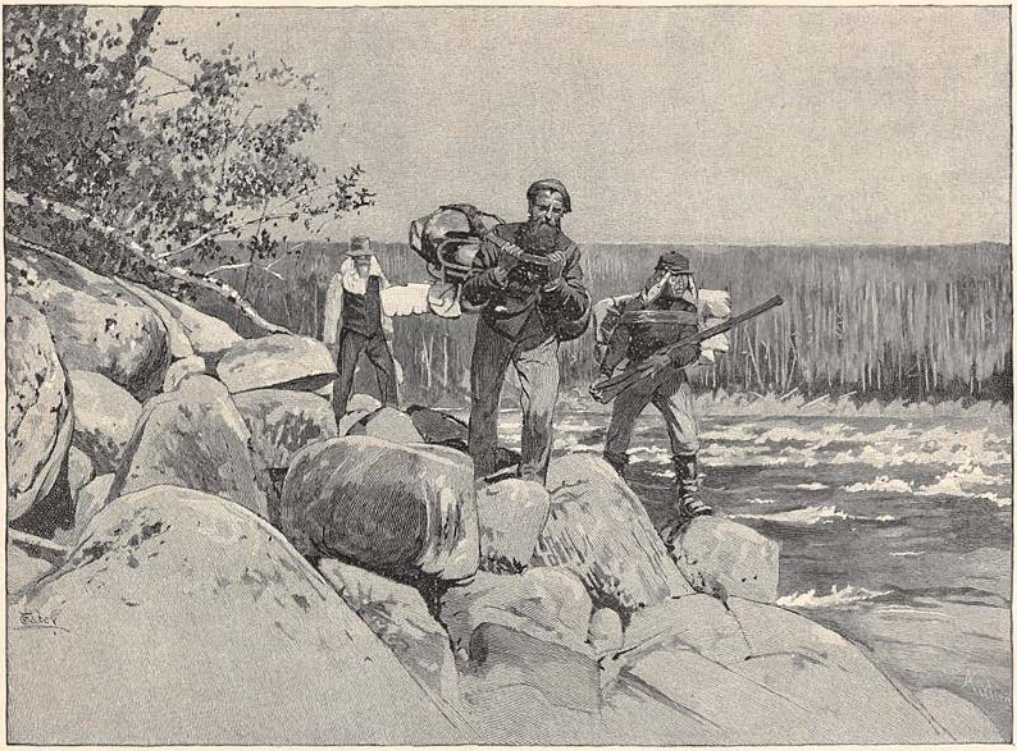
In this laborious fashion the advance continued for three weeks. With the exception of a smooth stretch, which Montague called "slack water," the current was almost uniformly swift and the "tracking" of the most arduous character. Sandy terraces, and extended reaches covered with glacial boulders, characterized the lower portion of the river, while farther up-stream great numbers of smaller boulders, insecurely lodged on the precipitous sandy banks, presented a precarious footing to those trudging along the rocky "tow-path." When a combination of this "rubble" and a troublesome rapid occurred, it was only by the most violent exertion, and no end of slipping and sliding, that the tension of the tow-line could be maintained on the treacherous ground. Then again, stretches of steep rocky bank, where no "tracking" was possible, often necessitated scaling the rugged cliffs and passing the line from one to another over various obstacles. Wading through the water was frequently the only resource. This was always in order when a place was encountered where the spring freshets had undermined the banks, and where numbers of trees, stumps, and underbrush littered the shore and formed *chevaux-de-frise* of the most formidable character.

The popular impression that Labrador possesses a climate which even in summer is too rigorous for the enjoyment of open-air life was not verified on this trip. The temperature during the day was found to be delightful—just cool enough to be stimulating; while the average minimum temperature registered during the forty-two nights of the journey was ascertained to be but 42° Fahrenheit. Nor was verdure lacking in this subarctic landscape, for dense growths of spruce and fir extended back for miles into the blue distance, and even where fire had blackened the slopes of adjacent hills, the somber aspect of the scene was much relieved by a second growth, which showed the delicate green of its leaves among the charred remains of the original forest. Game and fish proved to be fairly abundant, and two fine black bears were killed by members of the party. The fresh meat thus obtained, together with the trout captured from time to time, made welcome variations in the dietary of the expedition.

The declining sun of August 20 beheld our small craft glide into the smooth waters of Lake Wanockalow. The first view of the lake was beautiful, and most grateful to our eyes after the long struggle with the rapids. Even Geoffrey and John, usually indifferent to scenic effects, could not conceal their admiration as we glided by towering cliffs and wooded headlands, and beheld at intervals cascades leaping from the rocks into the lake, their silvery outlines glistening in the sun and contrasting distinctly with the environment of dark evergreen foliage.

This romantic sheet of water stretches in a northeasterly and southwesterly direction for about thirty-five miles, and has an elevation above sea-level, according to the aneroid observations secured, of 473 feet. Low mountains of granite and gneiss rise on each side, and the average width of the lake is less than one mile. A sounding taken near the middle showed a depth of 406 feet. This narrow elevated basin





DRAWN BY W. TABER. ENGRAVED BY P. AITKEN.

PACKING ROUND THE MINNIPI RAPIDS. (FROM A PHOTOGRAPH.)

is undoubtedly of glacial origin, the presence of great numbers of boulders, and the rounded appearance of the hill-summits, pointing to a period of ice-movement. We made a good run up the lake, passing the farthest point reached by Mr. Holme in 1887, and camped on the river-bank three miles above the lake, opposite the mouth of the Elizabeth River, which here enters the Grand from the northwest. The next day we rested in camp; taking occasion to overhaul the boat and canoe and repair clothing and outfit, preparatory to entering the terra incognita which lay before us.

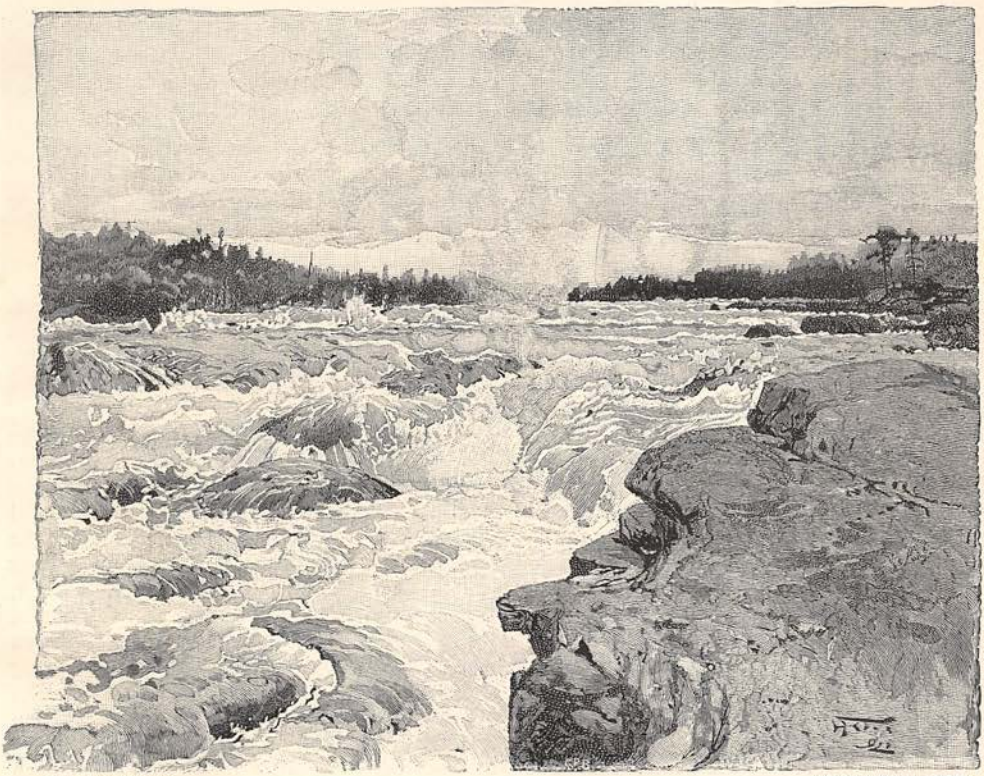
Four days after passing Lake Wanockalow, a wide shallow rapid was encountered, over which it was impossible to drag the boat. Finding no possible channel in the river, we judged we were in the neighborhood of the "Big Hill," the head of canoe navigation, and the point where, in the old days, when the Hudson Bay Company sent crews to their inland post, the Indian voyageurs left the river. From an Indian we had learned that the old trail, long disused, led from this point on the river to a chain of lakes on the table-land. By following these lakes and crossing the intervening "carries," the rapid water which extends for twenty-five miles below the Falls could be avoided, and the traveler be brought finally to the waters of the Grand River many miles above Grand Falls. Our plan was to follow this old trail for several days, and then to leave the canoe and strike across country in a direction which we hoped would bring us again to the river in the vicinity of the Falls. It was deemed best to follow this circuitous canoe-route rather than to attempt to follow the banks of the river on foot, in which case everything would have to be carried on our backs for many miles through dense forests.

After a long search the old trail was found, and leaving Geoffrey in charge of the main camp on the river, the rest of us took the canoe and a week's provisions, and began the ascent of the steep path which led to the edge of the elevated plateau, which here approaches the river. In three days six lakes and the intervening portages were crossed. Arriving at the sixth lake, which was larger than the others, we turned aside from the dim trail and paddled to its northwestern extremity, where we drew out the canoe and prepared for the tramp toward the river. Arrayed in heavy marching order, and carrying almost all that remained of the provisions, we were soon advancing in a westerly direction. We were now on the table-land of the Labrador interior, and the country we were passing through was of the most desolate character, denuded of trees, the surface covered with caribou-moss, Labrador tea-

plants, blueberry-bushes, and thousands of boulders. By keeping to the ridges, fair progress was made; but when compelled to leave the higher ground and skirt the borders of the lakes, dense thickets of alders and willows were encountered, and these greatly impeded our advance. The desolation of this upland landscape is indescribable. No living thing was encountered, and the silence of primordial time reigned supreme. Just before sunset we went into camp on a hillside near a large lake, and soon after, from the top of a high rock, beheld a great column of mist rising like smoke against the western sky. This, we knew, marked the position of the Falls, and, needless to say, our spirits rose — oblivious of our bleak surroundings — as we contemplated the near attainment of our journey's end. During the night the thermometer registered a minimum temperature of 41°, and we were treated to a superb display of northern lights.

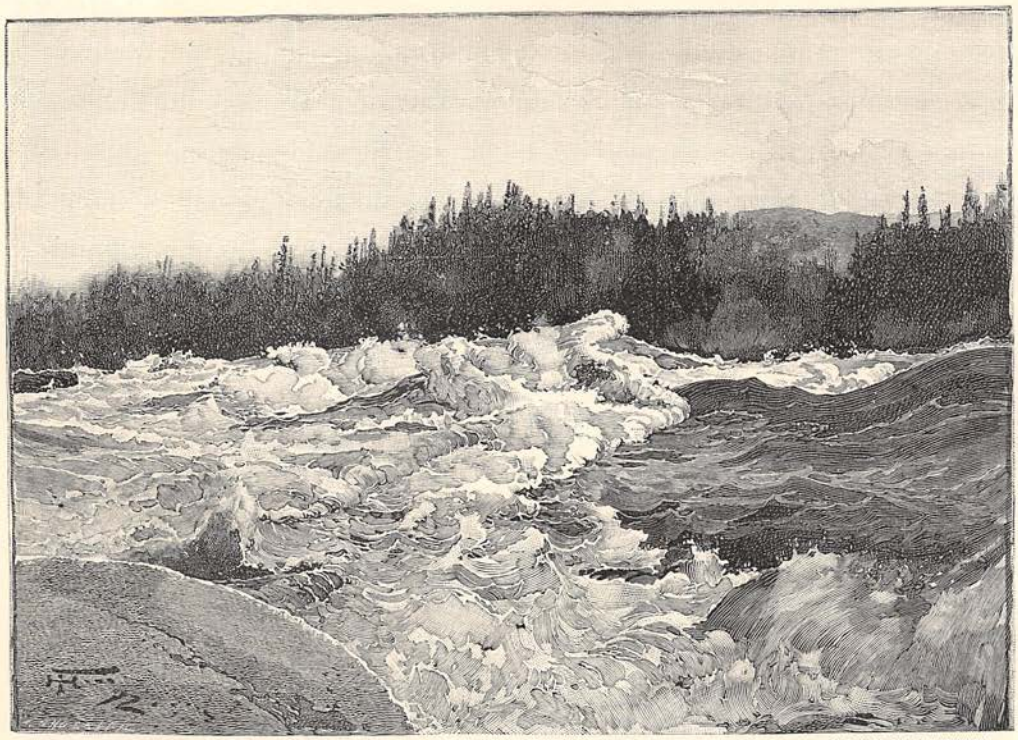
September 2 was a memorable day, as it marked the date of our arrival at Grand Falls. A rough march over the rocks and bogs intervened. As we approached the river, spruce forests of a heavier growth appeared, and pressing on through these, although we could no longer see the overhanging mist, the deep roar of falling waters was borne to our ears with growing distinctness. After what seemed an intolerable length of time, — so great was our eagerness, — a space of light in the trees ahead made known the presence of the river. Quickening our steps, we pushed on, and with beating hearts emerged from the forest near the spot where the river plunged into the chasm with a deafening roar.

A single glance showed that we had before us one of the greatest waterfalls in the world. Standing on the rocky brink of the chasm, a wild and tumultuous scene lay before us, a scene possessing elements of sublimity, and with details not to be apprehended in the first moments of wondering contemplation. Far upstream one beheld the surging, fleecy waters and tempestuous billows, dashing high their crests of foam, all forced onward with resistless power toward the steep rock whence they took their wild leap into the deep pool below. Turning to the very brink and looking over, we gazed into a world of mists and mighty reverberations. Here the exquisite colors of the rainbow fascinated the eye, and majestic sounds of falling waters continued the pæan of the ages. Below and beyond the seething caldron the river appeared, pursuing its turbulent ca-



DRAWN BY HARRY FENN. ENGRAVED BY G. P. BARTLE.

RAPIDS ABOVE THE GRAND FALLS. (FROM A PHOTOGRAPH TAKEN 250 FEET ABOVE THE BRINK.)



DRAWN BY HARRY FENN. ENGRAVED BY T. SCHUSSLER.

CROSS VIEW OF THE RAPIDS NEAR THE BRINK OF THE GRAND FALLS. (FROM A PHOTOGRAPH.)

reer past frowning cliffs, and over miles of rapids, where it heard "no sound save its own dashings." The babel of waters made conversation a matter of difficulty, and, after a mute exchange of congratulations, we turned our attention to examining the river in detail above and below the Falls.

A mile above the main leap, the river is a noble stream nearly 300 yards wide, already flowing at an accelerated speed. Four rapids, marking successive depressions in the river-bed, intervene between this point and the Falls. At the first rapid the width of the stream is not more than 175 yards. From there it rapidly contracts until it reaches a point above the escarpment proper, where the entire column of fleecy water is compressed within rocky banks not more than 50 yards apart. Here the effect of resistless power is extremely fine. The maddened waters, sweeping downward with terrific force, rise in great surging billows high above the encompassing banks ere they finally hurl themselves into the gulf below. A great pillar of mist rises from the spot. An immense volume of water precipitates itself over the rocky ledge, and under favorable conditions the roar of the cataract can be heard for twenty miles. Below the Falls, the river, turning to the southeast, pursues its maddened career for twenty-five miles, shut in by vertical cliffs of gneissic rock which rise in places to a height of 400 feet. Above and below the Falls the rocky banks are thickly wooded with fir and spruce, among which the graceful form of the white birch appears in places.

While Professor Kenaston and Montague were making a direct measurement of the principal fall, which proved to be 316 feet, an incident occurred which illustrated the cool daring of the latter in a striking manner. The water, at the time of our visit, was probably as low as it ever is in the Grand River. In fact, from the debris lodged high up on the banks, we judged the stream had fallen at least ten feet from the high-water mark of the spring freshets. This drop in the river left exposed a considerable surface of the rocky ledge which is usually covered by water, forming part of the brink of the fall. After measuring the length of the preliminary incline leading to the main leap, Montague was directed to cast the plummet-line over the rocky edge of the escarpment, in order to secure a measurement of the principal fall. This was done; but while Professor Kenaston was paying out the line, it caught in a slight crevice, and to complete the measurement it became necessary to free it at once. Without a moment's hesitation, our brave John clambered down the steep bank and walked out on the very brink of the Falls,

where, stooping down, with the spray of the passing flood wetting his cheek, he loosened the line, and returned to the bank in safety. A single misstep, or the slightest giddiness on his part, while on that dizzy height would have resulted tragically. But to think was to act with this hardy Scotchman, and, truly, his cool head and nerve served him well on this occasion.[1]

DRAWN BY HARRY FENN. ENGRAVED BY J.W. EVANS.

AT THE BRINK OF THE GRAND FALLS, SHOWING THE CREST OF THE INCLINE. (FROM A PHOTOGRAPH.)

While these direct measurements were being made, I turned my attention to obtaining a number of photographs of the Falls and rapids, and then to securing barometric readings above and below the cataract. In order to obtain an observation at the lower bed of the river, it was necessary to descend the steep walls of the cañon. This I found to be a hazardous and exciting undertaking. Walking along the edge of the gorge just below the Falls, two places seemed to offer possible means of access to the river below. At both points I attempted the descent, only to find, after lowering myself from tree to tree down the bank, that a sheer precipice extended the remaining fifty or seventy-five feet to the surface of the water. On the third trial, by following the course of a tiny streamlet, the bed of the river was finally reached. By this time the day was far spent, and darkness almost enveloped the scene down in that imprisoned channel-bed. The situation was interesting, and filled with the charm of a first glimpse into one of nature's solitudes.

[1] At St. John's, Newfoundland, we had provided ourselves with several balls of stout linen cord with which to measure the height of the fall, if the situation should be found suitable. Fortunately, alongside the chute just above the brink of the main cataract, we found a floor of rock of the same slope, about 30° below the horizontal. Along this it was possible to go, but with some peril, nearly to the edge over which the stream plunges in its final descent. Fastening a heavy billet of green fir to one end of the cord, the weight was carried and thrown down on the surface of the rock to the brink of the fall, the cord being paid out from the upper end of the slope. A knot was made in the cord to mark the distance to the edge, and the billet was allowed to fall over the precipice into the chasm. Montague, having climbed along the bank at the edge of the cañon, was holding on by the trunk of a tree, from which he could see when the block of wood struck the water below as the cord was paid out by me above. The instant of contact was plainly visible to him, and I was equally sensible of it. The cord was now drawn up over the edge and carefully measured with a tape-line. The whole length paid out was 505 feet, the part which measured the slope was 189 feet, leaving for the height of the main fall below the chute 316 feet. Allowing for a few degrees deviation from the perpendicular, and for a slight stretching of the cord, though this last was probably counteracted by wetting, the height of the fall may be considered something more than 300 feet. The vertical height of the chute, about 32 feet, added to the other measurement, makes the descent from the head of the chute to the surface of the water in the chasm about 348 feet.—C. A. KENASTON.

In front, the great river roaring hoarsely in the gloom, and just entering on its final journey over miles of rapids to the sea. On the opposite bank, a splendid cliff of pinkish hue led the eye from the gloomy base, in one long sweep of hundreds of feet aloft, to the utmost pinnacle, which still glowed a few brief moments in the departing rays of the sun. Darkness had settled over all when I clambered over the edge above and made my way through the forest to the camp, just above the Falls. My long absence had alarmed my companions, who welcomed my appearance within the circle of the camp-fire with expressions of relief. It was after nine o'clock when I sat down to a frugal supper that night, somewhat foot-sore and weary after the stirring events of the day.

The difficulties of obtaining near views of large masses of falling water are admitted by all photographers. In the case of the Grand Falls, these were increased by the character of the surroundings. The great volume of water, compressed as it is, and discharging itself through a funnel-like channel in the rocks, falls in a thick, narrow column a distance of 316 feet, sending up banks of vapor and presenting the appearance from a distance of a great pillar of cloud. The vegetation is affected by this vapory condition of the atmosphere, and thin patches of green moss, unlike anything seen elsewhere, were conspicuous on the face of the cliffs just below the Falls. Notwithstanding the apparent futility of the attempt, I endeavored to obtain two views looking across the main leap, from the bank near the brink. These negatives proved to be failures on development. By descending the bank as far as the steep incline permitted, and hanging to the roots of the dwarf fir-trees growing thereabout, I was able, by watching for a favorable moment when the veil of mist lightened, to secure a near view of part of the main leap. It was apparent that the best vantage-ground for viewing the face of the fall was from a point where the cañon wall jutted out a short distance into the deep pool below the Falls. This point of view I estimated was from 140 to 160 feet from the column of descending water, and down its rocky edge one could not creep more than fifteen feet before encountering an almost vertical wall which led to the river-bed below. While the rising vapor did not envelop us here as when nearer the brink, yet the effect of it, rising in banks from the base, while not unpleasing to the eye, detracted somewhat from the fine sweep of the fall, the outline of which we could see descending behind the veil of mist. While on this rocky buttress, I took a photograph of the Falls, and one of the lower part of the Falls, showing the mist rising from the bottom, both of which proved to be almost total failures. To explain further the lack of definition in those photographs, I will add that the afternoon was far advanced and the light far from good. The sun was already well down in the western sky,—across the river from me,—and in the worst possible position for my purpose. I emphasize this feature of the occasion, because it materially affected the result; for had the sun shone from the south instead of the west, I think it would have been quite possible to secure a view giving at least the outline of the Falls.

In my descent to the bottom of the cañon I carried my camera, but I was unable to obtain a view of the fall from the lower bed of the river, because a projecting point of rock several hundred yards up-stream cut off a distant view of the spectacle. The steep walls of the gorge, against which the water dashed in places, prevented any considerable advance up-stream, and I was reluctantly compelled to abandon my purpose of returning the following morning to secure photographs of the Falls from this lower position.

I felt at the time that while the views of the rapids and cañon promised well, those of the Falls could not be otherwise than unsatisfactory. I consoled myself, however, by the thought that the light of the following morning would prove more propitious. Great was my disappointment, then, when September 3 dawned a dull and threatening day. Friends have naïvely remarked, when I expressed my regret at not obtaining a good view of the main fall, "Why did you not remain encamped at the Falls until you had secured satisfactory photographs of this most important object?" Our provisions were all but exhausted, only enough remaining after breakfast for two scant meals. To have remained under the circumstances seemed to risk starvation, for owing to the absence of all game from the vicinity there appeared to be no means of eking out our supplies by the usual devices of the woodsman. Thus I decided to delay no longer for clear weather; and the two-days' storm which supervened proved, I think, my wisdom in declining to take the risk.

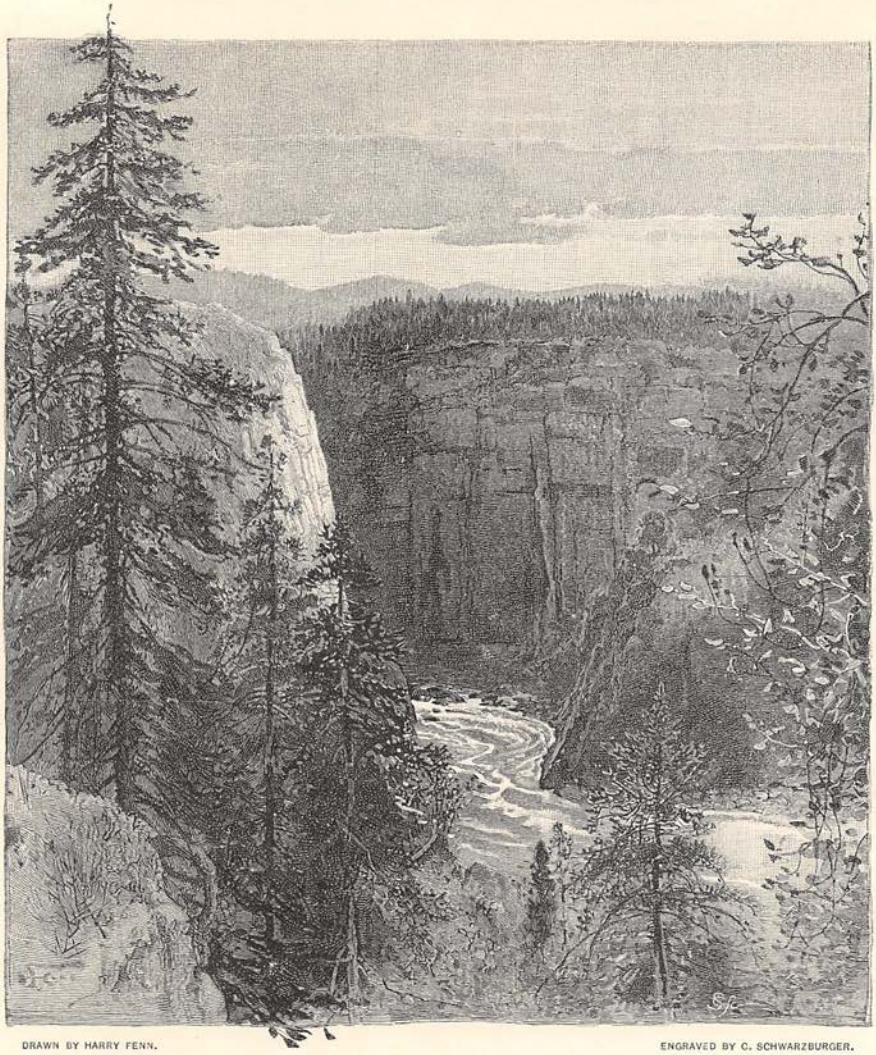
The deep incessant roar of the cataract that night was our lullaby as, stretched out under a rough "barricade," we glided into that realm of forgetfulness where even surroundings strange as ours counted as naught. By the morning light we again viewed the wonders of the place, and sought for some sign of the presence of bird or animal in the vicinity; but not a track, or the glint of a bird's wing, rewarded our quest, and this avoidance of the place by the wild creatures of the forest seemed to add a new element of severity to the eternal loneliness of the spot.

The Grand Falls of Labrador are nearly twice as high as Niagara, and are inferior to

DRAWN BY HARRY FENN. ENGRAVED BY R. VARLEY.

VIEW OF THE GRAND FALLS, FROM THE PROJECTION OF ROCK BELOW. (BASED ON AN IMPERFECT PHOTOGRAPH.)

that marvelous cataract in breadth and volume of water only. One of their most striking characteristics is the astonishing leap into space which the torrent makes in discharging itself over its rocky barrier. From the description given of the rapid drop in the river-bed and the coincident narrowing of the channel, one can easily understand that the cumulative energy expended in this final leap of the pent-up waters is truly titanic. If a substratum of softer rock existed here, as at Niagara, a similar "Cave of the Winds" would enable one to penetrate a considerable distance beneath the fall. The uniform structure of the rock, however, prevents any unequal disintegration, and thus the overarching sheet of water covers a nearly perpendicular wall, the base of which is washed by the waters of the lower river. In spite of the fact that no creature, except one with wings, could hope to penetrate this subaqueous chamber, the place is inhabited, if we are to believe the traditions of the Labrador Indians. Many years ago, so runs the tale, two Indian maidens gathering firewood near the Falls were enticed to the brink and drawn over by the evil spirit of the place. During the long years since then, these unfortunates have been condemned to dwell beneath the fall and forced to toil daily,



DRAWN BY HARRY FENN. ENGRAVED BY C. SCHWARZBURGER.

THE CAÑON, A QUARTER OF A MILE BELOW THE GRAND FALLS. (FROM A PHOTOGRAPH.)

dressing deerskins, until now, no longer young and beautiful, they can be seen betimes through the mist, trailing their white hair behind them and stretching out shriveled arms toward any mortal who ventures to visit the confines of their mystic dwelling-place. The Indian name for the Grand Falls — Patses-che-wan — means "The Narrow Place where the Water Falls." Like the native word Niagara,— "Thunder of Waters,"— this Indian designation contains a poetic and descriptive quality which it would be hard to improve.

On the left bank of the river above the Falls I found a small fir-tree, about four inches in diameter, which had recently been cut off with an ax at the height of four feet from the ground. An empty meat-can covered the stump, beneath which, secured to the trunk, was a bottle containing a written record of the fact that two members of the Bowdoin party had reached the spot about two weeks before us. I added to the written record a brief statement of the time and circumstances of our visit, and resealed the bottle.[1]

[1] After my departure for Labrador, I learned of another American expedition which proposed to visit the region of the Grand Falls during the summer of 1891. This enterprise, known as the Bowdoin College Labrador Expedition, under the leadership of Professor Leslie A. Lee, arrived at Rigoulette shortly after Professor Kenaston and myself. But owing to our delay in securing a crew and transportation inland, the four members of the Bowdoin party who were despatched to visit the Falls reached the mouth of the Grand River first, and started on their journey up-stream a week in advance of us. The remainder of the Bowdoin students cruised along the coast in their schooner while their comrades were up the river. By the upsetting of one of their two boats, and the loss of provisions, instruments, etc., W. R. Smith and E. B. Young were

From the point where the river leaves the plateau and plunges into the deep pool below the Falls, its course for twenty-five miles is through one of the most remarkable cañons in the world. From the appearance of the sides of this gorge, and the zigzag line of the river, the indications are that the stream has slowly forced a channel through this rocky chasm, cutting its way back, foot by foot, from the edge of the plateau to the present position of the Falls. Recent investigators estimate that a period of six thousand years was required to form the gorge below Niagara Falls; or, in other words, that it has taken that length of time for the Falls to recede from their former position at Queenstown Heights to their present location. If it has taken this length of time for Niagara Falls to recede a distance of seven miles by the erosive power of the water acting on a soft shale rock supporting a stratum of limestone, the immensity of time involved by assuming that the Grand River cañon was formed in the same way is so great that the mind falters in contemplating it, especially when it is recognized that the escarpment of the Grand Falls is of hard gneissic rock. And yet no other explanation of the origin of this gorge is acceptable, unless, indeed, we can assume that at some former time a fissure occurred in the earth's crust as a result of igneous agencies, and that this fissure ran in a line identical with the present course of the river; in which case the drainage of the table-land, emptying into the Grand River, would follow the line of least resistance, and in the course of time excavate the fissure into the present proportions of the gorge.

The highest point reached by the expedition was in the vicinity of the Falls, where, according to the aneroid observations obtained, an elevation something in excess of 1500 feet was noted. Accepting the fact that results obtained by the aneroid barometer are not regarded as conclusive by careful observers, it is nevertheless apparent that the altitudes obtained can be taken as at least approximately correct, especially when it is borne in mind that a standard instrument was used, and corrections for temperature made in every instance. Thus it would appear that the generally accepted idea that the interior table-land of Labrador attains a general elevation of over 2000 feet is erroneous, and future travelers will be called on to confirm or reject this important point relating to the configuration of the interior.

Having accomplished the main object of the trip, we set out on our return from this distant end of the expedition. A cold rain poured down during the first day's tramp across the barren plateau, and owing to a mistake in the course taken, we missed our former track, and became entangled in a lacustrine region, where we wandered for hours, unable to make any headway among the encompassing lakes. In the humid air landmarks became indistinct, and plunging on through bogs and over sharp rocks, cold, wet, and wearied with the weight of our packs, and with only enough flour remaining for one meal, our condition was unpleasant in the extreme. But dismal thoughts of being lost in this "great and terrible wilderness" incited us to unusual efforts, and at length, by making a long detour, a slight eminence was gained from which we could pick out a course in the desired direction. The storm, accompanied by lightning and thunder, continued during the night, and the most comfortless evening of the entire trip was passed on the bleak shores of a lake on this cheerless table-land. In the course of the following day we regained the canoe, and returning through the chain of lakes by the route previously used, we arrived in due time at the camp on the river, where Geoffrey was awaiting our return with some anxiety. Our trials were almost ended when we reached the river, and having embarked on it, the swift current carried us down-stream with exhilarating speed. Delaying only long enough to make a compass survey of the stream, in seven days the mouth of the river was reached without serious mishap.

A series of fierce gales detained us a week at Northwest River, and we did not arrive at Rigoulette until September 22. Sailing thence in a schooner, we soon reached Indian Harbor, a fishing-station on the coast, where we had the rare good fortune to secure passage on a Norwegian steamship, which brought us to St. John's, Newfoundland. From this point we took the regular passenger-steamer to New York city, where we arrived on October 15, thus completing a journey of over 4000 miles.

Henry G. Bryant.

obliged to turn back. The two remaining members of the party, Austin Cary and D. M. Cole, advanced up the river in their boat to a point about ten miles above the "Big Hill," where we turned off for the interior plateau. From there they followed the bank of the river as closely as the nature of the country permitted, until they reached the Falls. They did not measure the height of the cataract. They are entitled to praise for their pluck in overcoming obstacles in their advance up the river, and for their courage and endurance on the retreat; for owing to the spreading of their campfire, they lost camp, boat, and outfit, which rendered their escape down the river an experience of great hardship. Mr. Cary, in a letter to the writer, says: "We were given but thirty days from the vessel. . . . We were compelled to travel up to the limit of our strength, and leave scientific matters to the return trip; and then on the return trip it was all we could do to carry ourselves out of the country." Mr. Cary's account of his experiences was printed in a recent number of the "Bulletin of the American Geographical Society."—H. G. B.