NIAGARA RIVER
FROM LAKE TO LAKE.
Original Etchings by Amos W. Sangster.
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NIAGARA RIVER AND FALLS.
FROM LAKE ERIE
TO LAKE ONTARIO.

GUARANTEE.
To Whom it may Concern:
The Engravings of this work are printed by
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the copper plates.
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drawings.

THE PUBLISHER.
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Diagonally opposite the village of La Salle, and planted on both banks of the turbid little Creek of the same name, may be seen the unimportant but pleasantly situated and historically memorable town of Chippewa, where the visitor will be reminded of some of the most desperate and decisive events of the disastrous border strife of 1814. The village stands about three miles above the Falls, and the walk thither along the River's gently undulating banks is always one of unwearied delight. The descent of the River from this point to the cliffs of the Great Cataract, presents a series of water views of especial attractiveness and beauty. The clear bright stream, expanded to three times its average width, lies here, when the winds permit, as quiet and smooth as a motionless lake, over which, and even across to the opposite shore, experienced oarsmen may row their light canoes with ease and safety. The shore and water views, presented from this point in endless variation, pleasingly diversify the congenial and fascinating scenery of this always picture-forming River; and its caprices and surprises prove as enticing to the student of Nature's mysteries, as they do to the mere sympathetic admirer of her many curious phantasies and versatile delineations.

A short distance below Chippewa where the River has a width of nearly two miles, it will be noticed that this lake-like expansion begins to contract in breadth, and to gain rapidly in velocity. The stream, by the angular approach of its rocky banks, narrows, in the distance of a mile, to a width of three-fourths of a mile, where it becomes the surging and turbulent portion of the River known as the Rapids.

A view of these Rapids from either of the abutting shores, is one no visitor to the Falls should omit. It is a scene of wonder, second only, in majesty and unwearying fascination, to the gorgeous Cataract itself. It is the sublime but gentler prelude to the deep-rolling cadence of the thundering waters, so soon to follow. It is a scene of unrestrained disorder and wild uproar. The whole broad sheet of the spray-sprinkled River now rushes on with frantic speed, as if eager, after its long and devious journey of twelve hundred miles, to accomplish at last its mighty final act, and be done with it. The impetuous water pours with eager and reckless speed over the angular projections and submerged dikes and sharp ridges of its rocky and shallow channel, and is soon lashed into fragments, and becomes dispersed in spattering cascades and leaping jets of crystal spray. Sixteen hundred thousand tons of water are thus continuously dashed over these hidden rocks, and are finally driven over the trembling precipice of the Cataract, every minute of every year. Here is exhibited one of Nature's grandest processes, in operation; here we witness one of her most effective agencies in active work, and begin in a measure to comprehend the power of this prodigious
volume of water, that will soon again cohere and swell into that immense cylinder, which, urged onward by the force of this tremendous momentum, at last rolls over the precipice, and hurl its enormous weight upon the more fragile rocks that form its unstable base. It becomes quite clear, upon a little reflection, that under the continued action of a process so energetic, something, sooner or later, must be forced to give way; and observation shows us, as a fact, that the entire mass of the rocky strata that once filled up the long canyon of the River, from the site of its present barrier to a line near its entrance into Lake Ontario, has, in the course of centuries, whose number can only be approximately estimated by the amount of work seen, visibly enough, to have been accomplished, given way and been removed. The evidence of this long continued and still visibly progressing retrocession is self-recorded in the rocky walls of the deep excavation, and may be easily read; the only conclusion justified by existing indications being, that the deep gorge, seven or eight miles at least in extent, through which the panting River pours its agitated waters, has been chiseled and hammered out, and the crumbled and ground up material dragged away, by its own gigantic and patiently applied forces. The scores of centuries reasonably demanded for the completion, so far, of this astonishing piece of work, so deliberate in its methods, so slow in its daily progress, and so minute in its details, has been provisionally estimated, but the discussion must always remain in subjection to possibilities and undetected conditions, secular and temporary, whose just value is still the subject of much speculation and controversy, not here to be entered upon. The grandeur and extent of the work that has been done, is determinable by inspection; the time required for its execution, at the fastest admissible rate, must be computed on a scale of commensurate magnitude.

The breaking away and removal of the Rocks that form the irregular-shaped escarpment of the Cataract, as the result of the continual shock and tremor of the falling water, has greatly changed, even within the the space of forty years, the lineal direction and contour of the Cataract as a whole; but especially is this the case with regard to the peculiar curve known as the Horse-shoe. The present angular and V-like shape of this, the grandest feature of the main Fall, does not now suggest the appropriateness of the term. The center of what was once fitly called the arch of the Horse-shoe has been rent, and the breach is carried back to quite a sharp angle, from the two sides of which, and apparently facing each other with an evident approach to parallelism, the parted water seems to fall in two opposing streams, which plunge into each other before reaching the deep boiling gulf below.
It is not generally perceived that the direction of the general flow of the River, in its short journey of thirty-four miles,—in which distance it makes a descent, from Lake to Lake, of 328 feet,—is not a uniform one; its deviations from a straight line are very great. Its most conspicuous bend at Grand Island has already been mentioned. From that curve to the Rapids the flow of the current is due west; sweeping over the ledge of the Cataract precipice at the present head of the grand canyon, the River, becoming more and more compressed between its lofty and gradually approaching walls, makes an abrupt right-angled turn in a direction a little east of north, but before it reaches the whirlpool gorge it is again bent back to its northerly course. Escaping, after a brief but furious struggle, from its angrily resisted confinement within the walls of the grand amphitheatre of the vortex, it returns, by a gentle curve, to its normal direction, and quietly glides into the waters of Lake Ontario with a slight inclination towards the west.

The water that pours in such a lovely sheet of green and garnet jewels, over the American ledge, is the overflow of a sort of natural waste-wier, or narrow branch, cut off from the main stream, and parting from it a short distance above the group of the Sister-Islands. The channel, over the shallow and rock-strewn bed of which the water leaps and plunges with such impetuosity, is only the submerged extension of the American shore, connecting it with the promontory of Goat Island, the front escarpment of which, so picturesquely dividing the Cataract into two unequal and quite distinct Cascades, is continuous with the perpendicular precipice of the American Fall, and like it lies in a line parallel, or nearly so, with the northerly trend of the eastern wall of the gorge; in fact, it does not constitute any part of the great barrier that crosses the main River; nor does it lie in the same direction. This narrow branch or flume leaves the River, somewhere between Grass Island and the Three-Sisters, and works its own way, by a shorter overland cut, to the brink of the American precipice. It was the opinion of Prof. Tyndal that, should the Cataract of the Horse-shoe continue to disintegrate and undermine its manifestly unstable support, as undoubtedly it will, and when the consequent recession of the gorge has reached back to the rocks of the Sister-Islands, the water will cease to flow through this narrow channel, being turned once more into the parent stream, and that this submerged portion of the American shore will then become dry land again. Existing appearances would seem to justify this apprehension,—though its possible realization is too far in the rear of our era to occasion any present alarm; but the high authority of Mr. G. W. Holley re-assures us in the possession of our beautiful Cascade, by the statement that there are hidden channels and rocky dikes lying between Grass Island and the Sisters Group, which will prevent, at least in part, this threatened draining of this dashing and tumultuous stream. But this foreshadowed
change in the character of this grand and alluring feature of our inconstant River, of which the pitiless Professor gives us timely warning, would be no greater, either in kind or degree, than many that have occurred in past periods of its chequered and diversified career. That Goat Island will escape the devastating action of the receding waters, is scarcely to be supposed; but its removal, whether partial or entire, would only make more certain and speedy the predicted drainage of the American channel and the consequent desiccation of its majestic Cascade. The changes, known to have taken place at the Cataract, and in its vicinity, in two hundred years, that is, from the period of the earliest preserved description of it, have been many and very great. Since 1840 it has been cut back, at the Horse-shoe, at least a hundred feet; several very large slabs and immense blocks having fallen within that period. Every break of any magnitude carries away many feet of fractured and loosened rock, and the gaps and changes thus produced in the marginal outline of the cliffs, have become very perceptible. By the comparatively rapid recession of the central fissure of the Horse-shoe, where the backward excavation of the front wall of the barrier is most marked, its verge line has notably lengthened in forty years.

No description, it may be said, not even the simplest formulated observation or recollection, historical, sensational, or pictorial, of the Great Cataract and its wonder-waking surroundings, would be possible, in this late day, without the recurrence, in the production, of the same ideas, the same forms and qualities of expression, and still more surely, the same facts, and expressed often in the same habitual words, and illustrated by the same self-suggested fancies, that have been made use of by some previous, but really not more original observer. This so oft recurring repetition of words possessing some especial and significant appropriateness of application, is due, manifestly, to the meagre supply of them. For purposes of relation, as well as for illustration and imagery, one's vocabulary of admiration is monotonously restricted. The gorgeous Cataract of Niagara, a thing of beauty forever, equally lavish of its inspirations and its charms upon all comers, is always stupendous, and always glorious, and its beauties and splendors are as sublime and overwhelming to one really sympathetic admirer as to another. All its praises must be sung in the same key. Monopoly of expression before such a majestic spectacle, is no more admissible than monopoly of emotion. It will be as excusable as it will be inevitable, that any half dozen enraptured gazers on this sublime "cadence of waters," having, one after another, given verbal utterance to their surprise and enjoyment, the next half dozen who shall become thrilled with the same wondrous fascination, will find their enthusiasm involuntarily revealed in the very language already used by their predecessors.
It will be testified to by many, no doubt, that under the transcendent influences of a power so imposing and so majestic as Niagara, man's deepest emotions will be silent. The soul feels itself spell-bound in the presence of such commanding and self-asserted majesty, such ineffable dignity. Man must be still, to know the full supremacy of this gorgeous display of Nature's affluence. The deepest sensibilities are not vehement; nor are the finest human experiences readily communicable. The leaping jets and noisy breakers are over shallow water. But words will be intrusive, and often in the most exalted moments; and then is it seen that the impulsive sensations—it might not be quite just to say commonplace, such as most usually, in moments of excitement, seek expression, and generally collapse, in extemporised definitions, assume by simple necessity the hurried guise of such exclamatory utterances as are common to all, and at readiest command. A glance at some of these locutions, of the representative sort, that have survived the treacherous custody of ink and paper, will not here be out of place, and will prove more to the purpose than renewed and pitilessly handicapped attempts to describe what has so often, heretofore as now, been felt to be indescribable. And notably so by the writer of the first attempted description of the Falls ever made. This was Louis Hennepin, the Catholic Missionary who visited the place in company with Chevalier de La Salle in 1678. Hennepin's ideas were never very lucid, nor was his accuracy exemplary; as is shown in the confused and exaggerated account he gives of "the prodigious cadence of water which falls down in a surprising and astounding manner" over the "horrible precipice." The simple-minded priest reminds one of Domine Sampson in presence of his "prodigious" array of books; prodigious was the measure of Hennepin's
as toni s h m e nt; and perhaps it is as good
a word as any for this "wonderful down-
fall" of water. But this was his favorite
word; as when he speaks of "the brinks
so prodigious high," or states that "when
this prodigious quantity of water comes
to the fall, there is a din and noise
more deafening than the loudest thunder;"
or, again, that "the two torrents made
by the isle throw themselves off its end
with prodigious force," and "tumble
down into an abyss six hundred feet in
depth." This rash miscalculation as to
the height of the Cataract is not to be
explained on the supposition that he in-
cluded in it the depth of the abyss or
gulf, into which the waters tumble; for
he says in another place, that "the waters
tumble down into the gulf, altogether,
(at the Horse-shoe,) with all the violence
that can be imagined, from a fall of six
hundred feet, which makes the most
frightful Cascade in the world." The
whole account, correcting its exaggera-
tions, is not without interest; though the
world has long sympathised with the
honest narrator's wish, which he assures
us he "wished an hundred times," on ac-
count of his evident incapacity, "that
somebody had been with us who could
have described the wonders of this prodig-
ious Fall, so as to give the reader a just
and natural idea of it, and cause in him
an admiration of this prodigy of Nature,
as great as it deserves." One may smile at Hennepin's piteous excuse for writing so wretched
an account of so grand an affair, but the honesty of his plea will not be disputed; "I have
endeavored," he says, "to give as just an image of it as I can." The man who does the
best he can, when it is that or nothing, may be excused. His account, not published till
nearly ten years after his visit, was illustrated by a print, which presents an aspect of the
River and Falls, quite impossible from any point of view now imaginable; nor can it be
supposed to have been engraved from any drawing taken upon the spot; the scene, as drawn,
requires a height above, and a nearness to, the Cataract, not then in any known way attainable.
Hennepin is not the only enthusiastic spectator of the Great Wonder, who, from the mere judgment of sight, has largely over-estimated the apparent height and other magnitudes of this Cataract. In a French official report, written in 1718, in which it is briefly mentioned as “the grandest sheet of water in the world,” it is stated to have a fall of from two to three hundred feet.” Guesses of this hasty sort, have been many and various, and more often wrong than right, few having ventured upon any such estimate with the careful and experienced eye of F. Charlevoix, the French Missionary, who wrote a short notice of the Falls in 1721. The Jesuit Missionary Raguenauf, writing in 1648 simply says, that Lake Erie, “two hundred leagues in circumference,” “falls into Lake Ontario over a Cataract of frightful height.” Not long after, the Sulpician priest, Father Galline, mentioning the Falls, which, however, he had not seen, states that they are “on a River forty leagues in length that empties into Lake Ontario,” and that the Cataract “is one of the finest in the world, falling from a rock higher than the tallest pines, or about two hundred feet.” The Baron La Hontan, Lord Lieutenant of Placentia N. F., made a wilder guess as to the probable height, than Hennepin. He visited the place in 1687, and in a letter of the following year says;—“as for the waterfall of Niagara, it is seven or eight hundred feet high, and half a league broad; and towards the middle is an Island that leans as if ready to fall.” Charlevoix’s more cautious estimation, was made with admirable and really approximate exactness. Speaking of what he calls “the noblest Cascade perhaps in the world,”—I found, he says, “that the Baron La Hontan had committed such a mistake with respect to its height and figure; as to give grounds to believe he had never seen it.” * * “For my own part, having examined it on all sides, I am inclined to think we cannot allow it more than a hundred and forty or fifty feet.” Charlevoix adds, “the sheet of water falls upon a rock, and there are reasons which induce me to believe, that it has either found, or perhaps, in time, hollowed out, a cavern of considerable depth.” A shrewd surmise, the latter alternative being, doubtless, the fact. One of the points in evidence of his conjecture, still worthy of note is, “that the noise it makes is so very hollow, resembling that of thunder at a distance;” an effect due to the great depth, probably over two hundred feet, of the cavernous excavation into which it plunges. It is this deep resonant thunder-tone, this far-rolling pedal-point, that peals up from the depths of this unfathomed hollow, that is, at times, and indeed at all times, when not hindered by opposing winds and other confusing obstacles, carried to such incredible distances; as far, even, it has been recorded, as the City of Buffalo. Wm. Gardiner, in his Music of Nature, says that “probably the most appalling sound in Nature is that of the Falls of Niagara, the roar of which may be heard at a distance of forty miles”!