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NIAGARA:
ITS
HISTORY AND GEOLOGY,
INCIDENTS AND POETRY,
WITH ILLUSTRATIONS.
BY
GEORGE W. HOLLEY.



ESCUELA DE ESTUDIOS
HISPANO-AMERICANOS
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To the Memory

OF MY DEPARTED FRIENDS

PETER A. PORTER

AND

JOEL R. ROBINSON

I DEDICATE THIS VOLUME.

IN the conventional code of human homiletics they were separated in their lives by the accident of birth and difference of education ; but by their unselfish natures, their genial and gentle susceptibilities and sympathies, their love of Nature and thorough enjoyment of its ever varying moods and phases, they were on fit occasions fit and willing associates.

The one, answering the sharp, quick summons of the battle field, gave his life for his country.

The other, after having repeatedly saved the life of others, gave up his own from a bed of sickness.

In that sphere of divine and all embracing Charity whither they have gone, the pure gold of their lives, freed from all earthly alloy, will shine with equal lustre, and they who were companions in time may be friends forever.

With them the author had many pleasant excursions on the waters and along the shores of the Niagara River. * *
* * * Will the links of the broken chain be reunited in the Endless Hereafter ?

GEORGE W. HOLLEY.

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ERRATA.

On page 15, line 16, for "*Vista*" read "*Vesta*."

On page 28, line 8, omit "the" before "Niagara."

On page 53, line 25, in part of this edition the word
"geodiferous" is erroneously spelt "grodiferosus."

On page 59, line 9, for "those" read "these."

On page 73, line 12, for "gradually" read "grandly."

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RECUELA DE ESTUDIOS
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PREFACE.

ALTHOUGH every place which has been the home of human beings has a history more or less interesting and more or less known, yet it may be doubted whether any place on the globe so famous as Niagara is so little known (if the Milesianism may be allowed) in reference to what may be called its *individual* history. To supply that deficiency is the main object of this work.

The writer, having resided in the village of Niagara Falls nearly a third of a century, has had the opportunity to become thoroughly acquainted with the locality, and to study it with constantly increasing interest and admiration. It is like old wine and old friends. It never palls or wearies; never provokes or disappoints. Like a beautiful and true, an excellent and admirable mistress, the faithful lover may return to it with ever new delight, ever growing affection. It will humor and minister to all his better thoughts and aspirations, reprove and repress all his baser appetites and passions. It is a humanizer in many ways. It is so great, so

grand, so glorious, that, while looking at it, the small things of men and the world are revulsed and forgotten, and the soul, like its spray released from its ponderables, mounts heavenward.

Long observation enables the writer to offer some new suggestions in regard to the Geological age of the Falls, their retrocession, and the causes which have been potent in producing it; and also to demonstrate the existence of a barrier or dam that was once the shore of an immense fresh water sea, which reached from Niagara to Lake Michigan, and emptied its waters into the Gulf of Mexico.

Whoever undertakes to write comprehensively on this subject, will soon become aware of the weakness of exclamation points and adjectives, and the almost irresistible temptation to indulge in a style of composition which he cannot maintain, and should not if he could. So far as the writer, yielding to the inspiration of his theme and in opposition to all resolutions to the contrary, may have trespassed in this direction, he bares and bows his head to the severest treatment that the critic may adopt. His labor has been one of love, and in giving its results to the public he regrets that it is not more worthy of the subject.

As it is hoped that the work may be useful to future visitors to the Falls, and also possess some interest for those who have seen them before, it seemed desirable to avoid the introduction of notes and the citation of authorities. For this reason several paragraphs are placed in the text which would otherwise have been introduced in notes. This is especially true in the chapter of local history, which will interest the local more than the general reader.

The writer is especially indebted to the Hon. Orsamus H. Marshall, of Buffalo, for a copy of his admirable "Historical Sketches," and for access to his unrivalled Library of American History. The Documentary History and Colonial Documents of the State of New York; "The Relations of the Jesuits;" the works of other early French missionaries, travelers, and adventurers, made charmingly familiar to the public—as well as their own writings—by the *con amore* and indefatigable labors of Shea and Parkman, have all helped to make the writer's task an easy and agreeable one. Scholars, who may wish to do so, will easily verify all the facts he has stated, except such as are the result of his own observation. He hopes it is unnecessary to state that, although certain names and places are

favorably mentioned, no "arrangement" whatever has been made with any person or parties.

The greater part of the historical narrative was read before the Buffalo Historical Society, in February, 1871; and the geological portion, with some modifications, before the American Association for the Advancement of Science, at Indianapolis, in August of the same year.

NIAGARA FALLS, N.Y.,
May 1st, 1872.

PART FIRST.

CHAPTER I.

HISTORY.

First discovery of the country—Artillery and the sword precursors of the Cross—The Cabots—Portuguese—Gasper Cortoreal—First French expedition—Verrezanna—Second French expedition—Jacques Cartier—Size of his vessels—Modern yachts—Cartier's second expedition—First hears of the great Cataract—Champlain—Father Ragueneau—Father Hennepin's first and second visits to the Falls—Carriage drive under the American Falls—Rattlesnakes—Professor Kalm.

NOT long after the Spanish settlement in Florida and the English settlement in Virginia, but before the Puritans had said their prayers on Plymouth Rock and made the adjacent wilderness vocal with their nasal harmonies, the monks of St. Francis, pioneered by a French adventurer, had carried the Cross into the territory of the savage Hurons and had preached its gospel of peace and chanted its sacred anthems in forests which had theretofore been more familiar with the cries of wild beasts and the war-whoop of the Indian. In that sign—of the Cross—a continent was conquered.

Digressively, we may be permitted here to note the

fact that it is not a little remarkable that that religion whose gospel is love and peace should so generally make its conquests and be carried into new regions through the instrumentalities of a system whose law and gospel both are hatred and strife ; that the sword should be the precursor of the Cross, and that the heavy ordnance of the artillerist should open the way for the divine ordinances of God. And although the French missionaries made no use of this last carnal weapon, still the soldier and the priest marched abreast, and ten of the former were demoralised, and ten heathens slain, that the latter might make one slippery convert to the Cross. And now in all the wide empire which they once owned and occupied, not a single congregation of the dusky race, nor hardly a single individual Christian remains to bear witness to the heroic labor and ardent zeal of the Franciscan monk or Jesuit priest. Nevertheless *a* good work was done and *the* good work goes on. The Church, which is the inheritor of the eternal promises, has enlarged her borders and strengthened her stakes ; and, in the final glories of her millennial day, the dark beginnings of her militant career may be forgiven and forgotten.

From Newfoundland to Virginia, the coasts and the islands of the re-discovered continent were explored by the Cabots in 1497, and were re-visited by the same explorers the following year. In 1501 occurred the Portuguese expedition, under Gasper Cortoreal, the most notable feature of which was the fact that its leader, by capturing fifty Indians whom he carried to Portugal and sold into slavery, committed a crime which, very logically, proved to be the

foundation of the cruel hostility and treachery which, for so long a period, characterised the intercourse of the Indian with the white man. In 1525 France sent out her first transatlantic expedition, under Verrezanna. He found the natives from Cape Fear River to the New England coast friendly and peaceful. But on reaching the coasts and islands near Newfoundland he encountered the jealousy and hostility which were the natural results of the outrages perpetrated by his Portuguese predecessor. In 1534, Jacques Cartier, a shrewd, enterprising, and adventurous sailor, made his first voyage across the Atlantic, touching at Newfoundland, and exploring the coast to the west and south of it. Great interest has recently (1867) been manifested, we may remark parenthetically, in the voyage across the Atlantic of three yachts—the *Fleetwing*, the *Henrietta*, and the *Vista*—in the remarkably quick time of fourteen days, and great credit is awarded to their successful navigators. Each of these vessels had a capacity of more than 200 tons burden. The two vessels of Cartier, called ships by the historians of the period, were of only sixty tons burden. The time *at* which the latter and *in* which the former sailed makes their voyages remarkable.

On the return of Cartier to France, so favorable was his report of the results of the expedition, that Francis First commissioned him, the year following, for another voyage, and in May, 1535, after impressive religious ceremonies and receiving the benediction of a bishop, he sailed with three vessels thoroughly equipped. The record of this second voyage of Cartier, by Lescarbot, contains

the first historical notice of the Cataract at Niagara. The navigator, in answer to his inquiries concerning the source of the St. Lawrence, "was told that, after ascending many leagues among rapids and waterfalls, he would reach a lake one hundred and forty or fifty leagues broad, at the western extremity of which the waters are wholesome and winters mild; that a river emptied into it from the south, which had its source in the country of the Iroquois; that beyond the lake he would find a cataract and portage, then another lake about equal to the former which they had never explored."

In 1603, a company of merchants in Rouen obtained the necessary authority for a new expedition to the St. Lawrence, which they placed under the direction of Samuel Champlain, an accomplished mariner, and able, discreet and resolute commander. On a map attached to his voyages, published in 1613, he indicated the *position* of the cataract, calling it merely a waterfall, (*Saut d'eau*), and describing it as being "so very high that many kinds of fish are stunned in its descent." It does not appear by the record that he ever saw it.

During the sixty years that elapsed between the establishment of the French settlements by Champlain, and the expedition of La Salle and Hennepin, there can be little doubt that the great Fall was repeatedly visited by French traders and adventurers. In 1648, the Jesuit father, Ragueneau, in a letter to the Superior of the Mission, at Paris, says, "north of the Eries is a great lake, about two hundred leagues in circumference, called Erie, formed by the discharge of the *mer-douce* or Lake Huron,

and which falls into a third lake, called Ontario, over a *cataract* of frightful height."

The first description of it, however, secured to us by the preservative power of type, is that of Father Hennepin, so well known to those conversant with our early history. He saw it for the first time in the winter of 1678-9, and his exaggerated account of it is accompanied by a sketch which in its principal features is undoubtedly correct, though its perspective and proportions are quite otherwise. He says, "Betwixt the lakes Ontario and Erie there is a vast and prodigious cadence of water which falls down after a surprising and astonishing manner, insomuch that the universe does not afford its parallel. 'Tis true that Italy and Switzerland boast of some such things, but we may well say they are sorry patterns when compared with this of which we now speak.

* * * * It [the river] is so rapid above the descent, that it violently hurries down the wild beasts while endeavouring to pass it, * * * they not being able to withstand the force of its current, which inevitably casts them headlong above six hundred feet high. This wonderful downfall is composed of two great cross streams of water and two falls, with an isle sloping along the middle of it. The waters which fall from this horrible precipice do foam and boil after the most hideous manner imaginable, making an outrageous noise, more terrible than that of thunder; for when the wind blows out of the south their dismal roaring may be heard more than fifteen leagues off.

"The river Niagara having thrown itself down this in-

credible precipice, continues its impetuous course for two leagues together to the great rock, above mentioned [in another chapter as lying at the foot of the mountain at Lewiston], with an inexpressible rapidity. * * *

From the great Fall unto this rock, which is to the west of the river, the two brinks of it are so prodigious high, that it would make one tremble to look steadily upon the water rolling along with a rapidity not to be imagined."

On his return from the west, in the summer of 1681, the Father informs us that he "spent half a day in considering the wonders of that prodigious cascade." Referring to the spray, he says: "The rebounding of these waters is so great, that a sort of cloud arises from the foam of it which is seen hanging over this abyss even at noon-day." Of the river, he says, "From the mouth of Lake Erie to the Falls are reckoned six leagues. * * *

The lands which lie on both sides of it to the east and west are all level from the Lake Erie to the great Fall." At the end of the six leagues "it meets with a small sloping island, about half a quarter of a league long and near three hundred feet broad, as well as one can guess by the eye. From the end then of this island it is that these two great falls of water, as also the third, throw themselves, after a most surprising manner, down into the dreadful gulph, six hundred feet and more in depth."

On the Canada side, he says: "One may go down as far as the bottom of this terrible gulph. The author of this discovery was down there, the more narrowly to observe the fall of these prodigious cascades. From hence we

could discover a spot of ground which lay under the fall of water which is to the east [American Fall] big enough for four coaches to drive abreast without being wet ; but because the ground * * * * where the first fall empties itself into the gulph is very steep and almost perpendicular, it is impossible for a man to get down on that side, into the place where the four coaches may go abreast, or to make his way through such a quantity of water as falls toward the gulph, so that it is very probable that to this dry place it is that the rattlesnakes retire, by certain passages which they find under ground."

Finding no Indians living at the Falls, he suggests a probable reason therefor: "I have often heard talk of the Cataracts of the Nile, which make people deaf that live near them. I know not if the Iroquois who formerly inhabited near this fall * * * * withdrew themselves from its neighborhood lest they should likewise become deaf, or out of the continual fear they were in of the rattlesnakes, which are very common in this place. * * * * Be it as it will, these dangerous creatures are to be met with as far as the Lake Frontenac [Ontario], on the south side ; and it is reasonable to presume that the horrid noise of the Fall, and the fear of these poisonous serpents might oblige the savages to seek out a more commodious habitation." In the view of the Falls accompanying his description, a large rock is represented as hanging on the edge of the Table rock, and dividing the water into two channels, the one on the north side being small and falling to the west. The rock and the small cascade are mentioned by Kalm, a Swedish

naturalist, who visited the Falls in 1750, as having disappeared a few years before that date.

CHAPTER II.

HISTORY.

1687—Baron La Hontan—Description of the Falls—Beasts and fish drawn over them—Taken out by Indians—Their canoes precede the white man's skiff and yawl—1721—M. Charlevoix—Letter to Madame Maintenon—Number of Falls—Geological indications—Great projection of the rock—Cave of the Winds—Passing through it—Exhilarating trip—Rainbows.

EVEN more exaggerated than Father Hennepin's is the next account of the Falls, which has come down to us, and which was written by the Baron La Hontan, in the autumn of 1687. Fear of an attack from the Iroquois, the relentless enemies of the French, made his visit short and unsatisfactory. He says: "As for the water-fall of Niagara, 'tis seven or eight hundred feet high, and half a league wide. Towards the middle of it we descry an island, that leans towards the precipice, as if it were ready to fall." Concerning the beasts and fish drawn over the precipice, he says they "serve for food" for the Iroquois, who "take 'em out of the water with their canoes;" and also that "between the surface of the water, that shelves off prodigiously, and the foot of

the precipice, three men may cross in abreast, without further damage than a sprinkling of some few drops of water." Father Hennepin, it will be remembered, makes this space broad enough for four coaches, instead of three men.

From the Baron's declaration as to the manner in which the Indians captured the game which went over the Falls, it would seem that on the ferry at their foot, as in all others in this region, the bark canoe of the Indian was the precursor of the white man's skiff and yawl. And the timid traveller of the present day, who hesitates about crossing in this latter craft, will probably pronounce the Indian quite foolhardy for venturing on those turbulent waters in his light canoe, whereas, in skilful hands, it is peculiarly fitted for such navigation.

A more correct estimate of the Cataract than either of the preceding, is that of M. Charlevoix, sent to Madame Maintenon, in 1721. After referring to the inaccurate accounts of Hennepin and La Hontan, he says: "For my own part, after having examined it on all sides, where it could be viewed to the greatest advantage, I am inclined to think we cannot allow it [the height] less than one hundred and forty or fifty feet." As to its figure, "it is in the shape of a horse-shoe, and it is about four hundred paces in circumference. It is divided in two exactly in the centre by a very narrow island, half a quarter of a league long." In relation to the noise of the falling water, he says: "You can scarce hear it at M. de Joncaire's [Fort Schlosser], and what you hear in this place [Lewis-ton] may possibly be that of the whirlpools, caused by

the rocks which fill up the bed of the river as far as this."

Neither the Baron La Hontan nor M. Charlevoix speak of the *number* of water-falls. But Father Hennepin, it will be remembered, mentions *three*, two of which were to the south and west of Goat Island. And the Rev. Abbé Picquet, who visited the place in 1751, seventy years after Father Hennepin, says: [Documentary History, I., p. 283] "This Cascade is as prodigious by its height and the quantity of water which falls there, as by the variety of its falls, which are to the number of six principal ones divided by a small island, leaving *three* to the north and *three* to the south. They produce of themselves a singular symmetry and wonderful effect."

The geological indications are that Goat Island once embraced all the small islands lying near it, and also that it covered the whole of the rocky bar which stretches up stream some hundred and fifty rods above the head of the present island. At that period, from the depressions now visible in the rocky bed of the river, it would seem probable that the water cut channels through the modern drift corresponding with these depressions. In that case there would then have been a third fall in the American channel, north of Goat Island, lying between Luna Island and a small island then lying just south of the Little Horseshoe, and stretching up towards Chapin's Island. On the south side of Goat Island, there would have been a fall between its southern shore and an island near to and beyond the stone tower now standing in the channel.

It is evident from the descriptions of both Father Hennepin and the Baron La Hontan, that the upper stratum of rock over which the water falls, must have projected beyond the face of the rock below much further than it now does. This supposition is confirmed by the fact, that the underlying shale here curves upward higher than at any other point above the whirlpool. The large masses of fallen rock lying at the foot of the American Fall, are evidence of the same fact. Travelers still go behind the sheet on the Canada side, and into and through the Cave of the Winds, on the American side. But they do not expect to keep dry in so doing, nor to sun themselves on the rocks below, like the rattlesnakes of former days. Nevertheless, there is no more exciting nor exhilarating excursion to be made at the Falls than that through the Cave of the Winds. It is a rich experience, both mental and physical.

Nowhere else are the prismatic hues exhibited in such wonderful variety, nor in such surpassing brilliancy and beauty. And although a rainbow is not a spraybow, it may be admitted that a spraybow is a rainbow, formed of drops of water, large or small. So here rainbow dust and shattered rainbows are scattered around; rainbow bars and arches, horizontal and perpendicular, are flashing and forming, breaking and re-forming, dancing and floating around and above the visitor in the most fantastic and delightful confusion of form and effect. And if his fancy prompts him, he may arrange himself as a portrait, at half or full length, in an annular bow. The enamored Strephon may literally place his charming Delia in a

living, sparkling rainbow-frame, flecked all over with diamonds and pearls; albeit the uncouth bathing dress would be in striking contrast with the fairy-like texture and beauty of the setting.

The trip furnishes the *douche*, the shower, the *sitz* and every other kind of bath except the *plunge*. The water does enough of this to satisfy perfectly the most aquatic temperament. As a lung expander, it is unrivaled. And no soporific or anodyne can produce more delightful sensations or emotions than the traveler experiences when the "reaction" occurs. He goes to sleep with a rainbow in his head, and one around it, and the dreamy sound of many waters is transformed into the music of the spheres.

When an oriental parlor, with hammocks and lounges for repose, is added to the present guide and dress-house, this trip will form one of the most attractive features of the place.

CHAPTER III.

HISTORY.

The name Niagara—Baron La Hontan—Beautiful language of the Hurons—Jesuit Missionaries reach Niagara in 1626—Oldest of Indian names—Splendid territory to which it belonged—Description of the river—Immense drainage.

ALL reference to the *name* of this locality has been purposely deferred until we should have become acquainted with its physical characteristics. There is in

some words a mystic power which it is not easy to analyze or define, but which fascinates the ear even of those who do not understand their meaning. The very sound of them as they are enunciated by the human voice, touches a chord to which every spirit instinctively responds. So it is with the name of the great Cataract. No one can hear it correctly pronounced without being charmed with its rhythmical beauty, nor without feeling confident of its poetical aptness and significance in its original dialect.

And although we have no means of determining the correctness, or otherwise, of any of the fanciful or poetical interpretations which have been given of the word, still we cannot doubt that it must have had a peculiar force and justness with those who first applied it. Baron La Hontan, who spent several years among the Indians, noticed the remarkable fact concerning their language that it had no labials. "Nevertheless," he says, "the language of the Hurons appears very beautiful, and the sound of it perfectly charming, although, in speaking it, they never close their lips."

The most voluminous, and among the earliest existing, records connected with the River St. Lawrence, and the great lakes which it drains, are the well-known "*Relations of the Jesuits*," so called, comprising a yearly account of the labors of the Missionary Fathers sent out by the College at Paris to christianise the Indians. In 1615, they established their Mission at Quebec, and from thence extended their operations westward. In 1626, they reached the large and powerful tribe of Indians which occupied the splendid domain which may be described with

proximate accuracy, as bounded by a line commencing at a point on the southerly shore of Lake Ontario, about thirty miles west of the mouth of the Genesee river, and running thence parallel to that river to a point due west from Avon ; thence nearly due west to Buffalo ; thence along the north shore of Lake Erie to the Detroit river ; thence up that river to a point directly west from the west end of Lake Ontario ; thence east to that lake, and finally along the southern shore of it to the place of beginning.

The oldest and most notable name in all this territory is NIAGARA, as would naturally be inferred, when we consider the varied and wonderful features of the mighty river which flows across it. Taking a hurried leave of Lake Erie with a joyous bound, its clear waters gradually spread themselves out in a broad, bright channel, over a plain, open country, having a slight declivity, just sufficient to make a gentle current, thereby adding the living beauty and force of motion to the broad expanse of a lake-like surface, that surface itself diversified and relieved by the pleasant islands, large and small, which are scattered over it. Eddying into every quiet bay ; coquetting with every salient angle ; moving to the melody of its own murmurs, serenely and pleasantly it flows on.

But after a time this holiday journey is interrupted. A fearful change takes place. The careless waters are hurried down a long and sharp descent, over the rough, denuded, boulder-studded bed-rock of the stream. Breaking and bounding ; surging and resurging ; flashing and foaming ; rushing fiercely upon some huge boulder, re-

coiling an instant, then madly leaping entirely over it ; rushing on to others huger still, then breaking wildly around them and hurrying onward until the troubled waters, culminating in their sublimest aspect, are plunged sheer downward in the grandest cataract on the globe.

And now the scene and the effect it produces on the beholder both change. The rapids are beautiful ; the falls are grand ; those are exhilarating, these are inspiring ; those we can look upon standing or walking ; these we gaze upon wrapt and still ; with those our thoughts go out in shout and song ; with these in aspiration and praise ; those are noisy, turbulent, fickle ; these are calm, resistless, inexorable.

After the water has made the final plunge over the precipice the cataract acquires its most impressive and enchanting characteristics ; the majestic monotone, the bow, the cloud, which is its vail by night, its crowning glory and beauty by day. The combinations of grandeur and beauty have reached their climax—the fall, the foam, the voice, the spray, the incense, the bow. Silence is golden here. Speech were powerless even were it pertinent.

The chasm of the river from the Falls to Lewiston has been sufficiently described, as will be seen in the sequel, in treating of the geology of the district. From Lewiston to Lake Ontraio, seven miles, the waters of the river flow on through an elevated and fertile plain, in a strong, calm, majestic current, smiling with dimples and reversed in occasional eddies, but neither broken by rapids nor impeded by islands. Finally it is lost in the lake after

passing an immense bar formed by the enormous mass of sedimentary matter carried down by its own current. The landscape, as seen from the top of the terrace above Lewiston, is one of the finest and most extensive which can be found on the continent, of its peculiar character, all its features being such only as appertain to a broad, champaign country.

The visitor at the Niagara, as he looks at the Falls, will have a profounder appreciation of their magnitude by considering that it requires the water drainage of half a continent to sustain them, and that the remoter springs, which send to them their constant tribute, are more than two thousand miles distant.

CHAPTER IV.

HISTORY.

Niagara a tribal name—Other names given to the tribe, and why—Father Lalement's letter—Niagaras a superior race—Indian language—Full sound of vowels—Corrupt abbreviations—True pronunciation—End of French rule in America—United States and Great Britain now owners of Niagara.

THE name Niagara has been so thoroughly identified with the River and the Falls that the question, whether it was also the name of an Indian nation or tribe has been quite neglected. It is proposed now to give the subject some consideration, assuming, at once, its af-

firmative to be true. This, it is believed, we shall be justified in doing by every principle of analogy and probability. We know that it was a general practice of the Indians who occupied this region of country, so abounding in lakes and rivers, to give the name of the nation or tribe *to*, or to name them *from*, some of the most prominent bodies and courses of water found in their territory. Such was the fact with the Senecas, Cayugas, Oneidas, Onondagas, and Hurons, the tribal name of each being perpetuated in both a lake and river. The warrior tribe of the Six Nations, having no noted lake within their boundaries, left a perpetual memorial of themselves in a name as beautiful as the stream which bears it, and every traveler along the Mohawk is, by it, reminded of the brave nation which never swerved in its fidelity to the Anglo-Saxons.

The unwarlike Eries too, though finally exterminated by their more powerful and aggressive neighbors, the Iroquois, are still remembered in the lake which bears their name.

With the Niagaras the river and the cataract were the most notable and impressive features of their territory. Their principal village bore the same name ; and when we recall the proverbial vanity of the race, we can hardly doubt that this must also have been their tribal name. That it should have been perpetuated in reference to the village, the river and the falls, and that the use of it, in reference to the tribe, should have lapsed, can be readily understood when we recollect that they had two substitutes for the latter. One of these substitutes is explained

at page 70 of the "Relations" of 1641, in a passage which the writer translates as follows: "Our Hurons call the Neuter Nation *Attouanderonks*, as though they would say a people of a little different language: for as to those nations who speak a language of which they understand nothing, they call them *Attouankes*, whatever nation they be may, or as though they spoke of strangers. They of the Neuter Nation in turn and for the same reason call our Hurons *Attouandaronks*."

Thus it would seem that this was a mere title of convenience used to indicate a certain fact, namely, a difference of language. The other substitute by which the nation was best known among their white brethren will be understood by an extract from a letter contained in the same "Relation," and written from St. Mary's Mission on the river Severn, by Father Lalement. In it he gives an account of a journey made by the Fathers Jean de Brebeuf and Joseph Marie Chaumont to the country of the *Neuter Nation*, as the Niagaras were called by the Hurons on the north and the Iroquois on the south of them, learning it, as they did, from the French. The letter says: "Our French, who first discovered this people, named them the *Neuter Nation*, and not without reason, for their country being the ordinary passage by land, between some of the Iroquois nations and the Hurons, who are sworn enemies, they remained at peace with both; so that in times past, the Hurons and the Iroquois meeting in the same wigwam or village of that nation, were both in safety while they remained. There are some things in which they differ from our Hurons. They are larger, stronger,

and better formed. They also entertain a great affection for the dead. * * * * * The Sonontonheronons (Senecas), one of the Iroquois nations the nearest to and most dreaded by the Hurons, are not more than a day's journey distant from the easternmost village of the Neuter Nation, named Onguiaahra [Niagara], of the same name as the river."

It would seem then that this name, Neuter Nation, as applied to this tribe, was an appellation used merely to indicate a peculiarity of its location, or of the relation in which it stood to the hostile tribes living to the north and south of it. The Indians were not philologists, and seem not to have objected to the names applied to them, nor to have criticised the erroneous pronunciation of words of their own dialects.

In the extract given above, the name of our river first appears in type. Its orthography will be noted as peculiar. It is one of forty different ways of spelling the name, thirty-nine of which are given in the index volume of the Colonial History of New York, and the fortieth, the most pertinent to our present purpose, in Drake's "Book of the Indians," seventh edition. Prefixed to "Book First" is a "TABLE OF THE PRINCIPAL TRIBES," in which we find the following:

"NICARIAGAS, once about Michilimakinak ; joined the the Iroquois in 1723."

M. Charlevoix, in 1642, apparently using the facts stated in Lalement's letter of the preceding year, and quoting also a portion of its language, says : "A people larger, stronger, and better formed than any other savages,

and who lived south of the Huron Country, were visited by the Jesuits, who preached to them the Kingdom of God. They were called the Neuter Nation, because they took no part in the wars which desolated the country. But in the end they could not themselves escape entire destruction. To avoid the fury of the Iroquois, they finally joined them against the Hurons, but gained nothing by the union." At a later date, he says, they were destroyed about the year 1643. But we have before observed that Father Raugeneau states, that their destruction occurred in 1651. The tribe mentioned by Drake was probably a remnant who escaped in the final overthrow of their nation in this last-named year, and sought refuge at Macinaw, among the Hurons, who had previously retreated to this almost inaccessible locality, in order, also, to escape from the all-conquering Iroquois. After the lapse of nearly three quarters of a century, when the hostility of the latter had subsided, and they had themselves been weakened and subdued by the whites, the wretched remnant of the Niagaras, with that strong love of home so characteristic of the Indian, returned to their native hunting grounds, where they remained for a few years, and then joined their conquerors in that mournful procession of their race which has been so constantly forced to the west by their white *brothers*.

If there were a Nemesis for nations as well as for individuals, it would be fearful to contemplate the time when the Anglo-Saxon should be called on to pay the "long arrears" of the Indians' "bloody debt." Returning to the orthography of our name, we find on Sanson's map of

Canada, published in Paris in 1657, that it is shortened into "Ongiara," and on Coronelli's map of the same region, published in Paris in 1688, it crystalizes into *Niagara*. There is also on this map a village located on or near the site of Buffalo, designated as follows: "*Kah-kou-a-go-gah, a destroyed nation.*" This name bears a closer resemblance to the true one than several of the forty to which we have just referred, and if it be reduced to Kah-kwa it would still be only a corrupt abbreviation of Niagara.

More than fifty years ago, while leisurely traveling through western New York, the writer well remembers how his youthful ears were charmed with the flowing cadences of the better class of Indians as they *intoned* rather than spake the beautiful names which their ancestors had given to different localities. Every vowel was fully sounded.

O-N-E-I-D-A was then Oh - ne - i - dah; C-A-Y-U-G-A was Kah - yu - gah; G-E-N-E-S-E-E was Gen - e - se - e; C-A-N-A-N-D-A-I-G-U-A was Kan - nan - dar - quah, and N-I-A-G-A-R-A was Ni - ah - gah - rah.

The present corrupt and abbreviated pronunciation of these names is well known. A people whose Elysium would seem to be imperfect if lacking a race-course; many of whose youthful scions and frost-crowned sires believe that the poetry of motion is expressed by the mystic characters 2' 17", and culminates in the fact which they represent; who, while usurping the prerogative of Jove, and compelling the electric current to do their errands, would "stir its metal with their steel," if it *were* metal

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and amenable to such pointed persuasion—such a people is not likely to respect the *far niente*, either in name or speech, of the more leisurely and poetic savage.

In regard to the name which commemorates our great nation, river, and cataract, the pronunciation nearest to the original which it may be possible to perpetuate is Ni-ag-a-rah; the accent on the second syllable, the vowel in the first pronounced as in the word *nigh*; the *a* in the third and fourth syllables but slightly abbreviated from the long *a* in *far*, and that in the second syllable but slightly aspirated.

CHAPTER V.

HISTORY.

The lower Niagara—La Salle's first entrance to it—First Defensive work—Fort Niagara—Fort Mississauga—Niagara Village—Lewiston—Portage around the Falls—First railroad in the United States—Fort Schlosser—Old orchard—Queenston—Butler—Ambuscade at Devil's Hole—Cayuga Creek—The *Griffin*, first vessel—Navy Island—Niagara frontier.

FROM the earliest advent of the French missionaries and voyageurs to the Lake region, the banks of the lower Niagara were a favorite and favored locality. Very early they were cleared of the grand forest which covered them and the genial, fertile, and easily-worked soil, enriched by the deep vegetable mould that had been accu-

mulating upon it for centuries, produced in lavish abundance the wheat, maize, garden vegetables and fruits, large and small, which are so palatable and healthful, not only to the hardy pioneer but also to the effeminate cosmopolitan. "On the 6th day of December, 1678," says Marshall, in his admirable Historical Sketches, "La Salle, in his brigantine of ten tons, doubled the point where Fort Niagara now stands, and anchored in the sheltered waters of the river. The prosecution of his bold enterprise at that inclement season, involving the exploration of a vast and unknown country, in vessels built on the way, indicates the indomitable energy and self-reliance of the intrepid discoverer. His crew consisted of sixteen persons, under the immediate command of the Sieur de la Motte. '*Te Deum laudamus*' chanted the grateful Franciscans as they entered the noble river. The strains of that ancient hymn of the Church, as they rose from the deck of the adventurous bark, and echoed from shore and forest, must have startled the watchful Senecas with the unusual sound, as they gazed upon their strange visitors. Never before had white men, so far as history tells us, ascended the river."

La Salle rested here for a time, but no defensive work was constructed until 1687, when the Marquis De Nonville, returning from his famous expedition against the Senecas, fortified it, after the fashion of the time, with palisades and ditches. The small garrison of one hundred men which he left, were obliged to abandon it the following season, after partially destroying it. By consent of the Iroquois it was reconstructed in stone in 1725-6.

Opposite to Fort Niagara, on the Canadian side, are Fort Mississauga and the Village of Niagara. The latter, Marshall says, "is an older settlement than any on the eastern side of the river, and boasted a weekly newspaper as early as 1795. In 1792, it became the residence of the Lieutenant-Governor of Canada, and in the autumn of that year, the first session of the Parliament of the Upper Province was held there." It is a charming location, and there are in the large village quite a number of substantial and tasteful mansions. Several Americans have purchased dwellings in the place for summer occupation. A mile above was Fort George, now a ruin.

Seven miles above the mouth of the river, and at the head of its navigation, nestled at the foot of the mountain, formerly so called, is Lewiston, so named in 1805 in honor of Governor Lewis, of New York. Here, in 1678, La Salle "constructed a cabin of palisades to serve as a magazine or storehouse." And this was the commencement of the portage to the river above the Falls, which passed over nearly the same route as the present road to Lewiston, and what is still called the Portage Road. Here, too, the first railway in the United States was constructed, True, it was built of wood, and was called a tramway. But a car was run upon it to transport goods up and down the mountain. The motion of the car was regulated by a windlass, and it was supported on runners instead of wheels. This was a very good arrangement for getting freight down the hill, but not so good for getting it up. But the wages of labor were low in every sense, since many of the Indians, demoralized by the use of those two

most pestilent drugs, rum and tobacco, would do a day's work for a pint of the former and a plug of the latter.

The upper terminus of this portage was for many years merely an open landing place for canoes and boats. In 1750 the French constructed a strong stockade-work on the bank of the river above their barracks and store houses. This they called Fort du Portage. It was burnt in 1759, by Chabert Joncaire, who was in command of it when the British commenced the formidable and fatal campaign of that year against the French. After Fort Niagara was surrendered to Sir William Johnson, Joncaire retired with his small garrison to the station on Chippawa Creek.

In less than two years the work was rebuilt in a much more substantial manner by Captain Joseph Schlosser, a German who served in the British army in that campaign. It had the outline of a tolerably regular fortification, with rude bastions and connecting curtains, surrounded by a somewhat formidable ditch. The interior plateau was a little elevated and surrounded by an earth embankment piled against the inner side of the palisades, over which its defenders could fire with great effect.

When the writer first saw its remains, the outlines and ditches of the work were quite distinct. Only some slight inequalities in the surface now indicate its site. Captain Schlosser was afterwards promoted to the rank of Colonel and died in the Fort. An oak slab, on which his name was cut, was standing at his grave just above the Fort as late as the year 1808.

Some sixty rods below, is still standing what is believed

to be the first *civilized* chimney built in this part of the country. It is a large and most substantial stone structure, around which the French built their barracks. These were burnt by Joncaire on his retreat. A large dwelling house was built to it by the English, which afforded shelter for many different occupants until it was burnt in 1813. Its last occupant, before it was destroyed, kept it as a tavern, and it became a favorite place for festive and holiday gatherings. What hath been may be. When the Falls shall have receded two miles, the brides and grooms of that age will find their Cataract House near the site of old Fort Schlosser.

To the west of this old stone chimney stand the few surviving trees of the first apple orchard set out in this region. As early as 1796, it is described as being a "well fenced orchard, containing 1200 trees." Not fifty are now standing.

Across the river from Lewiston is Queenston, so named in honor of Queen Charlotte. The battle which bears its name, was fought on the 13th of October, 1813, between the American and British armies. The former crossed the river, made the attack, and carried the heights. The commander of the British forces, General Brock, and one of his aids, Colonel McDonald, were killed. The British were reinforced, and the American militia refusing to cross over to aid the Americans, the latter were obliged to return across the river, leaving quite a number of prisoners in the hands of the enemy. Some years afterward, the Colonial Parliament caused a fine monument to be erected on the heights to the mem-

ory of General Brock. It presents a conspicuous and imposing appearance from the terrace below.

Two miles and a quarter above Lewiston, as we have noted in Part Second, is the Devil's Hole, famous as the scene of a short supplementary campaign, made against the English, by the Seneca Indians, in 1763. Though doubtless instigated by French traders, yet it was a purely Indian enterprise, gotten up among themselves, and commanded by FARMER'S BROTHER, one of the Seneca chiefs, who was a fighter as well as an orator. It was one of the best planned and most successfully executed military stratagems ever recorded. It was calculated upon the nicest balancing of facts and probabilities, and executed with unrivaled thoroughness and celerity.

It was *known* to the Indians that the English were in the habit, almost daily, of sending supply trains, under escort, from Fort Niagara to Fort Schlosser. After unloading at the latter post, they returned to the former. They *knew* also that there was a smaller supporting force of one or two companies at Lewiston, which could join the escort from Fort Niagara, in case of an extra valuable train. They *knew* too that the whole force at both places was not large enough to furnish an escort of more than four hundred men. They *knew* that the narrow pass at the Devil's Hole was the best point to place the ambuscade. They *knew* that when the train went up they could see whether its escort was large or small, and so they would know whether they should concentrate their force to attack the larger escort, or divide it and attack the train and small escort first and the relieving force after-

ward. They *conjectured* that the train would have a small escort ; but if it should have a large one, so much the better, as there would be a larger number in a small space for their balls to riddle. They *conjectured* that if the escort were small, the firing on the first attack would be heard by the soldiers at Lewiston, and that they would hurry to the relief of their comrades, not dreaming of danger before they should reach them.

The fatal result demonstrated the correctness of their reasoning. They made a double ambuscade : one for the train and escort ; the other for the relieving force, and they destroyed both, only three of the first escaping and eight of the latter. The event occurred on the 14th of September, 1763. We say nothing of its morality. We speak only of its strategy. John Stedman commanded the supply train. At the first fire of the Indians, seeing the fatal snare, he wheeled his horse at once, and spurring him through a gauntlet of bullets, reached Schlosser in safety. A wounded soldier concealed himself in the bushes, and the drummer-boy lodged in a tree as he fell down the bank. Eight of the relieving force escaped to Fort Niagara to tell the story of their defeat.

Three miles above Schlosser is Cayuga Creek, near the mouth of which La Salle built the *Griffin*, a vessel of sixty tons burden, the first *civilized* craft that floated on the upper lakes, and the pioneer of an inland commerce of unrivaled growth and value. She reached Green Bay safely, but on her return voyage foundered with all on board in Lake Huron.

The French also built some small vessels on Navy

Island, (the French name, *Isle la Marine*, given to the island having been thus translated by the English.) The reinforcements sent from Venango for the French, during the siege of Fort Niagara by Sir William Johnson, in 1759, were landed on this island. To the east of it there is a large deep basin, formed at the foot of the channel, between Grand and Buckhorn islands. The upper part of this channel being narrow, the basin appears like a bay. In this bay the French burnt and sunk the two vessels, as is supposed, which brought down the Venango reinforcements; hence the name "Burnt Ship Bay." The writer has seen the ribs and timbers of these vessels beneath the water, and caught many fine perch which had their haunts near them.

The Niagara frontier was the theatre of great activity during the war of 1812, the particulars of which we need not record again, as they are already matters of familiar history. Let it suffice to say, that the contest ended triumphantly for both parties; for England, in that she yielded nothing we asked of her; and for the United States, in that they won so many glorious victories by land and sea. Every good citizen on both sides of the line must earnestly hope that there never may be a recurrence of such scenes.

The French rule in North America was finally terminated in 1763. It virtually ceased soon after the capture of Quebec by General Wolf, in 1759, and the vast possessions which they had been the first to explore and partially to civilize, were transferred to their English

neighbors. England and America are now the joint owners of Niagara.

We thus conclude what may be called its early history. Some other historical facts and incidents will be found in the sequel, Parts Second and Third.

PART SECOND.

CHAPTER VI.

GEOLOGY.

America the old world—Geologically recent origin of the Falls—Evidence thereof—Captain William's surveys for ship canal—Former extent of Lake Michigan—Its outlet into Illinois River—The Niagara Barrier—How broken through—Niagara born.

IF Professor Agassiz and Elie De Beaumont are correct in their geological reading, America is the *old* world rather than the new, and the northern portion of it, stretching west from Eastern Canada to the Rocky Mountains, was the first to be lifted into the genial light of the sun. And Professor Lyell has recourse to the vast stellar spaces for a standard by which to estimate "the interval of time which divides the human epoch from the origin of the coralline limestone, over which the Niagara is precipitated at the Falls." "The Alps, the Pyrenees, the Himalayas," he continues, "have not only begun to exist as lofty mountain chains, but the solid materials of which they are composed have been slowly elaborated beneath the sea within the stupendous interval of ages here alluded to."

A little more than twenty years ago, Professor Agassiz made a tour to the Upper Lakes with a class of students

for the purpose of giving them practical lessons in geology and other branches of natural science. The day was devoted to out-door examinations of different localities, and in the evening was given a familiar lecture expository of the day's work. One of the points thus examined was Niagara, and it was the writer's good fortune to be able to accept an invitation to listen to the instructive lecture which followed the examination.

Professor Agassiz concurs with other geologists in the opinion that the Falls were once at Lewiston, and one of the most interesting portions of the lecture was his animated description of the retrocession of the Falls, traced step by step back to their present position.

From this oral exposition, from other high geological authorities, and from personal observation extending through a quarter of a century, the writer has derived the facts herein presented.

There can be no doubt that at a comparatively recent geological period the Falls of Niagara had no existence. The scope and limits of a work like this will not admit of the full exposition of this postulate which the writer hopes hereafter to give. For the present it may suffice to mention two facts which are conclusive on this point.

Dr. Houghton, geologist of the State of Michigan, states in his report that the elevation of Lake Michigan above tide water is 578 feet. That of Lake Erie, as shown by the surveys of the Erie Canal, is 568 feet, the difference of level between the two being ten feet. The fall or descent in the Niagara River from Lake Erie to Gill Creek, a few rods above the site of old Fort

Schlosser, is twenty feet. Hence we learn that the surface of the water in Lake Michigan is thirty feet higher than that of the Niagara River near the mouth of Gill Creek. If, therefore, we find anywhere below the Falls a barrier drawn across this river that is more than thirty feet high, its water would thereby be set back to Lake Michigan. A moderate elevation above this thirty feet would serve as a safe shore-line for still water.

The existence of this barrier has been demonstrated. In the year 1835, by direction of the War Department, Captain W. G. Williams, of the United States Topographical Engineers, surveyed three routes for a canal around Niagara Falls. The first of these routes was run from the river nearly in a straight line to the head of Bloody Run and thence a portion of the way over the terrace laid bare by the rapid subsidence of the water after the barrier had been broken through. The second route commencing at the same point with the first—the old Schlosser Storehouse just above Gill Creek—was run up the valley of the creek, through the ridge above Lewiston at a slight depression in the general line of the hill, and thence to Lake Ontario by two different routes. The highest point in the ridge was found to be sixty feet above the surface of the water in the river at the starting point. Here then is found the requisite barrier, a dam thirty feet higher than the water in Lake Michigan and having a base, as will be seen by reference to the map, of two and a half miles in breadth. This was its breadth at the time of the survey. But a careful observance of the topography of the banks on both sides of the river will show that it must originally

have been not less than twice that breadth, and that the depressions now existing are the results of the denudation caused by the removal of the barrier. The profile given on the map of a portion of line No. 2, of Capt. Williams' survey, is reduced from one of the maps accompanying his report. This profile passes through the Lewiston ridge about one mile east of the site of old Fort Grey.

While this barrier was unbroken Lake Erie as extended would have covered all land that was not twenty-six feet higher than the present level of the river at old Schlosser landing, since the water there is sixteen feet below the level of Lake Erie. It is not difficult to trace this barrier on a good map. From old Fort Grey it stretches eastward a short distance past Batavia, and then turns to the south through Wyoming into Cattaraugus County. In the latter county it forms the summit level of the Genesee Valley Canal. This summit is a swamp sixteen hundred and twenty-three feet above tide water, and the water runs from it northerly through the Genesee River into the Gulf of St. Lawrence, and southerly, through the Alleghany, into the Gulf of Mexico, while within a short distance rises Cattaraugus Creek which flows west into Lake Erie.

The gradual rise of the Niagara barrier as it extends to the east was demonstrated by the surveys of Captain Williams. By the Gill Creek line to Lewiston he found its elevation above the river, as has been stated, sixty feet. By the Cayuga Creek line to Pekin, it was sixty-four feet, and by the Tonawanda Creek line to Lockport, it was eighty-four feet, as is also shown by the surveys of the Erie Canal.

To the west it extends from Brock's Monument to the ridge which bounds the easterly side of the valley of the Chippawa Creek, and thence around the head of Lake Ontario into the Simcoe Hills.

At that period all the islands in the Niagara River valley were submerged. The lower sections of the valleys of the Chippawa, Cayuga, Tonnewanda and Buffalo Creeks were also submerged. The site of Buffalo was, probably, a small island, and many other similar islands were scattered over the broad expanse of water.

And this brings us to our second cardinal fact. Lake Michigan, having absorbed or spread over all the vast water-links in the great chain between Superior and Ontario, was the most stupendous body of fresh water on the globe. Its drainage was to the south through the valleys of the Des Plaines, Kankakee, Illinois and Mississippi Rivers, into the Gulf of Mexico. The evidence of this fact is abundant. The survey of the Illinois Central Railroad shows that the surface of Lake Michigan is three hundred feet above the line of low water in the Ohio River at Cairo, where it joins the Mississippi. It also shows that the low water-line of the Kankakee, where the rail-road crosses it, is eleven feet above the surface of the lake. This river, which forms the north-eastern branch of the Illinois, rises in the State of Indiana, near South Bend, two miles from the St. Joseph. From its very commencement at its head-springs it is a shallow channel in the middle of a swamp,—called on the maps the "Kankakee Pond,"—nearly a hundred miles long, and from two to five miles wide. On its north side, in Porter

County, is a broad cove, with a small stream in the midst of it, which reaches up due north to within a stone's throw of the south branch of the East Calumic river, which empties into the south-west corner of Lake Michigan.

More than thirty years ago, while traveling by stage from Logansport, Indiana, to Chicago, the writer was told by a fellow-passenger that it was not an unusual thing, on the occurrence of a strong north wind during the spring floods, to cross with boats from this branch of the East Calumic into the Kankakee Pond through this cove. We have not been able to obtain any authentic topographical survey, which shows the elevation that it would be necessary to overcome in order to effect this meeting of the waters.

Again. The river Des Plaines rises near the northern line of the State of Illinois, and running south parallel with the lake shore, forms, at its junction with the Kankakee, the Illinois. The Des Plaines is only ten miles west of Chicago. One of its eastern tributaries rises very near the head waters of the south branch of the Chicago River, and often, when flooded by heavy rains, its waters flow over into the lake. At this point, also, the Jesuits and the early settlers were in the habit of crossing in their boats to the Des Plaines, and thence into the Illinois. The writer is informed by Col. William A. Bird, the last Surveyor in Chief of the boundary Commission, that when the party was at Macinaw, in the spring of 1823, Mr. Ramsey Crooks, the adventurous and enterprising agent of the late Mr. John Jacob Astor, came up to that place

from Joliet on the Illinois in one of the big canoes so generally used at that day for navigating the lakes, and that Mr. Crooks informed them that he crossed from the Des Plaines into Lake Michigan without taking his canoe out of the water.

Again. The deep cut in the Illinois and Michigan Canal, recently excavated by the City of Chicago, in order to improve its sewer drainage, is quite uniform at its upper surface, and is sixteen to eighteen feet deep for a distance of twenty-six miles. The bottom of this cut is six feet below the lowest water-mark ever noted in the lake. At the point where the deep cut reaches the Des Plaines, it is ten feet lower than the bottom of the river. It is sixteen miles further down before the bottom of the cut and the river coincide with each other. Nearly the whole of this distance it is necessary to maintain a guard-bank, to protect the canal from the inundations of the river. Here we find there is a dam only about twelve feet high, that once separated the waters of the lake from those of the Gulf of Mexico.

There were, therefore, two courses through which the waters of Lake Michigan could once have passed into the Illinois; the first through the Des Plaines, and the second from the head-springs of the East Calumic into the great north cove of the Kankakee Pond. When we consider the immense drainage which must have been discharged through these channels into the valley of the Illinois, we can well understand the gigantic proportions of that valley when compared with the stream which now flows through it. The perpendicular and water-worn

sides of Starved Rock, below Ottawa, attest the magnitude of the lake-like floods which must once have dashed around them.

Having established the existence of the Niagara barrier, it remains to analyze its structure, and then to search out the agencies by which it was broken down. First, in regard to its organization. An examination of the locality reveals the fact that the portion of the ridge lying between old Fort Grey and Brock's Monument was of a peculiar character. At the former point the hard, compact clay had in it but a slight mixture of grey loam and sand. At the latter point, fine gravel was plentifully mingled with this loam. This latter mass being quite porous, would rapidly become saturated with water, and its component parts be easily separated. The declivity of the high, hard clay bank, down to the rock at the edge of the precipice, is quite abrupt on the American side, while on the opposite side the ascent towards Brock's Monument, and above, is quite gradual. This formation extends upward about one mile and a-half, when the gravel and loam disappear, and the hard clay succeeds and continues upward with a gradual downward slope nearly to the Falls.

This upper drift was about twenty feet thick, and rested on a laminated stratum of the Niagara lime-stone. This stratum, though quite compact, and having its seams closely jointed, yet was not so thoroughly indurated as the lower strata of the Niagara group, and its thin plates were more easily displaced and broken up. The depression marked in the sixth mile of the profile referred to,

was evidently cut out by the waters of Fish Creek, after the barrier had been removed, since the land near the head waters of this stream is higher than at the point where the line runs through the ridge. It is also noticeable that the ridge, at this point, approaches the brink of the escarpment more nearly than at any other, and the sharp declivity of its northern face is clearly shown on the profile.

Within the last century there have been two, and perhaps more, large tidal waves on the great lakes. There have also been many severe gales, which have inundated the low lands around their shores, and attacked, with destructive effect, their higher banks. One of these gales is mentioned in the sequel. It came from about two points north of west, and as noted, raised the water six feet perpendicular on the rapids above the Falls. In the narrow portions of the river above it must have elevated the water still more. Of course a much higher rise would have been produced by the force of such a gale acting upon the vastly increased surface of the larger lake.

The first serious impression upon the Niagara barrier must have been made by these two mighty forces. By them, undoubtedly, was the first breach made over its top, thus commencing that slow but sure denudation, which finally reached the rock below. And by their aid was even the rock itself removed.

Here then,—changing the tense,—is the composition and structure of our dam. It is thirty feet high, with a base two-and-a-half miles certainly, and probably five, in width. How to break through it, is the problem to be

solved—or dissolved—by the great inland sea which laves it, so that the water may flow onward and downward to the Atlantic.

Fortunately we have, all along the shores of our inland lakes, an annual demonstration of the method by which such problems are solved. A constant abrasion of their banks is produced by the action of water, frost and ice. And these are the resistless elements, which, by their persistent and powerful action during the lapse of ages, are to excavate a channel for the waters of the Niagara. The gradual upward slope of the rock and the thick upper drift broke the force of the huge waves that were occasionally dashed upon them. Their position could not have been more favorable to resist attack. It was a Malakoff of earth on a foundation of rock. Little by little the refluxing waves carried back portions of the crumbled mass, and deposited them in the neighboring depressions. Slowly, wearily, desultorily the erosion and desquamation went on. At last the upper drift was broken down, and its crumbled remains swept from the rock.

Then the insidious forces of heat and cold, sun and frost became potent. The thin laminæ of limestone were loosened by the frost, broken up and disintegrated. At last a thin sheet of water was driven through the gorge by some fierce gale. The steep declivity of the counterscarp was then fatally attacked, and after a time its perpendicular face laid bare. Thenceforth the elements had the top and one end of the rocky mass to work on, and they worked at a tremendous advantage. The breaking up and disintegration of the rock went on. It was gradu-

ally crumbled into sand which was washed off by the rains and swept away by the winds. Finally a channel was excavated, of which the bottom was lower than the surface of the great lake above; the sparkling waters rushed in, dashed over the precipice, and Niagara was born.

As the water worked its way over the precipice gradually, so it would gradually excavate its channel to Lake Ontario, and it is not probable that any great inundation of the lower terrace could have occurred.

CHAPTER VII.

GEOLOGY.

Composition of terrace cut through—Why retrocession is possible—Three sections from Lewiston to Falls—Devil's Hole—Medina group—Recession long checked—Whirlpool—Soon cut out—Outlet narrowest part of river—Rapids above—The mirror—Depth of water and chasm—Former grand Fall—Height of Falls.

THE water having laid bare the face of the mountain from top to bottom, we are enabled to examine the composition of the mass through which it has been slowly cutting its way. After removing the thin plates of the upper stratum, as we descend, according to Professor Hall, we find :

1. Niagara limestone—compact and grodiferos.
2. Soft argillo-calcareous shale.

3. Compact grey limestone.
4. Thin layers of green shale.
5. Grey and mottled sandstone constituting with those below the Medina group.
6. Red shale and marl with thin courses of sandstone near the top.
7. Grey quartzose sandstone.
8. Red shaly sandstone and marl.

Before reaching the Whirlpool the mass becomes, practically, resolved into numbers three, four and five, the limestone, as a general rule, growing thicker and harder, and the shale also, as we follow up the stream.

The reason why retrocession of the Fall is possible is found in the occurrence of the shale noted above as underlying the rock. It is a species of indurated clay, harder or softer according to the pressure to which it may have been subjected. When protected from the action of the elements it retains its hardness, but when exposed to them it gradually softens and crumbles away. After a time the superstratum of rock, which is full of cracks and seams, is undermined and precipitated into the chasm below. If the stratum of shale lies at or near the bottom of the channel *below* the Fall it will be measurably protected from the action of the elements. In this case retrocession will necessarily be very gradual. If above the Fall the shale projects upward from the channel below, then in proportion to the elevation and thickness of its stratum will be the ease and rapidity of disintegration and retrocession. It results, therefore, that the shale furnishes a very good standard by which to

determine the comparative rapidity with which the retrocession has been accomplished at different points.

From the base of the escarpment at Lewiston up the narrow bend in the channel above the Devil's Hole, a distance of four and a quarter miles, the shale varies in thickness above the water, from one hundred and thirty feet at the commencement of the gorge, to one hundred and ten feet at the upper extremity of the bend. Here, although there is very little upward curve in the limestone, yet there is a decided curve upward in the Medina group, noticed above, composed mainly of a hard, red sandstone. It projects across the chasm, and also extends upward to near the neck of the Whirlpool, where it dips suddenly downward. The two strata of shale becoming apparently united, follow its dip and also extend upward until they reach their maximum elevation near the middle of the Whirlpool. Thence the shale gradually dips again to the Railway Suspension Bridge, three-quarters of a mile above. For the remaining one and a half miles from this Bridge to the present site of the Falls the dip is downward to the new Suspension Bridge, where it rises again and passes under the Falls to Table Rock.

We may then divide this reach of the Niagara River into three sections :

First. From Lewiston to the Bend above the Devil's Hole.

Second. Thence to the head of the rapid above the Railway Suspension Bridge.

Third. Thence to the present site of the Falls.

We are now prepared to consider these sections with

reference to the retrocession of the fall of water. Through the first section the shale, as before noted, lying much above the water surface, and the superposed limestone being rather soft and thinner than at any point above, the retreat was probably quite uniform and comparatively rapid, about the same progress having been made in each of the centuries required to accomplish its whole length. Professor James Hall, in his able and interesting Report on the Geology of the Fourth District of the State of New York, suggests the probability of there having been three distinct Falls, one below the other, for some distance up stream, when the retrocession first began. The average width of this section between the banks is one thousand feet. About one mile below its upper extremity is the "Devil's Hole," a side-chasm cut out of the American bank of the river by a small stream called "Bloody Run," which, in heavy rains forms quite a torrent. The "Hole" has been made by the detrition and washing out of the shale and the fall of the over-lying rock.

Near the upper end of this section there is a rocky cape, which juts out from the Canada bank, and reaches nearly two-thirds of the distance across the chasm. At this point the great Fall met with a more obstinate and longer continued resistance than at any other, for the reason that the fine, firm sandstone, belonging to the Medina group, as has been stated, here projects across the channel of the river, and forming a part of its bed, rises upward several feet above the surface of the water. And here, this hard, compact rock held the cataract for many centuries ; the crooked channel which incessant friction

and hammering finally cut through it, being one of the narrowest in the river. The average width between the banks of this section is about nine hundred feet.

In the second section is found the Whirlpool, one of the most interesting and attractive portions of the river. The large basin in which it lies was cut out much more rapidly than any other part of the chasm. And this for the reason that, in addition to the thick stratum of shale, there was, underlying the channel, a large pocket, and, probably also, a broad seam or cleavage filled with gravel and pebbles. Indeed there is a broad and very ancient cleavage in the rock-wall on the Canada side, extending from near the top of the bank to an unknown depth below. Its course can be traced from the north side of the pool some distance in a north-westerly direction. Of course the resistless power of the falling water was not long restrained by these feeble barriers, and here the broadest and deepest notch of any given century was made. The name, Whirlpool, is not quite accurate, since the body of water to which it is applied is rather a large eddy, in which small whirlpools are constantly forming and breaking. The spectator cannot realize the tremendous power exerted by these pools, unless there is some object floating upon the surface by which it may be demonstrated. Logs from broken rafts are frequently carried over the Falls, and when they reach this eddy, tree trunks from two to three feet in diameter and fifty feet long, after a few preliminary and stately gyrations, are drawn down endwise, submerged for awhile and then ejected with great force, to resume again their devious

way in the resistless current. And they will often be kept in this monotonous round from four to six weeks before escaping to the rapids below. The writer has seen the bodies of a man, a horse and a hog, floating together in unconscious equality for weeks before thus escaping.

The cleft in the bed-rock which forms the debouche of the basin is the narrowest part of the river, being only four hundred feet in width. Standing on one side of this gorge, and considering that the whole volume of the water in the river is rushing through it, the spectator witnesses a manifestation of physical force which makes a more vivid impression upon his mind than even the great Fall itself. No extravagant attempt at fine writing, no studied and elaborate description can exaggerate the wonderful beauty and fascination of this pool. Separated from the habitations of men, at a distance from any highway, lying secluded in the midst of a small tract of wood, which has fortunately been preserved around it, and in which the dark and pale greens of stately pines and cedars predominate, and impart a shade of deeper green to the borders of the water in the basin below, while within the basin the waters are rushing onward, plunging downward, leaping upward, combing over at the top in beautiful waves and ruffles of dazzling whiteness, and shaded down, through all the opalescent tints, to the deep emerald at their base; whirling, rippling, rushing, tumbling, dancing, flashing, roaring, murmuring, sighing, singing, every liquid note and tone clear and distinct, in the grand diapason which includes the voice of many

waters ; ever varying, never presenting the same aspects in any two consecutive moments ; incarnation of change and emblem of eternity, the beholder is now lost in admiration, anon clapping his hands in glee, and again looking with moistened eyes as he comprehends more and more the many-sided and varied beauties of the matchless scene. Hyperbolic as this may appear to careless travelers, it will seem but simple truth to true students and lovers of nature. None of those who may visit the Whirlpool should fail to go down the bank to the water's edge. On a bright summer morning, after a night shower has laid the dust, cleansed and brightened the foliage of shrub and tree, purified and glorified the atmosphere, there are few more inviting and charming views.

The remaining portion of this section is a beautiful curve, reaching up just above the railway Suspension Bridge. The water is in a perpetual tumult, a perfect embodiment of the spirit of unrest. Owing to the rapidity of the descent and the narrowness of the curve, the water is forced into a broken ridge in the centre of the channel. There, in its wild tumult, it is tossed up into fanciful cones and mounds, which are crowned with a flashing coronal of liquid gems, by the isolated drops and delicate spray thrown off from the whirling mass, sometimes to the height of thirty feet.

Standing on the Bridge and looking down stream, the spectator will see near by, on the American shore, a very good illustration of the manner in which the shale, there cropping out above the surface of the water, is worn

away, leaving the superposed rock projecting beyond it.

In the third and last section the shale continues its downward dip, and at several places entirely disappears. The rock lying upon it is quite compact, and some of it very hard. The deep water, into which the falling water was formerly received, partially protected the shale, so that many centuries must have elapsed before the excavation of this section was completed.

Sixty rods below the American Fall is the upper Suspension Bridge. The distance between the banks at this point is twelve hundred feet. The average width of the section is eleven hundred feet. From this bridge, looking downward, no one can fail to be impressed with the serene and quiet beauty of the mirror below, reflecting from the surface of its emerald and apparently unfathomable depths, life-size and life-like images of surrounding objects. The calm, majestic, unbroken current is in striking contrast with the fall and foam and chopping sea above.

The average depth of the water between the two Suspension Bridges, as ascertained by measuring, is one hundred feet. But it must be borne in mind that this is the depth of the water flowing above the immense mass of rock, stones and gravel which has fallen into the channel. The *bottom* of the chasm, therefore, must be more than a hundred feet lower, since the fallen rocks, having tumbled down promiscuously, must occupy much more space, than they did in their original bed. There are isolated points, as at the Whirlpool and Devil's Hole, where the river is wider than in any part of this section, but the depth is

less. Taking into consideration both depth and width, this is the finest part of the chasm. And for this reason chiefly, when the great Cataract was at a point about one hundred rods below the upper Bridge, it must have presented its sublimest aspect. The secondary bank on each side of the river, is here high and firm, whereby the whole mass of water must have been concentrated into a single channel of greater depth at the top of the Fall than it could have had at any other point. And here the mighty column exerted its most terrific force, rolling over the precipice in one broad, vertical curve, water falling into water and lifting up, perpetually, that snowy veil of mist and spray which constitute, at any point, its crowning beauty. Deep calleth unto deep, in the storms, around the capes and amidst the caves of the ocean, but nowhere with a voice so continuous, majestic and solemn as might then have been heard.

From near the Ferry stairs passing under the American Falls, Goat Island, the Horse-Shoe Fall, Table Rock, and for some distance down the Canada bank, there is a decided upward curve, and at the same time a softening of the shale. To this softer shale was due the great *overhang* of the American Fall noticed by Father Hennepin and the Baron La Hontan, and of Table Rock while it was standing. And here a remarkable change occurs in the physical features of the locality. For three miles above the Falls the course of the river is a little north of east, or south of west as the current runs. But after leaving the precipice which sustains the present Fall, it makes an acute angle with its former direction and thence to the

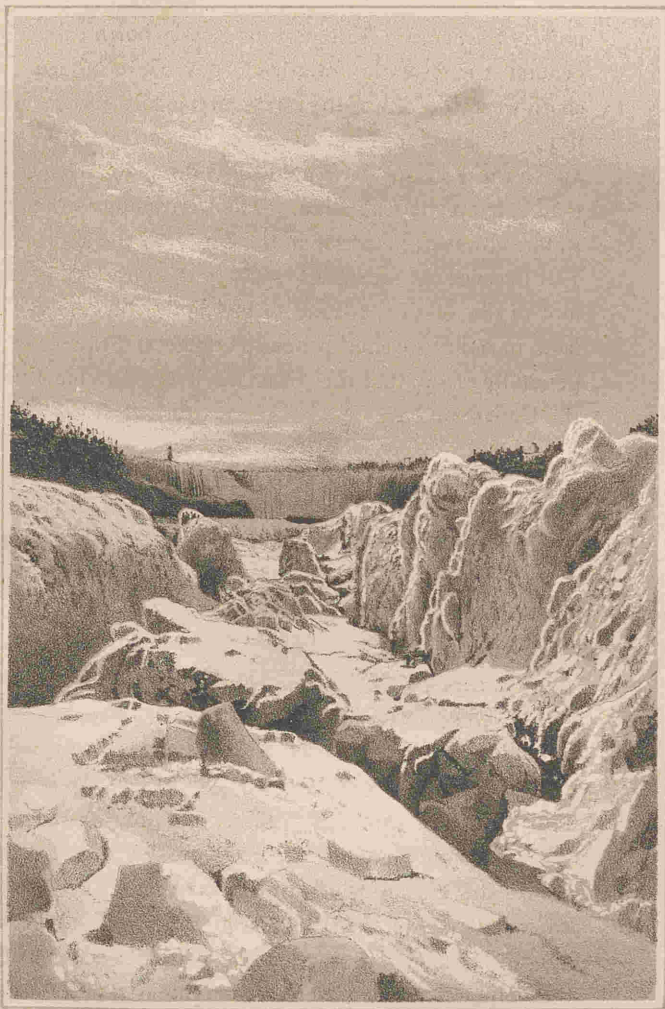
railway Suspension Bridge, runs nearly north-east. The general trend of the stratified rocks is north-east and south-west, the dip of the strata being in the latter direction. It is owing to this fact that the surface of the water above the Fall on the American side is ten feet higher than it is on the Canadian. The continuous column of water, however, is longer in the centre of the Horse-Shoe Fall because of the fallen rock and debris lying at the foot of the other portions of the Falls. Keeping these facts in mind, we shall properly understand the statement generally made, that the American is ten feet higher than the Canadian Fall.

CHAPTER VIII.

GEOLOGY.

Recession above present position—Falls will be higher as they recede—Reason Why—Possible new feature—Present and former accumulations of Rock—How removed—Terrific power of the elements—Ice and ice bridges.

THERE is probably little foundation for the apprehension which has been expressed that the recession of the chasm will ultimately reach Lake Erie and lower its level, or that the bed of the river will be worn into an inclined plane by gradual detrition, thus changing the perpendicular Fall into a tumultuous rapid. And for these reasons, namely: First, that the contour or periph-



Ice Bridge.

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ery of the fall in its present location is much greater than it could have been at any point below. Consequently a much less body of water and much less effective in force is passed over any given portion of the precipice, the current being also divided by Goat and Luna Islands. Second, that the river bed increases in width above the Fall until it reaches Grand Island, which, being twelve miles in length by eight in width, divides the river into two broad channels, thus still further diminishing the weight and force of the falling water. The average width of the channel from Lewiston upward, is one thousand feet. The present periphery of the Falls and Islands is four thousand two hundred feet. Of course the water concentrated in mass and force below the present Falls must have proved vastly more effective in disintegrating and breaking down the shale and limestone than it possibly can be at any point above.

But long continued observation of the locality enables the writer to offer still other reasons why the Fall will never dwindle down to a rapid. As has already been noticed, the course of the river above the present Fall is a little south of west, so that it flows across the trend of the bed-rock. Hence, as the Falls recede there can be no diminution in their altitude resulting from the dip of this rock. On the contrary, there is a rise of fifty feet to the head of the present rapids, and a further rise of twenty feet to the level of Lake Erie. During the last two years (1871-2) the bed of the river from Buffalo to Cayuga Creek has been thoroughly examined for the purpose of locating piers for railway bridges over the

stream. The greatest depth at which they found the rock—just below Black Rock dam—was forty-five feet. Generally the rock was found to be only twenty to twenty-five feet below the surface of the water.

About five miles above the present Falls there is, in the bottom of the river, a shelf of rock stretching, in nearly a straight line, across the channel to Grand Island and having, apparently, a perpendicular face about sixteen inches deep. Its presence is indicated by a short but decided curve in the surface of the water above it, the water itself varying in depth from eleven to sixteen feet. The shelf above referred to extends under Grand Island and across the Canada channel of the river, under which, however, its face is no longer perpendicular. If the Falls were at this point they would be fifty-five feet higher than they are now, supposing the bed-rock to be firm. Now, by excavations made during the last year (1870) for the new railway from Suspension Bridge to Buffalo, the surface rock has been found to be compact and hard, much of it unusually so. As a general rule it is well known that the greater the depth at which any given kind of rock lies below the surface, and the greater the depth to which it is penetrated, the more compact and hard it will be found to be. The rock which was found to be so hard, in excavating for the railway, lies within six feet of the surface. The deepest water in the Niagara river between the Falls and Buffalo is twenty-five feet. At this point, then, it would seem that the shale of the Niagara group must be at such a depth that the top of it is below the surface of the water at the bottom of the

present Fall. Hence, being protected from the disintegrating action of the atmosphere, and the incessant chiseling of the dashing spray, it would make a firm foundation for the hard limestone which would form the perpendicular ledge over which the water would fall. Supposing the bottom of the channel below *this* fall to have the same declivity as that for a mile below the *present* fall, the then Cataract would be, as has been before stated, fifty-five feet higher than the present one. If we should allow fifty feet for a soft surface limestone, full of cleavages and seams which might be easily broken down, still the new fall would be five feet higher than the old one. But, so far as can now be discovered, there is no geological necessity, so to speak, for making any such allowance. In the new Cataract the American Fall would still be the highest, and its line across the channel quite straight. The Canadian Fall would undoubtedly present a curve, but more gradual and uniform than the present horse-shoe.

But there might possibly occur one new feature in the chasm-channel of the river as the result of any future recession. That would be the presence in that channel of rocky islands, similar to that which has already formed just below the American Fall. The points at which these islands would be likely to form are those where the indurated rock of either the Medina or the Niagara group lies near the surface of the water. This probably was the case at the narrow bend below the Whirlpool, before noticed, and from thence up to the outlet of the pool. After considering what must have occurred in the last

case, we may form some opinion concerning the probabilities in reference to the first.

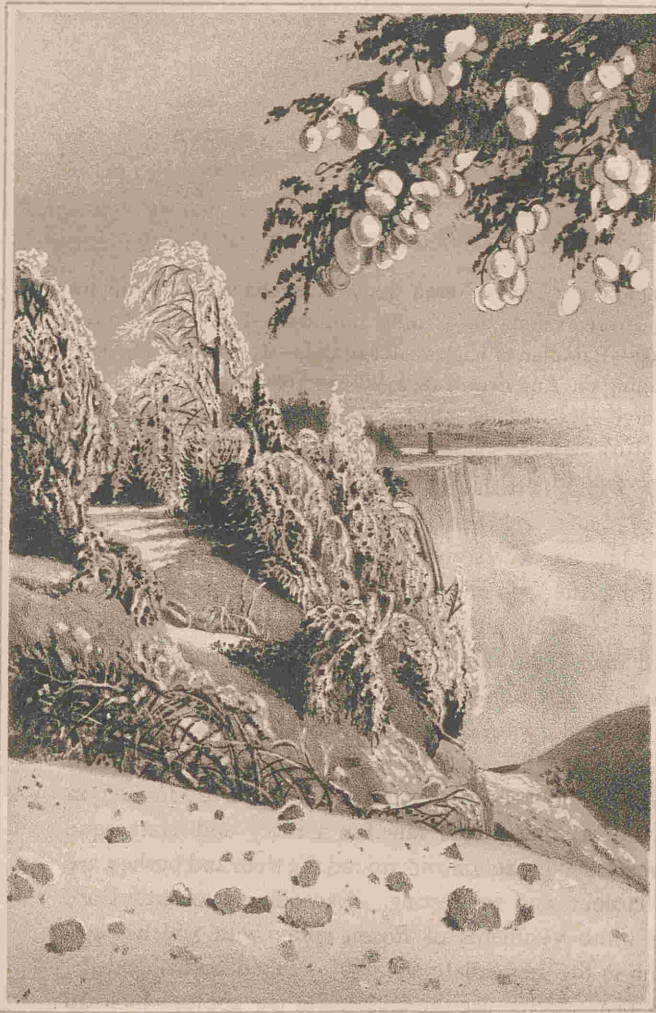
We can hardly resist the conclusion, that masses of fallen rock must have accumulated below the Whirlpool as we now see them under the American Fall. But if so, where are they? The answer to this question brings us to the consideration of the most remarkable phenomenon connected with this wonderful river. To the beholder it is matter of astonishment what can have become of the great mass of earth, rock, gravel and boulders, large and small, which once filled the immense chasm that lies below him. He learns that the water for a mile below the Falls is one hundred feet deep, and flows over a mass of fallen rock and stone of equal depth lying below it; he sees a chasm of nearly double these dimensions, more than half of which was once filled with solid rock; he beholds the large quantities which have already fallen, which are still defiant, still breasting the ceaseless hammering of the descending flood. For centuries past this process has been going on until a chasm seven miles long, a thousand feet wide and, including the secondary banks, more than three hundred feet deep, has been excavated, and the material which filled it entirely removed. How? By what? FROST was the agent, ICE was his delver, WATER his carrier, and the basin of Lake Ontario his dumping ground. Whatever it may have been; and although it is not probable that any islands similar to Goat Island have existed in the channel from Lewiston upward, still it is probable that when the Fall receded from the rocky cape below the Whirlpool up to the pool, it left masses of rock,

large and small, lying on the rocky floor and projecting above the surface of the water. As there were no islands above, there were no broken, tumultuous rapids. As has been before remarked, the water poured over in one broad, deep, resistless flood. When frozen by the intense cold of winter the great cakes of ice would descend with crushing force on these rocks. The smaller ones would be broken, pulverized and swept down stream; the channel for the water would be gradually enlarged, and the larger masses thus partially undermined. Then the spray and dashing water would freeze and the ice accumulate upon them until they were toppled over. Then the falling ice would recommence its chipping labours, and with every piece of ice knocked off a portion of the rock would go with it. Finally as the cold continued, the master force, the mightiest of mechanical powers would be brought into action. The vast quantities of ice pouring over the precipice would freeze together, agglomerate and form an ice-bridge. The roof being formed, the succeeding cakes of ice are drawn under and, raising it, are frozen to it. This process goes on. Every piece of rock above and below the surface is embraced in a relentless icy grip. Millions of tons are frozen fast together. The water and ice continue to plunge over the precipice. The principle of the hydrostatic press is made effective. Then commences a crushing and grinding process which is perfectly terrific. Under the resistless pressure brought to bear upon it, the huge mass moves half an inch in one direction and an hundred cubic feet of rock are crushed to powder. There is a pause. Then again the immense structure moves

half an inch another way, and once more the crumbling atoms attest its awful power. This goes on for weeks continuously. Finally the temperature changes. The sun-light becomes potent ; the ice ceases to form ; the warm rays loosen the grip of the ice-bridge along the borders of the chasm below. The water becomes more abundant ; the bridge rises, bringing in its icy grasp whatever it had attached itself to beneath ; it breaks up into masses of different dimensions ; each mass starts downward with the growing current, breaking down or filing off everything with which it comes in contact. The smaller bits and finer particles, after filling the interstices between the larger rocks in the bottom of the chasm, are borne lakeward. The heavier portions make a part of the journey this year ; they will make another part next year, and another the next, being constantly disintegrated and pulverized. This work has been going on for many centuries. The result is seen in the vast bar of unknown depth which is spread over the bottom of Lake Ontario around the mouth of the river.

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Winter Foliage & Ice Apples.

CHAPTER IX.

GEOLOGY.

Niagara in winter—Frozen spray—Ice foliage and ice apples—Frozen sunlight—Frozen rainbows—Ice-moss—Frozen fog—Rataplan of icicles—Ice islands—Ice statues—Sleigh-riding on American rapids—Boys coasting on them—Ice gorge—Ice pulling up trees—Remarkable geognosy of earth's surface—Bottom of Lake Huron below tide water.

WHOSO hath seen Niagara in summer only, has but half seen it. In winter its beauties are not diminished, while the accessories to its sublimity are numerous and varied. After two or three weeks of intensely cold weather many beautiful and fantastic scenes are presented around the Falls. The different varieties of stalactites and stalagmites hanging from or apparently supporting the projecting rocks along the side walls of the deep chasm ; the ice islands which grow on the bars and around the rocks in the river ; the white caps and hoods which are formed on the rocks below ; the fanciful statuary and statuesque forms which gather on and around the trees and bushes, are all curious and interesting. Exceedingly beautiful are the white vestments of frozen spray with which every thing in the immediate vicinity is robed and shielded ; and beautiful too are the clusters of ice apples which tip the extremities of the branches of the evergreen trees.

There is something marvellous in the purity and *whiteness* of congealed spray. One might think it to be frozen sunlight. And when by reason of an angle or a curve it is thrown into shadow, one sees where the rainbow has been caught and frozen in. After a day of sunshine which has been sufficiently warm to fill the atmosphere with aqueous vapor, if a sharp, still, cold night succeed, and on this there break a clear, calm morning, the scene presented is one of unique and enchanting beauty. The frozen spray on every boll, limb and twig of tree and shrub, on every stiffened blade of grass, on every rigid stem and tendril of every trailing vine, is covered over with a fine white powder, a frosty bloom, from which there springs a line of delicate frost-spines, forming a perfect fringe of ice-moss, than which nothing more fanciful and beautiful can be imagined. Then as the day advances and the increasing warmth of the sun's rays dissolves this fairy frost-work and spreads it as a delicate varnish over the solid spray, giving it a brilliant polish rivaling the lustre of the rarest gems ; and as the mid-morning breeze sets in motion this flashing, dazzling forest, which varies its color as the sunlight-angle varies ; and finally when the waxing warmth and growing breeze loosen the hold of the icy covering in the tree-tops and it drops to the still solid surface in the shade beneath, the tiny particles with a silver tinkle and the larger pieces with the sharp, rattling sound of the castenet, the ear is charmed with a wild, dashing *rataplan*, while a scene of strange but veritable enchantment challenges the admiration of the spectator.

Even more beautiful and fairy-like, if possible, is the garment of *frozen fog*, with which all external objects are adorned and etherealized when the spring advances, and the temperature of the water is raised. As the sharp, still night wears on, the light mists begin to rise, and when the morning breaks, the river is buried in a deep, dense bank of fog. A gentle wave of air bears it landward ; its progress is stayed by every thing with which it comes in contact, and as soon as its motion is arrested, it freezes sufficiently to adhere to whatever it touches. So it grows upon itself, and all things are soon covered half an inch in depth with a most delicate and fragile fringe of frozen fog of intensest whiteness. The morning sun dispels the mist, and in an hour the gay frost-work vanishes.

The ice islands are sometimes quite extensive. In the year 1856 the whole of the rocky bar above Goat Island was covered with ice, piled together in a rough heap, the lower end of which rested on Goat Island, and the three Moss Islands lying outside of it, all of which were visited by different persons passing over this new route. The ice formed on the rocks below the American Fall, stretched upward, reached the edge of the precipice just north of the Little Horse-shoe, continued up stream above Chapin's Island, spread out laterally from that to Goat Island on the south, and over nearly half of the American rapids to the north. At the brow of the precipice it accumulated upward until it formed a ridge some forty feet high. Some fifteen rods up stream another ridge was formed about half the height of the first. Every rock projecting upward bore an immense ice cap. Around and between these mounds and

caps the sporting equestrians drove their horses, albeit the course was not favorable for quick time. The boys drew their sleds to the top of the large mound, slid *down* it, *up* stream, and nearly to the top of the smaller hill.— On the lower, or down stream side, they would have had a clear course to the water below, and might have made “time,” compared with which Dexter’s minimum would have seemed only a funeral march. But with all Young America’s passion for speed, he declined to try this route. The writer walked over the south end of Luna Island, above the tops of the trees.

The ice bridge of that year filled the whole chasm from the railway Suspension Bridge up past the American Fall. When the ice broke up in the spring, such immense quantities were carried down that, on the occurrence of a strong northerly wind across Lake Ontario, a jam occurred at Fort Niagara. The ice accumulated and set back until it reached the Whirlpool, and could be crossed at any point between it and the Fort. It was lifted up about sixty feet above the surface, and spread out over both shores, crushing and destroying every thing with which it came in contact. Many persons from different parts of the country visited the extraordinary scene. At Lewiston the writer, with many others, saw a most remarkable illustration of the almost omnipotent power of the hydrostatic press. Just below the village, on the American side, there stood, about two rods from high-water mark, a sound, thrifty, tough white-oak tree, perhaps a hundred years old, and two feet in diameter. The ice, moved by the water, struck it near the ground

and pressed it outward and upward, until it actually pulled it up by the roots,—or rather broke off some of the roots and pulled out others,—and landed it twenty feet up the bank. Those who watched the operation stated, that from the time the ice touched the tree, until it was landed on the bank above, the *motion* of the ice could not be detected by the eye. Slowly, steadily, surely it pressed on. Suddenly there would be an explosion, sharp and loud, when a root gave way. No motion in the ice or tree could be discovered. After a lapse of two or three hours another sharp crack would give notice of another fracture. Thus it went gradually on, and in ten hours the work was done. Invisible was that motion, yet invincible was its force. A thousandth part of *this* would pulverize a boulder of adamant. We need not wonder that the river Niagara keeps its channel clear. In the ice gorge of 1866 the ice was set back to the upper end of the Whirlpool, over which it was twenty feet deep. The Whirlpool rapid was subdued nearly to an unbroken current, and all below to Lake Ontario was reduced to a gentle flow of quiet waters. Never was there a sublimer contest of the great forces of nature. The frost laid its hand upon the raging torrent and it was still.

And finally, to the force we have been considering, more than to any other, it is probable that all the coming generations of men will be indebted for a grand and perpendicular Fall somewhere between its present location and Lake St. Clair; for it must be remembered that the *bottom* of Lake Erie is but fourteen feet *lower* than the *top* of the present Fall, and the bottom of Lake St. Clair is

eighteen feet higher. It may also be considered that the corniferous limestone of the Onondaga group,—which succeeds the Niagara group as we approach Lake Erie,—is quite as competent to maintain a perpendicular face as is the limestone of the latter group.

We may here appropriately notice a remarkable feature in the Geognosy of the earth's surface from Lake Huron to the Gulf of St. Lawrence. We have before stated that the elevation of that lake above tide-water is five hundred and seventy-eight feet. But its depth, according to Dr. Houghton, is one thousand feet. If this statement is correct, the *bottom* of it is four hundred and twenty-two feet *below* the sea level. The elevation of Lake St. Clair is five hundred and seventy feet. But its depth is only twenty feet, leaving its *bottom* five hundred and fifty feet *above* the sea level. The elevation of Lake Erie is five hundred and sixty-eight feet. But it is only eighty-four feet deep, making it four hundred and eighty-four feet *above* the sea level. From Lake Erie to Lake Ontario there is a descent of three hundred and thirty-six feet. But the latter lake is five hundred feet deep, and its elevation two hundred and thirty-two feet. Hence the *bottom* of it is two hundred and sixty-eight feet *below* the sea level. From the foot of Lake Ontario runs the St. Lawrence river, eight hundred and twenty miles to tide water, falling two hundred and thirty-two feet in this distance. The facts will be at once understood by referring to the diagram given on the map, the base of the triangle being diminished for convenience. The hypotenuse is fifteen hundred miles long, and the water from the springs

in the bottom of Lake Huron is compelled to climb a mountain nine hundred and eighty feet high before it can start on this long oceanward journey. It may also be noticed that the bottom of Lake Michigan, which has the same depth as Lake Huron, is one hundred and twenty-two feet below the low-water line of the Ohio at its mouth, as may be seen by reference to the survey of the Illinois Central Rail-road, heretofore given.

PART THIRD.

CHAPTER X.

LOCAL HISTORY AND INCIDENTS.

Judge Porter — General Porter — Goat Island — Origin of its name — Its diminution — Early dates found on Trees and in Rock — Visited by the Indians — Kalm's Wonderful story — Bridges to the Island — Method of Construction — Red Jacket — Anecdotes — Stone Tower — Biddle Stairs — Sam Patch — Depth of Water on the Horse-Shoe — Ships sent over the Falls — Animals on Board.

THE writer is well aware how much he violates the unities by mingling together the elements of the Historic, Geologic and Narrative portions of his composition. But he has preferred to string his shells as he found them and to record the impressions they suggested at the time, rather than to classify and arrange them for more elaborate description and discussion. The subject is indeed a flowing one, and some embarrassment arises in deciding what to select, and where to stop.

In addition to the authorities to which the writer has been so greatly indebted in preparing this narrative, he has had the good fortune to listen to many oral relations

of facts and incidents by two distinguished citizens,* whose names are intimately and honorably connected with the more recent history, not only of this particular locality but with that of the whole State.

Judge Porter, after having spent several years in surveying and lotting large portions of the territory of Western New York and the Western Reserve in Ohio, came from Canandaigua to Niagara Falls with his family in June, 1806, where he continued to live until his death, nearly fifty years afterwards.

Gen. Porter settled as a lawyer at Canandaigua in 1795, removed to Black Rock in 1810, and to Niagara Falls in 1838.

In 1806 the two brothers became interested with others in the purchase from the State of New York of four lots in the Mile Strip lying both above and below the Falls. A few years later they purchased not only the interest of their partners in these lots, but other lands at different points along this Strip. In 1814 they bought of Samuel Sherwood a paper, since named a *float*, an instrument given by the State authorizing the *bearer* to locate two hundred acres of any of the unsold or unappropriated lands belonging to the State. This float they fortunately anchored on Goat Island and the islands adjacent thereto, lying "immediately above and adjoining the Great Falls." The wherefore of the name of the larger island is as follows. Mr. John Stedman who came into the

* The late Judge Augustus Porter and the late General Peter B. Porter.

country in 1760, had cleared a portion of the upper end of the island, and in the summer of 1779, he placed on it a few small animals. Chief among these was an aged and very dignified male goat. The following winter was very severe, navigation to the Island was impracticable and he fell a victim to the intense cold. For a time he was, like Juan Fernandez, "monarch of all he surveyed" and like him he left his name to his water-bound home.

By the terms of the Treaty of Ghent, 1815, the boundary line between Great Britain and the United States on the Niagara Frontier, was to run through the deepest water along the river courses and through the centre of the great lakes. As the deepest water, at this point, is in the center of the Horse-shoe Fall, the islands in the river fell to the Americans. General Porter, acting as Commissioner for the United States, proposed to call the largest one Iris Island, and it was so printed on the boundary maps. But the public adhered to the old name, refusing to adopt the new one. So the Goat, being dead, still speaketh, or rather is spoken, while the heathen Goddess is visible in her beautiful hues, which may be accepted as a fair division of the honors. One of the early chronicles states that the island contained two hundred and fifty acres of land. At the present time there are in it less than seventy. A strip some ten rods wide by eighty rods long has been worn away from the southern side of it since 1818, when Judge Porter made the first road around it. The earliest date he found on it was 1765 carved on a beech tree. The earliest date cut in the rock on the main land was 1645. Human bones

and arrow-heads were found on the island. The Indians went to it with their canoes which they paddled up and down in the comparatively quiet water lying on the rocky bar which extends upward nearly a mile above the head of the island.

Notwithstanding this fact, the Swedish Naturalist, Kalm, who visited the place in 1750, relates a fabulous story of two Indians, who, on a hunting excursion above the Falls, drank too freely from "two bottles of French brandy" which they brought from Fort Niagara ; got sleepy and laid themselves down in the bottom of their canoe for a nap. The canoe swung off shore and floated down stream. Nearing the rapids the noise awakened one of them who had apparently been more fortunate in learning the English language from the French than most of his tribe, for seeing their perilous situation he exclaimed, "we are gone." But the two plied their paddles with such aboriginal vigor, that they succeeded in landing on Goat Island. From the sequel it would seem that they must have destroyed or lost their canoe. Finding no houses of refreshment, nor cairns of stores left by former explorers, and most naturally getting hungry, they concluded it would be desirable to get back to the Fort, a wish more easily expressed than accomplished.

But it was necessary for them to "do or die." So, as the story runs, they stripped the bark from the basswood trees, and with it made a ladder long enough to reach from a tree standing on the edge of the precipice at the foot of the island down to the water below. They probably did not waste any time in discussing the Darwinian

question of natural selection, nor puzzle their brains to determine which species of the genus *simiidæ* might be responsible for their origin ; but practically they must have done climbing enough, in order to loosen the top ends of their basswood strips, to vindicate their claim to a monkey paternity. After dropping their ladder they followed it downward. Reaching the water and being good swimmers, they plunged in with great glee, expecting to be able to swim across to the opposite shore, which they could easily climb. But the counter-current forced them back to the island. After being a good deal bruised on the rocks, they were compelled to abandon the attempt to cross, and then returned up their ladder to the Island. There, after much whooping, they attracted the notice of other Indians on the shore. These reported their position at the fort, and the commandant sent up a party of whites and Indians to rescue them. They brought with them four light pike-poles. Going to the head of the Island, they exchanged salutations with the new Crusoes, and began preparations for their rescue. Two Indians volunteered to undertake the task. "They took leave of all their friends as if they were going to the death." Each Indian rescuer, according to the wondrous fable, took two pike-poles and *waded* across the channel to the island, gave each of the Crusoes a pike-pole, and then the four waded back to the mainland, where they were joyfully received by their anxious, waiting friends, after having been "nine days on the island." Remembering that the water in mid-channel is twelve feet deep, with a twelve-mile current, we must concede this to be the

most marvellous of all aquatic achievements. If the illustrious Munchausen had been a reality and not a fiction, and if he could have appeared either in the flesh or out of it to the credulous Swede after he had finished this recital, we cannot doubt that he would, in the most graceful manner, have surrendered his sceptre—probably a *long bow*—to his new disciple. And yet so grave a work as the “*Encyclopedia Britannica*,” in the article on “*Niagara Falls*,” gives a large space to this extraordinary narrative.

In 1817 Judge Porter built the first bridge to Goat Island, about forty rods above the present bridge. In the following spring the large cakes of ice from the river above, not being sufficiently broken up by the short portion of rapids through which they passed, and being hurled against the bridge with terrific force, it was mostly carried away. With the courage and enterprise of his race—of course he was a New Englander—the next season he constructed another bridge lower down, on the present site, rightly judging that the ice would be so much broken up before reaching it, as to be harmless. That bridge, with constant repairs and one almost entire renewal, stood firm in its place until the year 1856, when it was removed to make room for the present iron bridge. The old piers were much enlarged and strengthened, and also raised about three feet higher to receive the new bridge. As nearly every stranger inquires how the first bridge was carried over the turbulent waters, a brief description of the process may be acceptable. First a strong bulkhead was built in the shallow water next to the shore ;

a solid backing was put in behind this, and the upper surface properly graded and well floored with plank. Strong rollers were placed parallel with the stream, and fastened to the floor. In the old forest then standing near by, were many noble oaks of different sizes and great length. A number of these were felled and hewed 'tapering' as it was termed, so that, when finished they were about eighteen inches square at the butt, fifteen at the top and eighty feet long. Through the small ends were bored large auger-holes. These sticks were placed, as required, on the rollers, at right angles to the stream, the small ends over the water, and the shore ends heavily weighted down. The first stick being properly placed, levers were applied to the rollers and the stick run out until the front end reached an eddy in the water. Then another similar stick was run out in like manner parallel to the first, and about six feet from it. A few light, strong planks were placed across and made fast. Two men were provided each with strong, iron-pointed pike-staffs, each staff having in its upper end a hole through which was drawn some ten feet of new rope. Thus provided, they walked out on the timbers, drove their iron pikes down among the stones and tied them fast to the timbers. Thus the whole problem was solved. Around these pike-staffs the first pier was built and filled with stone. Then other timbers were run out, all were planked over and the first span was completed. All the remaining spans were finished in the same way.

After the war, the great Indian chief and orator, Red Jacket, occasionally visited Judge and General Porter—

the latter then living at Black Rock. The former told this anecdote of the Chief. He visited the Falls while the mechanics were stretching the timbers across the rapids for the second bridge. He sat for a long time on a pile of plank watching their operations. His mind seemed to be busy both with the past and the present, reflecting upon the grand empire his race once possessed, and intensely conscious of the fact that it was theirs no longer. Apparently mortified, and vexed that its pale-face owners should so successfully develop and improve it, he rose from his seat and uttering the well-known Indian guttural "Ugh, Ugh," he added, and repeated "d—n Yankee, d—n Yankee;" then gathering his blanket-cloak around him, with his usual dignity and downcast eyes, he slowly walked away, and never returned to the spot.

Before parting with the distinguished Chief, we may be permitted to repeat from the late General Porter, two other characteristic anecdotes of him. He lived not far from Buffalo, on the Seneca Reservation, and frequently visited the late General Wadsworth, at Geneseo. Indeed his visits came to be somewhat perplexing, for the great Chief must be entertained by the host of the establishment wherever he went. He had little affinity for juniors, however distinguished they might be. He condescended to associate only with the men of mark, with whom he had come in contact during the exciting scenes of his active life.

Of course he was a "*teetotaler*," only in one way. When he got a glass of good "liquor" he drank the whole of it. He was very fond of the rich apple-juice of

the Geneseo orchards, of which his absorbing capacity was quite wondrous. Having repeated his visits to Gen. Wadsworth at one time, with rather inconvenient frequency, and coming one day when the General saw that he had been drinking pretty freely some where else, he concluded he would not offer him the usual refreshments. In due time, therefore, he rose and excused himself. As he was leaving the room the orator said, "General hear!" "Well what, Red Jacket," to which he replied with great gravity, "General, when I get home to my people, and they ask me how your *cider tasted*, what shall I tell them?" Of course he won his "*pint*" and repeated it.

His determined and constant opposition to the sale of the lands belonging to the Indians is well known. At the Council held at Buffalo Creek, in 1811, he was selected by the Indians to answer the propositions of a New York Land Company to buy more land. The Indians refused to sell, although, as usual, the company only wanted "a small tract." To illustrate the system, after the speech-making was over, Red Jacket placed half-a-dozen Indians on a log, which lay near by. They did not sit very close together but had plenty of room. He then took a white man who wanted "a small tract," and making the Indians at one end "move up," he put the white man beside them. Then he brought another "small tract" white man, and making the aborigines "move up" once more, the Indian on the end was obliged to rise from the log. He repeated this process until but one of the original occupants was left on the log. Then sudden-

ly he shoved him off, put a white man in his place, and turning to the land agent said: "See what one *small tract* means; white man *all*, Indian *nothing*."

The strong round tower, which stands near Goat Island, was built in 1823, of stones gathered in the vicinity. It is forty-five feet high, and twelve feet in diameter at the base. The hardness and durability of these stones are abundantly proved, since the storms and exposure of half a century have made no impression upon them. Yet before the end of the next century the tower itself may be precipitated into the gulf below.

The Biddle Staircase was named from Mr. Nicholas Biddle, of Philadelphia, who contributed a sum of money towards its construction. It was erected in 1829. The shaft is eighty feet high, and firmly fastened to the rock. The stairs are spiral, winding around it from top to bottom. Near the foot of these stairs, at the water's edge, the distinguished Beotian, Mr. Samuel Patch, who wished to demonstrate to the world that "some things could be done as well as others," set up a ladder one hundred feet high, from which he made two leaps into the water below. Going thence to Rochester, he took another leap near the Genesee Falls, which proved to be his last. It was for him a leap-year that never returned.

The depth of water on the Horse-shoe Fall is a subject of speculation with every visitor. It was quite correctly determined in 1827. In the autumn of that year, the ship *Michigan*, having been condemned as unseaworthy, was purchased by a few individuals, and sent over the Falls. Her hull was eighteen feet deep. It filled going down

the rapids, went over the Horse-shoe Fall with some water above the deck, indicating that there must have been at least twenty feet above the rock. This voyage of the *Michigan* was an event of the day. A glowing hand-bill, charged with such pyrotechny of types and tropes as would be a credit to the sensational literature of the present time, was issued, announcing that "The Pirate *Michigan*, with a cargo of furious animals," would "pass the great rapids and the Falls of Niagara," on the "eighth of September, 1827." She would sail "through the white-tossing and deep-rolling rapids of Niagara, and down its grand precipice into the basin below." Entertainment was promised "for all who may visit the Falls on the present occasion, which will, for its novelty and the remarkable spectacle it will present, be unequalled in the annals of *infernal* navigation." Considering that the Falls could only be reached by land carriage, the gathering of people was very large. The voyage was successfully made, and the "cargo of live animals" duly deposited in the "basin below," except a bear, which left the ship near the centre of the rapids, got to shore and was recaptured.

Two enterprising individuals made arrangements to supply the people assembled on the Island with refreshments. They had an ample spread of tables and an abundant supply of provisions. As there was much delay in getting the vessel down the river, the people got both impatient and hungry. To relieve both they took their place at the tables. When their appetites were nearly satisfied, notice was given that the ship was com-

ing, whereupon they departed hurriedly, forgetting to leave the equivalent half dollar for the benefit of the purveyors, and the places which knew them knew them no more forever.

In after years, one of the proprietors of this unexpected "free lunch"—the late Gen. Whitney—established here one of the best hotels in the country, and left his heirs an ample fortune.

A few geese in the cargo were only badly confused by their unusual plunge, and were afterwards picked up from boats. It was noticed as being a little singular that geese which went over the Falls in the Pirate *Michigan* were for sale at extravagant prices all the next season. By some new method of expanding a finite quantity into an infinite series, the modest quartette which actually went over was increased to more than a hundred.

Another condemned vessel of about 500 tons burden, the *Detroit*, which had belonged to Commodore Perry's victorious fleet, was sent down the rapids in 1841. A large concourse of people assembled from all parts of the country to witness the spectacle. Her rolling and plunging in the rapids were fearful, until about midway of them she stuck fast on a bar, where she lay until knocked to pieces by the ice. From Baron La Hontan (ante) we know that the Indians went on the water, just below the Falls, in their canoes, to gather the game which had been drawn over them. For more than a hundred years there has been a ferry of skiff and yawl boats at this point, and in all that time not one serious accident has happened.

CHAPTER XI.

JOEL R. ROBINSON.

First and Last Navigator of the Rapids—Rescue of Chapin—Of Allen—Of property from canal boat—Takes the “Maid of the Mist” through the Whirlpool—Description of the voyage—His companions—Effect upon Robinson—Biographical notice—His body mouldering in an unmarked grave—The heroines of Lonestone and Newport, Grace Darling and Ida Lewis.

THE history of the navigation of the Rapids of the Niagara may be very appropriately concluded in this chapter, which is devoted to a notice of the remarkable man who inaugurated it, who had no rival and has left no successor in it—Mr. Joel R. Robinson.

In the summer of 1838, while some extensive repairs were being made on the main bridge to Goat Island, a mechanic named Chapin fell from the lower side of it into the rapids about ten rods from the Bath Island shore. The swift current bore him toward the first small island lying below the bridge. Knowing how to swim he made a desperate and successful effort to reach it. It is hardly more than thirty feet square, and is covered with cedars and hemlocks. Saved from drowning he seemed likely to fall a victim to the slow torture of starvation. All thoughts were then turned to Robinson, and not in vain. He launched his light red skiff from the



Maid of the Mist in Whirlpool Rapids.

ESCUELA DE ESTUDIOS
HISPAÑO-AMERICANOS

BIBLIOTECA

foot of Bath Island, picked his way cautiously and skilfully through the Rapids to the little island, took Chapin in and brought him safely to the shore, much to the relief of the spectators, who testified their appreciation of Robinson's service by a moderate contribution.

In the summer of 1841, a Mr. Allen started for Chip-pawa in a boat just before sunset. Being anxious to get across before dark he plied his oars with such vigor that one of them was broken when he was about opposite the middle Sister. With the remaining oar he tried to make the head of Goat Island. The current, however, set too strongly towards the great Canadian Rapids, and his only hope was to reach the outer Sister. Nearing this and not being able to run his boat on to it he sprang out, and, being a good swimmer, by a vigorous effort succeeded in getting on to it. Certain of having a lonely if not a quiet and pleasant night, and being the fortunate possessor of two stray matches, he lighted a fire and solaced himself with his thoughts and his pipe. Next morning taking off his red flannel shirt, he raised a signal of distress. Toward noon the unusual smoke and the red flag attracted attention. The situation was soon ascertained, and Robinson informed of it. Not long after noon the little red skiff was carried across Goat Island and launched in the channel just below the Moss Islands. Robinson then pulled himself across to the foot of the middle Sister and tried in vain to find a point where he could cross to the outer one. Approaching darkness compelled him to suspend operations. He rowed back to Goat Island, got some refreshments, returned to the middle Sister,

threw them across to Allen, and then left him to his second night of solitude. The next day Robinson took with him two long, light, strong cords, with a properly shaped piece of lead weighing about a pound. Tying the lead to one of the cords he threw it across to Allen. Robinson then fastened the other end of Allen's cord to the bow of the skiff; then attaching his own cord to the skiff also, he shoved it off. Allen drew it to himself, got into it, pushed off, and Robinson drew him to where he stood on the middle island. Then seating Allen in the stern of the skiff he returned across the Rapids to Goat Island, where both were assisted up the bank by the spectators, and the little craft too, which seemed to be almost as much of a hero and as great a favorite with the crowd as Robinson himself.

This was the second individual rescued by Robinson from islands which had been considered wholly inaccessible. It is no exaggeration to say that there was not another man on the globe that could have saved Chapin and Allen as he did. His laurels as *Navigator of the Rapids* can never fade nor decay. They are made perennial by the generous motives and humane acts through which they were won.

In the summer of 1855 a canal boat, with two men and a dog in it, was discovered in the strong current near Grass Island. The men, finding they could not save the large boat, took to their small one, and got ashore, leaving the dog to his fate. The abandoned craft floated down and lodged on the rocks on the south side of Goat Island and about twenty rods above the ledge over which

the Rapids make the first perpendicular break. There were in it a watch, a gun, and some articles of clothing. The owner offered Robinson a liberal salvage if he would recover the property. Taking one of his sons with him, he started the little red skiff from the head of the hydraulic canal, half a mile above the Island, shot across the American channel, and ran directly to the boat. Holding the skiff to it himself, the young man got on board and secured the valuables. The dog had escaped during the night. Leaving the canal boat, he ran down the ledge between the second and third Moss Islands, and thence to Goat Island. On going over the ledge he had occasion to exercise that quickness of apprehension and presence of mind for which he was so noted. The water was rather lower than he had calculated, and on reaching the top of the ledge the bottom of the skiff near the bow struck the rock. Instantly he sprang to the stern, freed the skiff and made the descent safely. If the stern had been swung athwart the current, inevitable wreck would have followed.

In the year 1846 a small steamer was built in the eddy just above the railway Suspension Bridge to run up to the Falls. She was very appropriately named—*The Maid of the Mist*. Her engine was rather weak, but she safely accomplished the trip. As, however, she took passengers aboard only from the Canada side, she did little more than pay expenses. In 1854 a larger, better boat, with a more powerful engine, the new *Maid of the Mist*, was put on the route, and many thousands of persons made this most exciting and impressive tour under

the Falls. The admiration which the visitor felt as he passed quietly along under the American Fall was changed into awe when he began to feel the mighty pulse of the great deep just below the tower ; then swung around into the white foam directly in front of the Horse-shoe and saw the sky of waters falling toward him. And he seemed to be lifted on wings as he sailed swiftly down on the flying stream through a baptism of spray. To many persons there was a fascination about it that induced them to make the trip every time they had an opportunity to do so. Owing to some change in her appointments, which confined her to the Canadian shore for the reception of passengers, she became unprofitable. Her owner having decided to leave the place wished to sell her as she lay at her dock. This he could not do, but had an offer of something more than half of her cost, if he would deliver her at Niagara, opposite the Fort. This he decided to do, after consultation with Robinson, who had acted as her captain and pilot on her trips under the Falls. The boat required for her navigation an engineer, who also acted as fireman, and a pilot. On her pleasure trips she had a clerk in addition to these. Mr. Robinson agreed to act as pilot for the fearful voyage, and the engineer, Mr. Jones, consented to go with him. A courageous machinist, Mr. McIntyre, volunteered to share the risk with them. They put her in complete trim, removing from deck and hold all superfluous articles. Notice was given of the time for starting, and a large number of people assembled to see the fearful plunge, no one expecting to see either boat or crew again, after they

should leave the dock. This dock, as has been before stated, was just above the railway Suspension Bridge, at the place where she was built, and where she was laid up in the winter; that, too, being the only place where she could lie without danger of being crushed by the ice. Twenty rods below this eddy the water plunges sharply down into the head of the crooked, tumultuous rapid which we have before noticed, as reaching from the bridge to the Whirlpool. At the Whirlpool the danger of being drawn under was most to be apprehended; in the Rapids of being turned over or knocked to pieces. From the Whirlpool to Lewiston is one wild, turbulent rush and whirl of water without a square foot of smooth surface in the whole distance.

About three o'clock in the afternoon of June 15, 1867, the engineer took his place in the hold, and, knowing that their flitting would be short at the longest, and might be only the preface to a swift destruction, set his steam-valve at the proper gauge, and awaited—not without anxiety—the tinkling signal that should start them on their flying voyage. McIntyre joined Robinson at the wheel on the upper-deck. Self-possessed, and with the calmness which results from undoubting courage and confidence, yet with the humility which recognizes all possibilities, with down-cast eyes and firm hands, Robinson took his place at the wheel and pulled the starting bell. With a shriek from her whistle and a white puff from her escape pipe to take leave, as it were, of the multitude gathered on the shores and on the bridge, the boat ran up the eddy a short distance, then swung around to the right, cleared the smooth

water and shot like an arrow into the rapid under the bridge. She took the outside curve of the rapid, and when a third of the way down it a jet of water struck against her rudder, a column dashed up under her starboard side, heeled her over, carried away her smoke-stack, started her overhang on that side, threw Robinson flat on his back and thrust McIntyre against her starboard wheel-house with such force as to break it through. Every eye was fixed; every tongue was silent, and every looker-on breathed freer as she emerged from the fearful baptism, shook her wounded sides, slid into the whirlpool and for a moment rode again on an even keel. Robinson rose at once, seized the helm, set her to the right of the large pot in the pool, then turned her directly through the neck of it. Thence, after receiving another drenching from its combing waves, she dashed on without further accident to the quiet bosom of the river below Lewiston.

Thus was accomplished the most remarkable and perilous voyage ever made by men. To look at the boat and the navigation she was to undertake no one would have predicted for it any other than a fatal termination. The boat was seventy-two feet long with seventeen feet breadth of beam and eight feet depth of hold, and carried an engine of an hundred horse power. In conversation with Robinson after the voyage, he stated that the greater part of it was like what he had always imagined must be the swift sailing of a large bird in a downward flight; that when the accident occurred the boat seemed to be struck from all directions at once; that she trembled like a fiddle-string and felt as if she would crumble away and drop into

atoms; that both he and McIntyre were holding to the wheel with all their strength but produced no more effect than if they had been two flies; that he had no fear of striking the rocks, for he knew that the strongest suction must be in the deepest channel and that the boat must remain in that. Finding that McIntyre was somewhat bewildered by excitement or by his fall as he rolled up by his side but did not rise, he quietly put his foot on his breast to keep him from rolling around the deck and thus finished the voyage.

Poor Jones, imprisoned beneath the hatches before the glowing furnace, went down on his knees, as he related afterward, and although a more earnest prayer was never uttered and few that were shorter, still it seemed to him prodigiously long. To that prayer he thought they owed their salvation.

The effect of this trip upon Robinson was decidedly marked. To it, as he lived but a few years afterward, his death was commonly attributed. But this was incorrect, since the disease which terminated his life was contracted at New Orleans at a later day. "He was," said Mrs. Robinson to the writer, "twenty years older when he came home that day than when he went out." He sank into his chair like a person overcome with weariness. He decided to abandon the water and advised his sons to venture no more about the rapids. Both his manner and appearance were changed. Calm and deliberate before, he became thoughtful and serious afterward. He had been borne, as it were, in the arms of a power so mighty that its impress was stamped on his features and on his

mind. Through a slightly opened door he had seen a vision which awed and subdued him. He became reverent in a moment. He grew venerable in an hour.

Yet he had a strange, almost irrepressible desire to make this voyage immediately after the steamer was put on below the Falls. This wish was only increased when the first *Maid of the Mist* was superseded by the new and stancher one. He insisted that it could be made with safety and that it might be made a good pecuniary speculation.

He was a character, an original. Born on the banks of the Connecticut, in the town of Springfield, Massachusetts, it was in the beautiful reach of water which skirts that now fine city that he acquired his love of aquatic sports and exercises and his skill in them. He was nearly six feet high, with light chestnut hair, blue eyes and fair complexion. He was a kind-hearted man of equable temper, few words, cool, deliberate, decided; lithe as a Gaul and gentle as a girl. To say that he was a man of 'undaunted courage' would be to waste on him an expression which is supposed to be fine and known to be strong. He had that calm, serene, supreme equanimity of temperament which fear could not reach nor disturb. He had none of the qualifications which would have fitted him to become a robber or a conspirator; he might have been, under right conditions, a quiet, willing martyr, and at last he bore patiently the wearying hours of slow decay which ended his life. Pecuniarily he had none of that covetousness which is idolatry. His love of nature and adventure was paramount to his love of money, and although

his purse was never pinched with poverty, yet it was never plethoric with abundance. Hence his virtues were not over-estimated by those with whom coin and success are convertible terms.

He loved the water and was at home in it or on it, as he was a capital swimmer and a skilful oarsman. Especially he delighted in the Rapids of the Niagara. Kind and compassionate as he was by nature, he was almost glad when he heard that a fellow-creature was, in some way, entangled in the rapids, since it would give him an excuse, an opportunity to work in *them* and to help *him*. As he was not a boaster he made no superfluous exhibitions of his skill or courage, albeit he might occasionally indulge—and be indulged—in some mirthful manifestation of his good nature; as when on reaching Chapin's Island for his rescue he waved from one of its tallest cedars a green branch to the anxious spectators as if to assure and encourage them; and when he returned with his skiff half filled with cedar-sprigs which he distributed to the multitude when they raised his pet craft to their shoulders, with both Chapin and himself in it, and bore them in triumph through the village, while money tokens went in to replace the green ones as they came out.

He neither provoked nor defied Providence, nor foolishly challenged the admiration of his fellow-men. But when the emergency arose for the proper exercise of his powers, when news came that some one was in trouble in the river, then he went to work with a calm and cheerful will which gave assurance of the best results. Beneath his quiet deliberation of manner there was concealed a

wonderful vigor both of resolution and nerve, as was amply testified by the dangers which he faced, and by the bend in his withy oar as he forced it through the water, and the feathery spray which flashed from its blade when he lifted it to the surface.

In all fishing and sailing parties his presence was indispensable with those who knew him. There are some of the best possible elements in the character of that man to whom children are instinctively attracted. He was a great favorite with children and women. The most timid no longer hesitated if Robinson was to go with the party. His quick eye saw everything it was necessary to see and his willing hand did all that it was necessary to do to secure the comfort and safety of the company.

And yet a prophet is not without honor save in his own country. It is doubtful whether any except a very few of his neighbors know where his mortal remains are mouldering in an unmarked grave. The heroines of Lonestone and Newport have been the worthy recipients of favors and testimonials well and nobly won. They performed their beneficent labor upon the storm-swept billows of the ocean, where, if their heroic efforts had not been successful in saving others, they might possibly have saved themselves on the shoreward surging waves. Robinson went forth on a turbulent, unreturning flood where the slightest hesitancy in thought or act would have proved instantly fatal. Benevolent associations in different cities and countries bestow honor and rewards on those who, by unselfish effort and a noble courage, save the life of a fellow-being. This Robinson did

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Fisher and the Bear.

repeatedly. Yet no word nor line nor stone commemorates his worthy deeds.

CHAPTER XII.

LOCAL HISTORY AND INCIDENTS.

Fisher and Bear in Canoe—Frightful Experience in the Ice—Early Farming on the Niagara—Fruit Growing—Original Forest—Testimony of the Trees—First Hotel—International—General Whitney—Cataract House—Distinguished Visitors—Carriage Road down the Canada Bank—Pavilion—Ontario House—Clifton House—Museum—Table and Termination Rocks—Burning Spring—Lundy's Lane—Battle—Anecdotes.

SOON after the war of 1812, a fisherman—whose name we will call Fisher—on a certain day, went out upon the river about three miles above the Falls, and while anchored and fishing from his canoe, he saw a bear in the water making, very leisurely, for Navy Island. Not understanding very thoroughly the nature and habits of the animal, thinking he would be a capital prize and having a spear in the canoe, he hoisted anchor and started in pursuit. As the canoe drew near, the bear turned to pay his respects to its occupant. Fisher, with his spear made a desperate thrust at him. Quicker and more deftly than the most expert fencer could have done, the quadruped parried the blow and, disarming his assailant, knocked the spear more than ten feet from the canoe.

Fisher then seized a paddle and belabored the bear over his head and on his paws, as he placed the latter on the side of the canoe, and drew himself in. The now frightened fisherman, not knowing how to swim, was in a most uncomfortable quandary. He felt greatly relieved therefore, when the animal deliberately sat himself down facing him in the bow of the canoe. Resolving in his own mind that he would generously resign the whole canoe to the creature as soon as he should reach the land, he raised his paddle and began to pull vigorously shore-ward, especially as the Rapids lay just below him and the Falls were roaring most ominously. But much to his surprise as soon as he began to paddle Bruin began to growl, and as he repeated his stroke, the occupant of the bow raised his note of disapproval an octave higher, and at the same time made a motion as if he would "go for" him. Fisher had no desire to cultivate a closer intimacy and so stopped paddling. Bruin then serenely contemplated the landscape, in the direction of the island. Fisher was also intensely interested in the same scene, still more intensely impressed with their constant and insidious approach to the Rapids, but most of all exercised as to the manner of his own escape. He tried the paddle again. But the tyrant of the quarter-deck again emphatically objected and as *he* was master of the situation and fully resolved not to resign the command of that craft until the termination of the voyage, there was no alternative but submission. Still, the Rapids were frightfully near and something must be done. He gave a tremendous shout. But Bruin was not in a musical mood and vetoed that

with as much emphasis as he had done the paddling. Then he turned his eyes on Fisher quite interestedly as if he were calculating the best method of dissecting him. The situation was fast becoming something more than painful. Man and bear in opposite ends of the canoe floating,—not exactly double—but together to inevitable destruction. But every suspense has an end. The single shout, or something else, had called the attention of the neighbors to the canoe. They came to the rescue and an old settler, with a musket which he had used in the war, insinuated a charge of buck-shot into Bruin's internal arrangements which induced him to take to the water, after which he was soon taken captive and dead to the shore. He weighed over three hundred pounds.

A son of the settler who shot the bear, had a frightful experience in the river many years afterward. He was engaged in Canada in the business of buying saw-logs for the American market. Coming from the woods down to Chippewa one cold day in December, at a time when considerable quantities of strong, thin cakes of ice were floating in the river, he took a flat-bottom skiff to row across to his home. This he did without apprehension as he had been born and brought up on the banks of the Niagara, understood it well, and was also a strong, resolute man. As he drew near the foot of Navy Island intending to take the schute between it and Buckhorn Island, two large cakes between which he was sailing, were suddenly closed together and cut the bottom of his skiff square off. Just above the upper cake on which his bottomless skiff then was floating, there was a second

large cake at a little distance from it, and beyond this a strip of water which washed the shore of Navy Island. In less time than it has taken to write this, he sprang on to the first piece of ice, ran across it with a sort of maniac speed, cleared the first space of water at a single leap, ran across the next cake of ice, jumped with all his might and landed in the icy water within a rod of the shore, to which he swam. He was soon after warming and drying himself before the rousing fire of the only occupant of the island.

His father had a fine farm on the bank of the river, which he cultivated with much care. But before the drainage of the country was completed the land was decidedly wet. A friend from the east who made him a call found him ploughing. The water stood in the bottom of the furrows, as he turned over the rich, heavy soil, and his visitor remarked that it was "rather wet ploughing." "Oh no! this is not bad," said the farmer. "What do you call bad?" asked the New Englander. "When I cannot see anything of my plough except the handles," was the response.

But agriculture has been progressive since those days. It is now almost a fine art instead of a mere pursuit. And no where north of the equator is there a climate and soil so genial and favorable for the growth of certain kinds of fruit, especially the apple and the peach, as are those of Niagara County. Connoisseurs claim that they can decide by the peculiar consistency of the pulp and by its flavor and *bouquet*, on which side of the Genesee river any tested apple was grown. It is said that the winter apples

of Niagara are as well known and as greatly distinguished above all others of their kind on the docks of Liverpool as is Sea Island Cotton, above all other grades of that plant. The delicious little russet, known as the *Pomme Gris*, with its fine aromatic flavor when ripe, grows nowhere else to such perfection as along the Niagara river. In 1825, at the grand celebration held to commemorate the completion of the Erie Canal, the late Judge Porter made the first shipment east of apples raised in Niagara County. It consisted of two barrels, one of which was sent to the Corporation of the city of Troy, and the other to that of New York. They were duly received and honored. From this small beginning the fruit trade has grown up to the yearly value of more than a million of dollars for Niagara County alone.

In reference to the forest which once covered this country, a very erroneous impression is prevalent as to its age. Poets and Romancers have been in the habit of speaking of these "primeval forests" as though they might have been bushes when Nahor and Abraham were infants. But this is a great error. Since the discovery of the country but one tree has been found that was eight hundred years old. This is mentioned by Sir Charles Lyall as having grown out of one of the ancient mounds near Marietta, Ohio. But the great majority of them were not over three hundred. The testimony of the trees concerning the past, is not quite so abundant as that of the rocks, but that of one tree grown in central New York is of a remarkable character. It was a white oak, which grew in the rich valley of the Clyde river,

about one mile west of Lyons' Court House, and was cut down in the year 1837. The body made a stick of timber eighty feet long, which before sawing was about five feet in diameter. It was cut into short logs and sawed up. From the centre of the butt log was sawn a piece about eight by twelve inches. At the butt end of this piece, the saw laid bare, without marring them, some old scars made by an axe or some other sharp instrument. These scars were perfectly distinct and their character equally unmistakable. They were made, apparently when the young tree was about six inches in diameter. Outside of these scars, there were counted four hundred and sixty distinct rings, each ring marking with unerring certainty one year's growth of the tree. It follows that this chopping was done in 1374, or one hundred and eighteen years before the first voyage of Columbus across the Atlantic. Hence one of the reasons for speaking of the *rediscovered* continent, in the first part of this work.

It has been questioned whether the rings shown in a cross section of a tree, can be relied upon to determine truly the number of years it has been growing. A singular confirmation of the correctness of this method of counting was furnished some years since.

In the latter part of the last century the late Judge Porter surveyed a large tract of land lying east of the Genesee river, known as "The Gore." Some thirty-five years afterward it became necessary to re-survey one of its lines, and recourse was had to the original surveys. Most of the forest, through which the first line had been run, was cleared off and such trees as had been "blazed"

as line-trees, had overgrown the scars. One tree was found which was declared to be an original line-tree. On cutting into it carefully the old "blaze" was brought to light, and, on counting the rings outside of it, they were found to correspond with the number of years which had elapsed since the first survey.

One of the three small buildings at Niagara which escaped the flames of 1814, was a log cabin about thirty by forty feet in its dimensions, that stood in the centre of the front of the International block. In the latter part of 1815 the inhabitants returned and the late General P. Whitney put a board addition to the log house and opened the first hotel. From that has grown up the present International. On the opposite side of the street was a small house, a story and a half high of which Judge Porter took possession, and to which he built an addition. Then, as now, there were occasionally more visitors than the hotel could accommodate, and the neighbors assisted in entertaining them. Judge Porter did this frequently, and among his guests were President Munroe, Marshal Grouchy, Gen. La Fayette, Gen. Brown, Gen. Scott, Judge Spencer, a Prussian Envoy, and other distinguished strangers.

The first building erected on the ground where the "Cataract" now stands, was of a later date—1824—a frame house about fifty feet square. It was purchased by Gen. Whitney in 1826 and formed the nucleus of the great pile which constitutes the present Cataract House.

In 1829 the carriage road down the bank to the Ferry on the Canada side was made. For some years previous

the principal hotel at the Falls was also on that side. It was called the Pavilion and stood on the high bank just above the Horse Shoe Fall. It commanded a grand view of the river above and almost a bird's eye view of the Falls and the head of the chasm below. The principal stage route from Buffalo was likewise on that side, and the Register of the Pavilion contained the names of most of the noted visitors of the period. But the erection of the Cataract House and the establishing of stage routes on the American side drew away much of its patronage, and finally, on the completion of the first half of the Clifton House, in 1833, it was quite abandoned. A few years later the Ontario House was built about half way between the Clifton and the Horse-Shoe Fall toward which it fronted. There was not sufficient business to support it and after standing unoccupied for some years it was finally burned.

The Clifton was greatly enlarged and improved by Mr. S. Zimmerman in 1865. The Amusement Hall and several cottages were built and gas works erected. The grounds were handsomely graded and adorned, and, on account of its pleasant and quiet location, it has been quite a favorite with the public.

Near the foot of the Table Rock is the Museum, its valuable collection being the result of several years' labor by its proprietor, Mr. Thomas Barnett. It contains several thousand specimens from the animal and mineral kingdom, and as the galleries are so arranged as to represent a forest scene, they are presented in a very attractive manner. There are also several ancient

Egyptians in the building, but as they are in a chrysalis state—mummies—it will probably be a long time before they will be able to see the great Cataract.

Just above the Museum the visitor steps on to what remains of the famous Table Rock. It was once a bare, rock pavement about fifteen rods long and about five rods wide, about fifty of its width projecting beyond its base at the bottom of the lime-stone stratum nearly one hundred feet below. Remembering this fact we can more readily credit the probable truth of the statement made by Father Hennepin—which we have before noticed—that the projection on the American side in 1682, when he returned from his first tour to the west, was so great that four coaches could drive abreast under it. On top of the debris below the bank lies the path by which Termination Rock, under the western end of the Horse-shoe, is reached. It is a path which few who are able neglect to follow.

The Table itself has always been and must continue to be a favorite resort for visitors. The combined view of all the Falls and the chasm below as well as the rapids above is finer, more extensive here than from any other point. Moreover, the *nearness* to the great Cataract is more sensibly felt, the *communion* with it is deeper and more intimate than it can be any where else. The view from this point can be most pleasantly and satisfactorily taken in the afternoon when the spectator has the sun behind him and can look at his leisure and with unvexed eyes at the brilliant scene before him. However long he may tarry he will find new pleasure in each return to it.

Two miles above, following around the bend of the Oxbow toward Chippawa, and down near the water's edge, is the Burning Spring. The water is impregnated with sulphurated hydrogen gas and is in a constant state of mild ebullition. The gas is perpetually rising to the surface of the water and when a lighted match is applied it burns with an intermittent flame. If however, a tub with an iron tube in the centre of its bottom is placed over the spring a constant stream of gas passes through it. On being lighted it burns constantly with a pale blue, wavering flame which possesses but little illuminating or heating power. The drive is a pleasant one, affording a fine view of the Oxbow Rapids and islands and the noble river above.

A mile and a quarter west of Table Rock is the Lundy's Lane battle-ground. On the crown of the hill, where the severest struggle occurred, are two rival pagodas challenging the tourist's attention. From the top of each he has a rare outlook over a broad level champaign relieved on its northern horizon by the top of Brock's Monument and on its south-eastern by the City of Buffalo and Lake Erie.

The obliging cicerone of either tower will enlighten his hearers with dexterous volubility and, according as he is certain of the nationality of his listeners, will the Stars and Stripes wave in triumph, or the Cross of Saint George float in glory, over the bloody and hard fought field. If he cannot feel sure of his listeners' habitat, like Justice, he will hold an even balance and be blind withal.

It was the writer's privilege to go over the field on a

pleasant June day with Generals Scott and Porter, and to learn from them its stirring incidents. General Scott pointed out the location of the famous battery on the British left, which made such havoc with his brave brigade, and in taking which the gallant Miller converted his modest "I'll try, Sir" into a triumphant "It is done." The General also found the tree under which, faint from his bleeding wound, he sat down to rest, placing its protecting boll between his back and the British bullets, as he leaned against it. Plucking a small wild flower growing near it, he presented it to one of the ladies of the party, telling her that "it grew in soil once nourished by his blood."

General Porter showed us where, with his volunteers and Indians he broke through the woods on the British right, just as Miller had carried the troublesome battery, thus aiding to win the most obstinate and bloody fight of the war. Its hard-won trophies, however, were too easily lost, as by some misunderstanding or neglect of orders, the proper guard around the field was not maintained, and, in the darkness proverbially intense just before day, the British returned to the field and quietly removed most of the guns. So our English friends claim it was a drawn battle.

Nearly half a century later a dinner was given at Queenston by our Canadian friends, to signalize the completion of the Lewiston Suspension Bridge. On this occasion a British-Canadian officer, the late Major Woodruff, of St. David's, who served with his regiment during the war, was called upon by the Chairman, the late Sir

Allan McNabb, to follow, in response to a toast, the late Colonel Porter, only son of General Porter. In a mirthful reference to the stirring events of the war he alluded to the British retreat after the battle of Chippawa, and condensing the opposing forces into two personal pronouns, one representing General Porter and the other himself, turning to Colonel Porter he said, "Yes, Sir, I remember well the *moving* events of that day, and how sharp he was after me. But, Sir, he was balked in his purpose, for although he won the *victory* I won the *race*, and so we were even."

CHAPTER XIII.

LOCAL HISTORY AND INCIDENTS.

Incidents—Fall of Table Rock—Remarkable phenomenon in river—Consequences—Driving and lumbering on the Rapids—Capture of a large turtle—Points of Compass—First view of Falls—Disappointment—Fall, seen from below—Lunar Bow—Golden spray—Gull Island and gulls—Highest water ever known—Performance of a fish hawk—Of an eagle—Hermit of the Falls.

OF incidents, curious, comic and tragic connected with the locality, the catalogue is long, but we must make our recital of them brief.

We have before referred to Professor Kalm's notice of the fall of a portion of Table Rock previous to 1750. Authentic accounts of like events are the following: In 1818 a mass one hundred and sixty feet long by thirty

wide ; in 1828 and '29 two smaller masses : also in 1828 there went down in the centre of the Horse-Shoe a huge mass of which the top area was estimated at half an acre. If this estimate was correct it would show an abrasion equivalent to nearly one foot from the whole surface of the Canada Fall. In April, 1843, a mass of rock and earth about thirty-five feet long and six feet wide fell from the middle of Goat Island. In 1847 there was just north of the Biddle Stairs, a slide of boulders, earth and gravel with a small portion of the bed-rock, the whole mass being about forty feet long and ten feet wide. About every third return of spring has increased the abrasion at these two points. At the first named point more than twenty feet in width has disappeared with the whole of the road crossing the island. From the latter point, which was a favorite one from which to look at the Horse-shoe Fall, the seats provided for visitors and the trees which shaded them have fallen.

On the 25th of June, 1850, occurred the great downfall which reduced Table Rock to a narrow bench along the bank. The portion which fell was one immense solid rock two hundred feet long, sixty feet wide and one hundred feet deep where it separated from the bank. The noise of the crash was heard like muffled thunder for miles around. Fortunately it fell at noonday when but few people were out, and no lives were lost. The driver of an omnibus who had taken off his horses for their mid-day feed, and was washing his vehicle, felt the preliminary cracking and escaped, the vehicle itself being plunged into the gulf below.

In 1850 a canal boat that became detached from a raft went down the Canadian rapids, turned broadside across the river before reaching the Falls, struck amidships against a rock projecting up from the bottom and lodged. It remained there more than a year and when it went down took with it a piece of the rock apparently about ten feet wide and forty feet long. At the foot of Goat Island some smaller masses have fallen and three quite extensive earth slides have occurred.

In the spring of 1852 a triangular mass, the vertex of which was just beyond or south of the tower, while its altitude of more than forty feet lay along the shore of the south corner of Goat Island, fell in the night with the usual grinding crash. And with it fell some isolated rocks which lay on the brink of the precipice in front of the tower, and from which its name was derived. Before the tower was built some person looking at the rocks from the shore, suggested that they appeared like huge terrapins sunning themselves on the edge of the fall. A few days after the fall the triangular mass, a huge column of rock an hundred feet high, about fourteen feet by twelve, and flat on the top, large enough for a Cleopatra's darning needle, became separated from the bank and settled down perpendicularly until its top was about ten feet below the surface rock. It stood thus about four years, when it gradually began to settle, as the shale and stone were disintegrated beneath it, and finally tumbled over on to the rocks below, furnishing the illustration of the manner in which we suppose the rocks once accumulated below the Whirl-

pool must have been broken down. In the spring of 1871 a portion of the west side of the sharp angle of the Horse-Shoe, apparently about ten by thirty feet, went down, producing a decided change in the curve.

On the 29th of March, 1848, the river presented a remarkable phenomenon. There is no record of a similar one nor has it been observed since. The winter had been intensely cold, and the ice formed on Lake Erie was very thick. This was loosened around the shores by the warm days of the early spring. During the day a stiff easterly wind moved the whole field up the lake. About sundown the wind chopped suddenly around and blew a gale from the west. This brought the vast tract of ice down again with such tremendous force that it filled in the neck of the Lake and the outlet so that the outflow of the water was very greatly impeded. Of course it only needed a short space of time for the Falls to drain off the water below Black Rock.

The consequence was that when we arose in the morning at Niagara, we found our river was nearly half gone. The American channel had dwindled to a respectable creek. The British channel looked as though it had been smitten with a quick consumption, and was fast passing away. Far up from the head of Goat Island and out into the Canadian rapids, the water was gone, as it was also from the lower end of Goat Island, out beyond the tower. The rocks were bare, black and forbidding. The roar of Niagara had subsided almost to a moan. The scene was desolate, and but for its novelty and the certainty that it would change before many hours, would

have been gloomy and saddening. Every person who has visited Niagara will remember a beautiful jet of water which shoots up into the air about forty rods south of the outer Sister in the great rapids, called, with a singular contradiction of terms, the 'Leaping Rock.' The writer drove a horse and buggy from near the head of Goat Island out to a point above and near to that jet. With a log cart and four horses, he had drawn from the outside of the outer island, a stick of pine timber hewed twelve inches square, and forty feet long. From the top of the middle island was drawn a still larger stick hewed on one side and sixty feet long.

There are few places on the globe where a person would be less likely to go *lumbering* than in the rapids of the Niagara, just above the brink of the Horse-shoe Fall. All the people of the neighborhood were abroad exploring recesses and cavities that had never before been exposed to mortal eyes. The writer went some distance up the shore of the river. Large fields of the muddy bottom were laid bare. The shell-fish, the uni-valves and the bi-valves, the Unios, Cyclas and Valvatas were in despair. Their housekeeping and domestic arrangements were most unceremoniously exposed. The clams with their backs up and their open mouths down in the mud were making their sinuous courses towards the shrunken stream. The small-fry of fishes were wriggling in wonder to find themselves impounded in small pools, where the room of their friends, would have been, emphatically, better than their company. Testudæ found their backs out of water without the necessity of mounting a log. One monstrous

individual of the snapping order, about the size, circumferentially, of a half-bushel measure, who was probably the patriarch of his tribe, found himself obliged to survey more territory than he could conveniently compass, and while seeking a new home, had been captured by two ragged urchins who had secured his attention as well as his teeth to the end of an alder rod, with which they were trying to draw him home. With his four pedal supporters stretched firmly and defiantly forward, and his eyes snapping with rage, he was *testudinally* not to say *manfully* contesting every inch of the ground. The writer suggested that he would draw easier if the boys would turn him over on his back. This was a piece of grand strategy for which he was not prepared. It took him not only in the flank but in the rear, all over and all around. His arms and armory were both upset. His eyes were no longer to the front. On the contrary they were constantly liable to be wiped in a manner not at all healthful or agreeable. Turtle flesh and blood could stand it no longer. Conquering the proverbial obstinacy of his race, he surrendered at discretion. He would have been glad to be backed by his friends, but it was intolerable to be *backed* in this manner by his enemies. Those enemies doubtless *loved* him, after they had made him into soup.

This singular syncope of the waters lasted all the day, and night closed over the strange scene. But in the morning our river was restored in all its strength, and beauty and majesty, and we were glad to welcome its swelling tide once more.

It is a curious fact that nine-tenths of the persons who

visit the Falls for the first time are, on their arrival, completely bewildered as to their points of compass ; and this without reference to the direction from which they may approach them. All understand the general geographical fact, that Canada lies north of the United States. Hence they naturally suppose when they arrive at the frontier that they must see Canada to the north of them. But when they reach Niagara Falls they look across the river into Canada, in one direction directly south, and in another directly west. Only a reference to the map will rectify the erroneous impression. It is corrected at once on noting that the Niagara river empties into the south side of Lake Ontario and not into its west end.

One other fact may be regarded as well-established, namely : that most visitors are disappointed when they first look upon the Falls. They are not immediately and forcibly impressed by the scene as they had expected to be. The reasons for this are easily explained. The chief one is that the visitor first sees the Falls from a point *above them*. Before seeing them, he reads of their great height ; he expects to look up at them and behold the great mass of water, falling, as it were, from the sky. He reads of the trembling earth ; of the cloud of spray, that may be seen an hundred miles away ; of the thunder of the torrent, and of the rainbows. He does not consider that these are *occasional* facts. He may not *know* he is near the Falls until he gets just over them. At certain times he feels no trembling of the earth ; he hears no stunning roar ; he may see the spray scattered in all directions by the wind and, of course, he will see no bow-

Naturally, he is disappointed. But it is not long before the grand reality begins to break upon him, and every succeeding day and hour of observation impresses him more and more deeply with the vastness, the power, the sublimity of the scene and the wonderful and varied beauty of its accessories and surroundings. Those who spend one or more seasons at Niagara know how very little can be seen or comprehended by those who "stop over one train."

They are fortunate who can see the Falls *first* from the Ferry boat on the river below, and about one-third of the way across from the American shore. The writer has frequently tried the experiment with friends who were willing to trust themselves, with closed eyes, to his guidance, and wait until he had given them the signal to look upward. The experience with the neophyte is invariably one of great astonishment and delight.

Those who may be at Niagara a few nights before and after a full moon will not fail to go to the tower to see the Lunar Bow. It is the most unreal of all real things, a thing of weird and shadowy beauty.

Another striking scene peculiar to the locality is witnessed in the autumn, when the sun in making his annual southing reaches a point which, at the sunset hour, is directly west from the Falls. Then those who are east of them see the spray illuminated by the slant rays of the sinking orb. In the calm of the hour and the peculiar atmosphere of the season, the majestic cloud looks like the spray of molten gold. And as the gorgeous column rises, fold on fold, up the radiant sky with the glowing

west for a back-ground, it is not difficult for the beholder to imagine that he can realize something of the splendor of

“The robes which the glorified wear.”

In 1840 there was a small patch of stones, gravel, sand and earth called Gull Island, lying near the centre of the Canadian rapid and about one hundred rods above the Horse-shoe Fall. It was apparently twenty rods long by two rods wide and was covered with a growth of willow bushes. It was so named because it was a favorite resort of that singular combination of the most delicate bones and lightest feathers called a Gull. The birds appear large and awkward on the wing, but as they sit upon the water nothing can appear more graceful. They are far-sighted and keen scented. Their eyes are marvels of beauty. They are eccentric in their habits, the very Arabs of their race, here to-day and gone to-morrow. They are gregarious and often assemble in large numbers. At times in a series of wild, rapid, devious gyrations and uttering a low, mournful murmur they seem to be engaged, as it were, in some solemn festival commemorative of their departed kindred. Hundreds of them will be thus engaged for nearly an hour. One moment the air will be filled with them and their sad refrain ; the next this ceases and not a gull is to be seen. They come as they go summer and winter alike. In thirty years the writer has never been able to discover when nor whence they came nor whither they departed. In winter they generally appear in the milder days, and their disappearance is followed by cooler weather. If we had a few *gull*

stations in the latitudes of their flight, they might perhaps be utilized as a winged thermometer.

In the spring of 1847 a long and fierce gale from the west, driving the water down Lake Erie caused the highest rise ever known in the river. It rose six feet perpendicular on the Rapids and for the first time reached the floor plank on the old bridge. The greater part of Gull Island was washed down in this flood, and ten years after it had wholly disappeared.

The vague tradition—the origin of which cannot be traced—that there is a periodical flux and reflux of the waters in the great Lakes, which embraces a period of about seven years, is not confirmed by the writer's observation, if it be intended to affirm that the ebb and flow are both completed in seven years. His observation shows that there is a flow of about seven years, and a reflux which is accomplished in the same period. The water in the Niagara was very low in 1843-4, again in 1857-8, and again in 1871-2. This last is the lowest long continued shrinkage ever known. It is probable the flow will recommence in 1873. It is, however, altogether probable that the general level of the Lakes will fall hereafter, owing to the destruction of the forests and the cultivation of the land along their shores. In this case the waters of the Niagara and Detroit rivers may, in the far future, meet in the bed of Lake Erie, and their margins be covered with orchards and vineyards more extensive and productive than those along the Rhine.

Here the writer may appropriately mention an extraordinary performance of a fish-hawk, which he witnessed

one pleasant June day, while standing on the short bridge between Bath Island and Goat Island. The hawk descended into the rapids just above the bridge and seizing a mullet, apparently about ten inches long, rose with it almost perpendicularly, but bearing somewhat toward the island. When, seemingly, about three hundred feet above the water, by some mishap he lost his hold of the fish which, of course, began a fall of ever increasing velocity. The hawk turned instantly in pursuit and within twenty feet of the water actually recaptured the fish and bore him off in triumph. As there was no visible motion of the wings the writer could only account for this apparent violation of the laws of gravity¹ by supposing that the bird, the *living* matter must have possessed a certain inherent power, a certain *vim*, which enabled it to accelerate its downward motion, while at the same time the air bladder of the fish may have been fully distended, thus retarding *his* motion.

St. John de Cr ve C ur in his travels in upper Pennsylvania, in 1798, describes a similar scene and gives a pictorial representation of it.

A hawk having risen in the air with a fine pike is set upon by an eagle and compelled to drop his game. Thereupon the eagle starts after and secures it before it strikes the water below.

The Hermit of the Falls, so called, Mr. Francis Abbott, came to the village in June, 1829. He was a rather well-looking, respectable young man of moderate attainments who was subject, apparently, to a mild form of intermittent derangement. Though his manner was eccentric,

his conduct was harmless, and it is probable that his parents, who, it was afterwards ascertained were respectable members of the Society of Friends in England, encouraged his desire to travel and furnished him the means to do so. He seems to have had some taste for music and to have been a tolerable performer on the flute. The love of nature which attached him so strongly to Niagara was certainly creditable to him. He wandered much about the island both night and day, and often bathed below the little fall on the south side of Goat Island near its head. He lived alone in an unoccupied log hut directly across the island from this fall until about the first April, 1831, when he removed to a little cabin of his own building on Point-view. In June of that year, just two years after his arrival, he was drowned while bathing below the Ferry. Ten days after his body was found at Fort Niagara, brought back and buried in the God's acre at the Falls.

CHAPTER XIV.

LOCAL HISTORY AND INCIDENTS.

Avery on the log—Young man and girl over the Falls—Death of Miss Rugg—Singular Monument—Competition for business stand—Swans—Eagles—Crows—Ducks over the Falls—Dogs go over and live—Reason why—Water cones.

ON the morning of the 19th of July, 1853, a man was discovered in the middle of the American rapid, about thirty rods below the bridge. He was cling-

ing to a log which had lodged against a rock the previous spring. He proved to be a Mr. Avery, who had undertaken to cross the river above, the night before, got bewildered in the current, and was drawn into the rapids. His boat struck the log, was overturned, and by some extraordinary good fortune he was able to hold to the timber. A large crowd was soon gathered on the shore and bridge. A sign painted in large letters "We will save you," was fastened to a building that the reading of it might cheer and encourage him. Boats and ropes were provided, with willing hands to use them. The first boat lowered into the rapids filled and sank just before reaching Avery. The next, a life-boat which had been procured from Buffalo, was let down, reached the log, was dashed off by the reacting waters, upset and sank beside him. Another light, clinker-built boat was launched and reached him just right. But in some unaccountable manner the rope got caught between the rock and the log. It was impossible to loosen it. Poor Avery tugged and worked at it with almost superhuman energy for hours. The citizens above pulled at the rope until it broke.

By this time a raft had been constructed with a strong cask fastened to each corner, and ropes attached so that Avery could tie himself to it. It was lowered and reached him safely. He got on it and seized the ropes. Every heart grew lighter as the rescuers moved across the lower part of Bath Island, drawing in the rope, and the raft swinging easily toward Goat Island. But when it reached the head of Chapin's Island all hopes were dashed again.

The rope attached to the raft, as it was passing below a ledge in a swift chute of water, got caught in the rocks. All efforts to loosen it were ineffectual. Another boat was launched and let down stream. It reached the raft all right, and Avery, in his eagerness to seize it, dropped the ropes he had been holding, stepped to the top of the raft with his hands extended to catch the boat, when the former seemed by his weight to be settled in the water, and, just missing his hold, he was swept into the rapids, went down the north side of Chapin's Island, and almost in reach of it, in water so shallow that he rose to his feet, threw up his hands in despair, fell backward and went over the Fall, after a terrific struggle with death, which lasted eighteen hours.

The names connected with the next incident are suppressed out of regard for the feelings of surviving friends. It is given as a warning to future visitors to Niagara, not to attempt any mirthful experiments around the Falls. A party of ladies, gentlemen and children were on Luna Island just above a little beech tree with a bent top, called "the Parasol." A young girl of ten was standing near her mother just on the brink of the water; a young man of twenty-two stepped up beside her, seized her playfully by the arms saying, "Now, Nannie, I am going to throw you in;" and swung her out over the water. Taken by surprise, and frightened, she struggled, twisted herself out of his grasp, and fell into the rapid within twenty feet of the brink of the precipice. Instantly the young man plunged in after her, seized hold of her dress and swung her around toward her half-distracted mother, who almost

reached her as she slipped by and went over the Fall, immediately followed by the young man. The young girl was found some days afterward lying on her back on a large rock, holding her open parasol above her head, as though she had lain down to rest. A few weeks afterward the father of the young man was coming up the river on the *Maid of the Mist*, from the lower landing. A body was discovered floating in the water, and by the aid of a small boat was brought on board the steamer. It was that of his dead son.

The next incident shows how the comic sometimes grows out of the tragic. On the 23rd of August, 1844, Miss Martha K. Rugg was walking up to Table Rock with a friend. Seeing a bunch of cedar berries on a low tree which grew out from the edge of the bank, leaving her companion she reached out to pick it, lost her footing and fell one hundred and fifteen feet on to the rocks below. She survived about three hours. As usual, in such cases, future pilgrims to Table Rock inquired for the spot where this accident happened. The following spring, an enterprising Irishman, wishing to answer these inquiries, and at the same time secure a little daily bread, brought out a table of suitable dimensions, set it down on the bank of the river and covered it with sundry articles which he offered for sale. In order to enlighten strangers as to the peculiarity of the spot he provided a remarkable sign, which he set up near one end of the table. He made of pine boards a monumental obelisk about five feet high, and painted it white. On the rectangular base which supported the shaft, he painted in

black letters the following poetical and touching inscription :

“Ladies fair, most beauteous of the race,
Beware and shun a dangerous place.
Miss Martha Rugg here lost her life
Who might now have been a happy wife.”

As the stand proved to be a good one and his business prosperous, an envious competitor, one of his own countrymen, proposed to share it with him. Accordingly he brought his table of sundries, and placed it and them just above the original mourner. Thereupon the latter, determined that his rival should not have the benefit of his unique and mournful sign, removed it below his own table, having first removed the table itself as far down as circumstances would permit. Then he added his master-stroke of policy. Theretofore the monument had, very properly, been stationary. Thenceforward every day on quitting business, he put it on a wheel-barrow and toted it home, bringing it out again on resuming operations in the morning. If there is one thing in the world which, more than any other, ought to be considered a permanency, it would seem to be a monument to the dead. The idea of an itinerating tombstone is eminently worthy of its Milesian origin.

Previous to the war of 1812, the Niagara river abounded in swans, wild geese and ducks. Since that war none of the former have been seen here, except two pairs which came at different times. One of each pair went over the

Falls and was taken out alive but stunned. The other two, faithful unto death, were shot while watching and waiting for the return of their mates.

Eagles have always been seen in the vicinity, and a few have been captured. A single pair for many years had their eyrie in the top of a huge dead sycamore tree near the head of Burnt Ship Bay. It was interesting to watch the flight of the male bird when he left it and his brooding mate on a foraging expedition. Leaving the topmost limb that served as his home observatory, he swept around in a large horizontal circle, which formed the base of a regular spiral curve, in which he rose to any desired height. Then, having apparently determined by scent or sight, or by both, the direction he would take in a tangent, he sailed grandly off to the destined point. How grandly too, on his return, he floated on to his lofty perch with a single fold of his great wings, and sat for a few moments, motionless as a statue, before greeting his queenly mate. The writer, while on a sporting excursion in the vicinity when the young eaglets had but recently chipped their cells, gave energetic heed to an intimation that the family were not receiving callers at that time, and was quite content to view the majestic pair at a respectful distance. *Spread Eagle* may not be very formidable in a newspaper—nor even in a book. But a pair of spread eagles, each carrying ten talons, a hooked beak, a strong pair of wings and an unerring eye, all backed and propelled by an indomitable will and courage, are not to be recklessly trifled with. The noble family, not liking the intrusion of their human neighbors, sought a new home some years since.

Before the war of the Rebellion, Niagara was rather a favorite resort of that general winged-scavenger, the crow, and at times, in what seemed to be a western emigration, they were very numerous. But after the first year of the war they entirely disappeared. Snuffing the battle from afar they turned instinctively to the bloody forage grounds of the south, and did not reappear among us until some years after the war had ended.

Large numbers of ducks formerly went over the Falls, but not for the reason generally assigned, namely, that they cannot rise out of the rapids. It is true that they cannot rise from the water while heading up stream. When they wish to do so, they turn down the current and sail out without difficulty. No sound and living duck ever went over the precipice by daylight. Dark, and especially foggy nights are most fatal to them. In the month of September, 1841, four hundred ducks were picked up below the Falls, who had gone over in the fog of the previous night. In two instances dogs have been sent over the Falls and survived the plunge. In November, 1836, a troublesome female bull-tarrier was put in a coffee sack, by a couple of men who had determined to get rid of her, and thrown off from the middle of Goat Island bridge. In the following spring she was found alive and well about sixty rods below the Ferry, having lived through the winter on a deceased cow that was thrown over the bank the previous fall. In 1858 another dog, a male of the same breed, was thrown into the rapids, also near the middle of the bridge. In less than an hour he came up the Ferry stairs very

wet and not at all gay. He was ever after a sadder if not a better dog.

The reason why the animals were not killed may be thus explained. From the top of the rapids tower the spectator gets a perfect view of the periphery of the Canadian Fall. If he will, on a bright day, look steadily at the bottom of the Horse-Shoe where water falls into water, he will see, as the spray is occasionally removed, a beautiful exhibition of water cones apparently ten or twelve feet high. These are formed by the rapid accumulation and condensation of the falling water. It pours down so rapidly and in such quantities that the water below, so to speak, cannot run off fast enough and it piles up as though it were in a state of violent ebullition. These cones are constantly forming and breaking. If any strong animal should fall on to one of these cones as on to a soft cushion it might slide safely into the current below. The dogs were doubtless fortunate enough to fall in this way, aided also by the repulsion of the water from the rocks in the swift channel through which they passed. It is not impossible that some strong man in a light, strong boat may thus, at some future time, go over the Horse-Shoe Fall and not be killed.

CHAPTER XV.

LOCAL HISTORY AND INCIDENTS.

Niagara and bridal tourists—Anecdotes—Bridges to the Moss Islands—Railway at the Ferry—Persons over the Falls—Other accidents—First Suspension Bridge—Railway Suspension Bridge—Mr. Charles Ellet—Mr. John E. Robeling—Extraordinary motion of bridge—De Veaux College—Lewiston Suspension Bridge—Suspension Bridge at the Falls.

LIKE all places where men do congregate, Niagara is a good place to study human nature, many comical phases of which are there seen. For many years it has been famous as a favorite resort for bridal tourists, a honeymoon cell where they can escape the hum of busy life and charm each other with their own particular hums; where in a crowd of strangers they can be so excessively proper that every one else can see how charmingly improper they are. And the question is frequently asked why it should be so? why a passion which is so all-embracing in the concrete and so all-selfish and absorbing in the particular as love is, should exhibit itself in a place so public? The most obvious reason would seem to be that Niagara is the only place which by its vastness can equal the great happiness which is conferred upon those fortunate knights and ladies who have received Cupid's divinest accolade, and that only its majestic monotone can be in accord with the blissful harmony which is

purring in their united hearts. If Lord Byron could have visited Niagara in bride-time he would not have suggested, in the double-barrel apostrophe to "Love and Glory" which opens the seventh canto of *Don Juan*, that love at least was flying

"Around us ever, rarely to alight."

It is not probable that all the bizarre and extraordinary performances of humanity are to be attributed to newly married people, but they are generally in such a state of sentimental—if not mental—hallucination that terrene matters seem to get quite confused with them.

A few years since a newly married pair from Ohio took quarters at the Cataract. After breakfast they went out to see the sights. Linking themselves together in the manner peculiar to little girls when they go "skip and a hop," they left the Cataract, went around Goat Island, looked into all the shop windows, returned again to the hotel and walked up the front stairs without breaking the double lock. Both their happiness and rustic simplicity were complete, as manifested in their manner and serenely beaming on their countenances, while all other countenances at Niagara were illumined with a smile.

One pleasant afternoon, when the cars for Lockport started from in front of the Cataract, while the piazza was filled with guests who had just left the dinner table and were watching the train,—that perpetual provocative of curiosity whether standing or moving—there came out of the broad front door another newly married pair from Indiana, the enamored youth with his right hand holding

the blooming maid by her left and their arms extended at full length. Thus he led her out to the cars, and as she entered the door, he turned toward the smiling crowd with a most satisfied expression on his face, which plainly said "that's the way to do it."

Not long since, a young Illinoisan—for a wonder he had no wife with him—stopped at the Cataract over a train and had his dinner. Looking over the attractive wine list of that house, he ordered a large bottle of Heidseck. The waiter duly iced his goblet and filled it with the sparkling wine. The guest drank about half of it, but as it soon made a gaseous demonstration through his nose, he shoved it aside. On settling at the office, he of course found the wine on his bill. Enquiring what that meant he was shown the card by which it was ordered. "And do you charge for it?" "Yes Sir." "Well but it was on the feed bill and I supposed it went with the provisions. Besides I only drank a part of a glass." Having his erroneous impression on the subject corrected, and finding that the proprietors would not "allow him something for what was left" he concluded to take it with him. The bottle was brought and he took it to his room. After a time he returned with it to the office and said he could not "get the cork tight, it kept coming out and leaking on his clothes." As there was no remedy for this except to *wire* in the cork, and he could get no wire, he drank what he could and left the remainder on the counter. When he left for the train he had apparently more gas in his head than could well escape at his nose.

The three fine, graceful bridges which unite Goat Island with the three smaller islands lying south of it named the Moss Islands, or the Three Sisters, were built in 1858. They opened a new and very attractive feature of the locality, with which all visitors are charmed. Those who have been on them, will remember what a broken, wild, tangled mass of rocks, wood and vines they are. Nothing on Onalaska's wildest shore could be more thoroughly primitive. On Goat Island are posted the usual notices for the protection of trees. Whatever wit there may be in changing the location of signs, would seem to have been exhausted long ago. But one summer morning, visitors to the outer Sister, were rather amused to see in the roughest part of the island, a sign posted asking them, "Please not hitch horses to the trees."

A rude path with steps cut in the talus of the bank was for some years the only way of getting down to the water's edge at the Ferry. In 1825 several flights of stairs were erected, with good paths between, which made the task quite safe and easy. The double railway-track at the Ferry was completed in 1845. When the necessary excavations for its passage were nearly finished, and people were told, in answer to their inquiries, the object of it, the scheme met no approval from those conservative prophets, who have no faith in new things, nor in attempting to do in the present, what has never been done in the past. The idea of a railway "to go by water" was not considered a brilliant one. Indeed the majority shrugged their shoulders at the thought of riding down

that hill. But as soon as the lumber cars were started for the convenience of the workmen, and people saw how expeditious and easy was the trip, it was difficult to keep them off the cars. Hundreds of thousands of passengers have ridden in them without accident or injury. The motive power is a reaction water-wheel set in a deep pit, and as all the machinery is concealed, it has quite the appearance of a self-working apparatus.

The summer after this railway was finished, a tall, lean, wiry individual, whose Yankee origin was unmistakable, went into the Ferry House and examined the operation of the machinery with great interest. He made many inquiries of the Superintendent, Mr. George W. Sims, all of which were, apparently, satisfactorily answered, and he started to leave. Reaching the door, he seemed to be struck with a new idea, and returning to the Superintendent asked, "But suppose that *rope should* break after the thing gets going?" to which the reply was, "It makes no difference, as we take the pay before they start!" There is alongside of the railroad a straight stairway of two hundred and ninety steps, for those who prefer to use it.

Mr. Sims has had constant charge of this railway since it was built, and by his good nature, prudence and firmness, especially during a pic-nic avalanche of humanity, he has well succeeded in managing it safely and satisfactorily.

Before recording the casualties which have occurred on the river we may note the fact that, for the first time so far as known, the broad channel from Schlosser to Navy Island was entirely closed over by the ice in February of

the present year—1872. The ice bridge of this year below the Falls, was formed the night before Christmas and remained until the fourth day of April. There have been six ice bridges in the last ten years. The winter scenery has been very fine ; but there has been no such extraordinary accumulation of ice upon the American rapids as occurred in 1856. The photographers have secured many striking views ; but they have never yet been able to secure satisfactory presentations of the exquisite fringes of ice and frozen fog which we have before described.

The number of victims whom carelessness or folly has sent over the Falls is quite formidable and doubtless quite independent of any Indian tradition that the great Cataract demands a yearly sacrifice of two victims, since no such tradition can be authenticated.

In 1810 the boat *Independence*, laden with salt, filled and sunk while crossing to Chippawa. The captain and two of the crew went over the Falls. Another of the crew clung to a large oar and was saved by a small boat from Chippawa.

1821 Two men in a scow were driven down the current by the wind and also went over.

1825 Two men and boat from Grand Island went over.

1825 Three men went over in three different canoes.

1841 Two men, engaged in smuggling, boat upset in the current, one went over. One found dead on Grass Island. Two men boating sand in

a scow, were drawn into the current and went over.

- 1847 A lad of fourteen undertook to row across on a Sunday morning, and went over.
- 1848 In August a man went under the Goat Island Bridge, within ten feet of the shore ; asked of persons on the bridge, "Can I be saved?" Soon after boat upset, and he went over feet foremost, struck on the rocks below, and never seen afterward.
- 1848 A small boy and girl playing in a skiff which swung off the shore ; the mother waded into the water and rescued the girl. The boy sitting in the bottom of the skiff, with a hand on each side, went over.
- 1870 A lady from Chicago, deranged, threw herself from Goat Island Bridge, and went over.
- 1871 In June three men, unacquainted with the river, hired a boat to cross, were drawn into the rapids and went over.
- 1871 July two men in a boat went over.
- 1841 A number of British soldiers, stationed at Drummondville, attempted to swim across at the Ferry at different times. Two were drowned ; but several succeeded in escaping.
- 1842 A British soldier attempted to lower himself down the bank opposite Barnett's Museum, in order to escape to the American shore. The rope broke and he was killed by the fall.
- 1844 In August a gentleman was washed off from a

rock under the great Fall, which he had stepped onto in opposition to the remonstrances of the guide.

1846 In August a gentleman fell forty feet from a rock below the Cave of the Winds : was instantly killed.

1852 In January a man fell from the Tower bridge into the rapids, and was caught between two rocks just on the brink of the precipice, whence he was rescued, nearly exhausted, by means of a rope.

1840 During the night of April 17th, Brock's monument was blown up, the shaft split from top to bottom, and half of the observatory blown off. It was a complete wreck. The unfortunate criminal who did the mischief, as he confessed afterward when sent to prison for another crime, came near being—not hoist by his own petard—but crushed by the falling stone, since his fuse, being placed perpendicular, exploded the torpedo sooner than he expected.

The old was replaced by the new monument, in 1855.

On the 4th of July, 1857, on the partial completion of the Hydraulic Canal, the principal stockholders interested in the project, with a number of invited guests, celebrated the event by an excursion from Buffalo on the *Cygnets*, the first steamer that ever landed within the limits of the village. Although steamboats had long been run both to Chippawa and Schlosser, two miles above the Falls, yet it was thought to be impracticable

and hazardous to run down to the village. But the writer, some years before, taking Robinson as boatswain, traced out a channel which was followed on this occasion. It is now used during the season of navigation by tugs towing canal boats and rafts out and in. No passenger boat, however, has been placed on the route, although the sail on the river is a charming one.

Mr. Charles Ellet, in 1848, built the first suspension bridge over the chasm. He offered a reward of five dollars to any one who would get a string across it. The next windy day all the boys in the neighborhood were kiting, though not in the Wall street manner, and before night a lucky youth landed his kite in Canada and received the reward. Of this little string were born, so to speak, the large cables which support the present vast structure. But the first iron successor of the string was a small wire cable, seven-eighths of an inch in diameter. To this was suspended a wire basket in which two persons could cross the chasm. The basket was attached to an endless rope, worked by a windlass on each bank. The ride down to the centre was rapid and delightful. The pause over the centre of the abyss was apt to make the coolest persons a little anxious, and the *jerky* motion up the opposite side was rather annoying. The engineer was bold and brilliant rather than profound in his profession. At an entertainment given on the occasion of the completion of the bridge the good people of the embryo village, elated with their new acquisition, were inclined to regard their neighbors at the Falls with rather a patronizing sympathy. One of the latter said to Mr.

Ellet, "This bridge is a very clever] affair, and you only need the Falls here to build up quite a respectable village." "Well," he replied, "give me money enough and I will put them here." He had great faith in dollar-power, even to the adding of the supreme adjective.

This bridge was an excellent auxiliary in the construction of the present railway Suspension Bridge, built by Mr. John A. Robeling. It was commenced in 1852 and the first locomotive crossed it in March, 1855. It is one of the most brilliant examples of modern engineering. It is unique and stands unrivalled for its grace, beauty and strength. It is one of the few structures that not only harmonizes with the grand scenery of the vicinity, but even augments its impressiveness. It is eminently appropriate to the locality and admirably fitted for the purpose it was designed to serve. Its plan is original, apt and excellent in every way. It was necessary that its railway track should be as high as the secondary banks of the river. It was also desirable to have a carriage way. It was wholly inexpedient to have the two side by side. Frightened horses and careless people would cause many serious accidents. Besides this the terminus of the carriage way would be too far from the banks of the river.

Seizing at once upon the natural capabilities of the location, the engineer resolved to combine the advantages of two systems of construction, those of the Tubular and Suspension Bridges. The carriage way was placed level with the banks of the river at the edges of the chasm. The railway track was placed eighteen feet above on a

level with the top of the secondary banks across which the two railroads were to approach it. The plan was perfect and perfectly and faithfully executed in all its details. It is practically a skeleton tube. As the traveler passes over it in the carriage or the railroad car, from the almost total absence of any vibratory motion, he feels at once that he is on a safe basis and his sense of security is complete. While contemplating the grand scenery which may be viewed from its floor, we may reverently rejoice that the Creator has given to man, his creature, the capacity to comprehend, admire, utilize and adorn it.

One feature in the construction of the bridge may be noticed as having a bearing on the question of its durability. It is well known that when wrought iron is exposed to long continued or oft repeated and rapid concussions, its fibres after a time become granulated whereby its strength is greatly impaired and finally exhausted. It is also known that the effect of rhythmical or regular vibrations is more destructive than the effect of those which are inharmonious or irregular. Because of this, no body of men is allowed to march to music across a bridge, nor a large number of cattle allowed to cross at once lest they should, by accident, fall into a time step and so overstrain or break down the bridge. It is the difference between a single heavy blow and an irregular succession of light ones. Hence when harmonious, regular vibrations can be broken up, the destructive effect is greatly modified and retarded.

The bridge is supported by two large cables on each side, one pair above the other, the lower pair being nearer

together horizontally than the upper pair, so that a cross section of the skeleton tube would be shaped somewhat like the key stone of an arch. Each of these large cables is ten inches in diameter and is composed of seven smaller ones called strands. These smaller strands are made of number nine wire and each one contains five hundred and twenty wires. Each of these wires was boiled three several times in linseed oil, so that it was covered with an oleaginous coating of considerable thickness and great adhesive power. Each wire was carried across the river separately, from tower to tower, by a contrivance of the engineers, the chief feature of which was a light iron pulley about twenty inches in diameter, suspended on what might be called a wire cord. This apparatus was called a traveler, and curious and interesting was its performance as seen from below. It looked like a huge spider weaving an iron web that might—perhaps will—defy the Fates.

Six of the seven strands forming a large cable were laid around the seventh as a centre, and when all were properly placed they were again saturated with oil and paint. After this, by another contrivance of the engineers, they were wound or wrapped with wire, like winding a rope cable with marlin, and thus the whole cable was thoroughly compacted laterally and made into a huge, round iron rope. This is covered with numerous coats of paint so that the oxidation of the inner wires would seem to be impossible. The oft recurring succession of iron wire and its oleagenous coating, together with the small triangular spaces between the wires would seem to reduce the

destructive power of the vibrations to zero. But the vibrations are very greatly reduced and the stiffness of the structure is greatly increased by the use of a series of triangular stays, the triangle being the only geometrical figure whose angles cannot be shifted. There are sixty-four of these triangles. Their hypotenuses are formed by over-floor stays of wire rope reaching from the tops of the towers to different points in the lower floor, this latter, of course, forming their common base and the towers their altitude. The stays are fastened to the suspenders so as to form straight lines. As the towers and the floor are rigid and solid in the direction of the lines they represent, it follows that the intersections of the hypotenuses with the common base form so many stationary points in the latter. These stationary points present a powerful resistance to vibrations. The side trusses with their system of diamond work braces and the weight of the railway track on the upper bridge also help much to stiffen the structure. There are likewise fifty-six under stays or guys of wire rope fastened to the rocks below, designed to prevent upward and lateral vibrations. A heavy locomotive with twenty full loaded cars produced a depression of the cambre or upper curvature of the track of nearly ten inches. The ordinary loads produce a depression of only five inches.

In Part Second attention is directed to a point on the American side of the river, just below this bridge, where the disintegration of the shale and abrasion of the superposed rock is very strikingly exhibited. A singular phenomenon was presented here in 1863. A mass of rock

and shale, about fifty feet long, twenty feet wide and sixty feet deep, fell with a great crash on to the hard bed of the river. Directly following the fall a remarkable motion was developed in the bridge itself. A strong wave of motion passed through the whole structure from the American side to the opposite shore, and returned again to the same side.

Some twelve or fifteen mechanics who were at work on the upper or railway track, were so alarmed that they fled with all speed to the shore. The motion imparted to the bridge was incalculably greater than, and of a different character from any motion imparted by the crossing of the heaviest trains. The rocky mass which fell was forty rods below the bridge, and the hard floor on which it struck more than two hundred and thirty feet beneath it. The mass itself fell about sixty feet average distance, and might have weighed five thousand tons. The extraordinary motion imparted to the bridge by the concussion must have been transmitted along the subterranean rock to the anchorages on the American side, thence through the cables and the bridge across to the anchorages on the Canadian side, whence it reacted or returned again to the American side.

Mr. Donald McKenzie, the most capable and intelligent Master Carpenter and Superintendent of Repairs, who has been connected with the bridge constantly since its erection, and all the men under him at the time, make and confirm this statement, and declare it is impossible to exaggerate or describe the wave-like motion which they experienced while escaping to the shore.

Half a mile further down is De Veaux College, a noble charity endowed by the late Mr. Samuel De Veaux. He was for many years an active business man at Niagara, and by his integrity, industry and wise enterprise accumulated a handsome fortune. His death occurred in 1852, and by his will he left nearly the whole of his estate to certain trustees to establish an institution for the care, training and education of orphan boys. One of its sources of income is the amount received annually for admissions to the Whirlpool. Every visitor to that interesting locality will cheerfully pay the fee charged when he understands this fact.

The suspension bridge below the mountain near Lewiston, spanning the river where it emerges from the fearful abyss through which it has been struggling for the last five miles, was built in 1856, by Mr. T. E. Serrel. Like all suspended bridges it presented a graceful and beautiful appearance and was a fine feature in the scene at the foot of the gorge whose western bank is crowned with General Brock's equally graceful and beautiful monument. The guys designed to protect it from the effect of the wind were fastened in the rocks on either side at the water's edge. The great ice jam of 1866 tore from their fastenings, or broke off, many of these guys. Before they were replaced a terrific gale in the following fall broke up the road-way, severed some of the suspenders and left the structure a melancholy wreck dangling in the air.

The new suspension bridge as it is called, just below the Ferry at the Falls, was built in 1868. Its length is

twelve hundred feet, the longest structure of the kind in the world, and also the narrowest of those designed for carriage travel. To this fact, its narrowness, it probably owed its safety from destruction during a fierce gale which occurred in the fall of 1869. The fastenings or dowels of several of the guys on the Canada side were torn out and the bridge at its centre deflected down stream more than its width so that the surface of its road-way could not be seen half its length. Then its undulations from end to end—like a stair carpet between the two persons who are shaking it—were frightful, and for a time it was feared that either cables or towers must give way. After the gale subsided the old guys were made fast again and new ones were added so that now it seems a durable work. The gale was a good insurance for it.

CHAPTER XVI.

LOCAL HISTORY AND INCIDENTS.

Blondin—Effect of his “ascensions”—Prince of Wales—His visit to American side—Escort of boys—Testing his broadcloth—Grand illumination of the Falls—Steamer Caroline—Workshops and rubbish along the banks—Time of recession of the Falls.

IN the year 1858 a short, well-rounded, fair-complexioned, light-haired Frenchman, a singular compound of bones and brawn, muscle and gristle, made his appearance at the Falls and expressed a wish to put a rope

across the chasm below them for the purpose of crossing, and exhibiting athletic feats upon it. He received little encouragement, but having a Napoleonic faith in his star, he persevered and finally obtained the necessary authority to place his rope just below the Railway Suspension Bridge. It was a well and evenly-twisted rope, about two inches in diameter; and after stretching it as taut as it could be drawn it hung in a moderate catenary curve. Commencing at the shore ends he secured stays of small rope to the large one, placing them about eight feet apart. These were made fast to the shore in such a manner as to make all the stays on one side of the main rope parallel to each other from the centre outward to the ends. They were made tight somewhat in the manner that tent cords are tightened, and when the structure was completed it looked like a gigantic representation of two opposite polygonal sections of the web of the geometric spider spread out, as near as might be, horizontally.

At each end was a spacious enclosure made by a rough board fence for the use of spectators. Mr. Blondin,—for this was the name of the new aspirant for acrobatic honors,—also made an arrangement with the superintendent of the railway bridge for its occupation during what, with a shade of irony, he called his “ascensions.” Those who went within the enclosures and on to the bridge paid a certain sum. A contribution was asked of all outsiders. He selected Saturday as the day for fortnightly ascensions and advertised his intentions very liberally. The speculation was quite successful and gave great satisfaction to the spectators. He exhibited a

variety of rope-walking feats, balancing on the cable, hanging from it by his hands and feet, standing on his head, and lowering himself down to the surface of the water. He also carried a man across on his back, trundled over a loaded wheelbarrow and divers other things, and also walked over in a sack. He sprinkled in a few extras to heighten the effect, as the knowing ones declared, such as slipping astride the cable, falling across a stay rope, or dropping something into the water. In 1860 he had a special ascension in honor of the Prince of Wales. The Prince and his party occupied a sheltered space on the Canada side, and Blondin walked to it from the opposite side, performing various feats on the way over. The Prince shook hands with him as he stepp'd into the shed, commended his courage and nerve, and had quite a chat with him.

In his ordinary walks Mr. Blondin carried the heavy balance-pole used on such occasions, and soon after he gave his first exhibition there was a small argument—or rather there were several of them—furnished to the disciples of Darwin, illustrating the imitative powers of our quadrumanous ancestors—if such they were. Possession was taken of every board-fence in the neighborhood by the village urchins, each with his balance-pole in hand, endeavoring to “walk” its top. After one or two limbs had been badly damaged the sport was abandoned, the enterprising compounder of “a certain cure for contusions and bruises” advertised on the innocent boards being the only gainer by these exceptional exhibitions.

As illustrating the power of the imagination over the nerves it may be noted, that if the great spider's-web had been stretched out anywhere on a level surface, and not more than three feet above it, a dozen men in any large community could have been found to walk it as unconcernedly if not as gracefully as the famous "ascensionist." After three years of successful labor at Niagara, he sought higher walks in longer—if not wider—fields.

The most notable occurrence, however, which emphasized the visit of the Prince of Wales in that year was the illumination of the Falls late in the evening of a moonless night. On the banks above and all about on the rocks below, on the lower side of the road down the Canada bank, and along the water's edge, were placed numerous colored and white calcium, volcanic and torpedo lights. At a given signal they were all at once set aflame. At the same time rockets and wheels and flying artillery were set off in great abundance. The shores were crowded with people.

The scene was a most remarkable one. The steady, lurid light below and the intermittent flashes and explosions overhead; the seething, hissing volumes of flame and smoke rolling up from the deep abyss; the ghostly appearance of the descending stream; the ghostly appearance of the swift current of white foam; the weird appearance of the cloud of spray with a faint and fantastic illumination at its base, which faded out in the dim light of the stars as it ascended; the peculiarly deep but muffled and solemn monotone of the falling water by night; the livid hue imparted to the faces of the quiet but deeply

interested spectators, all made it memorable and impressive.

When the Prince visited the American side some of the good people thought it a little singular that he should avoid their well laid plank sidewalks and travel in the middle of the street. As the Prince with a single companion crossed the Ferry unheralded and quite informally for a stroll on Goat Island—the village police having received no instructions to see that he should not be annoyed—it was said, probably with some exaggeration, that he soon had an escort of juveniles, and as he stopped a moment to look at the Rapids, a young republican sovereign, unabashed by the royal presence, and with that passion so common to the feline, canine, equine and human species, to *touch* everything which excites their curiosity, tested the quality of the Prince's broadcloth, saying to a comrade, as he lifted one of his coat-tails, "Feel of that Bob, a'int it soft?" The Prince took it good naturedly, and with true English sturdiness held on the even tenor of his way, the police by this time securing him a free course.

In December 1837 the steamer *Caroline* came down from Buffalo to aid, it was said, the so-called Patriots, then engaged in an insurrection against the Canadian Government. A motley collection of adventurers on Navy Island constituted the disturbing, not to say attacking, force. At Chippawa was stationed quite a body of Canadian Militia, under the command of Colonel—afterward Sir—Allan McNabb, who had the good fortune to win his spurs in a single bloodless campaign. By his direction a

boat expedition was sent to attack the *Caroline*, as she lay at the old Schlosser dock. In the mêlée one American was killed. The steamer was set on fire, and her fastenings must have been burnt away as also a part of her upper works, since the writer, ten years later, while returning from a fishing expedition, discovered her smoke-pipe lying on the bottom of the river in a quiet basin not thirty rods below the dock.

A catfish of moderate dimensions appeared to be keeping house in it and, with his head barely projecting from one end, was serenely watching the current for whatever game it might bring to his iron parlor. After the new bridges were built connecting the three Sisters with Goat Island, the guides and drivers, in their desire to enhance the interest of the scene, astonished travelers by informing that it was the boiler of the *Caroline* which caused the extraordinary elevation of the water which we have before referred to as the *Leaping Rock*.

Nine miles from the Falls is the Tuscarora Reservation of four thousand acres. On this there are about three hundred and fifty Indians, mostly half-breeds, engaged in agricultural pursuits, which supply a portion of their necessities. The Indian women who are seen at the Falls in the summer season working and vending different articles of bead work belong to this community. Every stranger who may purchase any of their articles will only pay an infinitesimal portion of the indefinitely large sum still due to them from their Christian neighbors. For the Tuscaroras have not been more fortunate than others of their race in bargaining with their white brothers, and their

lands are now stripped of the fine oak timber and valuable wood which stood upon it a few years since, all sold in telescopic quantities for microscopic prices.

As a compensation for this system of robbery we helped to maintain a Christian missionary among them for a few years, and we boast that they are all Protestants. The value of the conversion it may be difficult for the Indians to determine, but if they are to meet their white Christian friends in the Happy Hunting Grounds beyond the Great River, probably they devoutly cherish the hope that these friends may be vastly improved in their morals before or by the emigration.

Concerning the manufactories, shops, rubbish and litter along the race near the brink of the American Falls, which appear so uncouth and inharmonious, and which are noticed by strangers as being a desecration of the scene, it is but just to remark that the utilization of the water power here, in the easiest and most economical manner, was one of the imperative necessities of the early settlement of the country. For many years a large territory, lying on both sides of the river, was dependent upon the manufacturing, repairing and milling facilities of this place. For furnishing these water-power, in those days, was the only agent. And the name—Manchester—given to the place by its early settlers only foreshadowed their hope that it would one day rival its great English prototype. But the introduction of steam, the concentration of different kinds of manufactures at different points, and the production of large quantities of any given article at one establishment, the facilities furnished for easy and

rapid distribution of the products by canals and railroads, have revolutionized the method of conducting this branch of industry.

There are fewer manufactories in the village now than there were thirty years ago, and if there should be any considerable increase in the number hereafter, it is probable that they will be located on the hydraulic canal, which has been excavated at so much expense ; which leaves the river a mile above the Falls, and empties into the chasm half a mile below them.

Their present location is becoming too valuable for such uses, and the time cannot be far distant when they will all be removed with their attendant annoyances. And then it may be hoped that the narrow alley along the river bank will be widened and converted into a pleasant boulevard. Even more earnest must be the hope that Bath Island will be cleared of all unsightly and discordant incumbrances.

Merely as a matter of curiosity an estimate has been made of the time required to cut the river chasm from Lewiston up, six miles. In the last hundred and seventy-five years certain masses of rock have fallen, it is stated, from the *water-covered* face of the cataract. The surface-measure of each mass was estimated and given at the time. The supposition is made that each break extended to the bottom of the fall, although the whole mass did not fall at once. Of course, the substructure must have worn out before the superstructure could have gone down. The further supposition is made that the projection noticed by Father Hennepin, now fallen, and under

which four coaches could pass abreast, was twenty-four feet wide, and that it extended from the American shore to Goat Island. It is also supposed that there have been abrasions by piecemeal that were not noticed and that equalled all the others. The number of cubic feet in these two masses has been ascertained. Then it is supposed that this combined mass was spread out over a surface one thousand feet wide and one hundred and sixty feet deep, the average width though less than the average depth of the Fall, as it was below the Ferry. Omitting fractions the following is the result :—

The whole mass contains 12,000,000 cubic feet. This would cover a surface 1,000 feet by 160 feet to the depth of 76 feet. This for one hundred and seventy-five years is 4 inches 'per year. At this rate to cut back six miles would require 72,000 years ; a mere shadow of time compared with the age of the coralline limestone over which the water flows.

PART FOUR.

CHAPTER XVII.

POETRY.

Poetry—Table Rock albums—Light literature—More serious efforts—Colonel Porter—Willis G. Clark—Lord Morpeth—M. F. Tupper—A. S. Ridgley—J. G. C. Brainard.

IF this chapter were to be confined to fitting words fitly spoken upon the great theme, it would be very short. At best it will not be long.

Before the last fall of Table Rock, in 1850, there stood upon it for many years a comfortable summer-house, where people could take refuge from the spray, look at the Falls, get refreshments, and also guides and dresses to go under the sheet. In the sitting-room was a large round table, on which were placed a number of albums, as they were called. In these visitors could write whatever thoughts or sentiments might be suggested by the scene. With the grand reality before them but few persons attempted anything serious ; by far the greater number adopting the facetious vein. It was emphatically light literature. One or two collections of it have been published, furnishing the reader with only a hapworth of sense to an intolerable quantity of nonsense. A few

specimens will satisfy the most absorbing taste. A Wall street muse shrunken, perhaps, by mammon worship, can only say :

“ I came from Wall street
To see this water sheet.
Having seen this water sheet,
I return to Wall street.”

The next versicle is doubtless rather slanderous :

“ The goose we know securely rides
O'er crested waves and foaming tides ;
If all who gaze on thee were floating there,
What flocks, Niagara, would thy bosom bear !”

There was probably more truth than poetry in the following :

“ I have come to see Niagara Falls
Spread out in all their glorious beauty;
And I have come to see them without
A d——d cent of money.”

Some tender swain who seems to have found more spray than sunshine dubitates in this couplet :

“ Great is the mystery of Niagara's waters,
But more mysterious still are some men's daughters.”

A more fortunate Strephon perpetrates the following sibylant versicle:

"On Table Rock we did embrace,
And there we stood both face to face.
The moon was up; the wind was high;
I kiss'd her, and she kiss'd I."

A more ambitious beholder having tried the serious and ended in its opposite, some critic wrote beneath his lines the oft repeated quotation:

"'Tis but a step from the sublime to the ridiculous;"

whereupon the next critic hit the last as follows:

"The Falls the one; the other you."

A duo each of flats and sharps furnish this running stave:

"How lonely and desolate would the life of man be without
WOMAN."

"What has woman to do with the Falls?
QUIP."

"If woman has nothing to do with the Fall, I should like to know who has, since she engineered the first one herself!
CRANK."

"And *what* a fall was there, my countrymen!
SHAKESPEARE, by CLINK."

Another versifier, considering the hopelessness of the case, contents himself with these lines :

“ I fain would write, but my muse
Finds something here to stagger her;
And brain and pen alike refuse
To picture grand Niagarer.”

The following practical view from a New York city muse, was written before the day of the New Court House. *That* with a Tammany controller would have beggared even the great Persian millionaire :

“ The wealth of Cræsus might have built
A thousand city halls;
But what a sight it must have cost
To build Ni-ag-ra Falls !”

Of a far better quality are the following lines :

“ To view Niagara Falls, one day
A Parson and a Tailor took their way.
The Parson cried, while rapt in wonder,
And list'ning to the Cataract's thunder,
' Lord! how thy works amaze our eyes,
And fill our hearts with vast surprise !'
The Tailor merely made this note :
' Lord! what a place to sponge a coat !' ”

But the most popular of the facetious rhymes about Niagara are the following :

"THOUGHTS ON VISITING NIAGARA.

- "I wonder how long you've been a roarin'
At this infernal rate ;
I wonder if all you've been a porin'
Could be ciphered on a slate.
- "I wonder how such a thund'rin' sounded
When all New York was woods ;
I suppose some Indians have been drowned
When rains have raised your floods.
- "I wonder if wild stags and buffaloes
Hav'nt stood where now I stand ;
Well, 'spose—bein' scared at first—they stub'd their toes,
I wonder where they'd land !
- "I wonder if the rainbow's been a shinin'
Since sunrise at creation ;
And this water-fall been underminin'
With constant spateration !
- "That Moses never mentioned ye, I've wondered,
While other things describin'.
My conscience ! how loud you must have thunder'd
While the deluge was subsidin' !
- "My thoughts are strange, magnificent and deep,
While I look down on thee.
Oh ! what a splendid place for washing sheep
Niagara would be !
- "And oh ! what a tremendous water power
Is wasted o'er its edge !
One man might furnish all the world with flour
With a single privilege.

"I wonder how many times the lakes have all
Been emptied over here?
Why Clinton didn't feed the Grand Canawl
From hence, I think is queer."

As a fitting finale of these humorous conceits, we may append a bit of information which could not well be introduced in its proper place. The origin of the name of the "Devil's Hole" is not known. None of the early records contain it. This fact having been mentioned in the presence of a New Englander, who had a stock of juvenile rhymes outside of Mother Goose, he suggested the following as a solution of the question :

"The Lord made man, and man made money;
The Lord made bees, and bees made honey;
The Lord made the Devil, and the Devil made sin;
The Lord made a hole and put the Devil in."

The general belief has been that his Kine-footed Majesty had his head quarters at the other end of the State. It must, however, be confessed that of late years he has spent much time in the rural districts. It is also evident that he was very active among our Canadian friends from 1860 to 1865.

The most graceful rhymes indigenous to the locality

are the following by the late Colonel Porter, who was an artist both with the pencil and the pen. They were written for a young relative in playful explanation of a sketch he had drawn at the top of a page in her Album, representing the Falls in the distance, and an Indian chief and two Europeans in the foreground :

"An Artist, underneath his sign, (a masterpiece, of course),
Had written, to prevent mistakes, 'This represents a horse :'
So ere I send my Album Sketch, lest connoisseurs should err,
I think it well my Pen should be my Art's interpreter.

"A chieftain of the Iroquois, clad in a bison's skin,
Had led two travelers through the wood, *La Salle* and
Hennepin.
He points, and there they, standing, gaze upon the ceaseless
flow
Of waters falling as they fell two hundred years ago.

"Those three are gone, and little heed our worldly gain or
loss—
The Chief, the Soldier of the Sword, the Soldier of the Cross.
One died in battle, one in bed, and one by secret foe ;
But the waters fall as once they fell two hundred years ago.

"Ah, me ! what myriads of men, since then, have come and
gone ;
What states have risen and decayed, what prizes lost and
won ;
What varied tricks the juggler, *Time*, has played with all
below :
But the waters fall as once they fell two hundred years ago.

"What troops of tourists have encamped upon the river's
brink;

What poets shed from countless quills, Niagaras of ink;
What artist armies tried to fix the evanescent bow
Of the waters falling as they fell two hundred years ago.

* * * * *

And stately inns feed scores of guests from well replenished
larder,

And hackmen drive their horses hard, but drive a bargain
harder;

And screaming locomotives rush in anguish to and fro:
But the waters fall as once they fell two hundred years ago.

"And brides of every age and clime frequent the island's
bower,

And gaze from off the stone-built perch—hence called the
Bridal Tower—

And many a lunar belle goes forth to meet a lunar beau,
By the waters falling as they fell two hundred years ago.

"And bridges bind thy breast, Oh stream! and buzzing mill-
wheels turn,

To show, like *Sampson*, thou art forced thy daily bread to
earn:

And steamers splash thy milk-white waves, exulting as
they go,

But the waters fall as once they fell two hundred years ago.

"Thy banks no longer are the same that early travelers
found them,

But break and crumble now and then like other banks
around them;

And on their verge our life sweeps on—alternate joy and woe;
But the waters fall as once they fell two hundred years ago.

“ Thus phantoms of a by-gone age have melted like the spray,
And in our turn we too shall pass, the phantoms of to-day :
But the armies of the coming time shall watch the ceaseless
 flow
Of waters falling as they fell two hundred years ago.”

On turning to the more serious rhythmic utterances on the great theme, the reader naturally experiences a feeling of disappointment that a scene which has filled and charmed so many eyes should have found but a single interpreter—one who never saw it, and who fortunately wrote concerning it only nineteen lines. The sublimest act of the Creation is described in ten words. Only those who see Niagara know how fast the tongue is bound when the thought struggles most for utterance. One who seems to have experienced this feeling thus expresses it :

“ I came to see;
I thought to write;
I am but——dumb.”

The late Mr. Willis G. Clark thus expands—and weakens—the same sentiment :

“ Here speaks the voice of God—let man be dumb,
Nor with his vain aspiring hither come.
That voice impels the hollow-sounding floods,
And like a Presence fills the distant woods.

These groaning rocks the Almighty's finger piled ;
 For ages here his painted bow has smiled,
 Mocking the changes and the chance of time—
 Eternal, beautiful, serene, sublime !”

Only the three first of the following pieces are from the Table Rock Albums. The late Lord Morpeth was poetical, if not a poet, as his lines abundantly prove :—

“ NIAGARA FALLS.—BY LORD MORPETH.

“ There's nothing great or bright, thou glorious Fall !
 Thou mayest not to the fancy's sense recall.
 The thunder-riven cloud, the lightning's leap,
 The stirring of the chambers of the deep ;
 Earth's emerald green, and many tinted dyes,
 The fleecy whiteness of the upper skies ;
 The tread of armies thickening as they come,
 The boom of cannon and the beat of drum ;
 The brow of beauty and the form of grace,
 The passion and the prowess of our race ;
 The song of Homer in its loftiest hour,
 The unresisted sweep of human power ;
 Britannia's trident on the azure sea,
 America's young shout of Liberty !
 Oh ! may the waves which madden in thy deep
 There spend their rage nor climb the encircling steep ;
 And till the conflict of thy surges cease
 The nations on thy banks repose in peace.”

The following was written before the advent of the spiritualistic Misses Fox :

“ A scene so vast, so wildly grand
May well a mortal's mind amaze,
For e'en the swift-wing'd Angel-band
On Mercy's errands stop to gaze.”

A meek and reverent beholder says :

“ I dare not write my name,
Where God hath set his seal.”

In the following example of high bosh the “Proverbial” philosopher is his own peer. It is only introduced because it was the text for a better lyric from which some extracts are given :

“ NIAGARA.—BY TUPPER.

“ I longed for Andes ; all around and Alps,
Hoar kings and priests of Nature robed in snow,
Throned as for judgment in a solemn row,
With icy mitres on their giant scalps,
Dumb giants frowning at the strife below.

“ I longed for the sublime. Thou art too fair,
Too fair, Niagara, to be *sublime* !
In calm, slow strength thy mighty floods do flow
And stand a cliff of Cataracts in the air,
Yet all too beauteous, Water bride of Time !

“ Veiled in soft mists and cinctured by the bow,
Thy pastoral charms may fascinate the sight,
But have not power to set my soul aglow,
Raptured by fear and wonder and delight.”

The lyric above referred to, and from which the following extracts are made, was written by the late Mr. A. S. Ridgely, of Baltimore, Md. :

“ Man lays his sceptre on the ocean waste,
His foot-prints stiffen in the Alpine snows,
But only God moves visibly in Thee,
Oh King of Floods ! that with resistless fate
Down plungest in thy mighty width and depth.
* * * * * Amazement, terror, fill,
Impress and overcome the gazer's soul.
Man's schemes and dreams and petty littleness
Lie open and revealed. Himself far less—
Kneeling before thy great confessional—
Than are bubbles of the passing tides.
Words may not picture thee, nor pencil paint
Thy might of waters, volumed vast and deep;
Thy many-toned and all pervading voice;
Thy wood-crown'd Isle, fast anchor'd on the brink
Of the dread precipice; thy double stream,
Divided, yet in beauty unimpaired;
Thy wat'ry caverns and thy crystal walls;
Thy crest of sunlight and thy depths of shade,
Boiling and seething like a Phlegethon
Amid the wind-swept and convolving spray,
Steady as Faith and beautiful as Hope.
There, of beam and cloud the fair creation,
The rainbow arches its ethereal hues.
From flint and granite in compacture strong ;
Not with steel thrice harden'd—but with the wave
Soft and translucent—did the new-born Time
Chisel thy altars. Here hast thou ever poured
Earth's grand libation to Eternity,

Thy misty incense rising unto God—
The God that was and is and is to be."

But the noblest lines inspired by the great Cataract were written by a poet who never saw them, the late John G. C. Brainard. They were written at a single short sitting, in answer to a call for "copy" for the head of the literary column of the *Connecticut Mirror* of Hartford, which he then edited. They are a true inspiration:

"THE FALLS OF NIAGARA.

"The thoughts are strange that crowd into my brain
While I look upward to thee. It would seem
As if God pour'd thee from his 'hollow hand'
And hung his bow upon thine awful front,
And spoke in that loud voice which seem'd to him
Who dwelt in Patmos for his Saviour's sake,
'The sound of many waters,' and had bade
Thy flood to chronicle the ages back,
And notch his cent'ries in the eternal rocks.

"Deep calleth unto deep. And what are we
That hear the question of that voice sublime?
Oh! what are all the notes that ever rung
From War's vain trumpet by thy thundering side!
Yea, what is all the riot man can make
In his short life to thy unceasing roar!
And yet, bold babbler, what art thou to HIM
Who drown'd a world and heap'd the waters far
Above its loftiest mountains?—a light wave
That breaks and whispers of its Maker's might."

THE END.

ESCUELA DE ESTUDIOS
HISPANO-AMERICANOS

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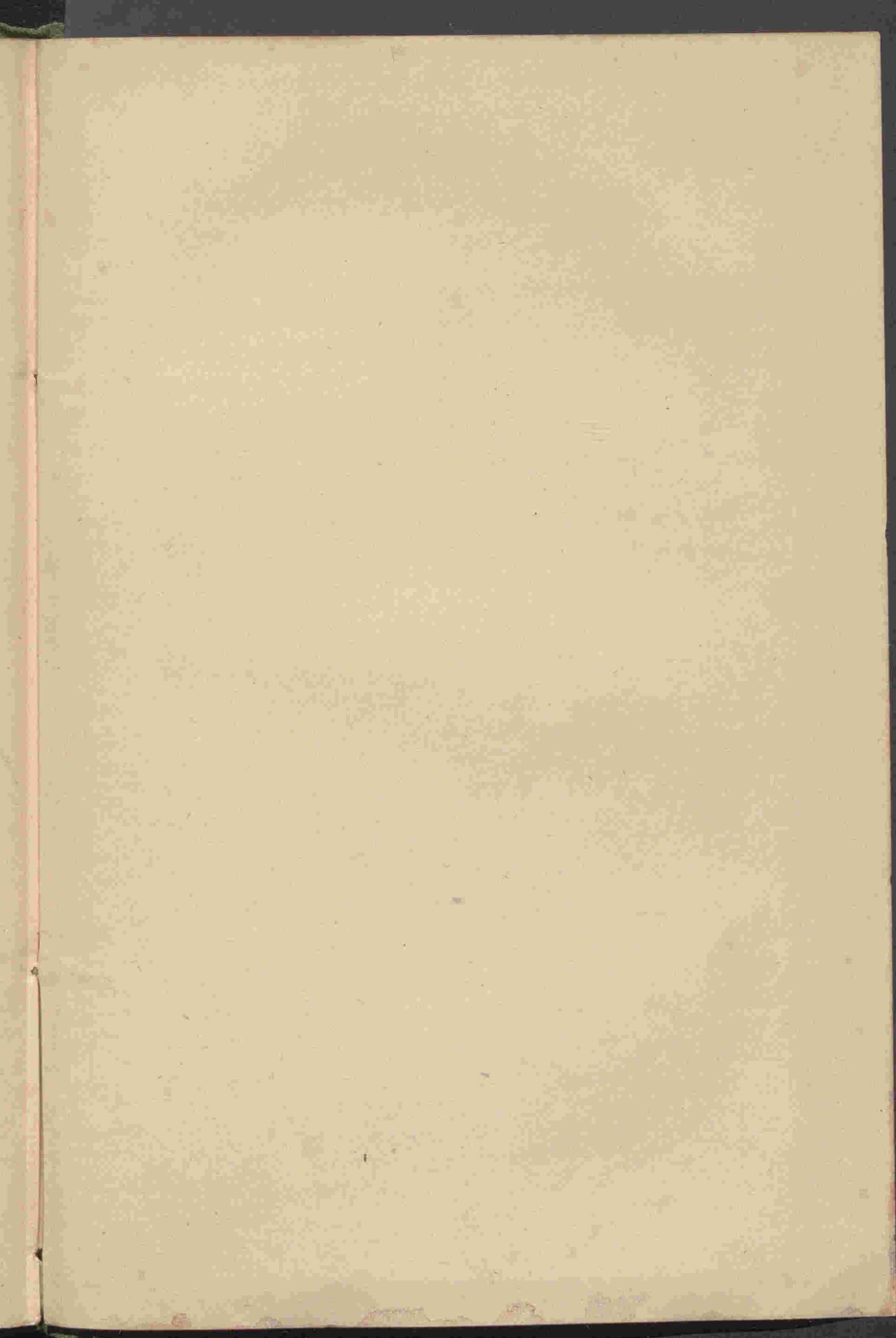
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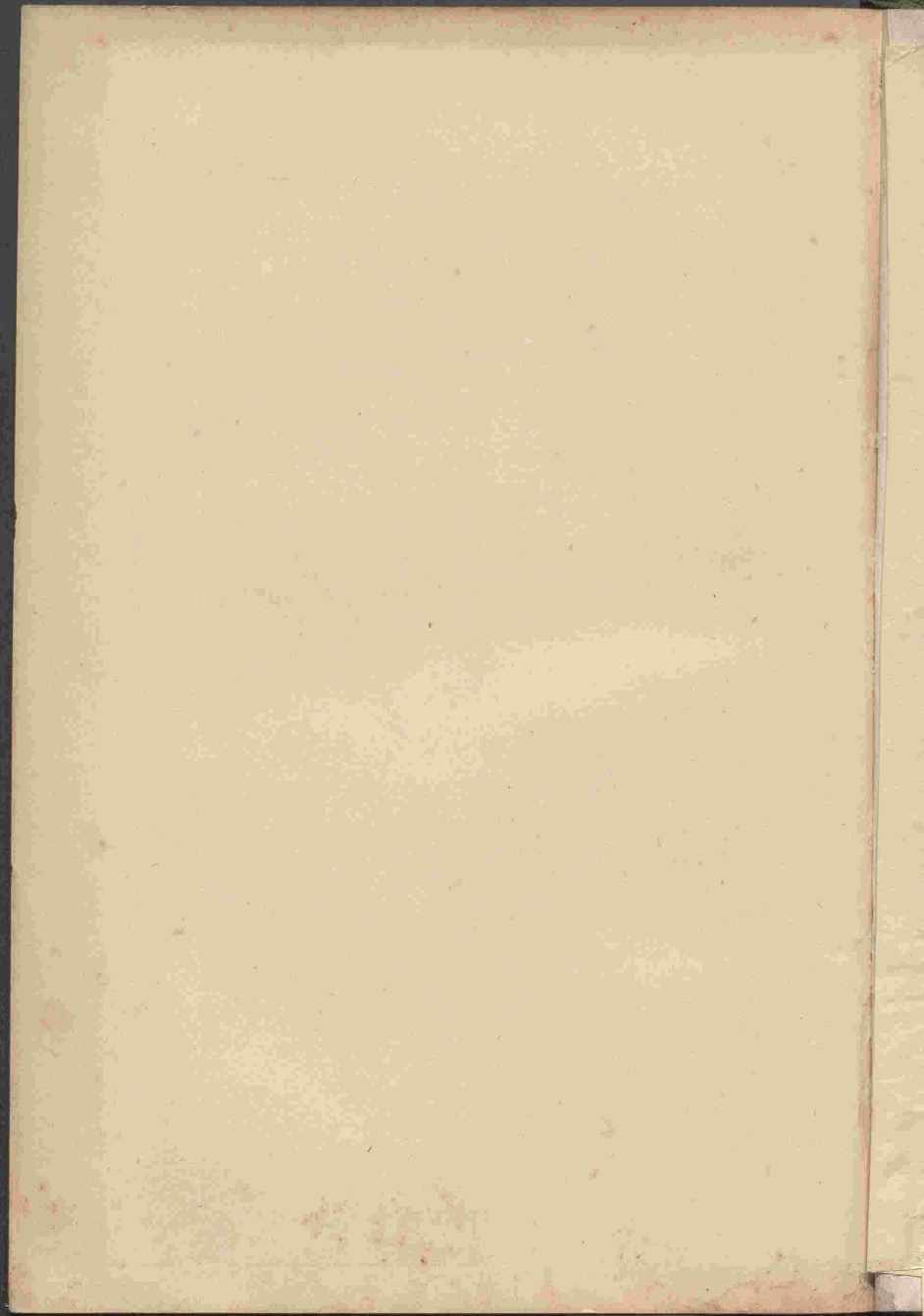
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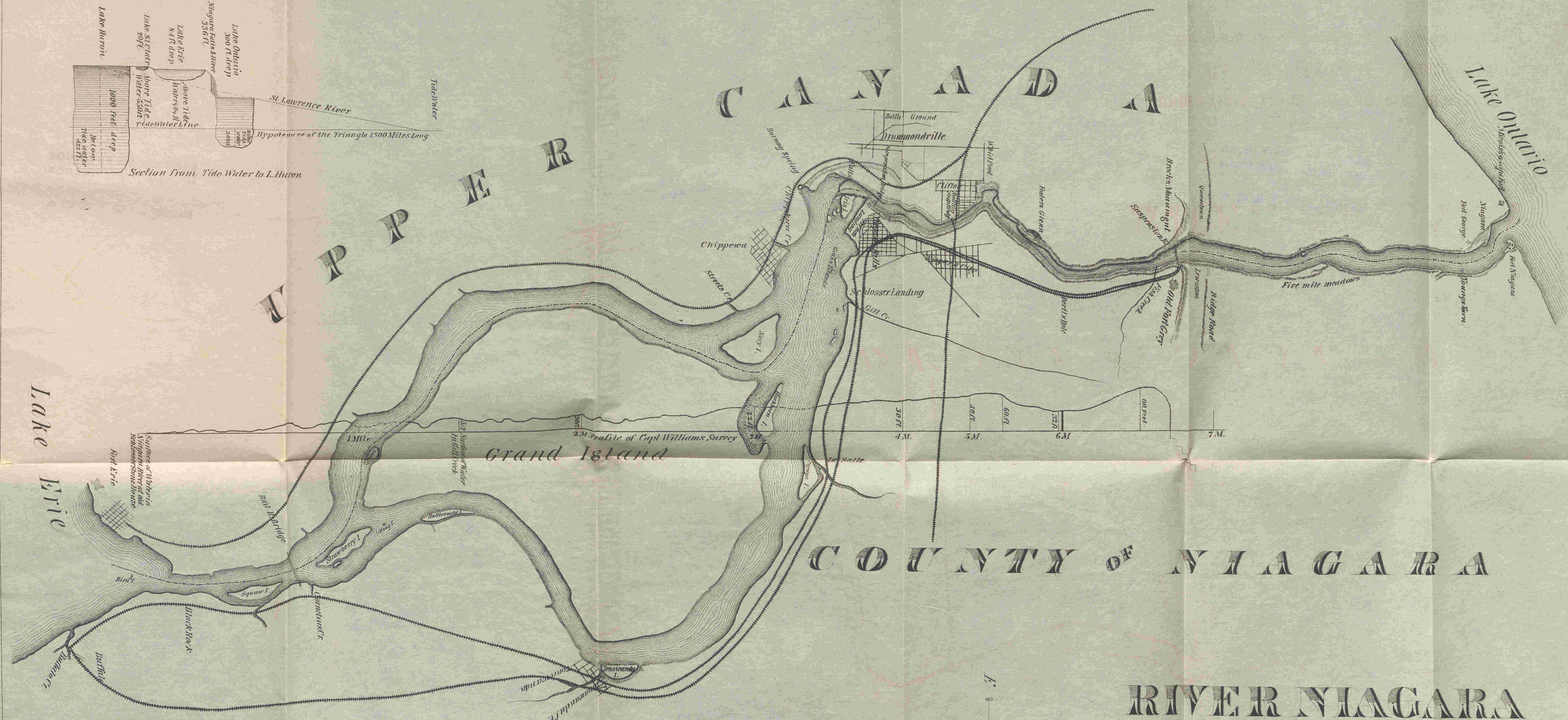
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RIVER NIAGARA

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UNDER THE 6TH ARTICLE OF THE TREATY AT GHENT
By COL WILLIAM A. BIRD
Surveyor in chief under the Boundary Commission

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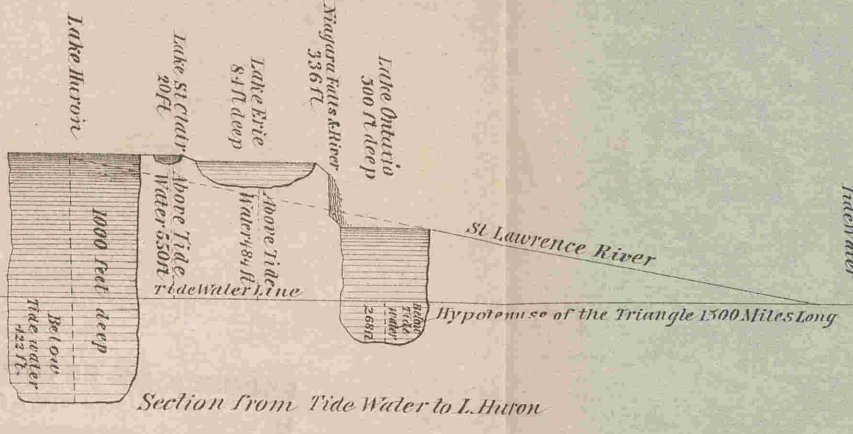
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Under the authority of the Treaty of 1848
By Order of the Boundary Commission
The Original Maps
Of the Commissioners

STATE OF CALIFORNIA

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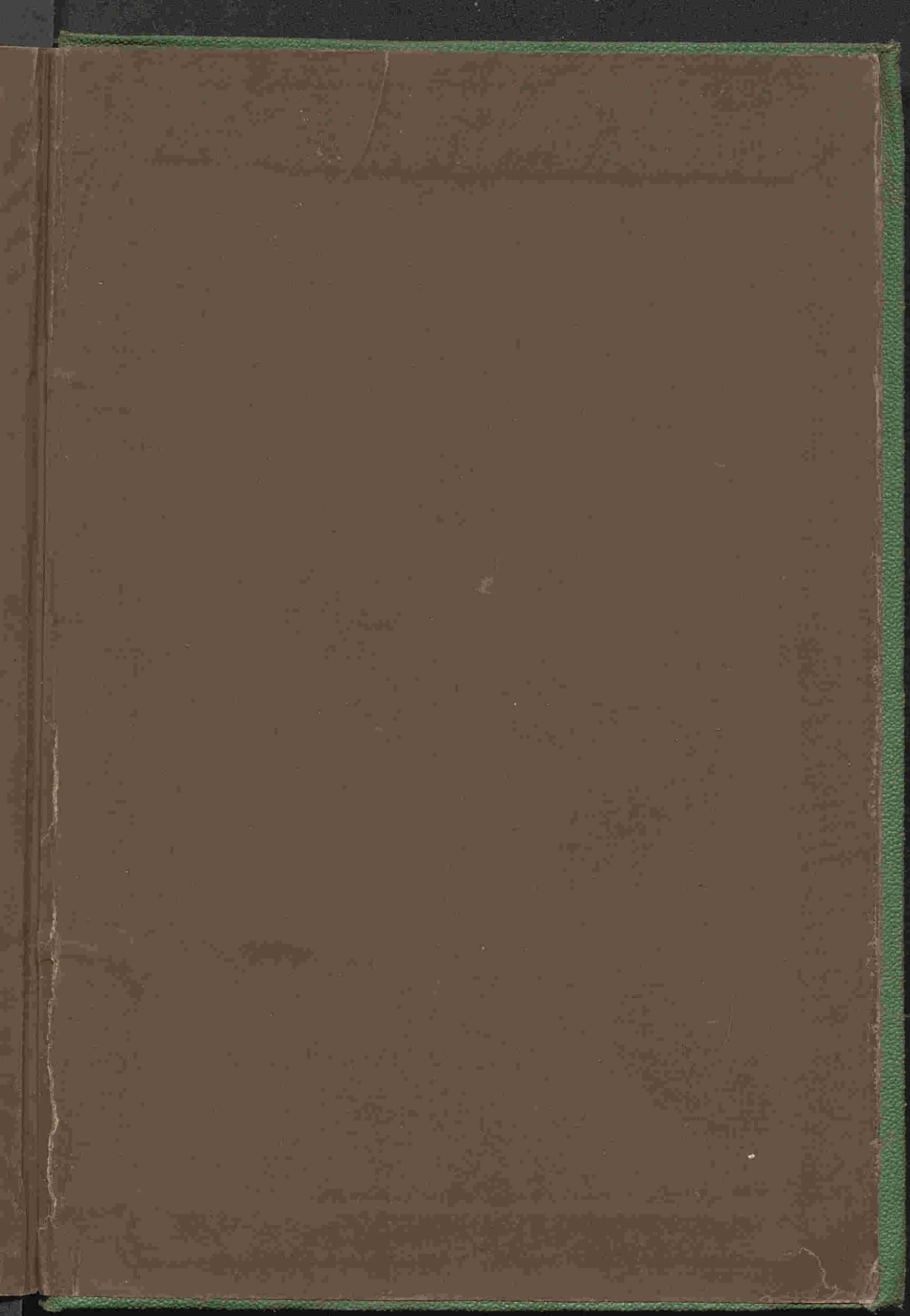
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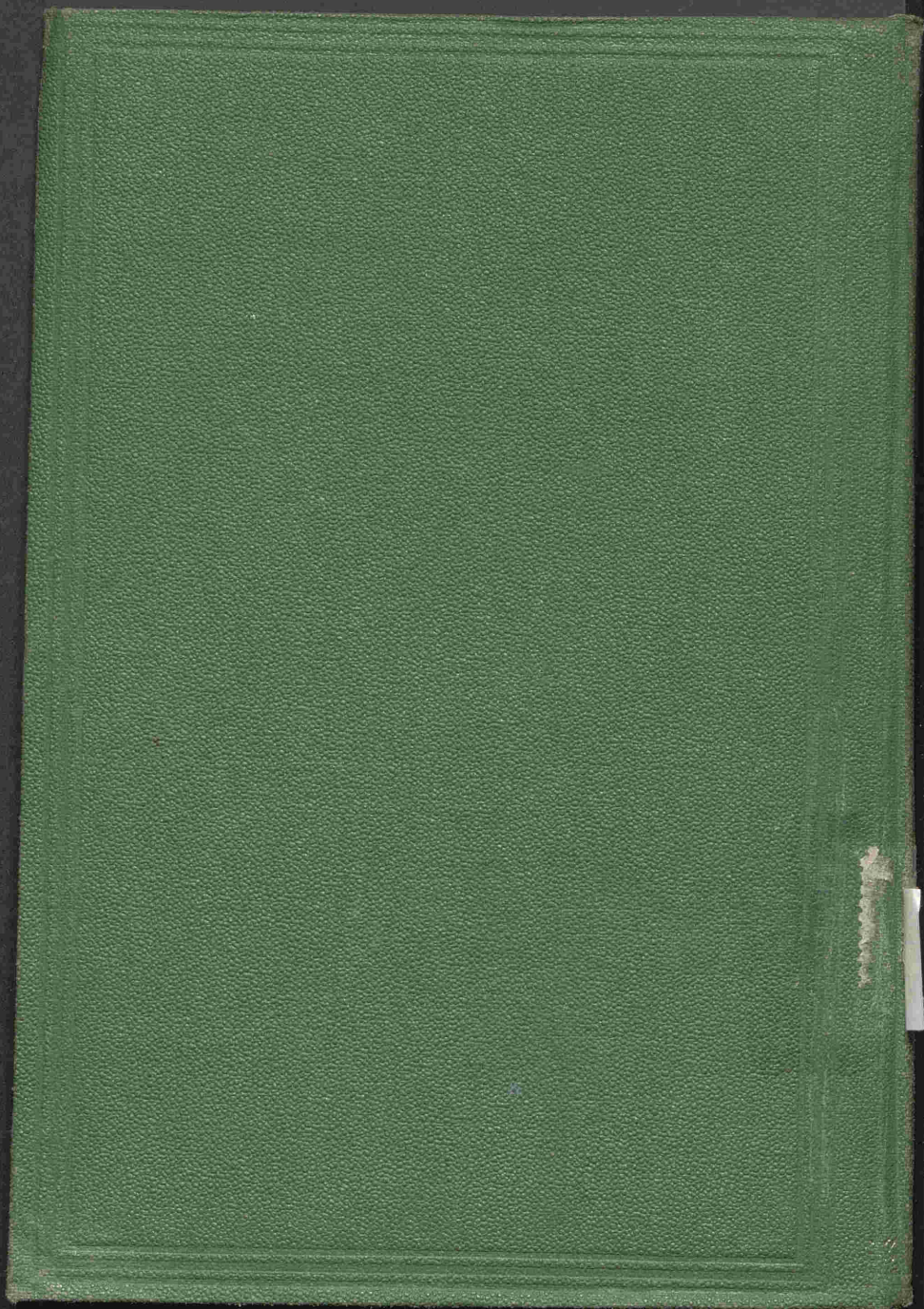
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