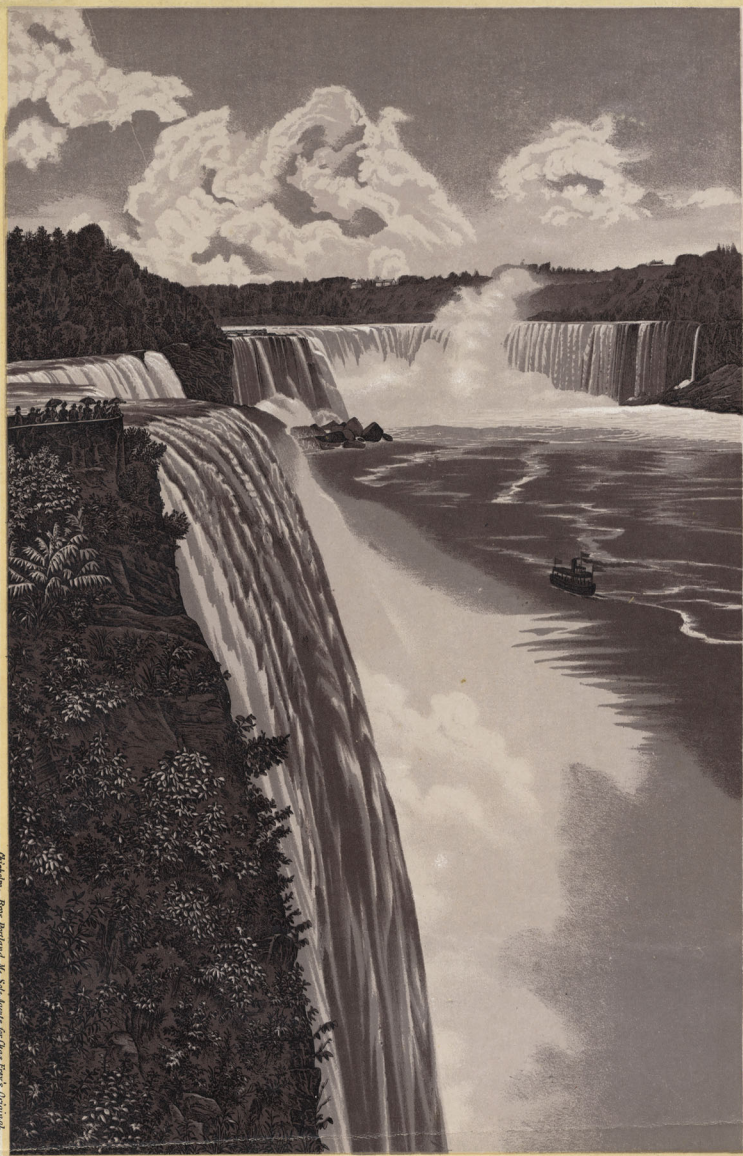


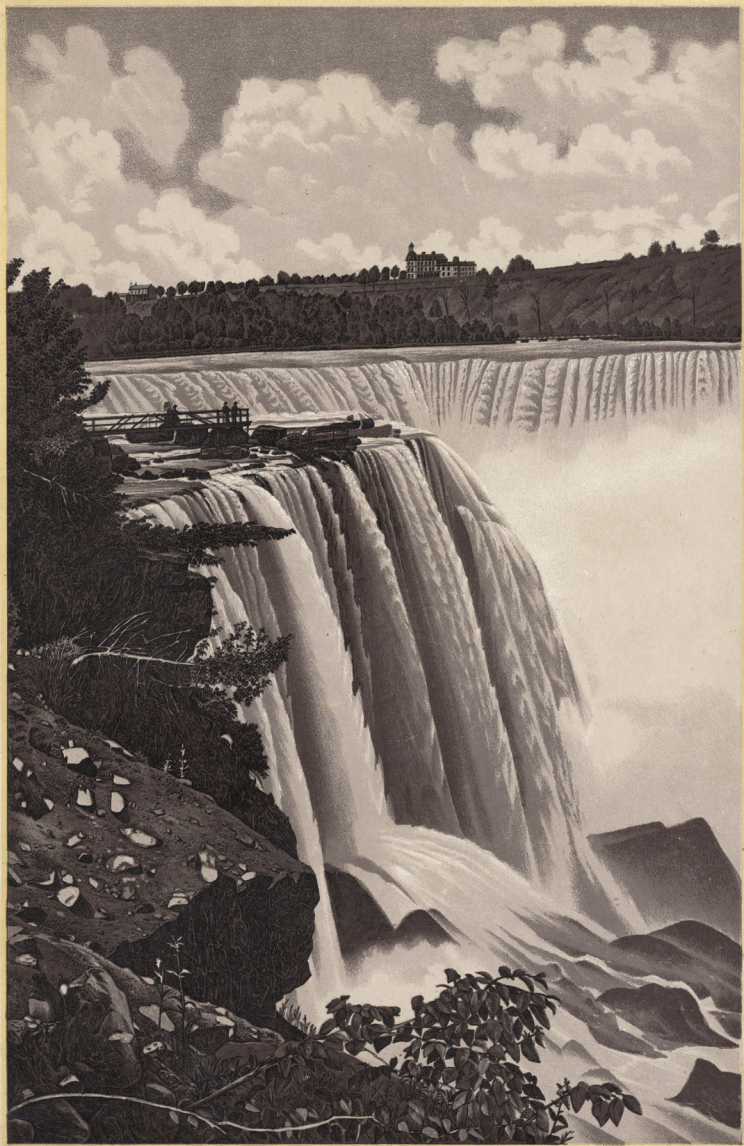
ALBUM
of Niagara
Falls



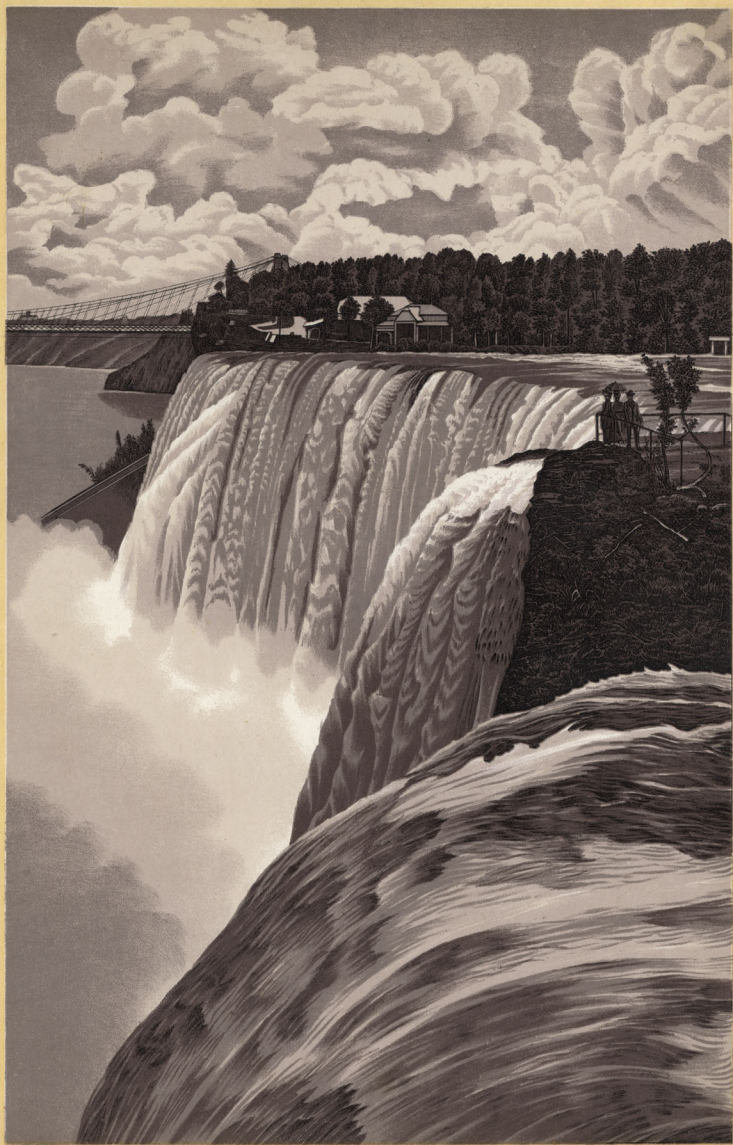


PROSPECT POINT.

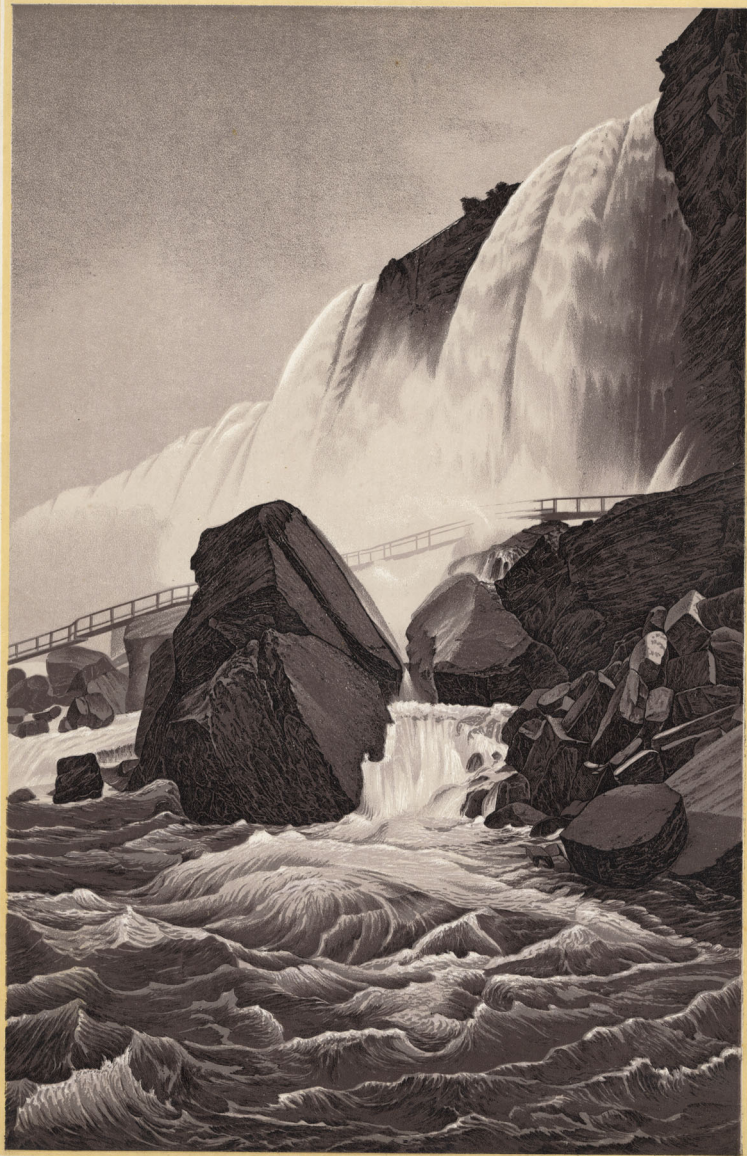
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HORSE SHOE FALL FROM GOAT ISLAND.



AMERICAN FALL FROM GOAT ISLAND.



CAVE OF THE WINDS AND "ROCK OF AGES"



WHIRLPOOL RAPIDS, RAILWAY SUSPENSION BRIDGE AND CANTILEVER BRIDGE.



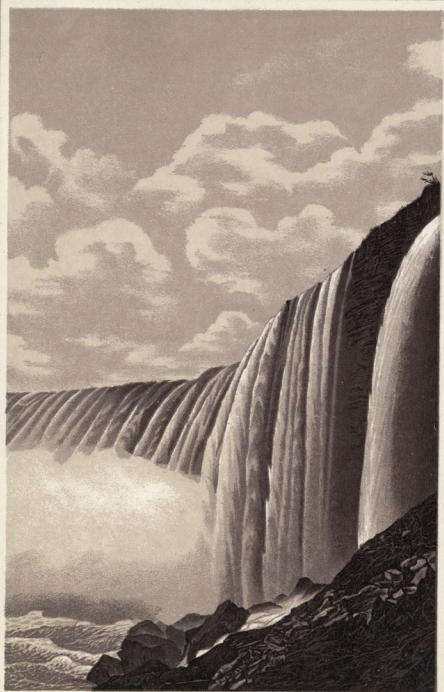
FALLS VIEW FROM MICHIGAN CENTRAL R. R.



THE WHIRLPOOL.



GENERAL VIEW FROM THE NEW BRIDGE.



HORSE SHOE FALL FROM CANADA SIDE.



GOAT ISLAND BRIDGE.



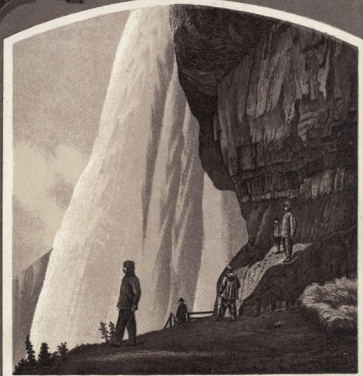
BRIDGE TO
THIRD SISTER
ISLAND.



BRIDGE TO FIRST SISTER ISLAND



BRIDGE TO SECOND SISTER ISLAND.



ENTRANCE TO CAVE OF THE WINDS.



INTERIOR OF FERRY STAIRWAY.

INDIAN FAMILY WITH PAPOOSE IN INDIAN CRADLE.



SIGNORINI MARIA SPELTERINI CROSSING WHIRLPOOL RAPIDS ON A ROPE WITH FEET IN PEACH BASKETS.



BELLENI CROSSING NIAGARA ON A TIGHT ROPE.



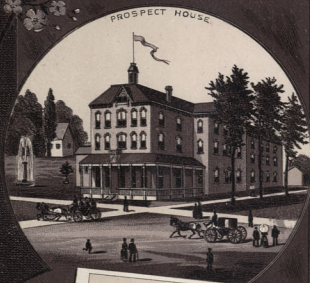
CAPT. WEBB'S FATAL SWIM



FRONT VIEW INTERNATIONAL HOTEL



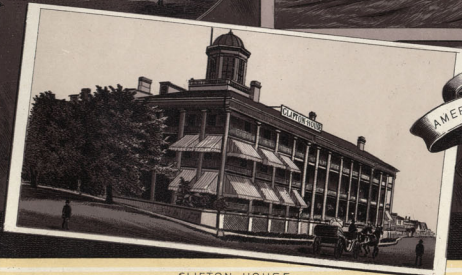
SPENCER HOUSE.



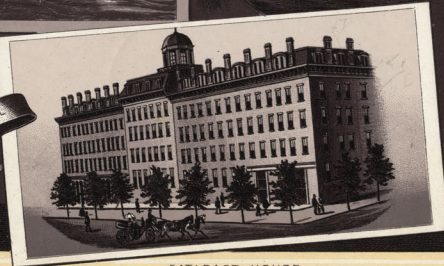
PROSPECT HOUSE



HOTEL KALTENBACH.



CLIFTON HOUSE



CATARACT HOUSE.

HOTELS.

WINTER SPORTING ON THE ICE MOUNTAIN.

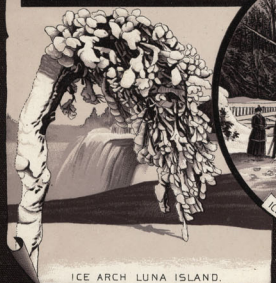


ICE MOUNTAINS IN FRONT OF CAVE OF WINDS.



ICE FORMATION IN SHAPE OF EAGLE'S HEAD.

THE ICE BEAR, PROSPECT PARK.



ICE ARCH LUNA ISLAND.



LUNA ISLAND.



THE FROST KINGS
TIMBERLAND LUNA ISLAND.



BRIDGE TO LUNA ISLAND.



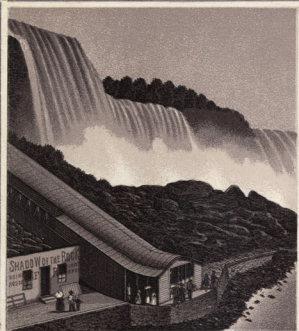
BELOW TABLE ROCK.



THE GREAT ICE BRIDGE.

WINTER SCENES.

BELOW PROSPECT PARK.



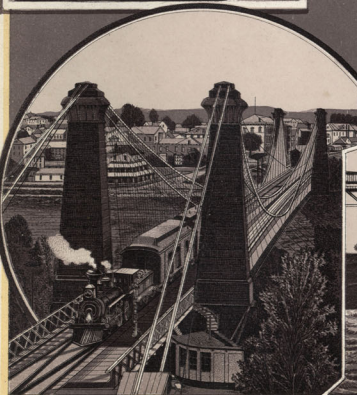
HORSE SHOE FALL AND SISTER ISLANDS FROM CANADA.



AMERICAN FALL FROM CANADA.



INTERIOR RAILWAY SUSPENSION BRIDGE. 800 FEET LONG.



SUSPENSION BRIDGE ON LINE OF ERIE RAILWAY.

WHIRLPOOL RAPIDS.



FALLS AND NEW SUSPENSION BRIDGE.
FROM CANADA.



CANTILEVER BRIDGE
MICHIGAN CENTRAL RY.



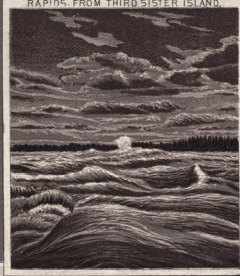
BURNING SPRING.



MAID OF THE MIST IN WHIRLPOOL RAPIDS.



RAPIDS, FROM THIRD SISTER ISLAND.



THE NEW SUSPENSION BRIDGE.



BRIDGE TO BURNING SPRINGS
AND CLARK HILL ISLANDS.



BROCKS MONUMENT.

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NIAGARA



CHISHOLM'S COMPLETE GUIDE

..... TO THE

GRAND ✦ CATARACT.



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CHISHOLM BROS., PORTLAND, ME.

NIAGARA.

"Flow on forever in thy glorious robe
Of terror and of beauty. Yea, flow on,
Unfathomed and resistless. God hath set
His rainbow on thy forehead, and the cloud
Mantled around thy feet. And he doth give
The voice of thunder power to speak of Him
Eternally—bidding the lip of man
Keep silence, and upon thine altar pour
Incense of awe-struck praise."



NIAGARA,—THE GRAND CATARACT, is without doubt the greatest natural phenomena of America, if not of the world. No other attraction draws with equal force the tourist and pleasure-seeker from ALL AMERICA. At all seasons and under all circumstances, with every varying effect of sunlight, moonlight or the dazzling glare of electric illumination the scene is always sublime. The ceaseless monotone of its thunderous roar, the vast clouds of spray and mist that catch in their depths the dancing sunbeams which transform them into the hues of a thousand rainbows, or imprison the moonbeams to form the beautiful lunar-bow, are never silent, never absent, and in the memory of tens of thousands who have witnessed it, the grand display lives on.

Says Charles Dickens in his American Notes: "I think of it in every quiet season now, still do those waters roll and leap, and roar and tumble all day long; still are the rainbows spanning them a hundred feet below. Still when the sun is on them, do they shine and glow like molten gold. Still, when the day is gloomy, do they fall like snow, or seem to crumble away like the front of a great chalk cliff, or roll down the rock like dense white smoke. But always does the mighty stream appear to die as it comes down, and always from its unfathomable grave arises that tremendous ghost of spray and mist which is never laid: which has haunted this place with the same dread solemnity since Darkness brooded on the deep, and that first flood before the Deluge—Light—came rushing on creation at the word of God."

From the largest inland reservoirs of water on earth,—The Great Lakes, Ontario excepted,—draining with their numerous tributaries an area of more than one hundred and fifty thousand square miles, flows the Niagara River—northward—through thirty-six miles of territory to connect Lake Erie with Lake Ontario. Through its channel and that of the St. Lawrence, which is the outlet of Lake Ontario, the Great Lakes find the sea.

These lakes form an interesting study. From Lake Superior, the first and largest, which is six hundred and thirty feet above tide-water, and four hundred feet below, a total depth of one thousand and thirty feet, the fall is but forty feet to the level of Lake Michigan, one thousand feet deep. From Lake Michigan to Lake Huron is a fall of but six feet, and the waters of these two great lakes are exactly the same depth, one thousand feet.

Between Lake Huron and Lake Erie occurs the little—by comparison—Lake St. Clair, not generally classed among the great lakes. It has a depth of but twenty feet and leads to Lake Erie, which is one hundred feet below the three Great Lakes, Superior, Michigan and Huron, and incomparable in depth, being but two hundred feet.

From Lake Erie flows the Niagara River, which is in fact but one link of the chain which conveys the waters of Lake Superior to the Atlantic. From the outlet of Lake Ontario—next in order,—for seven hundred miles it is called the St. Lawrence, and undoubtedly pours a greater flood into the Atlantic than any river on the globe. Between Lake Erie and Lake Ontario is a distance of thirty-six miles, and a fall of three hundred and thirty-six feet, which is made up as follows: To the Rapids above the Falls, fifteen feet; in the Rapids, fifty-five feet; over the Falls, one hundred and sixty-one feet; from the Falls to Lewiston, through the gorge, ninety-eight feet; from Lewiston to Lake Ontario, seven feet.

Ontario is the last of the Lakes; it is the only one that approaches the great depth of the first three, with its five hundred feet.

We have given here an idea of the depth rather than the area of these Great Lakes, and the descent one from another, to illustrate the power of Niagara and the unlimited supply of material to make its grand display.

The Niagara River forms for its thirty-six mile course the international boundary between the United States and Canada and embraces thirty-six islands, of which Grand Island, which divides the river into two streams for the greater part of its course, is largest, and Goat Island, on the verge of the cataract, the most famous.

The imaginary line of boundary is drawn through the center of the Great Lakes and through the deepest channels of the rivers. By this means over three-fourths of all the islands in the river, including all the important ones but one, belong to the United States, and as the deepest part of the river

immediately above the cataract is in the heart of the Horseshoe Fall, America has the greatest share of the famous Falls. The Niagara is no purling stream, but forms a mighty prelude to the cataract. From Lake Erie to the Falls the average depth is twenty feet, and at some points it is over two miles wide. At the point where it takes the plunge over the precipice this is narrowed down to 3,600 feet, or less than three-fourths of a mile.

The immense volume of water daily discharged over the Falls of Niagara has been variously estimated. Gauged by the velocity of the current and the depth of the river at a selected point, 1,500,000,000 cubic feet per minute has been named as the figure; another names 100,000,000 tons as passing through the whirlpool—below the Falls—every hour; and Judge DeVeaux estimated that 5,000,000,000 barrels go over every twenty-four hours; 211,836,853 barrels an hour; 3,536,614 barrels a minute; 58,343 barrels a second. It is this last estimate that fixes best the volume of Niagara in the ordinary mind. This massive stream flows majestically and serenely on to a point opposite the head of Goat Island where a line of breakers is encountered stretching to the Canadian shore, while on the American side the channel narrows as the divided flood rushes on to take its plunge. From this point to the verge of the cataract the river flowing each side of Goat Island falls fifty-five feet, and the waters come rushing and tumbling along the rocky bed of the stream, increasing in velocity from seven to thirty miles an hour.

NIAGARA FALLS VILLAGES. Adjoining the cataract lies the American Village of Niagara Falls, New York State, with its population of four thousand souls, besides which it is summer-populated by the greater part of four hundred thousand visitors, it being estimated that that figure represents the yearly gathering of sight-seers at Niagara. Here, within the village and close beside the Falls themselves, are the greater part of the mammoth hotels for the accommodation of this throng of guests. These hotels are of fine appointment and *cuisine*, comparing favorably at every point with the houses of entertainment at other American resorts. Chief of them is the International with accommodations for five hundred guests; the Cataract House, in close vicinity, also accommodating five hundred guests; the Clifton House, upon the Canadian side, three hundred (these three open during the summer season only); the Spencer House, directly opposite the New York Central depot, an all-the-year-round hotel; Hotel Kaltenbach, Prospect House, and many others.

While speaking of hotels it will be in order to name the other accommodations which are offered the tourist to Niagara, and their charges. Much has been said and written concerning the rapacity and *unshakable* qualities of the hackmen; through them Niagara has suffered in reputation not a little. Since New York State acquired control of the property about the Falls, however, all this has been changed; the old-time system of excessive fees, tolls and carriage charges has disappeared. The NIAGARA RESERVATION is FREE for pedestrians to any part thereof. The State Board of Commissioners has established a line of vans, which make periodical trips about the entire Reservation, carrying passengers for the following small fees:

From the Inclined Railway Building in the Grove, around the Reservation and return, twenty-five cents. From the Inclined Railway Building in the Grove, around the Islands and return, fifteen cents. From the Islands to the Inclined Railway Building in the Grove, ten cents. Children under twelve years, half fare; under five years, free. The carriages run at regular intervals. Visitors taking the carriages have the right to stop off at Goat Island, Stedman's Bluff, the Cave of the Winds, Porter's Bluff, and The Three Sisters Islands, and to complete the circuit by any other carriage in the service on the same day without additional charge.

Then the Street Railway Company, for fifty-five cents, will transport you from Niagara Falls Village, via the Railway Suspension Bridge, to the Whirlpool Rapids, Canada Side and return; for forty-five cents to the Whirlpool Rapids, American side, without crossing the bridge, and return; and to the Whirlpool, American side, via horse cars and transfer carriages, for fifty-five cents, the round trip, selling combination tickets for the entire journey, which includes the elevator ride to the bottom of the gorge. Carriages too are not scarce or difficult to find at all hotels, public hack stands and about the village. The legal fee for all service is conspicuously posted in each carriage, and there can be no overcharge unless the passenger allow himself to be beaten in argument.

RATES OF FARE ALLOWED BY LAW IN THE VILLAGE OF NIAGARA FALLS, N. Y.

For the use and hire of Carriages where no express contract is made therefor.

For carrying one passenger and ordinary baggage from one place to another in the village.....	\$.50
Each additional passenger and ordinary baggage.....	.25
For carrying one passenger and ordinary baggage from any point in this village to any point in the village of Suspension Bridge.....	1.00
Each additional passenger and ordinary baggage.....	.50
Each additional piece of baggage, other than ordinary baggage.....	.15
Children under three years of age, free.	

Over three years and under fourteen years, half price.
Ordinary baggage is defined to be one trunk and one bag, hat or handbox, or other small parcel.

For carrying one or more passengers, in the same carriage, from any point in this village to any point within five miles of the limits of the village, at the rate of \$1.50 for each hour occupied, except that in every instance where such carriage shall be drawn by a single horse, the fare therefor shall be at the rate of \$1.00 for each hour occupied.

The village of Niagara Falls, at the Falls themselves, and that of Suspension Bridge, a little further down, clustering about the entrance of that famous railway structure, are the only American settlements of size in close vicinity to the cataract; they are connected by a line of street railway two miles long, running through a thickly populated avenue of mingled trade and residence.

At the terminus of the railway bridges (for both towns receive the shore ends of the cantilever and suspension) upon the Canadian side lies the village of Clifton, Ontario, corresponding to its American neighbor, Suspension Bridge, from which it is separated by one-half mile only of chasm and rushing river. It is quite natural that these two villages should spring up at each terminus of this famous bridge with its immense traffic interests. Recently Clifton has been re-christened Niagara Falls, by some authorities, by others it still retains its old name. It must not be confounded in the stranger's mind with Niagara Falls, New York. Canada has no settlement of size upon her shore at the Falls, the land being occupied by the International Park. There is Niagara Falls (Ontario) station, one even mile above Clifton, on the main line of railway between Chicago and Buffalo, from which passengers reach the Clifton House, and just above is the celebrated Falls View Station of the Michigan Central Railroad, which allows all through passengers a near view of the Falls.

With railway facilities the whole Niagara region is abundantly supplied. It forms one of the strategic points of the country in this respect; as to the bridges nearly all the important north-eastern lines converge. The New York Central, the West Shore Route, the New York, Lake Erie and Western, the Rome, Watertown and Ogdensburg, and the Michigan Central roads each have stations, or occupy Union Stations in both Suspension Bridge and Niagara Falls. Across the bridges the Michigan Central and Grand Trunk roads lead East and West toward the Atlantic and Chicago.

Herewith are given the Tolls and distances to be undertaken in the visit to Niagara.

ADMISSION FEES AND TOLLS.

Cave of the Winds (with guide and dress).....	\$1.00	Crossing New Suspension Bridge, extra for two-horse carriage.....	.25
Inclined Railway (Prospect Park).....	.10	Crossing Railway Suspension Bridge (over and return).....	.10
Behind Horseshoe Falls, with guide and dress, Canada side.....	.50	Crossing Railway Suspension Bridge, extra for two-horse carriage.....	.25
Museum.....	.50	"Maid of the Mist," from foot of Inclined Railway to Horseshoe Falls, landing on Canada side, and return).....	.50
Whirlpool Rapids (either side).....	.50	Niagara Falls and Suspension Bridge Street Railway Co., from Soldiers' Monument, Niagara Falls, to Suspension Bridge, fare five cents.	
Whirlpool (either side).....	.50		
Crossing New Suspension Bridge.....	.25		

DISTANCE FROM PRINCIPAL HOTELS.

	Canada Side.	American Side.		Canada Side.	American Side.
Around Goat Island.....	2 miles.	1½ miles.	To Indian Village (Council House).....	8½ miles.	8 miles.
" Prospect Park.....	1 "	½ "	" Table Rock.....	½ "	— "
To New Suspension Bridge.....	1 ¾ "	2 ½ "	" " via New Suspension Bridge or Ferry..	— "	1 ½ "
" Railway Suspension Bridge.....	2 "	2 "	" " via Railway Suspension Bridge.....	— "	4 ¾ "
" Michigan Central Cantilever Bridge.....	1¾ "	1¾ "	" Burning Springs.....	1½ "	2½ "
" Whirlpool Rapids.....	2½ "	2½ "	" " via New Suspension Bridge.....	— "	2½ "
" Whirlpool.....	2¾ "	3 "	" " via Railway Suspension Bridge..	— "	6 "
" Devil's Hole.....	4 "	3 "	" Lundy's Lane Battle-ground.....	1½ "	2 "
" Top of Mountain.....	7 "	6½ "	" Brock's Monument, Queenstown Heights.....	7 "	7 "

STATE AND PROVINCIAL RESERVATIONS AT NIAGARA. The movement for the preservation of the scenery of the Falls of Niagara originated in the State of New York, in the year 1869. Previous to their later control by the State, beginning in 1885, the grounds in the immediate vicinity of the cataract were owned or controlled by private individuals, who placed a tax on any near view of the Falls.

On the 30th of April, 1883, the Legislature of the State of New York passed an Act entitled, "An Act to authorize the selection, location and appropriation of certain lands, in the Village of Niagara Falls, for a State reservation, and to preserve the scenery of the Falls of Niagara." April 30, 1885, the establishment of the Reservation was provided for by the passage of an Act entitled, "An Act to provide for the payment of the awards for the land selected and located by the Commissioners of the State Reservation at Niagara." The Reservation was declared formerly open to the public July 15, 1885. It comprises a tract of one hundred and ten acres.

Following this grand example the Legislature of the Province of Ontario, Canada, in the year 1885, passed an Act providing for the appointment of "the Commissioners of the Niagara Falls Park," and the Queen Victoria Niagara Falls Park was opened to the public May 24, 1888. It covers an area of one hundred and fifty-four acres.

Thus the Canadian and American Reservations occupy opposite banks of the world-famous torrent, forming a grand International Park. They are connected by the suspension foot-bridge, which is yet outside their jurisdiction. Most of the points of interest to the Niagara tourist are within the American Reservation. The Canadian Park holds the farther extremity of the Horseshoe Falls, the remnant of Table Rock, and the Rapids Drive to Cedar and Duferin islands. From this park may also be obtained the finest view of the entire face of the Horseshoe and American Falls. The Whirlpool Rapids and the Whirlpool are both outside the Reservations.

The Niagara sight-seer, approaching the cataract for the first time, and from the American side, will undoubtedly, if he approaches on foot, move first on Prospect Park and Point to satisfy that First View of Niagara which has been long in anticipation, afterward he will attack the detail of the thing and move up stream to where the Rapids are flashing in the sunlight, and the bridges invite an inspection of the wonders of the islands upon the verge of the Falls. It is but a short walk from the farthest of the hotels to Goat Island Bridge, while the large International and Cataract houses are within close range pistol shot.

Quoting from what we have already said:—"The river, flowing each side of Goat Island from its head to the verge of the cataract, falls fifty-five feet in one-half mile upon the Canadian, and forty feet in the same distance upon the American side, increasing in velocity from seven to thirty miles per hour," and constituting

THE RAPIDS ABOVE THE FALLS. These viewed from the bridges form a scene which together with its introduction to what is to follow must waken enthusiasm in the breast of the most *ennuied* type of humanity. The massive breast of water is seen hurrying on to its final plunge over the dread precipice, whose rounded edge is but a few yards farther down a maddened, tortured flood, broken into foaming billows, until they meet the verge of that magnificent steep which hurls them into the boiling caldron below. Nothing occurs to bar the torrent's power between the bridge and the edge of the precipice save Avery's Rock and Chapin's Island, about midway of the two, the scene of two of Niagara's thrilling incidents, a disaster and a rescue.

One summer morning in July, 1853, a man was discovered clinging to a log, sticking on a rock in the midst of the Rapids, below Goat Island Bridge, between Bath Island and the mainland. It proved to be Mr. Joseph Avery. Thousands of people assembled to render the poor man assistance, and during the day various attempts were made to rescue him from his perilous position, but without success. At length a boat was lowered down the Rapids toward the log to which he clung. It reached the spot, but the rope became entangled under the log, rendering it useless. A raft was then let down, and he succeeded in getting onto it; but these ropes also became entangled, and the raft could not be brought to shore. Another boat was let down to him, but as it reached the raft, it struck with such force that Avery, who was standing erect, fell off backward, and in another moment he was swept over the Falls. His body was never found. This is probably the most noted of Niagara incidents, from the fact of its long drawn out suspense and many witnesses.

GOAT ISLAND BRIDGE. The building of this substantial structure over the turbulent waters of the Rapids and so dangerously near the verge of the cataract, was fraught with much difficulty and hazard. It was accomplished first in 1817, at the head of the island; this bridge was carried away by ice the following spring and was succeeded by a second at the site of the present structure. The bridge in use today was built in 1856. This was previous to the day of the cantilever principle in bridge building and American ingenuity overcame the power of the flood in the following way: First a massive abutment of timber was constructed upon the water's edge, from this long and massive timbers were pushed across the foaming waters and secured upon the shore side by immense quantities of stone, while from their outer ends long piles were thrust down into the bottom of the river. A platform was now built over the projection across which was carried a strong framework of timber filled solidly with stone which was sunk into the river, to form the first pier, between which and the shore abutment the first permanent span of the bridge was constructed. Three other piers were constructed in like manner, and the completed bridge consists of four iron arches each of ninety feet span, three hundred and sixty feet, with a width of twenty-seven feet, which is occupied by a carriageway sixteen and one-half feet broad, and two promenades on either side five and one-quarter feet each in width. Crossing this bridge the visitor reaches first—

BATH ISLAND. This island contains about two acres of territory, and formerly held the Niagara Falls Paper Mills, one of the largest manufactories of the kind in America. Nothing more aptly illustrates the spirit of preservation of Niagara than the demolition of this paying property by the State of New York in the year following its acquisition of the Niagara Reservation. It holds now but one building, the small brick office of the Park Commissioners.

In the river above and below Bath Island are other lesser islands:—those above called Ship and Brig, from a fancied resemblance to craft of that class; and below, Blackbird, Crow and Robinson's Islands, reaching to famous Luna Island on the brink.

Crossing Bath Island by a straight-away carriage road on foot-path, a bridge, similar to the one already described, though shorter, leads to Goat Island. There are gates which cut off all approach to Goat Island by night, and a keeper's lodge just beyond.

GOAT ISLAND. Local fact is responsible for this title, so little in harmony with the scene. Originally it was named Iris Island, fit company for Luna Island of the brink. It is by far the largest of the group—one mile in circumference—containing sixty-two heavily wooded acres. In the year 1779, a Mr. Stedman, having cleared a portion of the island, put thereon a herd of goats, which perished from exposure the ensuing winter, it being impossible to reach the island. It is Goat Island which, extending to and below the brink, divides Niagara into two distinct falls, the American Falls to the right and the Horseshoe Falls toward the Canadian shore. These islands, combined with a sharp curve in the course of the river, widen the channel to about 4,750 feet; one-fourth of this is occupied by Goat Island, solidly placed upon an eternal foundation of hardest stone, and the remainder is open to the immense downpour of the water. The roar of this tumultuous flood is at times deafening; at others it cannot be heard even at a distance of a few feet. Under favorable conditions it has been heard at Toronto, forty-four miles, and at Buffalo, twenty-two miles away. From the abyss the spray arises to the heavens like a thick veil of smoke, lit by the sun in summer, and congealed into most perfect frost-work by winter's cold.

Arrived at Goat Island, the visitor may proceed at once to the verge of the cataract, or, reserving that, take in the wonders of the river above the Falls. A road leads entirely around the one-mile circumference of the island close to the water's edge, while others, diverging from the lodge near the bridge approach, lead directly to the foot of the Horseshoe Fall, to the Three Sisters Islands, and straight away across Goat Island's width. There are no habitations on the island save the lodge above referred to. A pavilion stands at the junction of the roads near the bridge to Three Sisters, but apart from these the island is given over to the bird and strolling tourist, a bit of forest primeval, which it is the policy and pride of its owners to preserve.*

Goat Island is wonderful as a producer of plant life, it being said to contain a greater number of valuable species of the vegetable kingdom than any area of its size in any explored part of the world; over four hundred different species of plants and trees are credited to it.

No person is allowed to carry a gun upon the island, so danger from an ill-timed shot is prevented.

Geologically, too, the island is a success, and its cliffs raised high above the water, show the exact composition and dip of the rock stratas, thus bearing in their rugged outlines, and in the shells and alluvial deposits which are found mingled with its soil, a story of the past, from which geologists have been able to read the record of the ages, during which Niagara has been cutting its gorge from Lewiston to its present location, for it is a fact that the cataract does recede, and within the memory of men now living, it has made a retrograde movement of one hundred feet.

Four other islands are connected by bridges with Goat Island; they are the **THREE SISTERS**, near the head of the island, and **LUNA ISLAND**, on the verge of the Falls.

THE THREE SISTERS ISLANDS. Yet, for a short time, reserving the cataract itself, next consider another point lying above, which must not be omitted by the tourist. From the southern or farther shore of Goat Island where the current races to the Fall at the rate of twenty-eight miles an hour, a series of bridges reach to three romantic little islands, which lie out in the river, toward the Canadian shore, and above the Horseshoe Fall. These bridges were constructed in 1868, and certainly open the grandest view of the Rapids obtainable at any one point. The islands lie in a succession of three with the "Little Brother" at the foot of the third Sister, the latter has not yet been bridged. From the head of the farther isle of the three, one continuous cascade greets the eye, extending from Goat Island across the Canadian shore, varying from ten to twenty feet in height. The bridge to the First Sister Island spans the Hermit's Cascade, so called from the hermit of the Falls, Francis Abbott, who used to bathe in its waters. A queer character was this hermit. He belonged to a good English family and his relations for maintaining his seclusion at the Falls were never discovered. For two years this gentlemanly and accomplished young man lived the life of a recluse at Niagara. He had but little intercourse with any one, wrote a good deal, and always in Latin, but destroyed all manuscripts as soon as written. He had a hut near the Cascade on Goat Island, and later he built one in what is now Prospect Park. At Goat Island, at hours when it was unfrequented, he delighted to roam, heedless if not oblivious of danger. At that time a stick of timber eight inches square projected over the verge of the precipice for eight feet beyond the brink of the Falls. On this he has been seen at all hours of the night pacing back and forth without the least sign of fear or hesitancy of step. He seemed never at rest, and at all times might be seen wandering

*The State of New York has purchased the Goat Island group, Prospect Park and a strip of land along the river front three-fourths of a mile long and two hundred feet wide, and of these shores and islands have made reservation free to the world; and the Ontario Parliament, following the example of New York, have passed an act to reserve the western side of the Falls' vicinity, and a commission are carrying out the design.

about the object of his adoration. Not content with gazing at the turbulent waters he regularly bathed in the flood, until finally the waters which he had so recklessly dared, claimed him for a victim; he was drowned near the foot of the Park Railway in 1831—and his body which was recovered ten days later near the mouth of the river was returned, to find a last resting place within sound of the thunder of the Falls he loved so well.

These are the general characteristics of the River, and some of the scenes above the Falls. The troubled waters as they pour down their tortured flood toward the brink of the precipice contain much of beauty, much of grandeur, a fitting introduction to the Falls themselves.

THE AMERICAN FALLS. The American Fall, the one first reached from the American shore, consisting of the American and Center Fall, is eleven hundred feet wide, nearly one-fourth of a mile, and its flood makes a sheer descent of one hundred and fifty-nine feet from the crown to the base of the precipice. Careful estimation places the amount of water passing over the American Fall at one hundred and fifty million cubic feet every minute of the time. This torrent takes the plunge in a billowy sweep, but is caught by craggy points and thrown out in a hundred places in wild and singular beauty, an ever varying irregularity, and which clothes its falling water in snow white drapery, its peculiar charm. Its torrent is not so great, nor is its fall so far as that of the immense volume of water which passes over the Horseshoe Fall, an immense amount of rock accumulated at the foot of the former reducing that fall five feet, yet the most of interest centers about the American Fall; it is easiest reached and nearest approached.

LUNA ISLAND. To vast numbers who have never visited Niagara, the name of Luna Island is familiar from the frequency with which are met frost pictures of foliage upon this wonderful little island, which literally hangs upon the torrent's brink, and so delicately poised that many aver that the island trembles, a statement that is undoubtedly a fact, though heightened by the imagination. To reach this point, having crossed the bridge to Goat Island, take path to the right and approach the Fall. At the extremity of Goat Island stairs descend the bank to the river and a bridge crosses the "Little" or Center Fall to Luna Island. Beneath this fall is the famous Cave of the Wind. From the farther shore of Luna Island, so called from the fact that the lunar bow is seen in its perfection from here, may be had the most desirable near view of the American Rapids and Falls to be obtained at any point, and protected by an iron rail from possible danger one may dip the hand in the torrent as it leaps over the brink. From this point too, the gorge through which the river leaps, below the Fall, shows up to best advantage, and one may view the vast accumulation of debris of rock and shell deposited by the action of the torrents at its foot.

CAVE OF THE WINDS. This celebrated cavern occurs beneath the Center Fall, between Goat and Luna Islands. Its formation is explained by the gradual wearing away of the shaly substratum of the precipice by the ceaseless fall of water, leaving the more solid limestone rock projecting overhead some thirty feet beyond the base. Over this open cave flows the Fall. It may be entered with safety, and is one of the features of Niagara. To reach it descend Biddle's stairs, after dressing for the trip in the building provided for that purpose on Goat Island, and which leads directly to the stairs aforesaid. They occur at a point where the perpendicular height of the bank is one hundred and eighty-five feet, the staircase itself being eighty feet high, with one hundred and thirty-two steps; all are enclosed in a tower rising perpendicularly from the rocks at the base of the precipice and secured to the solid rock by bolts of iron. Erected in 1829, they bear no record of accident, and are said to be perfectly safe. No charge is made for their use.

Toward the right, after the descent of the stairs, a short walk brings one to the entrance of the "Cave of the Winds," by all odds the best place to get behind the falling sheet of water between the cataract and the rock. Entered first in 1834, it has since that time been visited by hundreds of people annually. A charge of one dollar is made for guide and suitable clothing, but the trip amply repays the outlay, for here one may bathe in the spray of Niagara, pass through the rainbows and secure a delightful, novel and strange experience of mingled terror and safety. One may pass completely behind the Fall, and emerging return in front of the tremendous downpour upon the bridge erected for that purpose. A guide and a suit are of course necessary for this exploit.

The cave is one hundred feet in height, one hundred feet in width, with a depth of sixty feet. It is a place of perpetual storm occasioned by the tremendous pressure of the atmosphere. Clouds of spray hurled with great violence along the floor of the cavern, meet the farther wall and ascend, combing like surf to the roof. Rainbows, ever present when the sun from outside penetrates the veil of water, quiver amid this storm-driven cloud, within a few feet of the visitor; two and sometimes three of these bows have been seen at once, remarkable for their circular shape, for this is the only spot on the globe where rainbows forming an entire circle may be seen. Returning to the entrance of the cave a series of platforms and bridges enable one to walk out directly in front of the American Fall, and only forty feet distant. The roar and the general tumult of the waters about this the Hurricane Bridge, with the cataract pouring down at one's feet, forms a scene which the visitor should not miss.

THE HORSESHOE FALL. Sometimes called the "Canadian Fall," next commands attention. Neither of its names are appropriate. Not "Canadian," for by the treaty which ran the International boundary through the middle of the deepest channel of the Niagara River, half of it belongs to the United States; and not "Horseshoe," for the appearance of that useful article which gave the name long ago, has disappeared in the gradual

changes of time, until this noble fall has assumed more the contour of an inverted letter V. When you visit Niagara ask for the map published by the New York Park Commissioners for free distribution. It contains an excellent map of the Falls from which one can obtain a good idea of the changes in contour of the Horseshoe Fall.

It extends from Goat Island to the Canadian shore, its width being estimated at 2,376 feet, and its perpendicular fall 165 feet. An enormous volume of water goes over this Fall, estimated at ten times the amount passing over the American Fall. Full thirteen hundred and fifty millions of cubic feet go over each minute of time. The ordinary mind can best conceive of this figure in the fact that it rolls majestically over the brink in a solid volume twenty feet thick. This estimate was corroborated in a novel manner in the year 1829. A ship named the *Detroit*, having been condemned, was brought and sent over the falls. In the rapids above the vessel was well-nigh knocked into pieces, but a large part of her hull went over entire, and with it a deer, a bear, a buffalo and several smaller animals, — unwilling passengers. The *Detroit* drew eighteen feet of water, yet she went over the brink without touching the cliff. At the angle of the fall it is particularly deep, and takes on a peculiarly deep green color, due to that fact. The fall of the water is more even here than over the American Fall, and preserves a more compact form as it meets less of rock obstruction.

To view the Horseshoe Fall combined with the Cave of the Winds trip, with but one descent of Biddle's Stairs, take the path from the bottom of that structure toward the left, and although obstructed by rock from above until quite difficult, yet it will more than repay the effort, for a most glorious view of the larger fall is had from below, which is not obtainable elsewhere. Then returning ascend the staircase to the top of the precipice and continue on the brink until the point is reached where the Canadian Falls bursts into full view. En-route from Biddle's Stairs to this point, evidences are not wanting to show where immense slices of land have fallen into the gorge below, explaining the rugged pathway below. Within twenty years more than twenty feet in width and four hundred feet in length have gone down. The visitor is above and in full sight of the fall. Descend the bank of Goat Island and approach the river, a bridge leads out to the

TERRAPIN ROCKS. A collection of boulders scattered upon the very brink of the Horseshoe Fall. Upon these rocks was built in 1833 the Terrapin Tower, to be condemned as unsafe and blown up in 1873. It was a round tower forty-three feet high, twelve feet in diameter at the base, and eight feet at the top, with a gallery near the upper end. The view of Niagara to be obtained from such an elevation must be left to the imagination until the tower is replaced. It stood directly in the center of the broad sweep of the river from the American to the Canadian shore. Upon the latter and opposite the Terrapin Rocks was

TABLE ROCK—One of the famous outlooks upon Niagara previous to its fall in 1850. At its best it was a huge shelf of rock overhanging the precipice at the shore end of the Horseshoe Fall. Under the inspiration of the scene from this point Mrs. Sigourney wrote her celebrated "Apostrophe to Niagara," and a more inspiring sight can hardly be imagined than this where below lies the Niagara river, white as milk from the base of the precipice for fully one thousand feet down the gorge, boiling, seething and tumbling as they hurry away after the mad plunge, while above the troubled waters of the Rapids rush on as if to engulf all within their reach, until with a roar as of ten thousand baffled demons, they fall into space over that awful brink.

Like Longfellow's village of Grand Pré "naught but tradition" remains of the once famous Table Rock, large portions of it having fallen from time to time. In 1818, a mass one hundred and sixty feet long and forty feet wide broke off and fell into the boiling flood; and in 1828, three immense masses fell with a shock like an earthquake. Again, in 1829, another fragment fell; and in 1850, a portion about two hundred feet in length and one hundred feet thick. On one of these occasions, some forty or fifty persons had been standing on the rock a few moments before it fell. The work of demolition still went on, for another portion of Table Rock fell in 1857. In 1867, a large crack or seam having formed around it near the road, it was deemed unsafe, and the Canadian Government caused it to be blasted away.

With all the falling rock, chronicled or unchronicled, it is a singular fact that but one of the many victims of Niagara in modern times has met death through their agency. In the spring of 1839, Dr. Hungerford, of Troy, New York, while clambering over the rocks directly under Luna Island, was killed by the crumbling and fall of rocks from above.

To become thoroughly acquainted with the Horseshoe Fall one must visit Canada, which can be done by ferry from the foot of Prospect Park, or over the Suspension (foot) Bridge, both of which will be described later on. From the Canadian side a road is cut to the foot of the Fall, and those who wish can procure dresses and a guide for a fee of one dollar, to pass under Table Rock and the Horseshoe Fall. Above this Fall, still on the Canadian side of the river, are several islands near shore and connected with the mainland by a carriageway and bridges. The drive in this direction crosses Long

and Clark Hill Islands and extends to a point on the mainland just beyond the line of breakers which extend across to Goat Island. Here one of the curiosities of the neighborhood is shown, the Burning Spring, a jet of natural gas.

PROSPECT PARK. To this point, which is within the village of Niagara Falls, possibly, many visitors will first come. We speak of it last, after seeing all that lies above and at the final plunge of waters, making it our point of departure for the lower river.

The Park embraces some twelve acres; was formerly owned by a private company, but was secured in 1885 by the State of New York, and now forms part of the great Free Reservation, which includes, besides Prospect Park, The American Falls, Goat Island, Luna Island and others of the group, and half the Canadian Fall. The Reservation reaches from the Suspension Foot Bridge below, to the shore and islands above the Falls, taking in a narrow strip upon the river bank extending for some two and one-half miles to the old French Landing, and includes all lands below as well as above the precipice. The views from Prospect Park need not be commented upon; they are grand. While its pavilions, walks, fountains, greensward, shrubs and foliage trees make it a model picnic-ground or lounge's paradise. Prospect Point, the farthest extremity of the Park and next the American Fall, is carefully protected by a neat wall of stone, extending along the edge of the gorge for some distance. Just above the Point and within the Park, is "Hennepin's View." This is one of the best general view points possible.

Father Louis Hennepin was the priest and historian who, with the expedition of Chevalier Robert de La Salle, in 1678, ascended the St. Lawrence, established a trading-post at the mouth of the Niagara River, visited the Falls and launched the first vessel that ever sailed the Great Lakes. Hennepin published the first description of Niagara in his "New Discovery," 1697. Earlier than this the Falls of Niagara (spelled "Ongiara") are indicated upon Sanson's Map of Canada, published at Paris in 1657. The Fall had also been indicated on Champlain's Map in 1632.

From the Park an inclined railway moves cars from the brink to the water's edge, or the same may be accomplished by a flight of some three hundred stairs, within the same structure that runs the cars. The distance by car is three hundred and thirty feet on the incline; in perpendicular the height of the gorge at this point is one hundred and seventy-five feet, so to one who makes the ascent on foot, the stairs seem anything but a flight, and the cars, which are raised and lowered by water-power, by means of a strong cable three hundred feet long, running over steel wheels, need never be shunned as unsafe.

At the foot of the incline are the dressing-rooms for the "Shadow of the Rock," a name given to the entrance under the American Fall at this point, and platforms leading to the landing of the "Maid of the Mist," not the original of that name but a successor, which from this starting point runs up to the Horseshoe Fall, thence to the Canadian shore and back again. The passage is thrilling in the extreme, and exhilarating beyond compare. Strangers approach each other for companionship 'mid the awful presence of the torrent, impelled by a impulse felt in time of danger, or in self-congratulation, as the little craft steams to the very mists of the Falls.

THE RIVER BELOW THE FALLS flows through a gorge which it has itself excavated during the infinite years that have elapsed since it began its retrograde movement at Queenstown, seven miles below the present cataract. After passing the Falls the river narrows wonderfully, and takes an abrupt turn to the right. The gorge varies in width from two hundred to four hundred yards, and corresponds in depth to the surface of the river with the height of the Falls. It is this that makes the first view of Niagara too often disappointing. One who is unacquainted with the form of the river expects to see the Fall pouring down from above as he would enter the Yosemite Valley, and looks aloft for the Bridal Veil. One gets this view from the bottom of the gorge, at the foot of the inclined railway, or from the deck of the "Maid of Mist," and it is safe to say few leave Niagara unrequited for time spent in a more extended view than the first reveals.

But below the surface of the river flow the yet troubled waters at varying depths and speed, descending one hundred feet in the passage of seven miles through the gorge. Between the Falls and the Whirlpool Rapids the depth varies from seventy-five to two hundred feet. The United States Geological Survey have made soundings as near the Whirlpool Rapids as they dare go, finding constantly increasing depth of water, until one hundred and seventy-nine feet was reached, and that some distance above the head of the Rapids. At the Whirlpool Rapids it is estimated at two hundred and fifty feet, and in the Whirlpool, four hundred feet. This represents the depth of the water alone. The accumulation of stone, gravel, shell and debris, which, during countless ages, have fallen into the gorge, lie above the original bottom which would be but for these as deep again. Singularly enough, on the surface immediately below the Falls, the water, aside from the foam, give little sign of their recent great agitation. The current, when all is favorable, runs at the rate of six to seven miles per hour; but below the surface, and at a depth of thirty to forty feet, its speed is doubled, so say the learned in such matters, a theory which readily explains the fact that timbers and other floating objects which pass over the Falls, are rarely found until they are thrown

up by the mad rush of the Whirlpool. May not the fact that many bodies which have been known to take the plunge, and have never been recovered, be due to this under-current carrying them beneath some rock or other obstruction upon the bottom of the gorge?

THE BRIDGES. Between the Falls and the Whirlpool Rapids this chasm is spanned three times by suspension bridges; the first a foot bridge, extending from the North-east corner of Prospect Park to the Canadian shore, in one suspended span 1,268 feet, nearly a quarter of a mile, and 190 feet above the surface of the river. This is said to be the longest suspension bridge span in the world. Below, and at the narrowest part of the gorge, the railway bridges cross. First in order, from the Falls, is the steel cantilever of the Michigan Central Railroad, and just below stands the famous old Suspension Bridge, "*The bridge*" yet, to the mature American citizen, who was wont to consider its construction, one of the wonders of the world. Each of these structures bear enough of individuality and interest to warrant a visit.

THE NEW SUSPENSION BRIDGE. *New*, being built to replace the original structure at this point, which, opened Saturday, Jan. 2d, 1889, stood for twenty years the buffeting of the winds, to be tragically swept from its anchorages and destroyed during a terrific storm, January 10, 1889. Many will remember the interest with which the news of this event was received throughout the country, from the fact that there is but one Suspension Bridge associated in the minds of the people with Niagara Falls. This foot bridge, owned by a syndicate who make a charge of twenty-five cents for each person crossing, affords fine views of the Falls, and is patronized largely by visitors to Niagara. It was originally built of wood, suspended by cables from wooden towers, covered with corrugated iron, but in the spring and summer of 1888, but one year before it fell, the old wooden structure was replaced by steel, the towers having previously been rebuilt of stone, and all without cessation of traffic. To give an idea of the strength of the wind which destroyed this immense structure, we give details of its equipment:—

"The height of the tower on the Canadian side was 105 feet, while that of the one on this side was 100 feet, the American bank being five feet higher than the Canadian cliff. The base of each tower was twenty-eight feet square, while at the top they were four feet square. The anchorage pits were eighteen feet below the surface of the ground, and the length of anchor chains under-ground was thirty feet. When the bridge was reconstructed these anchor pits were sunk much farther down. On the Canadian side the anchorage was set in solid rock, while on the American side it was placed in masonry. Two cables, composed of seven wire ropes, each of which contained 133 No. 9 wires, supported the bridge. The weight of these cables per lineal foot was nine pounds, and the diameter seven inches. The total weight of the cables as suspended was about eighty-two tons. There were fifty-two guys connected with the bridge. The aggregate breaking strain of the cable was 1,680 tons net; that of the stays 1,320 tons net, making the total supporting strength of the stays and cables about 3,000 tons. The number of suspenders was 480, with an aggregate strength of 4,800 tons. The weight of the suspenders, roadway, cables, stays, etc., was about 250 tons. In the bridge as rebuilt there were four large cables,—two on each side,—each formed by seven of the smaller cables. Each of the smaller cables weighed about eight tons and the total weight of the bridge was about 800 tons. Of the fifty-two guys attached to the old wooden bridge, twenty-eight were on the up-stream side and twenty-six on the down-stream side. They were supposed to contain a reserve power of 540 tons, and offer a resistance of 260 tons to the wind.

The trial was close at hand. Down came the hurricane across Horseshoe Fall, driving the spray and sheeted water from the cataract, and hurling against this mountain of matter an irresistible force. For a time it withstood the fury, then a *bridle-stay* gave way upon the American shore, followed by the breaking of its opposite upon the farther bank. The two *bridle-stays* were the two long stays or guys from which the fifty-two smaller stays were connected with the bridge, their object being to prevent the swaying of the structure by the wind. With the breaking of the *bridles* the bridge began to rock to and fro, to lift and pound upon the suspenders. These gave way one by one, until one end was detached, then, like the tearing of a piece of cotton cloth, the suspenders gave way in succession, and the bridge sank to the bottom of the gorge, where it lies submerged to this day.

It was a wild night by all accounts. So noisy were the elements at war that none knew until morning that the bridge had gone down, and the water in the river below had risen thirty-seven inches above the floor of the inclined railway landing at the foot of the gorge.

The foot-bridge of to-day is an exact fac-simile of the one destroyed, save that the suspenders are a third larger.

THE CANTILEVER BRIDGE. This was the first bridge structure to be built upon the new cantilever principle. Following its success others have been erected; notably, the crossing of the St. John River at St. John, New Brunswick; the Fraser, on the line of the Canadian Pacific Railway, in the North-west Territory, and the crossing of the Frith of Forth in Scotland. When a tortuous flood like that below the Niagara River is to be spanned now, this latter principle comes into action as something more modern than the plan of suspension. It requires no supporting guys, and the swaying motion of the suspension bridge is absent. From massive and deeply imbedded shore abutments, the bridge structure is first builded from either side to a point where

two supporting piers of steel are met, which rise from solid masonry, placed one upon each of the river banks at the bottom of the gorge. These are the fixed spans which support the two cantilevers, and which were next sent out, section by section, until 395 feet from the American side and 395 feet from the Canadian side had thus been placed. These steel arms are the cantilevers, and they are connected and uphold a fixed center span 119 feet and 9 inches long, making the total length of bridge proper, 909 feet and nine inches. It spans a chasm 859 feet from bluff to bluff. The total weight of material which entered into its construction is 3,000 tons. It is a double track railway bridge, without accommodations for foot passengers. From the trains in crossing, passengers have a good long-distance view of the cataract, and the Michigan Central Railroad Company—by whom it was built—also give, as one of their inducements, a view from Falls View Station, on the Canadian side and just above the Horseshoe Fall. Below this bridge flows the river, 245 feet sheer down.

THE OLD SUSPENSION RAILWAY BRIDGE. John A. Loebing of Trenton, New Jersey, who died while carrying out his great work, the Brooklyn Bridge, erected also this famous structure, carrying the first string across the chasm with a kite, and following it with ropes until finally cables themselves performed the passage, and the bridge was opened to the public and to railway traffic in the year 1858. It has two distinct roadways; one above for trains and twenty-eight feet below another for carriages and foot passengers. It is needless to say that its completion was hailed as a triumph of engineering skill, or that its dimensions awed the American citizen of thirty years ago. We have advanced rapidly in the meantime, and now the statement that there are 9,000 miles of wire in the four supporting cables elicits no especial remark. But the Suspension Bridge is too old a friend to be left out of the itinerary, and all should visit it. A small fee, ten cents for each person over and back, is charged; extra for two-horse carriage, twenty-five cents. The Grand Trunk Railway through trains East and West pass overhead, and below are the famous Whirlpool Rapids. Following are the dimensions of the bridge:—

Length of Span, from center to center of towers.....	825 feet.	Diameter of each cable.....	10 1/4 inches.
Height of Towers above the rock, American side.....	88 "	Number of No. 9 wires in each cable.....	3,659
" " " " " Canada side.....	78 "	Ultimate aggregate strength of cables.....	12,400 tons.
" " " " " floor of Railway.....	60 "	Weight of superstructure.....	800 "
" " " " " Track above the water.....	258 "	Maximum weight cables and stays will support.....	7,309 "
Number of wire cables.....	4		

WHIRLPOOL RAPIDS. Beneath the bridges flow the famous rapids, gathering in strength and fierceness until the culmination of the whole is reached in the boiling caldron of the Whirlpool itself, some three miles below the Falls. At the Rapids the river flows through the narrowest part of the gorge, and the waters are compressed into such limited space that they leap aloft in angry billows twenty to thirty feet above the banks; here the visitor may view the power of the river as at no other point, the Falls themselves not excepted. As far as the eye can reach the river is tossed into a surging, struggling mass of foam clouded waters, whose noise of conflict is deafening, racing onward, impelled by the enormous backing of the united waters of Lake Superior, Michigan, Huron and Erie, taking a descent of one hundred feet to the mile and of enormous depth (estimated three hundred feet), through confining, rocky walls but three hundred feet apart, and at a speed of twenty-seven miles an hour. To view the Rapids cross to the Canadian side of the river by either the foot bridge or railway suspension, and follow its banks until the inclined railway is reached, which will bear you to the river bank two hundred and fifty feet below, where is the Whirlpool Rapids Park, comprising the natural uplands of the river bank and an excavated road following the course of the river at the foot of the cliff. Fifty cents is the entrance fee to this Park, including inclined railway fare. Or, from the American side, directly opposite the inclined railway of the Canadian, find the double elevator which descends the gorge, and by a foot path to the river bank. There is little to choose in point of vantage from which to view the Whirlpool Rapids. Possibly, during the warmer hours of the day the Canada side may prove more comfortable, shaded from the sun by the perpendicular cliff, but one misses the glint of the sunlight upon the broken crests of the waves, and its coloring of the waters: while as for uncomfortable heat it is never oppressive beside the tempering waters of the Rapids. It is here that the Niagara tourist poses before the camera with the Whirlpool Rapids for a background and secures a most startling picture.

WHIRLPOOL RAPIDS INCIDENTS. While viewing their display of power it is meet here to reflect upon two notable events in connection with these waters. First, the navigating safely through of the little steamer "Maid of the Mist," and the fatal attempt of Captain Matthew Webb to breast the torrent unprotected. Of the latter successful attempt to pass through, armored with the oaken staves and iron hoops of a cask, the public are sufficiently familiar. The passage of the "Maid of the Mist" was accomplished June 15, 1861. She was piloted by Joel R. Robinson, who had with him two assistants. The river banks were thronged to witness her passage, which, although for the time they were in the power of the Rapids the men were knocked

down and powerless, was finished in good order, the boat only losing her funnel in the trip. This was the original steamboat of the name, an excellent craft of one hundred and seventy tons, and with an engine of one hundred horse power. She was built below the cataract for the accommodation of visitors wishing to steam up the front of the Falls, but proving unprofitable she was sold to Montreal parties with the proviso that she be safely passed through the Rapids and Whirlpool. It is safe to say that on no occasion has a craft of this size passed such dangers in safety. We have referred to the fact that this steamboat has been replaced by another of the same name.

CAPTAIN WEBB'S FATAL SWIM. Captain Matthew Webb was English-born and thirty-five years of age at the time of his fatal attempt to swim the Whirlpool Rapids. At an early age he left his home to follow the sea, and in his career as a sailor won fame by his feats as a swimmer. While in South Africa in 1872, he won his first public laurels in this line, and a little later we find him winning the medal of the Royal Humane Society of London, and the recipient of a purse of \$500 from the passengers of the steamship "Russia" for the rescue in mid-ocean of a sailor who was washed overboard by the heavy sea. Next followed an achievement which gave him a reputation on each side of the Atlantic—the swimming of the English channel, naked and without aid of any kind. In the accomplishment of this feat he was in the water from 1 P. M. until 11 A. M. the following day.

In America he swam from Sandy Hook to Manhattan Beach during a storm which caused many vessels to seek harbor; secured the American championship at Coney Island, and performed divers other feats of skill and endurance. On the fatal July 4th, 1883, he essayed the wildest water on earth, and a feat which had never been accomplished. At four o'clock in the afternoon of that day he left the Clifton House on the Canada side, just above the foot bridge, and descended the bank of the gorge to the ferry landing, where he took boat and was rowed down the stream to a point some distance above the railway bridges, where at 4.25 he sprang into the water. At 4.33 he passed under the Railway Suspension Bridge into the full power of the Rapids; two minutes later he had reached the last of the Rapids and was about entering the mouth of the Whirlpool. When he passed under the bridge he seemed to have full control of himself which he maintained up to the point between the elevators by which visitors reach the Whirlpool Rapids Park. Here occurs the very ferment of the waters, from these he emerged into the comparatively still waters that occur just before the Whirlpool is reached, where he was seen to throw a third of his body out of the water, and, apparently gaining control of himself, to swim for a hundred feet upon the surface; then he was seen no more alive. It is indicative of the wild appearance of the flood in the Whirlpool Rapids, that despite the fact that the feat was witnessed by a great number of people, many doubted that the fiercest of the torrent had been attempted, saying that the swimmer had left the water at some advantageous point unobserved. This idle story was set at rest, however, by the finding of the dead swimmer's body four days later, floating upon the surface of the Niagara River, some five miles below the point where he lost his life.

In the following year, Ex-policeman Kendall, of Boston, successfully passed through the Rapids protected only by a cork jacket. He was, so say eye witnesses, completely exhausted when drawn from the water at the end of this two-minute swim, through the most trying flood ever dared.

THE WHIRLPOOL. Below the Rapids the river takes an abrupt turn to the right and flows directly at a right angle to its former course, in the apex of which angle occurs the basin of the Whirlpool.

Here the confined waters of the river, fresh from the rapids, impinge with great violence against the cliff in search of a passage out, circling round and round in a dizzy dance which raises the center of this maelstrom from ten to forty feet above the level of the river. Above it upon all sides, save only where it is broken for the narrow exit of the waters, towering cliffs rise to a height of three hundred and fifty feet, whose precipitous sides facing the river have become smooth by the action of the waters. Its outlet is but twenty-five rods wide, an ill-proportioned opening for the exit of such a vast body of water. Bodies float amid the eddies of the pool for days before finding the pathway out; all is ceaseless motion, its enormous depths boiling and eddying incessantly. This is the final tumult of the waters. The gorge extends yet further to Queenston, some seven miles below the Falls, where the river issues from the table-land through which it has cut its way to the present Fall, but there is no more obstruction, and after emerging from its chasm at Queenston Heights the Niagara flows on placidly for yet another seven miles, with a fall of but four feet in all, to join the waters of Lake Ontario.

WATER-POWER. The water-power of Niagara is unlimited and schemes for its wide-spread diffusion have long occupied the minds of those who have seen this magnificent servant run to waste, for little is used in comparison to the supply. Many mills line the American side of the gorge between Niagara Falls village and the Suspension Bridge, but a wise foresight has rendered inviolate for all time the grounds in the immediate vicinity of the cataract.

These mills are for the most part fed by a hydraulic canal which takes its water from the river at a point above Goat Island, conducts it through the village, and, to give additional power, drops it down a penstock or shaft fifty feet square and one hundred feet deep, sunk into the solid rock, from which a tunnel extends to the gorge below the Falls for an outlet. This arrangement adds 3,000 horse-power to the canal, which power is by belts and ropes transmitted long distances and in all directions. Later a hydraulic tunnel has been projected and work is going on night and day to perfect this system. The

contracts name January 1, 1892, as the date of its completion, and when a power estimated to be equal to the combined water power of Lawrence, Lowell, Holyoke, Turner's Falls, Manchester, Bellow's Falls, Lewiston, Cohoes, Oswego, Patterson, Augusta, Ga., Minneapolis, Rochester and Lockport, will be ready for use. At the hydraulic canal there is one long surface canal, a canal basin or reservoir, wheel pits and short tail races to the adjacent high bank of the river. With the hydraulic tunnel the Niagara River itself forms the basin directly connected by short surface canals, wheel pits and cross tunnels with one great tunnel forming the tail race for the whole, which carries the water from the wheels to the Niagara River again below the falls and just outside the State Reservation. The same principle applies to both the canal and the tunnel, although the former is a surface canal and the latter a subterranean tunnel of horseshoe form with capacity equal to a circle twenty-five feet in diameter, extending through the solid rock and at an average depth of one hundred and sixty feet below the surface, and four hundred feet from the river. It is an enormous undertaking, and in payment for the effort its projectors see in Niagara Falls the coming manufacturing center of America. They have purchased lands extending two miles along the shore of the Niagara River adjacent to the hydraulic tunnel, which have been laid out into lots, streets, mill rows, wharves and railway sidings, and which will be occupied by a town composed entirely of mills, factories and workshops. Adjoining this the company have purchased an additional tract of one thousand acres where are to be erected the homes of workmen and employees.

A BIT HISTORICAL. As is usual with border points so narrowly separated as are the United States and Canada, the whole course of the Niagara River holds much of historical interest in connection with the America—Great Britain differences, particularly the war of 1812, though the same may be traced back through the old French and English struggles for supremacy in North America, which culminated in the downfall of Quebec before Wolfe's victorious army in 1759. In ye olden time a line of forts extended along the entire river, and both the United States and Canada have outposts there to-day. A monument erected by the British government to commemorate the memory of Sir Isaac Brock, commanding the English forces at the memorable battle of Queenston Heights, stands upon the battle-field at that point, eight miles below the Falls. The battle-field of Lundy's Lane lies upon the height, Canadian side, about a mile and a half west of the Falls; and the Devil's Hole, where occurred a bloody massacre of a British wagon-train and its escort by the Indian allies of the French during the French and English war in 1763, lies three and one-half miles below the Falls—a narrow chasm in the river bank one hundred and twenty feet deep. Overhanging this dark cavern is a towering precipice over which pours a stream of water named the "Bloody Run," so called from having become dyed with the blood of the victims of that tragedy. If you are interested in the romance of History read Parkman's *Historical Hand-book of Niagara*; it is replete with the lurid tales of conquest which have made the historical page of the Niagara a record of blood.

At the mouth of Cayuga Creek, five miles above the Falls on the American side, Robert Cavelier de La Salle, in 1679, built and launched the "Griffon," the first vessel that sailed the upper lakes. Further down at the Old French Landing, within the Reservation, La Salle and the missionary, Louis Hennepin, embarked after the portage of their canoe from Lewiston, a point on the river seven miles below the Falls. The landing place was used by the early French and British traders, and before their coming by the Indians of the Neutral Nation and their successors the Senecas. The wooded shores of Navy and Buckhorn Islands are visible, noted for occurrences in the French and British wars. About a mile above the Falls is the site of the French Fort du Portage, destroyed by Joncaire before his retreat in 1759. The chimney of the French barracks built in 1750, is yet standing, and the outlines of Fort Schlosser, built by the British in 1761, are visible. December 29, 1837, during the "Patriot Rebellion," the steamer *Caroline* was seized at Schlosser Landing, about two miles above the Falls, towed out into the river, set on fire and allowed to drift with the current over the Falls. Further down upon the river bank, within the Reservation, where the bluff terminates near Mill Street, is the site of the saw mill erected by De Peyster, a British officer, in 1767, and used in preparing timber for stockades along the river. Immediately below are the sites of the Stedman and Porter mills, the first structures of the kind erected on the western frontier, and above on the opposite shore of the river is the Canadian village of Chippewa, the site of the battle of Chippewa, July 5, 1814. Eight miles from the Falls is the Indian Village, where the remnant of the six nations reside, and whose handiwork in the shape of bead work, bows, arrows and canoes is such a feature of Niagara bazars.

BLONDIN AND HIS FOLLOWERS. So closely identified, in the minds of all, is Niagara with the grand and awe-inspiring in nature, to dare which requires especial nerve, that it has given the crucial test to the seekers after notoriety in the bridge-jumping and tight-rope line. Sam Patch, that first of all high-jumping cranks, was here in 1829, and made two successful leaps from an elevation of ninety-seven feet into the river. There were no bridges spanning the Niagara chasm in those days, but a platform was projected over the water from a point near the Biddle Stairs. A short time after he essayed a higher leap at the Genesee Falls, where the inaugurator of this highly entertaining pastime was killed.

Thirty years after, or in 1859, came Blondin, whose achievements stand at the head of all tight-rope walking feats, and stretched his rope, a two-inch cable, across the gorge about a mile below the Falls, where its width was 1,200 feet; later he removed his cable up stream to a point midway between the

foot bridge and the cataract, where the gorge measured 900 feet. At both these points he crossed many times, at one time pushing a wheelbarrow, at another, carrying a man upon his back, and again on stilts. People flocked to witness the singular scene, and much money was wagered upon the result. Quite recently some enterprising journalist has found the man carried by Blondin across the chasm. He says in his review that just as they had reached the center of the rope it was violently pulled by some one of the disappointed gamblers upon the result, who had attached a wire to one of the guy ropes, intending to launch them into the river. The recital of the event is most thrilling.

In 1873, Sig. Bellini added a new feature to the show by leaping from the cable into the river. His rope was stretched from Prospect Park to a point opposite the Clifton House. Walking to the center he three times threw himself into the river below, a distance of two hundred feet. He was curiously sustained in his fall by a rubber cord, one inch in diameter, which was fastened to the cable and served to keep him from somersaulting in the descent. A lady, Signorina Maria Spelterina, in 1876, crossed at the same point Blondin had last occupied and rivalled that famous personage in the daring of her exploits, among others, crossing with her feet in peach baskets.

1878 brought another, and one Peer (full name not preserved to posterity), after having duly advertised the feat, jumped from the new Suspension bridge into the river. He walked off the plank which was placed for his purpose and which extended from the center of the bridge toward the Falls; four seconds later he struck the water one hundred and ninety feet below. Recovered safely he proposed to repeat the affair at another date, but lack of encouragement deterred him.

VICTIMS OF THE CATARACT. Not all, however, who brave Niagara escape as well as those already named. Suicides, accidental drownings and even murders have been alarmingly frequent. The Indians believed that the Cataract demanded a yearly sacrifice of two human beings. Sometimes months will elapse without accident of any kind, and again disasters may be often repeated, as the day on which Captain Webb's body was found there were recovered two others who had perished the previous day. One of the chief charms of the Falls of Niagara is the familiarity with which they can be approached, but beware of their relentless power. Few have been at the mercy of the Niagara and been given back to earth, yet the unexpected sometimes happens. Chapin Island just above the brink of the American Fall derives its name from one of these narrow escapes. A man of that name engaged in repairing Goat Island Bridge, by accident fell into the rapids, fortunately the current carried him to one of the two small islands below, from which he was safely rescued, and with which his name is still associated.

In 1872, a gentleman from Troy, New York, slipped from the bridge between Goat Island and Terrapin Rocks. He was in an instant swept to the verge of the Horseshoe Fall where he lodged between two rocks until rescued by lines thrown from the bridge. A third victim was snatched from the awful plunge in 1874, when an old resident of the neighborhood, McCullough by name, fell from the bridge leading to the second Sister Island. He was thrown by the current over a small ledge and into an eddy from which he was rescued.

Others have been less fortunate, and among the number who have been known to take the dreadful plunge—God knows the poor victims whose struggles have been witnessed by his all-seeing eye alone—there is no more pathetic incident than that of Lunar Island, June 21, 1849. A Mr. DeForest of Buffalo, New York, his family and a friend, Mr. Charles Addington, were making a tour of the Falls. When about leaving Lunar Island, the party in fine spirits, Mr. Addington in romping with a little daughter of the DeForests, Miss Annetta, caught her in his arms and advancing to the brink exclaimed, "I am going to throw you in!" The child in struggling to escape was precipitated into the river, the young man with a wild cry sprang to save her and immediately both were swept over the Fall. The body of the little girl was found the same afternoon in the Cave of the Winds, and that of the young man a few days afterward. Accidents are, however, of very rare occurrence, and Niagara's record of horrors is made by a more pitiful class of unfortunates.

Determined suicides from far and near visit Niagara for the final plunge into eternity. No season is without its victim and the season of 1890 was no exception. To illustrate the different moods with which they meet death, three recent acts of this kind may well be given. Whippert, of Buffalo, leaped from Prospect Point, into the very combing of the American Fall during the latter part of the season of 1890. His was a simple act of bravado, under stimulus, and not it would appear a premeditated attempt to suicide. He was a young man who had strolled into the park at mid-day, and hearing two gentlemen discussing how near a boat could approach the brink and live, at once jumped upon the wall which surrounds the point with the remark, "I'll show you how near a man can go to it—good-by," leaped to certain death.

In May of the same year—1890—Charles Orburst jumped from Goat Island Bridge. Death had no horrors for him. He too chose mid-day, and came down the rapids with all the grace an experienced swimmer could manifest in such a mad rush of water. Never! says an eye witness, did I see a man enjoy a swim more. He smiled into the horrified faces which looked on him from Prospect Point, and took the plunge over the American Fall head foremost. We are giving here extracts from an interview with John McCloy, an intrepid fellow, and a genial, large-hearted man. Find him at the head of