

### WHIRLPOOL RAPIDS AND PARK—CANADA SIDE.

In the reach of the river, below the Old Suspension Bridge, is what is generally known as the Whirlpool Rapids Park (Canada side). It comprises the natural uplands of the river bank, which, at this point, is 250 feet high, as well as a road at the base of the cliff, following the course of the river, which has been excavated from the rock. In the warm days of summer this is a most delightfully cool and shady retreat, the cliff forming a natural protection from the rays of the sun, while the immediate presence of the swift-rolling tide of waters ensures a perennial coolness making a strong contrast with the sultriness of the adjacent scenery. Two means of access to the water's edge are provided, the first being a series of steps forming a long flight of stairs, and the other a unique inclined railway operating two cars running by the specific gravity of water in the tanks under each car filled from a spring at the top of the cliff and emptied on the arrival of the cars at the foot of the incline. The ascent or descent is made in 1½ minutes, and is one of the most pleasurable experiences of the locality, the loaded car from above being invariably the motive power used to hoist the lighter car from below. The visit to this Park, including Railway, costs fifty cents, and is well worth the money. Nowhere else here can so perfect an idea of the enormous power of the river be obtained. Rushing through the narrow defiles, the aggregate of 100,000,000 tons of water passing over the Falls' cliff every hour, here meet with such restriction (as to space) as to make the waters of the current leap in some places to a height of 10 feet, the rolling surges of the stream here being exactly similar to those of the open ocean in a storm. Taylor Island, noted in 1881 as the spot where some dogs, afterwards rescued, were temporarily in danger of dying from starvation, is exactly opposite on the American side. It is also well to add here a brief mention of the excellent photographing arrangements of this Park—persons or parties can here be photographed with the Rapids in the background, the picture making one of the most interesting and noteworthy scapes obtainable, as well as an excellent *souvenir* of the Falls and vicinage. Messrs. Brundage, Trott & Whitney form the company owning the lease of this property, and have the most complete livery facilities here.

### WHIRLPOOL RAPIDS FROM THE AMERICAN SIDE.

The effect of changing the point of view is nowhere better illustrated than in the case of the Rapids above named. Seen from the Canada side they have all the advantages, in the season, of cool, shady walks and uplands, from their location, as it relates to the position of the sun in the warmest portions of the day. But as seen from the American side they have a peculiar charm in the fierce glint of the sunlight illuminating the billowy crests of the flood and in the emerald and opal translucence of the waters as they pass in their swift career to meet the ocean by way of old Niagara.

In spite of the disadvantage of the sun being directly opposite, there is no real inconvenience from heat, as the near proximity of the rolling river, with its ever-recurring accessions of ice-cold waters originating in the snow-capped mountains of the west from which this river derives its origin, secures an immunity from the natural caloric of the sun, and allows visitors to enjoy at the same time the beneficial effects of a sun bath and the soothing influence of the cooling action of the waters. No visitor to the Falls should miss seeing this phase of the Rapids below the Bridge. Here,



MAID OF THE MIST IN THE RAPIDS.

descending by the Double Elevator, we see where the entire volume of water from the Upper Lakes discharges itself through a gorge, confining but intensifying its power, well illustrated in our cut, and producing such a conflict between the natural forces as to recall vividly the old proposition of an irresistible force meeting with an immovable object. In 1861 the little steamboat, "*Maid of the Mist*," under the

command of Capt. J. Robertson, navigated this Rapid, and passed safely, but not without disastrous effect, through the Whirlpool below, and it is safe to hazard the opinion that her wheelsman was the first and last navigator of the torrent or race, as it may be termed, it being worthy, although properly a river, of either designation.

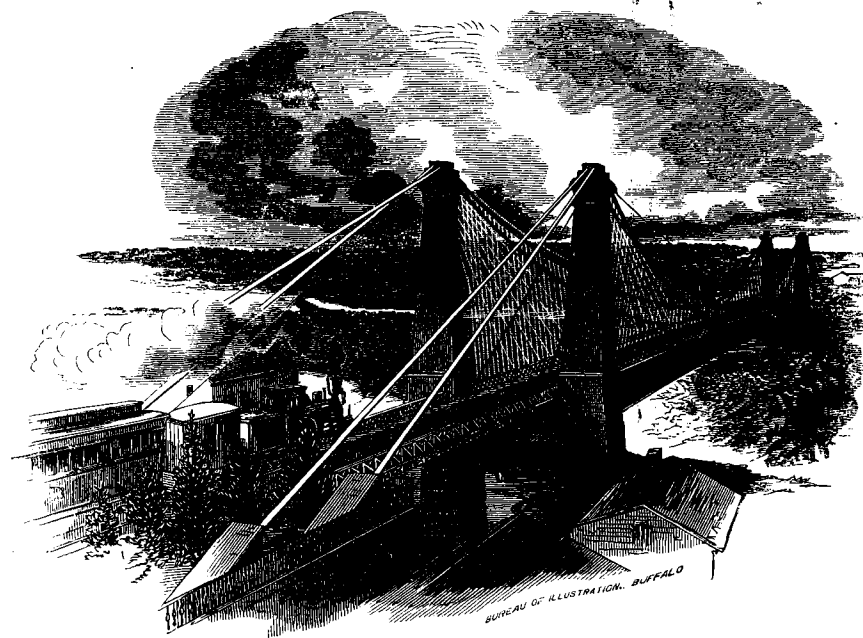
This portion of the scenery of Niagara Falls is leased by J. M. Buttery's Sons, who have spared no expense in making it a most enjoyable place worthy of a visit, especially in the morning and evening, 50 cents covering the cost of seeing all the natural resources of Niagara from this point. Mr. Charles Miller, the best photographic artist on the river, produces at the water's edge some of the finest scenic photographs of visitors, which make perhaps the best *souvenirs* of Niagara, the Rapids being shown in the background.

#### RAILROAD SUSPENSION BRIDGE.

Amongst the most interesting works of human industry at this or any other commercial point, the great Railroad Suspension Bridge must rank as one of the triumphs of engineering skill of this age. Spanning the gorge at the base of which is the foaming Niagara, running at the rate of 30 miles an hour, in a single link of 800 feet, and capable of bearing the strain of a full loaded freight train, this bridge merits mention as one of Niagara's chief points of interest. We insert an illustration showing that it is hung upon wire ropes, in the construction of which 8,000 miles of wire were used; and it will be seen that the weight alone of that enormous quantity of metal rope was sufficient to create a depression in its center of 60 feet from the vertical of the tower summits. On these cables the bridge structure is hung, and is so made as to warrant the belief that no change in its durability will take place, every part being so inserted as to be capable of renewal at any time it may be required. Mr. William G. Swan is superintendent, and will be found willing to make any reasonable arrangements for the accommodation of persons or parties wishing to view the Falls, Rapids and Scenery from the Bridge, the usual rate being 25 cents each individual passenger. The company owning the Bridge is twofold, it being an international structure—one central office is at St. Catharines, Can., and the other at Albion, this state.

The following are the dimensions:

Length of span from center to center of towers.....	822 feet.
Height of tower above rock on the American side .....	88 "
" " " " " Canada side .....	78 "
" " " floor of railway.....	60 "
" track above water.....	258 "
Number of wire cables.....	4
Diameter of each cable.....	10½ in.
Number of No. 9 wires in each cable .....	3,659
Ultimate aggregate strength of cables.....	12,400 tons.
Weight of superstructure .....	800 "
" " and maximum loads .....	1,250 "
Maximum weight the cable and stays will support.....	7,309 "



RAILROAD SUSPENSION BRIDGE.

#### THE NEW SUSPENSION BRIDGE.

As the longest suspension bridge in the world, and as the structure from which a very fine view of all the Falls in line, with their rainbows and mists, can be had, the New Suspension Bridge will be interesting to our readers. It is 1,268 feet in length, and is located ¼ mile

from the American Cataract. At each end of the Bridge are towers with suitable stairways, from the apex of which fine views of all the scenery in this locality can be had. The height of the bridge above the river is 190 feet, and it should be remarked here that the best time to see the Falls from this point is early on a summer morning or near sunset in winter. In the former case the rainbows, if the breeze be down the river, will form a complete circle around the Bridge and the spectator will pass through them—an event which has been witnessed



NEW SUSPENSION BRIDGE.

by the writer many times. In the latter case the setting sun throws a halo of light on the frozen portions of the surroundings indescribable in its effect but necessary to be seen by any who wish to assert that they have *done* Niagara Falls.

The price of passage over the Bridge is 10 cents to residents, or 25 cents to non-residents; admission to the towers, 10 cents. The companies are international and therefore twofold, and are located in Buffalo and Oswego, Mr. Benjamin Rhodes, Superintendent, being the business manager here. This Bridge was built in 1868 and safely weathered the gale of 1869, thus proving its trustworthiness as a means of crossing. In point of fact it is estimated to be able to carry 13

times more weight than can, by any ordinary combination of circumstances, be superimposed upon it; but, although those figures may not be absolutely correct, its past trials in its struggles with "*Rude Boreas*" prove it to be stable and lasting. This structure being so near the Falls we add to this section the following statistical facts in connection:

Height of American Fall, 165 feet.

Height of Canadian Fall, 160 feet.

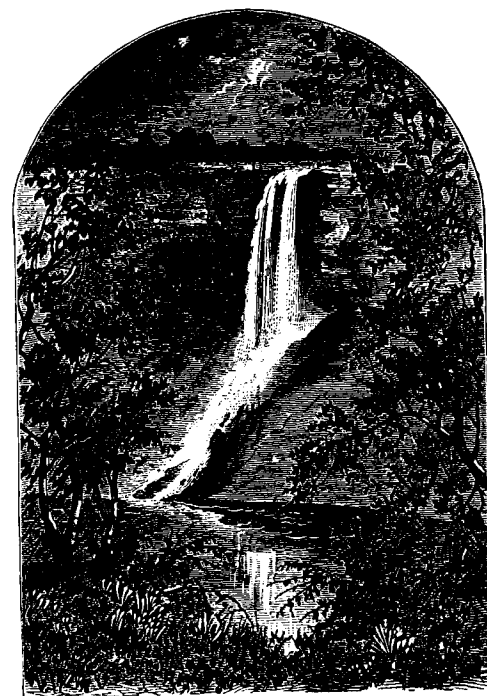
Biddle Stairs—shaft, 80 feet long; built in 1829.

Terrapin Tower—45 feet high; 12 feet diameter at base; built in 1833; destroyed in 1873.

Average depth of river below Falls, 100 feet.

Average depth of river above Falls, 20 feet.

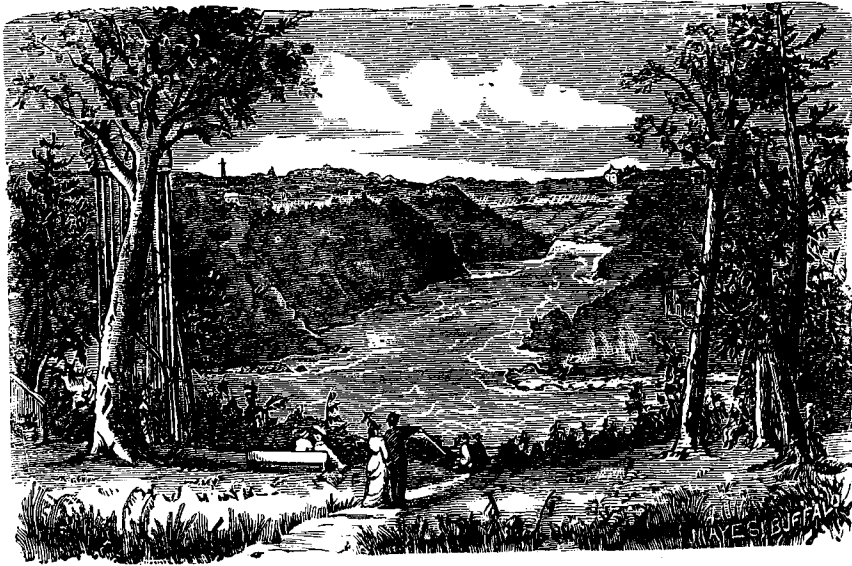
It is estimated that 100,000,000 tons of water pass over the Falls every hour.



BRIDAL VEIL FALLS.

*WHIRLPOOL—CANADA SIDE.*

When it is remembered that about 100,000,000 tons of water pass over the verge every hour and that this quantity of it is compelled to pass between steep cliffs to a point about 2 miles distant from the Falls, where the course of the river turns abruptly at an angle of 45 degrees, it will be understood, even by those who have never witnessed the scene, that such a terrific force must cause a commotion in its rocky bed worthy of witnessing.



VIEW FROM WHIRLPOOL, CANADA SIDE.

In point of fact, the power of the Falls confined in these narrow limits actually *raises* the center of the billowy flood to a height of from 10 to 40 feet. It is assumable that the earth does not afford another spectacle of contention of natural forces parallel to this. Descending from the Falls proper in an almost resistless torrent, this river, called by the Indians the "Father of Waters," is suddenly checked by its rock-bound barriers causing it to make a ceaseless passage around the pool, from which it can escape only after having made the entire circuit of the pool, and only then by passing through, over and under the ever-recurring accession of waters in the estuary of the channel proper.

The effect of this combination of forces can better be imagined than described, yet a very good idea of it can be obtained from the statement that it reverses the usual order of things in which the axiom says, "water finds its own level." Here water finds no level, but is forced and sustained in dome form, the surface of the pool being actually the segment of a circle.

On the Canada side the lease of the Whirlpool Grounds is under the control of Mr. W. H. Ferguson. The approach to the Whirlpool has been improved scientifically for the facilitating of its inspection by visitors. It has a fine inclined railroad similar to that of the "Whirlpool Rapids Park Co." on the same side, the descent being 500 feet from summit to base of cliff. Well-kept and shady paths, cooled by the action of the water, run from end to end of the domain and form a delightful standpoint from which to view the finest aspects of the River and Rapids at this point.

From a tower on the grounds Brock's Monument is distinctly visible, and the locality is further noticeable as the most dangerous point traversed by the "Maid of the Mist," in the most remarkable trip ever performed. Shallow as they appear, it has been demonstrated that the real depth of the water in the Rapids is 250 feet, and that in the *pool* 400 feet. These are facts provable from the quantity of water passing and the width of the channels and passages, but will seem almost incredible to those who view the river for the first time, as this *has the appearance* of a shallow tide rather than of the deep, impetuous and mighty current it is. Those who may wish to take in the most fascinating of Niagara's wonders, in the shortest time, should make this one of their earliest points, and will never regret their selection. The price of admission has been fixed at 50 cents and is but a moderate charge for the accommodations offered. The method of operating the ascending and descending cars is unique and novel, the power being derived from the weight of a stream of water entering a system of iron buckets revolving around an endless chain-work in such a way that the filled buckets carry the power to the cars, the nominal power of the water-wheel being about 5 horse-power. It is the invention of Mr. Leander Colt.