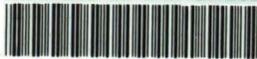


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19
FOURTH ANNUAL REPORT

OF THE

COMMISSIONERS

OF THE

State Reservation at Niagara,

FOR THE YEAR 1887.

TRANSMITTED TO THE LEGISLATURE FEBRUARY 1, 1888.

THE TROY PRESS COMPANY, PRINTERS.
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STATE OF NEW YORK.

No. 19.

IN ASSEMBLY,

FEBRUARY 1, 1888.

FOURTH ANNUAL REPORT
OF THE
COMMISSIONERS OF THE STATE RESERVATION
AT NIAGARA.

NEW YORK, *January 30, 1888.*

To the Speaker of the Assembly:

MY DEAR SIR.—I herewith transmit for presentation to the Assembly, the Annual Report of the Commissioners of the State Reservation at Niagara.

I have the honor to be, your servant.

WILLIAM DORSHEIMER.

REPORT.

To the Honorable the Legislature of the State of New York :

The Commissioners of the State Reservation at Niagara, as required by law, herewith submit their fourth annual report.

Their last communication to your honorable body was made on the 19th of March last, when they invited the Legislature to consider a "general plan for the improvement of the Niagara Reservation," prepared upon the invitation of the commissioners, by the landscape architects, Frederick Law Olmstead and Calvert Vaux. At a hearing accorded them the same day before a joint meeting of the Finance committee of the Senate and the Ways and Means committee of the Assembly, the commissioners asked an appropriation of money sufficient to enable them to undertake the work proposed. "Modification," they said, "may prove to be desirable in details; but in its main principles and features the plan of the eminent landscape architects commands the approval of this commission, and we believe that upon examination, it will commend itself to the judgment of the Legislature, and of the people of the State."

The Legislature of 1887 declined to grant the appropriation asked, and the work of making fully available the resources of the reservation for the enjoyment of the people was postponed a year. The commissioners would say that this postponement has not changed their conviction, either as to the merits of the plan of improvement submitted, or as to the desirability of carrying it into effect with the least possible delay. Indeed, the added observation and experience of the past year have but multiplied arguments in favor of a more comprehensive and far-sighted policy as to the reservation, than has yet been adopted. Heretofore, as your honorable body is doubtless aware, the work of the commission, aside from the removal of the various artificial objects and structures which marred the scenery of the Falls, has mainly been one of care and maintenance. The amount thus expended, during the two years and a-half of active operations under the present management, has been nearly sixty thousand dollars, the outlay for the year just past having been almost twenty-five thousand. This expense of maintenance could be greatly reduced if a permanent and adequate

plan of improvement, such as is proposed, were carried out. The substantial structures of various necessary kinds contemplated in the plan would not call for frequent repairs; roadways once constructed as they should be, would not stand in need of annual renewal. The expense incurred in 1887 for the single item of repairing the dirt roads on the reservation, exceeded two thousand dollars; nor is it likely that less would be required for the purpose in any coming season. And the like is true as to nearly, if not all, the structures, including buildings, bridges, stairways, fences, etc., acquired by the State when the reservation was secured, their insufficient and patch-work character necessitating frequent repair or reconstruction. Another fact to be considered is, that, whether or not the proposed plan be now a second time set aside, various needed works, each involving a larger outlay than the commissioners have heretofore been able to meet, are pressing and must soon compel attention at their hands. Among these we specify as urgent the following, to wit: (1) the adoption of measures to prevent further erosion of the south shore of Goat Island; (2) the construction of an elevator, or other similar structure, to take the place of the much dilapidated Biddle stairs on Goat Island; (3) the substitution of underground conduits, or pipes, for the present dangerous open raceways running along the river bank on the main land.

Again, as already intimated, the existing roads and walks of the reservation are notoriously inadequate. In their report of 1885 the commissioners felt constrained to speak of these as "in need of enlargement and reconstruction," while at the same time they called attention "to the necessity which will soon arise for the construction of a stone bridge from the main land to Goat Island, and of replacing with more durable structures the bridges which now connect Goat Island with the smaller islands." It hardly needs to be said that the necessity for each of these specified improvements is greater to-day than it was two years ago, and that, too, despite the extensive repairing work done the past season. Yet the commissioners would hesitate to ask the Legislature for means to undertake even the most urgent of these projects of improvement, until your honorable body had first given its sanction to a comprehensive and consistent plan of work which would include them all. The commission are firmly convinced that only by the adoption of such a plan, wisely conceived and carefully matured, can real economy of expenditure be secured, and a result creditable to the State and satisfactory to the public, attained.

An additional argument against longer delay in the development of

the State's domain at Niagara is furnished in the recent vigorous action of the Canadian authorities. At the date of our last annual report only preliminary steps had been taken toward the rescue of the Canadian side of the cataract. An appraisal had been effected of the lands needed to be taken, but no provisions of means to pay therefor had been made. But, within the past year, the government of Ontario has more than made up its arrearage of activity. In April last the House of Assembly of the Province passed an act authorizing the issue of bonds to the amount of \$525,000 to purchase and improve lands to be known as "the Queen Victoria Niagara Falls Park." The bonds, bearing four per cent interest and guaranteed by the Provincial government, were immediately purchased. Of the proceeds, \$402,867 was required to meet the awards of the arbitrators of appraisal, while more than \$100,000 remained available for work of improvement. Of this sum about \$26,000 has been expended, with excellent judgment, during the past season, the result being that the lead in the noble project of an International Reservation at Niagara may now be said to be taken by our Canadian neighbors. It was the example set by this State which stimulated them to action, and the hope may be cherished that New York will not allow herself to be out-done in so generous a rivalry. The Canadian park proper comprises 118 acres of land, and extends from the Clifton House along and up the river bank a distance of two and one-half miles. The improvement already wrought upon this unequalled stretch of river front serves to bring out in strong light the need of corresponding work on the American side. Especially is the nakedness of the main bank of our reservation, with its unsightly back-ground of hotel and other structures, now more than ever conspicuous from Canadian points of view, and calls loudly for measures to restore what human occupancy has ravaged and destroyed. Eight years ago the director of the State survey in his report on the condition of Niagara, made mention of this cruelly devastated river bank, and anticipated the commissioners in a plea for the restoration of something of its original character. "By planting this strip of land with trees," said Professor Gardner, "the whole village may be shut out from view — planted out — and the unsightly walls, the sewer mouths and wing dams, replaced by natural banks like those of Goat Island." The urgency of this work is greater to-day than ever before; for only now that the objects sought through the reservation begin to be apparent, do we become properly intolerant of whatever remains to defeat and thwart these objects.

In their last communication to your honorable body, the commissioners suggested that the element of time would necessarily enter

largely into any scheme for the restoration of the scenery at Niagara, and that, therefore, the healing processes of time and nature should be set in operation with as little delay as possible. This consideration we would again present and urge. Its force, as regards the treatment of the river bank above mentioned, needs no demonstration; but there is another connection in which it is also entitled to weight. In the construction of such roads and walks as are absolutely necessary for the proper opening of the reservation to the people, particularly on Goat Island, more or less cutting of trees and shrubbery will be inevitable. Sacrifice of this kind should, of course, be the very smallest possible, but something of it cannot be avoided. It is obvious, therefore, that no time should be allowed needlessly to elapse before nature is set free to repair, in her own way, all such unavoidable damage.

The first care of the commissioners, as soon as means are allowed them to carry out what they have planned, will be to enlist all the friendly energies of nature to aid in drawing around the great cataract some semblance, such as art may create, of that magic circle of sylvan wildness and seclusion within which Hennepin discovered it. Nor can the commissioners doubt that this ideal accomplishment of the State's beneficent purpose will in time be realized. The public sentiment which has effected Niagara's ransom will surely be satisfied with nothing else. The only question is whether the people who pay the price shall be permitted to enter into the full enjoyment of the purchase, or will leave posterity to gather the rich aesthetic fruit of their planting. This question is for your honorable body to answer. In submitting it the commissioners would only add, what was the burden of their last communication to the Legislature of 1887, to wit: that the plan of proposed improvement at Niagara contemplates no expenditure for decorative work of any kind, and, in fact, admits nothing of an artificial character not absolutely essential to the due use and enjoyment of what the State's liberality has provided. It takes liberal account of the future, with the probability of constantly increasing multitudes of visitors; but care is had that what is devised for man's entertainment and safety shall conflict as little as possible with the restoration and maintenance intact of nature. To this policy of its management the commissioners regarded themselves as pledged when they accepted their present trust, and they believe that hitherto the pledge has been faithfully kept. They now ask the public confidence in what they propose in the future. The plan determined upon, they believe to be in full accord with the enlightened sentiments that has reserved Niagara and its surroundings in perpetuity for the

delectation of all peoples, and, thus believing, they present it a second time for legislative approval. They are of opinion that \$300,000 would almost, if not quite, suffice to carry it into lasting effect and they respectfully ask the appropriation of \$50,000, in order that the work may be immediately undertaken.

The record of active operations on the reservation during the past year comprises the completion of the clearing and preparatory work which first confronted the commissioners. The six principal superfluous structures which remained at the date of their last annual report have been removed, to wit: the Tugby bazar building, near the main bridge to the islands; the Bazar building, which obtrusively occupied invaluable space at Prospect Point; the long stone building near the foot of the American Falls, known as "the Shadow of the Rock"; the frame building within and near the easterly boundary of Prospect Park, and the stone pulp mill building, long the conspicuous disfigurement of the Lower Rapids. The removal of each of these eyesores has been attended by the happiest results. Visitors have been quick to recognize the new beauties of scenery thereby disclosed, while old residents have expressed delighted surprise at the re-discovery of once familiar but long hidden views and effects. This has been especially true as to the disencumbered area at and near Prospect Point, whence new outlooks of surprising charm have been enjoyed by all visitors.

While superfluous structures have thus been cleared away, those necessarily retained have been put in thorough repair, and by every device of form and color, have been rendered as little obtrusive as possible. It is believed that until the general plan of the landscape architects is adopted, no further improvement in this direction can be looked for. A new stairway to Luna Island, constructed during the past autumn, should be mentioned in this connection, as a beginning in the class of better and permanent structures needed everywhere on the reservation. New and striking views of the American Falls, have been secured in the laying out of this stairway.

The safety of visitors has received additional assurance from the adjustment of a safety cable upon the line of the inclined railway, while the public comfort has been subserved by extending the supply of drinking water to a number of convenient points. A complete and sufficient water system, available in case of fire in the underbrush of the islands, should be established in the near future. The work of filling and grading, done the past season on Bath Island, and upon the main bank, both above and below the bridge, is a first installment of large operations, much needed, of the same kind. For details of

what has been accomplished on the reservation during the year 1887, we refer to the report of the superintendent, submitted herewith.

The number of persons estimated to have visited the reservation in excursion parties during the past season is 166,280, as compared with 187,781 in the season of 1886. This decrease is doubtless due in part to changes in railroad management, by which inducements offered to this class of travel have been somewhat diminished. That Niagara is becoming less attractive, or that the benefits of the reservation were less highly appreciated last season than a year before, there is no reason to believe. The contrary indeed is true, so far as may be judged from the expressions of daily crowds of visitors. The general conduct of these and the public order maintained on the reservation continue to be, almost without exception, admirable. More than any other place equally resorted to, Niagara, it is believed, exerts a quieting softening power upon its visitors. The crowds which pour through the gateways of the reservation, immediately after entering, fall apart, and as crowds are no more seen. If, as sometimes happens, a boisterous element slips in, speedily, in the presence of the cataract, it becomes subdued and quiet. Nor, while the commissioners have spoken of the important improvements still lacking, would they belittle the happy effects of what has already been done. In the enhanced and uninterrupted enjoyment even now possible in every part of what the State has rescued from human ravage, these effects are palpable and manifest. Already the genius of the place, long exiled, gives promise of return.

Since the opening of the reservation, and within its limits, visitors to Niagara have enjoyed protection from the annoyances and petty impositions to which formerly they were everywhere subject. It will be seen, however, from a report of the superintendent, given with this, that similar abuses have sprung up afresh during the year past, and that, too, under such auspices of influence and respectability as tended to make their detection more difficult. The system of "commissions," carried on by, or on behalf of proprietors of bazars, hotels and so-called "points of interest" at the Falls, underlies much of the evil repute from which Niagara formerly suffered, and the commissioners feel themselves justified in exerting to the utmost their influence and authority for its suppression. In view of remedial measures taken, and the honorable determination of leading railway companies wholly to disconnect their business from private and local interests subsisting on the patronage of visitors, it is hoped that the evil in its latest form will proceed no further. It is impossible for the commissioners, outside of the reservation, where their authority ends, to secure

to visitors entire immunity from such importunities or impositions as abound at places of pleasure resort; but every attempt to impair the value of the benefits which the State by its reservation has aimed to assure to the public, may and will be vigilantly resisted.

The provisions of the act of the last Legislature in relation to the maintenance and management of the reservation at Niagara have been carried into effect. Pursuant thereto, on the first of October, the sum of \$1,176.95 was paid by the commissioners into the State treasury, that being the total of moneys then in their hands as such commissioners; and on the first day of each month since that time the total of all receipts and earnings of the reservation for the month preceding has likewise been paid into the State treasury. Under an arrangement with the State Comptroller, a requisition made quarterly, of a fourth part of the appropriation of \$20,000 enacted in the act for "the care and maintenance" of the reservation, is honored by the State Treasurer. The Manufacturers' and Traders' bank of Buffalo was designated by the commissioners as their bank of deposit and its bond as such accepted by the Comptroller. The same officer has also approved a new bond in the sum of \$10,000, required under the provisions of the act, from the treasurer and secretary of the commissioners. The financial affairs of the reservation for the year 1887, are summed up as follows:

Balance on hand, December 31, 1886.....		\$11,843 15
RECEIPTS.		
Inclined railway.....		6,359 05
Leases.....		1,547 00
Sales.....		1,739 97
Interest on funds in bank.....		272 58
From State Treasurer, October 2, one fourth of appropriation		5,000 00
Error in making draft of August 4.....		10
Total.....		\$26,761 85
Total disbursements for the year.....	\$24,772 57	
Remitted to State Treasurer, Oct. 1, 1887..	1,176 95	
Remitted to the State Treasurer, receipts of October; November and December.....	455 23	
		<u>26,404 69</u>
Balance, December 31, 1887.....		<u>\$357 16</u>

Total receipts since the organization of the commission,	\$59,687 96
Total disbursements.. .. .	59,330 80
	<hr/>
Balance.....	\$357 16
	<hr/> <hr/>

Details of the year's expenditures are included in the report of the treasurer, hereto appended.

Following is a statement of the probable cost of maintenance for the year 1888:

Salaries of officers, office and traveling expenses and disbursements	\$4,500 00
Reservation police and watchmen	4,500 00
Materials for construction and tools	2,500 00
Stationery, maps, printing and advertising.....	500 00
Labor account, amount paid laborers.....	5,000 00
Maintenance account, materials	3,000 00
	<hr/>
	\$20,000 00
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An estimate of receipts for the year 1888 from all sources is as follows:

Inclined railway.....	\$6,500 00
Rentals, Cave of the Winds.....	\$800 00
Ferry and steamer landing.....	500 00
Reservation carriage service.....	100 00
Parcel check room.....	40 00
	<hr/>
	1,440 00
	<hr/>
Total.....	\$7,940 00
	<hr/> <hr/>

The scheme of a railroad along the gorge of the Niagara River below the Falls, of which mention was made in the annual report of 1886, is delayed by legal impediments, yet notice has been received from its projectors of a proposed route which would cut the *débris* slope within the boundary of the reservation. It is to be hoped that the project can be prevented. It would be most desirable, and it may still be practicable, for the State to secure the line of the slope in question from its present boundary to and including the whirlpool. This need involve no interference with the important industrial and manufacturing developments on the river bank below the American Falls; while it would render the reservation of Niagara's essential surroundings complete. The fact that arrangements are now practi-

cally concluded between the Ontario and Dominion governments, by which the entire bank and *débris* slope on the opposite side as far as Queenston will be included in the Canadian park, makes a corresponding acquisition on this side of the river doubly to be desired.

At the meeting of the commissioners held in New York, December 29, 1887, the resignation of David Gray, as treasurer and secretary, which had previously been tendered, was accepted, and Henry E Gregory was unanimously chosen his successor.

A distinguished citizen, Albert H. Porter of Niagara Falls, has made an offer through the commissioners, to convey to the State a valuable plot of ground abutting on the reservation, to be used as a site for a Museum of the Natural Sciences and History of Niagara; the State to provide a suitable building and the institution to be under the care of the commissioners. A letter from Mr. Porter on the subject will be found appended to this report. Regarding it as of decided merit and as possibly the forerunner of other useful public benefactions at Niagara, the commissioners respectfully bespeak for Mr. Porter's proposal your honorable body's favorable consideration.

The variety of scientific interest attaching to Niagara has been a frequent subject of comment, the rich flora of the region having especially attracted notice from scientists, both American and foreign. In view of this fact the commissioners esteem themselves fortunate in having recently become possessors of a complete "Catalogue of the Flowering and Fern-like Plants Growing without Cultivation," in the reservation and its vicinity. The work was prepared upon invitation and without expense to the State, by Hon. David F. Day of Buffalo, and is a marvel of patient, loving labor in the service of science. For a large part of the public it will have both interest and value, and we bring it to your honorable body with the request that you will permit its incorporation in printed form with this report.

Respectfully submitted.

WILLIAM DORSHEIMER,
M. B. ANDERSON,
SHERMAN S. ROGERS,

Commissioners of the State Reservation at Niagara.

REPORT OF THE SUPERINTENDENT
OF THE
STATE RESERVATION AT NIAGARA,
FOR THE YEAR 1887.

REPORT OF THE SUPERINTENDENT.

To the Board of Commissioners of the State Reservation at Niagara :

GENTLEMEN. — I respectfully submit the annual report of the superintendent for transmission to the Legislature with the annual report of the commissioners.

The operations upon the reservation during the year 1887 have been attended with good results. Additional precaution has been taken for the convenience and enjoyment of visitors, who have manifested a gratifying desire to observe the ordinances of the commissioners. The few complaints made by visitors were promptly investigated, and, when found true, action was taken in accordance with the regulations of the board. The difficulty of enforcing the rules has diminished as their provisions, and the desire to enforce them, became known. The year has been free from accident within the reservation.

The removal during the year of buildings from the shore of the river has afforded many additional points of view, increasing the enjoyment of visitors, and tending to prolong their stay at Niagara. The establishment of the Queen Victoria Niagara Falls Park on the Canadian side of the river has increased the interest of the public in the movement for the restoration of the scenery of the Falls of Niagara. The work done under the direction of the Canadian park commissioners has directed renewed attention to the desirability of proceeding without further delay, to the shaping and planting of the grounds within the State reservation, for which the preparations have been completed during the past year by the removal of all of the structures formerly existing along the river bank.

The "General Plan for the Improvement of the State Reservation at Niagara," prepared by Messrs. Olmsted and Vaux, has been placed in the office of the commissioners. The work done up to this time has been of necessity merely preparatory to the adoption of a general plan, and to the appropriation of funds for carrying forward a definite scheme of improvement. If a suitable appropriation had been made a year ago the work of shaping and planting the portions of the reservation lately cleared of buildings, could now be in progress. Valu-

able time is being wasted, and the present generation, which secured the establishment of the reservation, is being deprived of the privilege of seeing the grounds restored to a state of nature.

EXCURSIONS.

The excursion season commenced May 19, and ended December 2. The number of arrivals during May and June were greater, and in July, August, September, October and December, less than last year. The largest number of arrivals in one day took place August 4, on which day 100 railway cars arrived, conveying 6,000 people. During the excursion season 2,741 cars arrived, carrying an estimated number of 166,280 persons. The arrivals in each month were as follows:

May	2,820
June	16,800
July	40,040
August	74,760
September	26,520
October	4,140
December	1,200

The excursions consisted largely of church societies. Little difficulty was experienced in maintaining order. Only five arrests were made during the year.

The number of excursions has not been as large as last year. This result is attributed by some to the action of the railroad companies in discontinuing car rates. The regulation prohibiting the sale of provisions within the reservation may also have caused excursions in some cases to go to other places, but with a proper understanding of the regulations it is probable that very few such instances will occur in the future.

A statement of the number of excursion cars, the places of departure from, and the estimated number of people is hereto appended, showing that citizens of every section of the State and nation have visited the reservation in large numbers during the year.

The regulation prohibiting the sale of provisions or commodities of any kind within the reservation, has proved beneficial. It removes outside cause for complaint, and it aids largely in the work of keeping the excursion grounds in good order. It has resulted in the establishment of a number of places for the entertainment of visitors, immediately adjacent to the excursion grounds and others will undoubtedly be provided.

As the State owns the fee of the street upon which such establish-

ments will front, a certain supervision over the kind of business to be carried on may be exercised. Any business which would give rise to disorder would be undesirable. An opening has been made for the convenience of visitors on Canal street, midway between Fall street and Niagara street, and a walk constructed to the entrance at that point.

THE INCLINED RAILWAY.

The receipts from the inclined railway for the year 1887 were \$6359,05, a sum sufficient to pay the salaries of the regular employes. The receipts during the first six months of the year were greater, and during the last six months less than last year. The monthly receipts from the inclined railway were as follows.

January.....	\$27 35
February.....	34 30
March.....	18 15
April.....	20 40
May.....	229 20
June.....	721 50
July.....	1,467 80
August.....	2,361 00
September.....	1,085 05
October.....	276 70
November.....	69 40
December.....	48 20

In order to obtain an estimate of the cost of the proposed pipe for supplying water to operate the inclined railway, a profile has been made of the surface of the water from the eastern end of the upper race to the inclined railway building. The distance is 3,154 feet, having a fall of thirty feet four inches. A profile has also been made of the surface of the water from the eastern end of the lower race to the inclined railway building. The distance is 1,375 feet, having a fall of ten feet one inch.

The lower race is used only for the operation of the inclined railway, and is in need of some repairs. The upper race is used only for the operation of the Cataract House laundry. The retaining walls at the overflow, near Mill street, are being washed out. The reconstruction of the walls will be a matter of considerable expense. It may be desirable to ask the parties who use the race to incur such expense, or to avail themselves of the privilege accorded to them of placing pipes for a water supply in the race, so that the channel may be discontinued and the expense of maintaining it abolished, if desired.

THE CARRIAGE SERVICE.

The operation of the reservation carriage service during the present season has been more successful than last year. The value of the service, as a public convenience, has been demonstrated. The manager of the company has been notified of complaints made in relation to the operation of the carriage service, and in all such cases the cause of complaint has been removed.

The service was discontinued for the season on November fourteenth. The modifications made in the rates of fare during the year, equalizes the charges for conveyance, and will aid in maintaining the efficiency of the service.

The value of the service to the public will be best maintained by keeping it free from combination with other business interests, liveries, or places where admission fees are charged and commissions paid.

LICENSED CARRIAGE DRIVERS.

April seventh eight carriage stands were designated at points within the reservation, directly under the supervision of the reservation police.

The experience of the past two seasons has proven that this policy, properly guarded, aids largely in maintaining public order in the village, and gives the drivers of carriages opportunity to obtain employment. If the privilege is abused by the drivers, the permission to use such places as carriage stands will be revoked.

The board of trustees of the village have also been petitioned by the superintendent to enforce the village by-laws relating to numbers of carriages, and the rates of fare established by law.

Since April twenty-sixth, drivers have not been allowed to load or unload their carriages at the Point in Prospect Park. A more spacious and suitable place has been designated for that purpose, in front of the inclined railway building. The arrangement does away with the confusion and inconvenience attending the stoppage of a large number of carriages in the immediate vicinity of the Falls, obstructing the view and the way of pedestrians, who constitute the majority of the visitors to the reservation.

Visitors upon the streets between the depots and the reservation have been subjected to more annoyance than last year. Nine complaints have been made against licensed carriage drivers. Four drivers have been excluded from the reservation for violation of the ordinances of the commissioners.

EXCLUSIVE LIVERY PRIVILEGES AT THE RAILROAD DEPOTS.

During the year the exclusive privilege of entering the yards at the railroad depots, with vehicles, has been secured by a combination of two livery establishments, one of which is largely interested in bazars and outside points of interest, where commissions are paid to drivers and entrance fees collected. The company thus formed has the exclusive privilege of soliciting business upon the railroad trains and in the depot yards. The omnibuses, baggage wagons and carriages of all other persons are rigorously excluded by the railroad companies.

The drivers employed by the company are paid ten dollars per month, and, in order to make a living for themselves and their families, they are compelled to convey visitors to the points of interest and stores owned or controlled by the manager of the company, so as to obtain the commissions paid at such places. Visitors are often conveyed to such places before being taken to the Falls and the Islands and their time so engrossed that they have no opportunity thereafter to visit the reservation. Strangers are thus imposed upon, the reservation made a secondary object of attention, and visitors receive wrong impressions concerning it. When it became evident that persons intending to visit the reservation were systematically intercepted and conveyed to other places, the superintendent reported the circumstances to the commissioners, who authorized the superintendent to bring the facts to the attention of the railroad companies, which has been done.

The N. Y. C. and H. R. R. R. Co. states that the contract for the exclusive livery privilege at the station of that company will not be renewed, unless the business can be conducted without identification of any character with hotel liveries, stores and points of interest.

The matter has been made the subject of a special report to the commissioners, which is herewith submitted.

WORK OF THE YEAR.

The pulp mill machinery has been sold and the pulp mill building taken down. The stone and timber from the building have been stored for future use. The Tugby bazar building has been taken down by the purchaser. The excavation at the site of the building has been filled.

The removal of the structure produces the greatest improvement, yet effected in the appearance of the reservation. The building shut out views of the American rapids and the islands which are now greatly enjoyed by visitors.

The "Shadow of the Rock" building at the base of the American fall has been removed, a portion of the material has been used in enlarging the dock at the steamboat landing, Part of the stone has been used in constructing substantial stone walks and steps for the convenience of visitors; the balance of the stone has been used in restoring the natural slope of the locality.

The removal of the structure is a great improvement. The place formerly occupied by it now affords an impressive view of the Falls, and attracts a constantly increasing number of visitors.

The ticket office at the foot of the inclined railway has been moved to the northern side of the building and windows inserted in the side nearest the falls, so that visitors may now obtain a view of the Falls within doors in wet weather and when the spray is blown down the river. The framed wing at the foot of the inclined railway has been removed, and new steps constructed on the southern side.

The inclined railway building has been repainted inside and out, in less conspicuous colors than those formerly used. The painting of the building was necessary to preserve the structure from decay.

The framed store building at Prospect Point has been sold and removed. The locality has been filled up, terraced to conform with the grounds on either side and as much of the site as was not needed to widen the roadway has been covered with sod. The removal of the building does away with an objectionable structure and reveals from the terrace above, which is well-wooded, a fine view of the Horseshoe Falls. The locality is now a favorite point of observation.

The dwelling house in Prospect Park has been sold and removed and the excavation filled. The buildings sold were duly advertised and sales made to the highest bidder.

The platforms on the north and west sides of the inclined railway were in a dilapidated condition. They have been removed, and a veranda constructed on each side. The veranda will render the building more pleasant and convenient for visitors, especially in wet weather.

A new stairway to Luna Island has been constructed. It consists of five flights of oak stairs, resting upon substantial stone piers, and retaining walls. Four landings and balconies afford views of the American Fall.

The safety cable for the inclined railway has been completed and is now in operation.

A new manilla cable has also been procured for the inclined railway, which, with the safety cable, affords a security to the public not heretofore existing.

In order to avoid confusion and danger of accident a separate stairway was necessary for persons taking the cars at the foot of the inclined railway, on the southern side. The work has been completed and will greatly facilitate the operation of the inclined railway during the excursion season.

The water pipes within the reservation have been repaired and arrangements made for sprinkling the roads during the summer months.

The experience of the past two seasons shows one of the great needs of the reservation to be an abundance of good drinking water at convenient places, as the river water is unpalatable in summer. To supply this want a well has been drilled on Bath Island, adjacent to the path taken by all the visitors to the islands. A pump has also been erected on Goat Island, so that the spring water may be obtained without descending the bank to the spring. The small pump in Prospect Park has been replaced by a large heavy pump. Spring water has been conducted to the foot of the inclined railway, and drinking places provided on each side. A hydraulic ram is in operation on the southern side of Goat Island, but it may be desirable in the future to sink a well in that vicinity for the accommodation of visitors.

The high picket fence around Prospect Park has been lowered, so as not to obstruct the view in any direction. The high board fence between the reservation and the lands of the Clifton Suspension Bridge Company has been taken down and a wire fence constructed in its place. The removal of the high board fence secures a desirable view from the reservation of the gorge of the river and the Canadian shore. A direct entrance to the bridge has also been provided for the convenience of visitors.

One hundred feet of the railing designed by Mr. Calvert Vaux have been erected on the western shore of Goat island adjacent to the Cave of the Winds building.

The iron railing at the Horseshoe Fall has been repaired and extended, and additional wooden guard rails constructed on Bath island and upon Goat island.

The chain fence from Falls street to Rapids street has been removed and erected along Canal street, between Falls street and Bridge street, and the fence and gate-houses at Prospect Park have been repainted.

The walks in Prospect park have been repaired, and new sidewalks constructed on the west side of Canal street, from Falls street to

Bridge street, and on the north side of Bridge street from Canal street to Rapids street.

Temporary repairs have been made upon the bridges, stairways and sidewalks, and platforms have been constructed at points where passengers alight from carriages, at Prospect Park and upon Goat Island. The territory upon the main land has been mowed and the roads and walks cleaned and trimmed. A large quantity of material has been spread upon the roads in Canal and Cascade streets and several hundred loads of earth secured for filling at the site of the store building at Prospect Park and along River street. The cars of the inclined railway have been repaired; the Cave of the Winds building and restaurant building repainted and additional sign-boards provided.

The increased travel on the road around Goat Island made it necessary to take measures to keep the road in repair until such time as a substantial roadway shall be constructed. Fifteen hundred yards of gravel taken from pits on Goat Island, used by the former proprietors, have been spread upon the roadway during the past year. The approach to Goat Island has been macadamized, and an additional approach to Luna Island bridge provided by constructing a pathway down the northern slope of Goat Island. This pathway permitted the stairway leading to Luna Island, which was old and worn out, to be renewed without inconvenience to the public.

An opportunity occurred of securing a large amount of soil for filling at a part of the cost of hauling it a short distance. About two thousand loads were obtained. With the material, the barren locality on Bath Island, formerly occupied by the paper mill buildings, has been covered, and the excavations left by the removal of the store on Bath Island, the Rapids house, the brick, stone and frame shops and the large excavations so long existing on Rapids street, have been filled and a quantity of gravel spread upon the roads within the reservation. A large amount of material for filling can probably be obtained from time to time in this manner.

Two thousand five hundred yards of gravel have been procured and the material spread upon the driveway and walks in Prospect Park, which were in need of repairs, and upon River street. The gravel was obtained at cost of cartage.

The pier of the bridge from Bath Island to Goat Island has been covered with iron to protect the structure from floating ice. The timber work protecting the abutments at the Goat Island end of the bridge has also been repaired and covered with sheet-iron.

The wall protecting the Bath Island end of the bridge from the

mainland, has been rebuilt in a substantial manner. The removal of the Tugby bazar made it necessary to build a heavy stone wall to protect the mainland abutment, and to support the approach to the bridge.

The brick piers supporting the veranda of the office of the commissioners on Bath Island, which were crumbling away, have been removed and iron columns substituted, new steps have been constructed and the office building painted a more appropriate color.

THE CAVE OF THE WINDS.

The Biddle stairway at the Cave of the Winds was examined at the opening of the season and pronounced to be in a safe condition.

In accordance with views expressed by the board, the manager of the Cave of the Winds was authorized to close the entrance to the Biddle stairs at times of large excursions, in order to prevent the structure from being overcrowded, and also to limit the number of persons allowed to go under the cliff at that point at any one time. Complaints were made that such discretionary power was being harshly used, and such authorization was immediately withdrawn in order that visitors might have free access to the stairway at all times under such police supervision as the safety of the public demands.

The desirability of an elevator at Goat island becomes more apparent each succeeding year. Under the high bank at the western end of Goat island a walk, a quarter of a mile in extent, can be constructed from the American to the Canadian falls. The place is now rarely visited, excepting by guides and fishermen, and little is known of the magnificent views of the falls and gorge of the river afforded by the locality. An elevator, with a free stairway attached, would probably attract to this locality as many people as now visit the falls at the foot of the inclined railway, from which point the falls are viewed by over one hundred thousand people each year. The income from the elevator at a nominal charge, together with the receipts from the inclined railway would form a fund in excess of the annual amount expended for labor.

THE WHIRLPOOL RAILWAY.

Litigation concerning the acquisition of the right of way by the Niagara Falls and Whirlpool Railway Company, has been in progress during the year. The right of way has not been secured by the company.

Notice has been served upon the superintendent that the map of the proposed route has been filed, and that it traverses the reserva-

tion lands, between the high bank of the river and the edge of the, water.

February third, a bill amending chapter 286 of the Laws of 1885, relating to the reservation, was introduced into the Legislature by the member of Assembly representing the district in which the reservation is located. In the absence of instructions from the commissioners, the superintendent requested the introducer of the bill to delay action thereon until the views of the commissioners of the reservation should be ascertained.

The bill, in a modified form, was passed June 23, 1887. A copy of the act (chapter 656, Laws of 1887) is hereto appended.

THE OLD FRENCH LANDING.

The large ice-house and the workshop have been removed from the pier at Port Day, by the Niagara Falls Hydraulic Power and Manufacturing company, as stipulated. Stone boundary monuments marking the line of division from the canal lands, may now be placed in position.

THE BRIDGES.

The sidewalks of the bridge from the mainland to Bath Island have been replanked and the joists renewed. The bridge from Bath Island to Goat Island has been replanked, and defective joists replaced. A number of the needle beams of the bridges will require renewal during the coming season.

EROSIONS ON THE SHORE OF GOAT ISLAND.

An examination has been made of the southern margin of Goat Island. The bed of the island, composed largely of gravel and quicksand, is exposed to a rapid current, and at seasons to high water and floating ice. Erosions exist a distance of eighteen hundred feet. A plan for the prevention of future erosion has been prepared.

It provides for the construction of a single crib of timber filled with stone. The estimated cost per lineal foot is \$3.15, exclusive of the cost of stone for filling.

There are also perceptible erosions on the Three Sister Islands, caused by the action of the water.

EMPLOYEES.

The number of regular employes is nine. The number of additional workmen employed during the year was as follows : January, three ; February, three ; March, three ; April, six ; May, fourteen ;

June, twenty; July, nineteen; August, eighteen; September, twelve; October, twenty-one; November, twenty; December, three. Number of teams employed: February, one; March, three; April, six; May, five; June, four; July, two; August, four; September, eight; October, four; November, three.

The amount received during the year was as follows:

Inclined railway.....	\$6,359 05
Rentals.....	1,547 00
Sales.....	1,739 97
Total.....	<u>\$9,646 02</u>

Detailed statements of the receipts from the inclined railway, rentals and sales are hereto appended.

The expenditures of the superintendent were as follows:

Pay-roll for the year 1887.....	\$13,892 44
Accounts for labor and material.....	8,400 44
Total.....	<u>\$22,292 88</u>

A detailed statement of the pay-roll for each month, a classification of the amount expended for labor and material, and an inventory of all articles of maintenance on hand September 30, 1887, are hereto appended.

FUTURE OPERATIONS.

The shore of the river having been cleared of buildings, the eastern fence at Prospect Park may be extended along Canal street, and the gate-houses at Rapids street and at the entrance to the main bridge removed, so as to leave the view of the river unobstructed. Filling may be done at the pier at Port Day, on Bath Island, at the "wood-lot," and other places from time to time, as the material for filling can be obtained.

The parapet and hedge at Fourth and River streets, and the electric light fountain in Prospect Park may be removed, and the buildings in the excursion grounds repainted. The fence along the high bank in Prospect Park, should also be removed and a substantial railing substituted. A railing can be extended with advantage along the high bank on the western borders of Goat Island and Luna Island, and a walk constructed along the water's edge from the entrance to Goat Island to Luna Island bridge. A new bridge to Luna Island will be required, and extensive repairs will be necessary upon the bridges to the Three Sister Islands, and the bridge to Terrapin Rocks

at the Horseshoe Fall. If it shall be determined to lay pipes for a water supply, and to discontinue the upper and lower raceways, a large amount of stone in the piers will be available for protecting the southern shore of Goat Island and for other purposes. The retaining walls, tail-races and overflows may then be removed and the shore graded down to the edge of the water.

Little, in addition to the foregoing, can be done until adequate appropriation is made and the work of permanent improvement inaugurated.

Respectfully.

THOS. V. WELCH,
Superintendent.

SPECIAL REPORT

ON THE

MANAGEMENT OF THE EXCLUSIVE LIVERY PRIVILEGES AT THE NIAGARA FALLS STATIONS OF THE RAILROAD COMPANIES, AND POINTS OF INTEREST WHERE ADMISSION FEES ARE CHARGED AND "COMMISSIONS" PAID TO CARRIAGE DRIVERS; SUBMITTED TO THE COMMISSIONERS OF THE STATE RESERVATION AT NIAGARA.

BY THOMAS V. WELCH, Superintendent.

To the Commissioners of the State Reservation at Niagara:

GENTLEMEN.—The following preamble and resolution, adopted at a meeting of the commissioners September 6, 1887, were transmitted to me by the secretary of the board:

"The superintendent having reported to this board that he was credibly informed that it was the custom of the hackmen who furnish carriages to strangers, to drive them in the first instance to the whirlpool and other points outside the reservation where there are entrance fees, and articles are kept for sale, in many cases engrossing the time of visitors in this way, so that they have not sufficient time thereafter to visit the reservation, and there being reason also to believe that the hackmen who do these things receive commission on such entrance fees, or sale of merchandise, and that in this way visitors are imposed upon and the benefits of the reservation in a large measure lost to the public; therefore

Resolved, That the superintendent be authorized to bring this subject to the attention of the railroad companies to and from whose trains public carriages are driven, and who furnish special convenience to some of such hackmen, in allowing them to solicit custom within the yards and upon the trains, and that he report to the board the result of his conference with said companies, and such action as he deems necessary to prevent further imposition upon the public.

In compliance with the foregoing resolution I beg leave to report that I brought the subject to the attention of the railroad companies, as authorized. I respectfully submit the following correspondence in relation thereto :

NIAGARA FALLS, N. Y., *Sept. 14, '87.*

MR. EDSON J. WEEKS, *General Agent, Passenger Dept., N. Y. C. and H. R. R. R., Buffalo, N. Y. :*

DEAR SIR—Referring to my interview with yourself and Mr. Lambert of the West Shore Railroad, on the 10th inst., I inclose to you herewith copies of the extract from the report of the superintendent and the resolution adopted by the commissioners of the State Reservation at their meeting here on the 6th inst., in relation to the present operations of the firm of C. W. Miller & Co., (Charles W. Miller of Buffalo, N. Y., and James T. Brundage of Niagara Falls, N. Y.) I am informed that the "points of interest" where admission fees are charged, and the bazars and hotel liveries, owned or controlled by one or both of the persons composing the above firm are as follows :

POINTS OF INTEREST CONTROLLED BY JAMES T. BRUNDAGE.

Whirlpool (American side)—fee fifty cents; driver's commission, twenty-five cents on each person.

Whirlpool Rapids park (Canadian side) fee fifty cents; driver's commission, twenty-five cents on each person.

BAZAR STORES OWNED BY JAMES T. BRUNDAGE.

Whirlpool store (American side)—25 per cent commission on goods purchased paid to drivers.

Whirlpool Rapids store (Canadian side)—25 per cent commission on goods purchased paid to drivers.

Store in Cataract house—25 per cent commission on goods purchased paid to drivers.

Store in Clifton house—25 per cent commission on goods purchased paid to drivers.

HOTEL LIVERIES OWNED BY C. W. MILLER & Co.

Cataract House livery.

International Hotel livery.

Spencer House livery, also

The liveries at the railroad depots.

The Clifton House livery is owned by J. T. Brundage.

Their drivers are compelled to drive to their "points of interest" first, if possible, often contrary to the wishes of passengers. The

drivers are paid ten dollars (\$10) per month, and commissions as stated, on merchandise purchased by passengers whom they carry to their stores.

From the foregoing it will be seen that the traveling public coming here to visit the State Reservation, is now transferred by the railroad companies, on arrival, to a combination, owning or controlling "points of interest" where admission fees are charged; stores for the sale of merchandise to such visitors, and hotel liveries for hire. I shall be glad to confer further with yourself or Mr. Monett upon this subject.

Believing that when the true state of affairs here becomes known to the railroad companies, they will seek on their part to remove all just cause for complaint, I am

Very truly yours.

THOMAS V. WELCH,
Superintendent.

NEW YORK, N. Y., *October 19, 1887.*

Mr. THOMAS V. WELCH, *Superintendent State Reservation at Niagara, Niagara Falls, N. Y.:*

DEAR SIR.—Your favor of eighteenth instant to Mr. Edson J. Weeks, general agent of this department, at Buffalo, has been referred to me. Your previous complaints against Messrs. C. W. Miller & Co., the firm that controls the hotel liveries and enjoys exclusive privileges at the Niagara Falls stations of the railway companies, were promptly investigated, and simply resulted in drawing out endorsements of the highest character from all the leading hotel proprietors of Niagara Falls. Our local officials report that the interests of our passengers arriving at the Niagara Falls station were never protected so thoroughly as under the present arrangement; a published tariff controls all charges, and passengers are relieved of much of the importunity of hackmen that was formerly the source of great annoyance to visitors upon arrival at the falls.

In your letter to Mr. Weeks under date of the fourteenth ultimo, you present more specific charges, to the effect that the drivers of C. W. Miller & Co. are instructed to take passengers to the bazars, and places of attraction in which Mr. J. T. Brundage, of the firm of C. W. Miller & Co., is personally interested. These charges are being thoroughly investigated, although they have been already denied in a very public manner by the firm of C. W. Miller & Co., and the firm is notified that they must refute the charges to your satisfaction, or to the satisfaction of the commissioners of the State Reservation, with the

least possible delay, or the contract giving the firm exclusive omnibus and carriage privilege at the Niagara Falls station of this company would not be renewed, as it is the earnest desire of the New York Central and Hudson River Railroad Co. to assist the commissioners of the State Reservation at Niagara in the effort to relieve a visit to the great cataract of the petty impositions and annoyances to which visitors were formerly subjected. The commissioners may rely upon the full coöperation of this company in the effort to promote the general reputation of the administration of affairs at the falls.

It is proper, however, to state that the present arrangement with C. W. Miller & Co. was entered into advisedly, and, as the company believed, in the interest of its passengers; and under the circumstances I think you will agree with me that it is only just and proper that the firm of C. W. Miller & Co. should have an opportunity to go before the commissioners and refute, if possible, the very serious public charges against them.

Yours truly,

HENRY MONETT, G. P. A.

NIAGARA FALLS, N. Y., October 24, 1887.

Mr. HENRY MONETT, *General Passenger Agent, N. Y. C. and H. R. R. R., Grand Central Depot, New York City:*

DEAR SIR.—I have your favor of the nineteenth inst., in relation to my letter of the eighteenth, which Mr. Edson J. Weeks forwarded to you.

If you will kindly refer to your letter again I will briefly go over some of the points mentioned by you.

First.—In relation to the endorsement of C. W. Miller & Co. “by all the leading hotel proprietors.” I am informed that the proprietors of the Cataract House receive twenty per cent. of the receipts of the omnibus, baggage and livery business of C. W. Miller & Co. from that hotel. Mr. James T. Brundage, of the firm of C. W. Miller & Co., also leases a store in the hotel. Mr. James T. Brundage leases the livery privileges of the Clifton House, and also leases a store in that hotel. Such being the case, the “endorsement” of the above hotel proprietors is that of persons in business with Messrs. Miller and Brundage, and should be so considered. Messrs. C. W. Miller & Co. also have the omnibus and baggage business of the Hotel Kaltenbach.

I am informed that the proprietors of the International and the Spencer House are dissatisfied with the operations of C. W. Miller & Co. I would be glad to have you write and verify this statement. The proprietor of the Niagara House would also prefer to manage his own business as formerly. The Temperance House, the Prospect House, (American side,) the Hotel Atlantique, and many smaller hotels, whose rights are entitled to respect, are all opposed to the discrimination made against them by the working of the present arrangement.

Second.—In relation to report of local agents, that the interests of passengers are protected under the present arrangement, I respectfully submit that the interests of passengers are not protected, if it be shown that they are turned over on arrival here, into the hands of parties owning or controlling “points of interest,” where admission fees are charged, and stores where commissions are paid, as part equivalent of salaries to drivers, or to parties so much interested in any hotel as to make them partial in the discharge of their duties as common carriers. The point contended for in the report of the superintendent to the commissioners of the State Reservation, reads as follows: “If a company is to be entrusted with the conveyance of railroad passengers, it would seem injustice to the public that it should be entirely free from pecuniary interest in hotel liveries, bazars and points of interest, where commissions are paid and entrance fees collected.”

Third.—In relation to my letter of the 14th ult., to Mr. Edson J. Weeks, permit me to reiterate at this time, every statement made in that letter, and in the reports of the superintendent, which cover a period of observation from May to October, and I desire further to say that the “commission” abuse, although greatly diminished since the establishment of the State Reservation, is now largely carried on by Mr. James T. Brundage, and by the firm of C. W. Miller & Company, who pay their drivers mainly by “commissions” secretly taken from their passengers. Mr. James T. Brundage also pays commissions to all drivers who bring passengers to his points of interest and stores, and is thus largely responsible for the continuance here of practices which should be entirely broken up and abolished.

Fourth.—In relation to entering advisedly into the present arrangement, I do not understand that you were at the time of the granting of the privilege by your company fully informed of the ownership or control by Mr. Brundage (one of the lessees) of the stores and “points of interest” two or more miles distant from the falls to which visitors are now conveyed for the pecuniary benefit of one of the lessees and of the drivers employed by C. W. Miller & Company.

Fifth.—In relation to affording an opportunity to C. W. Miller & Co. to go before the commissioners, I enclose to you herewith a copy of a letter delivered to that firm September 5, extending to them such an opportunity which was not utilized.

I believe that the foregoing are the points covered by your letter. I wish to assure you that the desire of the railroad companies to protect the interests of their passengers, and to coöperate with the commissioners in their efforts to promote the public enjoyment here and to insure to visitors the benefits of the reservation, has not been for a moment doubted.

When it became evident that the travelling public on arrival here were being systematically carried away from the reservation to points where fees are charged, I then considered it my duty as superintendent, to bring the subject to the attention of the commissioners, who instructed me to communicate the facts to the railroad companies, as I have done.

The courtesy and interest which yourself and Mr. Weeks have manifested, assure me that the complaints made will be thoroughly investigated by your company.

Very truly yours.

THOS. V. WELCH,

Superintendent.

NIAGARA FALLS, *September 5, 1887.*

MESSRS. C. W. MILLER & Co., *Niagara Falls, N. Y.:*

DEAR SIR.—A regular meeting of the Commissioners of the State Reservation at Niagara will be held at their office on Bath Island in this village, on Tuesday September 6, 1887, at noon.

Very truly yours.

THOS. V. WELCH,

Superintendent.

NEW YORK, N. Y., *October 25, 1887.*

MR. THOMAS V. WELCH, *Superintendent State Reservation at Niagara Falls, N. Y.:*

DEAR SIR.—I have your favor of the twenty-fourth instant and will follow up the investigation in progress. It is not the purpose of the company to renew the arrangement giving C. W. Miller & Co. the exclusive privileges at the Niagara Falls station unless they can satisfy all concerned that the business can be conducted in an entirely

neutral spirit; and without identification of any character, with particular hotels, bazars or points of interest. We were not aware at the time the contract was made with Mr. Miller, that he was to associate with himself in business any person who was so identified.

As stated in my previous letter to you this company is desirous of strengthening the hands of the commissioners in every way in their great effort to advance the interest of the State Reservation at Niagara. We propose to improve our Lewiston branch along the gorge of Niagara, believing that with frequent train service between Niagara Falls and Lewiston visitors will soon appreciate that a visit to the falls is not complete without a ride along the Niagara gorge over our Lewiston branch.

Yours very truly,

HENRY MONETT, G. P. A.

The restrictions promised in the letter immediately preceding are the same contended for in the report of the superintendent submitted to the board September sixth, in the following words: "If a company is to be entrusted with the conveyance of railroad passengers it would seem, in justice to the public, that it should be entirely free from pecuniary interest in hotel liveries, bazars and points of interest, where commission are paid and entrance fees collected."

I have likewise communicated and conferred with Mr. L. P. Farmer, general passenger agent, N. Y., L. E. & W. R. R., in relation to the exclusive livery privilege granted to C. W. Miller & Co. at the Niagara Falls station of that railroad, and the purposes which such privilege is made to serve. The matter has been taken up for consideration by the passenger agent of the company.

It is desirable that any proposed renewal of the contract for the exclusive privilege of conveying visitors from the Niagara Falls stations of the railroad companies to the reservation, be submitted to the commissioners for examination.

In addition to the points of interest before mentioned admission fees are also charged at the following places:

Buttery's elevator, Whirlpool rapids, American side. Admission fifty cents, driver's commission twenty-five cents on each person.

Manning's elevator, Whirlpool rapids, American side. Admission fifty cents, driver's commission twenty-five cents on each person.

Stores for the sale of souvenirs of Niagara are also established at the above places, and twenty-five per cent commission on goods purchased by passengers is paid to drivers. The business is conducted in the same manner as at the whirlpool on the American side, and Whirlpool Rapids park on the Canadian side, excepting that the man-

agers of the latter places also control hotel liveries, and the exclusive livery privileges at the Niagara Falls stations of the railroad companies, and operate them in connection with stores and points of interest under the same management.

In further compliance with the resolution of the board to report such action as may be necessary to prevent imposition upon the public, I respectfully submit the following statement made by Henry A. Bennett, M. D., of Point Pleasant, N. J., as an illustration of the workings of the "commission" system and of the impositions practiced upon visitors, for which a remedy is desired:

POINT PLEASANT, N. J., *November 19, 1887.*

HON. THOMAS V. WELCH, *Superintendent:*

DEAR SIR.—Knowing of your earnest endeavors to make Niagara Falls and the surrounding points of interest at all times free to be enjoyed by all, whether rich or poor, and also knowing that there are evils existing which obstruct such endeavors, I would like to bring the following facts to your notice, to be made use of by you in any way you may deem proper, to the end that the public shall be protected and benefited:

Upon the ninth instant I reached Niagara Falls, N. Y., *en route* to New York from the Pacific slope. I had never seen the "falls" and had included them among the sights to be seen in my tour across the continent.

It was about two o'clock (Chicago time) when I arrived in town, and finding the Spencer House convenient to the depot, I stopped there. After dinner I asked the office boy who ushered me to my room how I could best see the different points of interest during the little time that remained of the afternoon. He told me that an old gentleman down stairs would furnish me with a carriage and guide at a very moderate rate. After reaching the office an old gentleman stepped up to me and asked me if I did not want a carriage. I answered, "No; I cannot afford one. I am going to walk around." He then told me I could see but little, as it would make a walk of several miles to see all worth seeing, and showed me a card taken from the office desk containing the names of places to be visited. I was startled to learn the distances, and inferred that I could see but little if I walked. Thereupon I asked him what his charges would be. He told me he would send me around to these different places in a comfortable carriage, and under a competent guide, until six o'clock or dark for two dollars.

Knowing this to be a very moderate charge I accepted the offer. He told his driver to "take the gentleman all around." When we started

from the hotel it was 2.40 (Chicago time). Being entirely ignorant of the geography and topography of the place, and being strongly desirous of seeing all I could see that afternoon, as I expected to leave for New York at 6.33 the next morning, I placed myself implicitly in the driver's care. The first place to which he took me was Prospect Park, and after tearing myself away from this place very hastily, in order that I might slight none, he told me that we would next visit the "Whirlpool." I immediately asked about going first to Goat island. He said, "oh, we will go there afterwards, you must see the whirlpool first." Being wholly ignorant of the whole matter, I, of course, allowed him to go on. After a long ride, that seemed to consume much of my precious afternoon, he drove up to a small lodge or cottage. The door was at once opened and I was bade to enter. I was then directed through another door in the rear to the whirlpool. After a moment's stay at this place I started back to the entrance. Upon entering the room a woman accosted me and asked if I should like to see some pretty things. I told her I could give her only a moment. She at once showed me some large photographic views in a set of three. She told me they were three dollars a piece mounted, and two (2) dollars unmounted. I told her I could not afford to buy the set; she then showed me others, but I did not want them. She said that the establishment was supporting an orphan school upon the grounds, and that I should buy, if only to aid them in such a worthy object. Finally, after a conference with another woman and a man, she told me as it was late in the season I could have the first set of unmounted photographs for five (5) dollars. So I bought them. Again she appealed to my charity and begged me to buy some "satin stone ornaments" not for "her good," but all for the "poor orphans." She said they had the sole manufacture of these ornaments. "There was not another place in the country where they could be bought, they did not 'wholesale' them anywhere. The Princess Louise had bought there a whole set, and remember you want to help the poor orphans." Finally I told her I would give seventy-five cents for a pin for which she wanted one dollar, if she would let me go; after paying for my articles I found I was fifty cents short in change, this she said was for my admission. She also wanted me to take a ticket for the "Bridge and Whirlpool Rapids." I told her no, I was not going there. Upon finding the driver, he asked if I had tickets for the bridge and rapids. I answered "No." He told me to get them by all means, as I must see them; so I paid them fifty cents more and secured the desired tickets. I must say I was a little surprised at being charged admission, as I was under the impression that the State had made these

places free to all. Driving from the whirlpool on the American side I was taken across the bridge to the whirlpool rapids on the Canadian side. I was taken down the elevator, after presenting my ticket, by a lad who repeated for my benefit some statements concerning the rapids. Just before ascending he said to me: "I receive no wages for my work, only what the visitors choose to give me." I thereupon gave him twenty-five cents. After reaching the room above I was immediately asked to buy, but I did not. I asked the driver if we could not then go to Goat island. "No," he answered "it is too late. It will be dark when we reach the hotel." So my sight-seeing ended for the day and I must say I felt disappointed with my visit, yet I did not realize that I had been swindled. It was only after an evening visit to a curiosity store and a jeweler's store that my eyes were opened. At the first named place I found photographs the same as mine only *mounted* for \$1.75 a piece, and at another place for \$1.50. I also saw many of the satin stone ornaments at a much lower price than at the "orphan" establishment.

I made some inquiries concerning the differences in prices, and, after recounting my afternoon experiences, I was told I had been swindled. That the owner of the carriage managed the "whirlpool" establishment, and the "orphan scheme" was a lie. I was also told that the drivers got only ten dollars a month salary, and to eke out a living they "suck" the rest from visitors, receiving a commission upon all goods sold and half the gate money. These statements were afterwards corroborated by a jeweler in town, who advised me to state my story to the superintendent. He also said that I had seen nothing worth seeing unless I had visited the "islands" and other places within the "reservation." So, reluctantly, I was compelled to stay over until the next afternoon, and as the whole day proved stormy, and I tramped around on foot, I had a sorry time of it. Yet I would not have come away without seeing what I did see *free* the second day, for \$100.

To sum up my first afternoon's trip cost me as follows: Five dollars for pictures, seventy-five cents for scarf pin, one dollar gate money, twenty-five cents to boy at the Canadian rapids, twenty-five cents "tip" to the driver, and two dollars for carriage, making a total of \$9.25.

Very respectfully.

HENRY A. BENNETT, M. D.

Sworn and subscribed to before me, }
 * this 21st day of November, 1887. }

ALBERT ALLEN,
Notary Public.

The carriage driver complained of in the foregoing statement has been excluded from the reservation for the remainder of the current year, which is the limit prescribed by the ordinances of the commissioners, but the owner or manager of the livery, who also owns and manages the stores and points of interest to which the complainant was taken, and was thus acting in collusion with the driver, suffers no further inconvenience than to be obliged to put another driver in the place of the one excluded from the reservation, and can not be otherwise punished or restrained by the present rules.

In accordance with your instruction to report such action as may be necessary to prevent further imposition upon the public, I respectfully recommend that an ordinance be adopted, authorizing the superintendent, in cases where it is evident to him that the owner of a carriage or carriages, countenances, encourages, or is a party to misrepresentation, imposition, fraud or extortion, practiced upon visitors conveyed to the reservation, to exclude the *carriage* or *carriages* of such owner from the reservation for the remainder of the current year, or for such lesser time as he shall deem proper.

• Very respectfully.

THOS. V. WELCH,

Superintendent.

NIAGARA FALLS, *December 8, 1887.*

STATEMENT OF EXPENDITURES BY THE SUPERINTENDENT,
1887.

Stationery	\$18 05
Tools	208 45
Coal	93 63
Printing and advertising.....	56 25
Sidewalks	697 24
Engineering.....	123 33
Water supply	579 05
Office expenses	285 35
Prospect park	386 92
Buildings	1,907 52
Bridges.....	1,172 94
Incline railway	1,329 75
Carting	28 96
Goat island	517 78
Fences	140 66
Insurance.....	23 75
Luna island stairway.....	422 31
Settees	408 50
	\$8,400 44
Pay-roll for January	\$686 12
Pay-roll for February	663 87
Pay-roll for March.....	779 74
Pay-roll for April.....	996 26
Pay-roll for May.....	1,062 33
Pay-roll for June	1,518 69
Pay-roll for July.....	1,426 67
Pay-roll for August.....	1,635 48
Pay-roll for September.....	1,740 44
Pay-roll for October.....	1,482 33
Pay-roll for November	1,224 14
Pay-roll for December.....	676 37
	13,892 44
Total	\$22,292 88

STATEMENT of *Excursions, 1887*— *Number of excursion trains and places of departure, from May 19, to October 21, 1887.*

1887.		No. of cars.	Estimated No. of visitors.
May	19	Excursion of Danes from Dakota	7 420
"	20	Raymond party from Boston	5 300
"	22	New York Central railroad, party from Buffalo	8 480
"	24	Raymond party from Boston to Indianapolis, to attend M. E. Convention	6 360
"	24	Steamer Chicora from Canada	3 180
"	24	Grand Trunk railway, from Canada	3 180
"	24	Hamilton and St. Catherines	3 180
"	29	Buffalo, N. Y., New York Central railroad	9 540
"	30	Buffalo, N. Y., New York Central railroad	3 180
		47	2,820
June	5	Buffalo, N. Y., New York Central railroad	11 660
"	9	Buffalo, N. Y., International Typographical Union	7 420
"	12	Newark, N. J., via New York and Erie railroad	9 540
"	12	Lockport, N. Y., via New York and Erie railroad	4 240
"	12	Buffalo, N. Y., via New York Central railroad	23 1,380
"	12	Buffalo, N. Y., via New York and Erie railroad	3 180
"	14	Elmira, N. Y., via New York and Erie railroad	2 120
"	14	Lockport, N. Y., via New York and Erie railroad	2 120
"	14	Elmira, N. Y., via Lackawanna railway,	4 240
"	15	Buffalo, N. Y., via New York and Lake Erie railway	17 1,020
"	15	Lockport, N. Y., via New York and Lake Erie railway	4 240
"	15	Rochester, N. Y., via New York and Lake Erie railway	3 180
"	15	New York Central railway, New York, from different points	54 3,240
"	16	Toronto, Ont	5 300
"	16	Lockport, N. Y.	6 360
"	18	Grand Trunk railway employes, from Toronto and Hamilton	1,500
"	18	Clarence, N. Y., via West Shore railway,	4 240
"	19	Buffalo, N. Y., via New York Central railway	11 660

Statement of Excursions, 1887. — (Continued).

1887.		No. of cars.	Estimated No. of visitors.
June	19	Meadville, Pa., Buffalo and North-western railway	4 240
"	21	Lockport Evangelical church, via Erie railway	3 180
"	21	Phoenix and Fulton, N. Y., via Rome, Watertown and Ogdensburg railway, York Co., Ont.	9 540
"	22	Richmond Avenue New Disciples church, Buffalo	3 180
"	25	Painters' Union	4 240
"	25	Buffalo, New York Central railway	2 120
"	26	Buffalo, Erie railway	14 840
"	26	Buffalo, Prospect Avenue Baptist church, Oil City, Pa.	3 180
"	28	Buffalo, Prospect Avenue Baptist church, Oil City, Pa.	9 540
"	28	Via Rome, Watertown and Ogdensburg railway	2 120
"	29	Lockport, N. Y.	6 360
"	29	Erie railway	4 240
"	29	Buffalo, N. Y., Delaware Avenue Baptist, Glenwood Avenue and High Street Mission Sunday schools.	3 180
"	30	Lockport, N. Y., Universalist church.	11 660
"	30	Warsaw, N. Y.	4 240
"	30	Jamestown, N. Y.	1 60
			4 240
		255	16,800
July	1	Toronto, Ont., via Erie railway	5 300
"	1	Toronto, Ont., via New York Central railway	1 60
"	1	Akron, Ohio, via Erie railway	8 480
"	1	Buffalo, N. Y., St. John's society.	10 600
"	1	Hamilton, Ont.	7 420
"	1	Fort Erie, Ont.	4 240
"	3	Cleveland, via Nickel Plate	15 900
"	3	West Shore railway, along the line—three sections.	24 1,440
"	3	Buffalo, N. Y., via Erie railway	10 600
"	3	Buffalo, N. Y., via New York Central railway	22 1,320
"	3	Jersey City, N. J., via New York Central railway	7 420
"	3	New York city, N. Y., via R. Weinact. excursion	2 120
"	3	Buffalo, N. Y., via Erie railway	10 600
"	4	Rochester, N. Y., via New York Central railway	5 300

Statement of Excursions, 1887.—(Continued).

1887.		No. of cars.	Estimated No. of visitors.
July	4	Buffalo, N. Y., via New York Central railway	11 660
"	4	New York Harmonia society	3 180
"	4	Guelph, Ont., C. M. B. A. society	7 420
"	5	Toronto, Ont.	2 120
"	6	North American Turner Bund.	16 960
"	7	Teachers' convention, from Brooklyn, N. Y.	200
"	7	Toronto, Ont., Ascension church	6 360
"	8	Youngstown, O.	7 420
"	10	Buffalo, N. Y., via New York Central railway	16 960
"	10	Buffalo, N. Y., via West Shore railway	5 300
"	10	Buffalo, N. Y., via Erie railway	3 180
"	12	New York City	2 120
"	12	Cincinnati, O.	2 120
"	13	Boston, Mass., Raymond excursion	2 120
"	14	Lockport, N. Y., via Erie railway	9 540
"	14	Jamestown, N. Y.	5 300
"	14	Cincinnati, O.	4 240
"	14	Toronto, Ont.	2 120
"	16	Buffalo, N. Y., via New York Central railway	8 480
"	16	Buffalo, N. Y., via New York and Erie railway	6 360
"	16	Palestine Singing Society, New York	2 120
"	16	Toronto, Ont.	3 180
"	16	Cleveland, Ohio	8 480
"	17	Youngstown and Cleveland, Ohio	9 540
"	17	Buffalo, N. Y., via New York Central railroad	18 1,080
"	17	Buffalo, N. Y., via West Shore railroad	7 420
"	18	Toronto, Ont., St. Michael's Society	6 360
"	19	Toronto, Ont., St. George's Society	7 420
"	20	Lockport, N. Y., Methodist Church Society	4 240
"	20	Buffalo, N. Y., St. Luke's Church Society,	6 360
"	20	New York City, Harugari Society	14 840
"	21	Toronto, Ont.	6 360
"	21	Corry and Oil City, Pa.	8 480
"	21	Attica, N. Y., Presbyterian Church Society	11 660
"	22	Toronto, Ont.	10 600
"	22	Cincinnati and Cleveland, Ohio	14 840
"	23	Employes Great Western railway, Bradford, Ont.	29 1,740
"	23	Buffalo, N. Y., New York Central railway	5 300

Statement of Excursions, 1887.— (Continued).

1887.		No. of cars.	Estimated No. of visitors.
July	24	Buffalo, N. Y., via New York Central railway	34 2,040
"	24	Rochester, N. Y., via New York Central railway	10 600
"	24	Jamestown, N. Y., via Boston, New York and Pennsylvania railway	2 120
"	24	Buffalo, N. Y., via Erie railway	10 600
"	26	Toronto, Ont.	4 240
"	26	Brownsville, Ont.	4 240
"	27	Buffalo, N. Y., Presbyterian Church Sunday school	5 300
"	27	Brantford, Ont.	9 540
"	27	Buffalo, N. Y.	6 360
"	27	Stafford and Batavia, N. Y., via Erie railway	5 300
"	27	Clifton Camp Ground, Ont.	10 600
"	28	Guelph, Ont.	9 540
"	28	Via Buffalo, Rochester and Pittsburgh railway	12 720
"	28	Oil City and Corry, Pa.	9 540
"	28	Goderich, Ont.	10 600
"	29	Toronto, Ont.	2 120
"	30	Chautauqua, N. Y.	7 420
"	30	Woodstock, Ont.	12 720
"	30	Buffalo, N. Y., via Erie railway	8 480
"	30	Buffalo, N. Y., via New York Central railway	6 360
"	30	Springville, N. Y., via Erie railway	1 60
"	30	Cleveland, O., via L. S. & M. S. railway	8 480
"	30	Toronto, Ont.	7 420
"	31	Buffalo, N. Y., via New York Central railway	32 1,920
"	31	Buffalo, N. Y., via West Shore railway	10 600
"	31	Lockport, N. Y., via New York Central railway	6 360
"	31	Lockport, N. Y., via Erie railway	2 120
"	31	Buffalo, N. Y., via Erie railway	5 300
"	31	Bradford, Pa.	6 360
		664	40,040
Aug.	1	Toronto, Ont., Safe Manufacturing Association	4 240
"	2	Toronto, Ont.	6 360
"	2	Jamestown, N. Y.	11 660
"	3	Brantford, Ont.	7 420
"	3	Indiana, via Nickel Plate railway	17 1,020

Statement of Excursions, 1887. — (Continued).

1887.		No. of cars.	Estimated No. of visitors.
Aug. 3	Whitby, Ont.	8	480
" 4	Tonawanda, N. Y., Christ's Church society.....	7	420
" 4	Rochester, N. Y., Clan McNaughton via Rome, Watertown and Ogdensburgh railway.....	8	480
" 4	Lake Simcoe, Ont., via Michigan Central railway.....	6	360
" 4	Oakville, Ont.	8	480
" 4	Cincinnati, Hamilton and Dayton railway.....	100	6,000
" 4	Hamilton, Ont., Scotch societies.....	16	960
" 4	St. Thomas, Ont., via Michigan Central railway.....	19	1,140
" 5	Toronto, Ont.	2	120
" 6	Carlton, N. Y., via Rome, Watertown and Ogdensburgh railway.....	14	840
" 6	Buffalo, N. Y., via New York Central railway.....	8	480
" 6	Chautauqua, N. Y., via Buffalo, New York and Philadelphia.....	4	240
" 6	Toronto, Ont., Grand Trunk railway, Canada.....	11	660
" 7	Newark, N. J., via Erie railway.....	17	1,020
" 7	Buffalo, N. Y., via Erie railway.....	13	780
" 7	Buffalo, N. Y., via New York Central railway.....	36	2,160
" 7	Brooklyn, N. Y., Foresters' society . . .	2	120
" 8	Hamilton and Dundas, Ont., Civic Holiday	14	840
" 9	Toronto, Ont., Elm St. Church.....	6	360
" 9	Chautauqua, N. Y., via Buffalo, New York and Philadelphia railway.....	8	480
" 9	Ingersoll, Ont.	6	360
" 9	Toronto, Ont.	4	240
" 10	Paris, Ont.	16	960
" 10	Bloomington, Indiana Western railway.	36	2,160
" 10	Buffalo, N. Y., Methodist church via Erie railway.....	7	420
" 10	Galion, O.	14	840
" 10	Akron, O.	15	900
" 10	Cleveland, O.	13	780
" 10	Lockport, N. Y.	7	420
" 11	Ohio and Illinois.....	24	1,440
" 11	Greenville, Ill., via New York, Pennsylvania and Ohio railway.....	10	600
" 11	Jamestown, N. Y., Ancient Order United Workmen's society.....	10	600

Statement of Excursions, 1887.—(Continued).

1887.		No. of cars.	Estimated No. of visitors.
Aug. 12	Toronto, Ont.....	3	180
" 12	Oshawa, Ont.....	4	240
" 13	Via Rome, Watertown and Ogdensburgh and Midland railway.....	5	300
" 13	Brockport, N. Y., and along New York Central railway, Ancient Order United Workmen.....	14	840
" 13	Buffalo, N. Y., via New York Central railway.....	14	840
" 13	Lake Shore and Michigan Southern railway.....	10	600
" 13	Chautauqua.....	8	480
" 13	Bradford, Pa.....	9	540
" 14	Buffalo, N. Y., via Erie railway.....	12	720
" 14	Buffalo, N. Y., via New York Central railway.....	34	2,040
" 14	Emporium, N. Y., via Buffalo, New York, and Philadelphia railway.....	9	540
" 15	Toronto, Ont.....	14	840
" 15	St. Catherines, Ont.....	4	240
" 16	Michigan and along line Nickel Plate railway.....	22	1,320
" 16	Rome, Watertown and Ogdensburgh railway.....	7	420
" 16	Chautauqua.....	4	240
" 16	Michigan Central railroad.....	3	180
" 17	Lockport Evangelical Church, via Erie railway.....	9	540
" 17	Via C. C. C. and I. railway.....	23	1,380
" 17	Oil City, Pennsylvania.....	9	540
" 17	Via New York, Pennsylvania and Ohio.....	11	660
" 17	Corning, N. Y., and along Erie railway.....	11	660
" 17	Buffalo, N. Y., via New York Central railway.....	5	300
" 17	Bellefontaine, O.....	12	720
" 18	Beamsville, Ont.....	9	540
" 18	Rochester, N. Y., Second Reformed church.....	9	540
" 18	Toronto, Ont.....	8	480
" 18	Mt. Morris, Corning and Bath, N. Y.....	24	1,440
" 18	Michigan Central railway.....	21	1,260
" 18	Buffalo, N. Y., via Erie railway.....	5	300
" 19	Via Erie railway.....	4	240
" 19	Canton, Ohio.....	6	360
" 20	Via Rome, Watertown and Ogdensburgh railway.....	11	660
" 20	Jamestown, N. Y.....	6	360

Statement of Excursions, 1887. — (Continued).

1887.		No. of cars.	Estimated No. of visitors.
Aug. 20	Leroy, N. Y., via Erie railway	6	360
" 20	St. George, Ont., Mechanics' Institute..	7	420
" 20	Michigan Central railway	6	360
" 20	Chautauqua, N. Y.	5	300
" 20	Buffalo, N. Y., New York Central railway	6	360
" 21	Mohawk Valley	10	600
" 21	Buffalo, N. Y., via New York Central railway	24	1,440
" 21	Rochester, N. Y., "Blue Env." excursion	7	420
" 21	Lockport, N. Y., via Erie railway	8	480
" 22	Burlington, Ont.	6	360
" 22	Woodstock, Ont., via Grand Trunk railway	8	480
" 23	Rochester, N. Y., via New York Central railway	13	780
" 23	Fredonia, N. Y.	3	180
" 23	Toronto, Ont.	5	300
" 23	Chautauqua, N. Y.	4	240
" 24	Butler, Pennsylvania, via Erie railway .	7	420
" 24	C. C. C. & I. railway, from Cincinnati, O.	32	1,920
" 24	Lockport, N. Y.	3	180
" 24	Toronto, Ont.	3	180
" 24	Illinois and Kentucky, via New York Central railway	20	1,200
" 25	Buffalo, N. Y., Hudson St. Baptist church	8	480
" 25	Erie, Pa.	6	360
" 25	Toronto, Ont.	5	300
" 25	Brantford, Ont.	5	300
" 25	Lockport, N. Y., via Erie railway	4	240
" 25	Buffalo, N. Y., via Erie railway	3	180
" 26	Cleveland, O., via Nickel Plate railway .	8	480
" 26	Toronto, Ont.	5	300
" 27	Via Rome, Watertown and Ogdensburg railway	6	360
" 27	Buffalo, N. Y., via New York Central railway	13	780
" 27	Toronto, Ont.	7	420
" 27	Syracuse, N. Y., via West Shore railway	12	720
" 27	Utica, N. Y.	9	540
" 27	Erie, Pennsylvania.	9	540
" 27	Chautauqua, N. Y.	6	360
" 28	Middletown and Port Jervis, via Erie railway	17	1,020
" 28	Buffalo, N. Y., via New York Central railway	31	1,860
" 28	Buffalo, N. Y., via West Shore railway .	10	600
" 28	Rochester, N. Y., via New York Central railway	4	240

Statement of Excursions, 1887. — (Continued).

1887.		No. of cars.	Estimated No. of visitors.
Aug. 28	Lockport, N. Y., via Erie railway	4	240
" 28	Pittsburgh, Pa	5	300
" 30	Buffalo, N. Y., via Erie railway	2	120
" 30	Toronto, Ont., Grace Church Sunday school	3	180
" 31	Cleveland, O., Butler excursion	8	480
		1,246	74,760
Sept. 1	Cleveland, O.	8	480
" 1	Easton and Guelph, Ont.	20	1,200
" 1	Erie, Pa.	6	360
" 1	Adams, N. Y., via Rome, Watertown and Ogdensburgh railway	7	420
" 1	Buffalo, N. Y., via New York Central and Erie railway	7	420
" 1	Oil City, Pa	6	360
" 1	Gowanda, N. Y.	4	240
" 2	Sanborn and Dickersonville (in wagons)		120
" 2	Toronto, Ont., via steamers Chicora and Empress of India	10	600
" 3	Toronto, Ont., Stone Masons' and Bricklayers' Union	9	540
" 3	Buffalo, N. Y., via New York Central railway	5	300
" 3	Buffalo, N. Y., via West Shore railway	2	120
" 4	Bay City, Saginaw and Detroit, Mich.	12	720
" 4	Youngstown, O	6	360
" 4	Buffalo, N. Y., via New York Central railway	22	1,320
" 4	Buffalo, N. Y., via West Shore railway	6	360
" 4	Buffalo, N. Y., via Erie railway	14	840
" 4	Rochester, N. Y., via Erie railway	7	420
" 4	Peoria, Ills.	8	480
" 5	Buffalo, N. Y. via Erie railway	4	240
" 6	Perry, N. Y., via Erie railway	12	720
" 7	Buffalo, N. Y., via Erie railway	1	60
" 7	Seranton, Pa., via Erie railway	6	360
" 8	Philadelphia, Pa., Carpenters' Association	4	240
" 8	Reading, Pa.	5	300
" 8	Ohio and Illinois, via C. C. C. & I. railway	18	1,080
" 8	Hornellsville, N. Y.	5	300
" 8	Titusville and Oil City	10	600
" 10	Boston, Mass., Raymond party	3	180
" 11	Albany, N. Y., via New York Central railway	21	1,260

Statement of Excursions, 1887. — (Continued).

1887.		No. of cars.	Estimated No. of visitors.
Sept. 11	Buffalo, N. Y., via New York Central railway	21	1,260
" 11	Buffalo, N. Y., via West Shore railway..	6	360
" 11	Lockport, N. Y.	4	240
" 12	Washington, D. C., Medical convention.	16	960
" 12	Tonawanda, N. Y., Presbyterian church.	2	120
" 12	San Diego, Cal., "City band"	1	60
" 13	Pendleton, N. Y., via Erie railway	6	360
" 13	Jamestown, N. Y., via New York Central railway	6	360
" 15	Rochester, N. Y.	10	600
" 15	Olean, N. Y.	8	480
" 15	Tonawanda, N. Y.	8	480
" 15	Lockport, N. Y.	12	720
" 18	Cleveland, O.	6	360
" 18	Lockport, N. Y.	3	180
" 18	Buffalo, N. Y., via New York Central railway	21	1,260
" 18	Buffalo, N. Y., via Erie, Socialist Society	6	360
" 20	Via Rome, Watertown and Ogdensburgh railway	10	600
" 22	Blossburgh, Pa	4	240
" 25	Lockport, N. Y., via Erie railway	3	180
" 25	Rome, N. Y., via Rome, Watertown and Ogdensburgh railway	6	360
" 25	Cleveland, O., via C. C. C. & I. railway.	12	720
" 25	Buffalo, N. Y., via New York Central railway	13	780
" 29	Albany and Troy, via New York Central railway	8	480
		440	26,520
Oct. 1	Dunkirk, N. Y., via New York Central railway	5	300
" 1	Buffalo, N. Y., Grand Army of the Republic convention	2	120
" 4	Boston, Mass., Raymond party	2	120
" 5	Scranton, Pa.	11	660
" 13	Marquette, Mich., via H. & N. W. railway	12	720
" 13	Cleveland, O., via New York, Pennsylvania and Ohio railway	4	240
" 14	Auburn, N. Y., via New York Central railway	6	360
" 15	Geneva, O.	8	480
" 15	Buffalo, N. Y., via New York Central railway	5	300

Statement of Excursions, 1887—(Concluded).

1887.		No. of cars.	Estimated No. of visitors.
Oct. 18	Salamanca and Allentown, Pa., via Erie railway	8	480
“ 21	Chicago, Ill., via West Shore railway...	6	360
		69	4,140
Dec. 2	Excursion from Minnesota, on a trip to Europe	20	1,200

RECAPITULATION.

	Cars.	Persons.
Excursions in May	47	2,820
Excursions in June	255	16,800
Excursions in July	664	40,040
Excursions in August	1,246	74,760
Excursions in September	440	26,520
Excursions in October	69	4,140
Excursions in December	20	1,200
	2,741	166,280

Statement of monthly receipts from leases, sales and inclined railway, 1887.

MONTH.	Inclined railway.	Leases.	Sales.	Totals.
January	\$27 35	\$16 00	.....	\$43 35
February.....	34 30	16 00	\$1,000 00	1,050 30
March	18 15	16 00	.....	34 15
April	20 40	16 00	.....	36 40
May	229 20	116 00	84 62	429 82
June	721 50	126 00	.....	847 50
July	1,467 80	326 00	.....	1,793 80
August	2,361 00	310 00	25 75	2,696 75
September.....	1,085 05	605 00	505 00	2,285 05
October	276 70	.....	10 00	286 70
November.....	69 40	.....	12 00	81 40
December.....	48 20	.....	12 60	60 80
	\$6,359 05	\$1,547 00	\$1,739 97	\$9,646 02

Statement of Property Sold, 1887.

1887.			
Feb.	16.	J. & A. Reid, Quebec, pulp mill machinery	\$1,000 00
May	3.	J. Brooks, lot of old fence (\$1.00)	1 00
	9.	J. Berry, 1,825 lbs. old iron, at $\frac{1}{2}$ c.	8 62
	11.	G. W. Hawley, Prospect Point Bazar (75c.)	83 62
Aug.	2.	J. Berry, 780 lbs. old cable, at \$3.30	25 75
Sept.	17.	J. T. Brundage, Prospect Park cottage	595 00
Oct.	12.	P. B. Secord, one old saw table	10 00
			\$1,715 37
Nov.	19.	Mr. Turver, one coal shed	\$3 00
	22.	Pettenbone Paper Co., one cupola	5 00
	25.	John Welch, eleven pieces old tile (\$1.00), three loads of boards (3.00)	4 00
Dec.	22.	M. H. Kinsley, hay	9 00
	23.	C. F. Giroux, six 6 ft. sash, at 60c.	3 60
			24 60
			\$1,739 97

Statement of Rentals, 1887.

Lease No.	3.	J. T. Eeckert, cottage	\$64 00
Lease No.	3.	M. Burns, cottage	48 00
			\$112 00
Lease No.	16.	Maid of the Mist Association, dock	500 00
Lease No.	12.	J. F. Reilly, check room	35 00
Lease No.	10.	G. W. Wright, Cave of the Winds	800 00
		Reservation Carriage Service Company	100 00
			\$1,547 00
			\$1,547 00

INVENTORY OF ALL ARTICLES OF MAINTENANCE ON HAND UPON THE
STATE RESERVATION AT NIAGARA.

September 30, 1887.

Two cars on incline railway	\$600 00
Three hundred and sixty-five feet, three-and-a-half inches manilla cable	147 98
One wire safety cable, with attachment	720 00
Extra gearing, three bevel wheels, and large attachment	33 97

Superintendent's Office.

Two office desks.....	\$40 00
One wardrobe.....	16 00
Two arm-chairs.....	10 00
Four arm-chairs.....	12 00
One clock.....	4 00
One stove....	12 00
Three common window shades.....	2 00
One set window curtains.....	6 00
One letter press.....	6 00
One plain deal table.....	1 50
One water cooler.....	3 00
One coal-box.....	2 00
Two small coal stoves.....	12 00

Gate-Houses.

Three stoves.....	17 00
Four arm-chairs.....	3 50
Four common chairs.....	3 00
One cup-board stand.....	3 00
One scuttle and fire shovel.....	50
One coal-box.....	2 00

Commissioner's Office.

One director's table.....	50 00
One corner table.....	3 00
Six arm chairs.....	60 00
One arm-chair.....	3 00
One letter press, with stand.....	6 00
One safe.....	40 00
One coal stove.....	40 00
One coal hod, shovel and poker.....	1 50
One chandelier.....	2 00
One calendar clock.....	7 50
Seven curtains and fixtures.....	5 00

Tools.

Seven rakes (wood).....	4 20
Four short-handle shovels.....	4 20
Nine long-handle shovels.....	6 75
Six wheelbarrows.....	7 80
Seven snow-shovels.....	3 10

Three hundred and fifty feet rubber hose		\$52 50
Six brooms		1 80
One cross-cut saw		1 50
Seven pick-axes		5 60
Three grubbing hoes		3 00
Two forks		1 50
One axe		75
Five crow-bars		2 50
Fifty pounds galvanized staples	\$4 00	
Four hundred and forty-three pounds ribbed wire,	24 36	
Four hundred and thirty pounds buck wire	27 95	
Stretcher, etc	1 50	
		<hr/> 57 81
One lot old timber (12,500 feet) at \$20 per thousand		250 00
One hundred cords stone		300 00
Eleven hundred and ten feet of two-inch water pipe, with attachments		222 49
Four stand pipes, with attachments, at \$75 each		300 00

Pavilion.

Seventy-two settees, wood, at \$4 each		288 00
One hundred settees, iron, at \$4 each		400 00
Three tons, nut coal, at \$5.45		16 35
		<hr/> <hr/> \$3,805 30

I certify, that the foregoing is a correct and complete inventory, of all articles of maintenance on hand, upon the State Reservation at Niagara, September 30, 1887.

THOMAS V. WELCH,
Superintendent.

LAWS OF NEW YORK. — By Authority.

[Every Law, unless a different time shall be prescribed therein, shall commence and take effect throughout the State, on and not before the twentieth day after the day of its final passage, as certified by the Secretary of State. Sec. 12, title 4, chap. 7, part 1, Revised Statutes.]

CHAPTER 656.

AN ACT to amend chapter two hundred and eighty-six of the laws of eighteen hundred and eighty-five, entitled "An act to provide for the maintenance and management of the State Reservation at Niagara," and making an appropriation therefor.

PASSED June 23, 1887; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section one of chapter two hundred and eighty-six of the Laws of eighteen hundred and eighty-five, is hereby amended to read as follows:

§ 1. The State Reservation at Niagara shall be under the control and management of the Commissioners of the State Reservation at Niagara and their successors in office. A majority of said commissioners shall constitute a quorum for the transaction of business. Said commissioners shall have power to lay out, manage, and maintain said reservation and make and enforce ordinances, by-laws, rules and regulations necessary to effect the purpose thereof and for the orderly transaction of business not inconsistent with the laws of this State; to fix the prices to be charged by drivers of public conveyances for carrying persons, for hire within the limits of said reservation; to appoint a superintendent and to employ such other persons as may be needed, one or more of whom, to be designated by the commissioners, shall have the powers and may perform the duties of a police constable in criminal cases. Said commissioners shall also have the power to fix the compensation of the persons who may be appointed or employed by them. But no debt or obligation shall be created by said commissioners exceeding the amount of moneys at the time at their disposal. No one or more of said commissioners, nor any other person shall have power to create any debt, obligation, claim or liability for or on account of said commissioners, except by the express authority of said commissioners conferred at a meeting thereof. On the first day of October eighteen hundred and eighty-seven, the said commissioners shall pay into the treasury of the State all moneys which may be in their hands as such commissioners, and shall on the first day of each and every month thereafter pay into the treasury of the State all receipts and

earnings of whatever nature, other than receipts from the State Treasurer.

§ 2. Section two of said act is hereby amended to read as follows:

§ 2. The said board shall sell and cause to be removed from said reservation all structures, machinery and materials thereon belonging to the State not required to afford free and convenient access to said reservation, nor for restoring the scenery of the Falls of Niagara, to and preserving it in its natural condition, and up to the first day of October, eighteen hundred and eighty-seven, may apply the proceeds of such sales to the payment of the expenses of such restoration and the maintenance of said reservation.

§ 3. Section four of said act is hereby amended to read as follows:

§ 4. Real and personal property may be granted, conveyed, bequeathed or devised to and taken by the State of New York, in aid of the purposes of said reservation or to increase the same, and upon such trusts or conditions as may be prescribed by the grantors or devisors thereof, provided the same be accepted or agreed to in writing by the said commissioners. All such property shall be managed and controlled by the said commissioners, and the rents, issues and profits thereof shall be turned into the State treasury as provided for above, except where said rents, issues and profits were specifically devised or bequeathed to be used for a specific and definite purpose.

§ 4. Section five of said act is hereby amended to read as follows :

§ 5. In the month of January of every year the said commissioner shall make to the Legislature a report of their proceedings and a statement in detail of all their receipts and expenditures for the next preceding fiscal year. They shall also submit therewith an estimate of the work necessary to be done and of the expenses of maintaining the said reservation for the ensuing fiscal year and shall make such recommendations as they shall see fit. And after October first, eighteen hundred and eighty-seven, the said commissioners shall, quarterly, on January first, April first, July first and October first of each fiscal year send to the Comptroller* a detailed, itemized and particular account of all receipts and expenditures, with sub-vouchers for the items thereof, for the preceding quarter, such accounts shall be verified by the oath or affirmation of the said commissioners or their treasurer.

§ 5. Section six of said act is hereby amended to read as follows :

§ 6. The treasurer appointed by the commissioners pursuant to the provisions of chapter three hundred and thirty-six of the laws of eigh-

* So in the original.

teen hundred and eighty-three shall give a bond to the people of the State with two or more sufficient sureties to be approved by the Comptroller in such sum as the commissioners shall determine, to the effect that he will faithfully perform the duties of his office and account for all moneys coming into his hands by virtue of his office as treasurer. Said bond shall be filed in the office of the Secretary of State.

§ 6. The following additional section is hereby added to the said act :

§ 7. Any moneys appropriated for caring for and maintaining said State Reservation at Niagara, and carrying out the provisions of this act, shall be paid to the order of the treasurer of the said commission by the Treasurer of the State upon the warrant of the Comptroller. But no warrant shall be issued until the amounts claimed shall have been audited and allowed by the Comptroller, who is hereby authorized to determine the same, except that upon the requisition of the treasurer of the said commission the Comptroller may advance out of said sum appropriated whatever moneys he may deem necessary for the proper carrying out of the provisions of this act.

§ 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

§ 8. The sum of twenty thousand dollars is hereby appropriated out of any moneys in the State treasury not otherwise appropriated, for the care and maintenance of the State Reservation at Niagara during the fiscal year which commences on the first day of October, eighteen hundred and eighty-seven.

§ 9. This act shall take effect immediately.

STATE OF NEW YORK, }
OFFICE OF THE SECRETARY OF STATE, } ss.:

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

FREDERICK COOK,
Secretary of State.

REPORT OF THE TREASURER FOR 1887.

RECEIPTS.

1887.	Balance from 1886.....	\$11,843 15
Feb. 3.	Draft for reservation receipts in January ...	43 35
March 7.	Draft for reservation receipts in February...	1,050 30
April 7.	Draft for reservation receipts in March.....	34 15
May 10.	Draft for reservation receipts in April.....	36 40
June 6.	Draft for reservation receipts in May.....	429 82
July 5.	Draft for reservation receipts in June.....	847 50
August 4.	Draft for reservation receipts in July.....	1,793 80
Sept. 5.	Draft for reservation receipts in August....	2,696 75
Sept. 30.	Draft for reservation receipts in September..	2,273 10
Oct. 22.	From State Comptroller, one-fourth appropriation of \$20,000, chapter 656, Laws of 1887,	5,000 00
Nov. 2.	Draft for reservation receipts in October....	298 65
Dec. 1.	Draft for reservation receipts in November...	81 40
1888.		
Jan. 3.	Draft for reservation receipts in December...	60 80
1887.		
Dec. 31.	Interest on funds in bank to date.....	272 58
	Error in making draft of August fourth....	10
		\$26,761 85

EXPENDITURES.

	1887.	No. of Abstract.	No of Voucher.		
Mar.	5.	xxx	270.	Leighton Williams, expenses as treasurer in 1886.....	\$20 18
	14.	xxx	271.	David Gray, treasurer, traveling expenses as treasurer	34 69
Jan.	24.	xxx	272.	W. H. Brook, bill withdrawn .....	.....
Feb.	1.	xxx	273.	Pay-roll for January....	686 12
	[Assembly, No. 19.]				8

1887.	No. of Abstract.	No. of Voucher.			
Feb.	3. xxx	274.	T. V. Welch, superintendent, traveling and office expenses.....	\$22	97
	28. xxx	275.	Pay-roll at Niagara for February	663	87
	28. xxx	276.	T. V. Welch, superintendent, traveling and office expenses.....	47	69
Mar.	31. xxx	277.	David Gray, treasurer, salary January and February, at \$91,66...	183	32
	31. xxx	278.	David Gray, treasurer, office expenses.....	34	18
					<hr/>
					\$1,693 02
Mar.	1. xxxi	279.	H. S. Ware, hardware, etc.,	\$28	80
	1. xxxi	280.	Secord & Co., lumber, etc.,	76	11
	1. xxxi	281.	Joseph McKenna, furniture	9	83
	1. xxxi	282.	John Johnson, tools, etc.,	7	35
	1. xxxi	283.	H. S. Ware, hardware...	48	62
	1. xxvi	284.	Rhodes & Babcock, stationery	11	35
	1. xxxi	285.	Drake Whitney, surveying.....	123	33
	1. xxxi	286.	S. S. Pomroy, printing..	8	25
	1. xxxi	287.	H. S. Ware, hardware...	12	70
	1. xxxi	288.	Bell Telephone Company of Buffalo, rent of instrument at Niagara,	13	40
	1. xxxi	289.	J. Binkley, coal.....	47	28
	1. xxxi	290.	P. A. Porter, printing...	14	50
	1. xxxi	291.	Isaac Davy, manure....	3	00
	1. xxxi	292.	P. C. Flynn & Son, painting.....	42	63
					<hr/>
April	1. xxxii	293.	Pay-roll at Niagara, for March	\$779	74
	1. xxxii	294.	T. V. Welch, superintendent, traveling and office expenses	47	06
	1. xxxii	295.	Martin B. Brown, printing,	122	00
	1. xxxii	296.	David Gray, treasurer, traveling expenses....	32	20
					<hr/>
					447 15

	1887.	No. of Abstract.	No. of Voucher.			
	Mar.	8.	xxxii	297.	M. B. Anderson, commis- sioner, traveling ex- penses	\$36 36
		16.	xxxii	298.	Matthews & Northrup, printing	23 00
		18.	xxxii	299.	David Gray, treasurer, traveling expenses. . . .	24 80
		31.	xxxii	300.	Sherman S. Rogers, com- missioner, expenses in 1885, 1886 and 1887. . .	202 00
		31.	xxxii	301.	Geo. H. Dunston, print- ing and engraving check book.	14 00
	May	2.	xxxii	302.	Pay-roll at Niagara, for April	996 26
		2.	xxxii	303.	T. V. Welch, superintend- ent, traveling and office expenses	22 05
					—————	\$2,299 47
		25.	xxxii	304.	The Howard Iron Works, safety cable for inclined railway	\$720 00
		24.	xxxii	305.	Charles E. Emery, C. E., supervising safety cable,	304 87
	June	1.	xxxii	306.	Pay-roll at Niagara, for May	1,062 33
		1.	xxxii	307.	T. V. Welch, superintend- ent, traveling and office expenses	4 79
	July	1.	xxxii	308.	Ray-roll at Niagara, for June	1,518 69
		1.	xxxii	309.	T. V. Welch, superintend- ent, office expenses. . . .	2 10
		1.	xxxii	310.	David Gray, treasurer, office expenses.	33 47
		1.	xxxii	311.	David Gray, treasurer, salary four months to date	366 66
	June	17.	xxxii	312.	Courier Company, letter- heads.	8 00
					—————	4,020 91

	1887.	No. of Abstract.	No. of Voucher.			
April	16.	xxxiii	313.	Wm. Pool & Son, adver- tising.....	\$3	50
	26.	xxxiii	314.	J. Binkley, coal.....	30	00
	27.	xxxiii	315.	Phillips & Wright, exam- ining bridges.....	10	00
	24.	xxxiii	316.	Wm. Walls' Sons, manilla cable for inclined rail- way.....	147	98
	25.	xxxiii	317.	Wm. Young, cartage....	28	96
July	1.	xxxiii	318.	H. S. Ware, hardware, tools, etc....	250	54
	1.	xxxiii	319.	Bell Telephone Company of Buffalo, rent of instrument.....	12	20
	1.	xxxiii	320.	P. B. Secord, sidewalks..	94.	79
	1.	xxxiii	321.	S. S. Pomroy, advertis- ing.....	3	00
May	31.	xxxiii	322.	John Johnson, tools....	12	15
June	4.	xxxiii	323.	George E. Wright & Co., carpenter work.....	188	67
July	1.	xxxiii	324.	William Shepard, mason work and material....	50	87
	6.	xxxiii	325.	Thomas Sutton, drilling well.....	286	00
	1.	xxxiii	326.	P. C. Flynn & Son, paint- ing.....	181	10
	6.	xxxiv	327.	William Dorsheimer, com- missioner, expenses from July 1885 to date,	\$77	50
	6.	xxxiv	328.	David Gray, treasurer and secretary, office and traveling expenses....	33	13
						<hr/>
					\$1,299	76
						<hr/>
						110 63
Aug.	1.	xxxv	329.	Pay-roll at Niagara for July.....	\$1,426	67
	1.	xxxv	330.	T. V. Welch, superintend- ent, petty disburse- ments.....	17	61
July	22.	xxxv	331.	F. P. Lanigan, agent, insurance.....	20	00

1887.	No. of Abstract.	No. of Voucher.			
Sept. 1.	xxxv	332.	Pay-roll at Niagara for August	\$1,635 48	
	1. xxxv	333.	David Gray, treasurer and secretary, salary two months to date	183 32	
	5. xxxv	334.	David Gray, treasurer and secretary, office and traveling expenses....	5 13	
				<hr/>	\$3,288 21
Aug. 16.	xxxvi	335.	Wm. Young, cartage	\$11 70	
				<hr/>	11 70
April 16.	xxxvi	336.	G. S. Hanes, agent, grass- seed.....	\$4 64	
Aug. 17.	xxxvi	337.	James Reynolds, mason work and material.....	89 60	
	30. xxxvi	338.	Niagara Falls Gazette, printing	27 00	
	30. xxxvi	339.	H. S. Ware, hardware for buildings, etc.....	315 01	
	30. xxxvi	340.	Wm. Shepard, mason work and material.....	228 80	
	31. xxxvi	341.	P. B. Secord, lumber, etc.,	33 09	
	31. xxxvi	342.	Rhodes & Babcock, sta- tionery	6 70	
Sept. 1.	xxxvi	343.	Bell Telephone Company of Buffalo, instrument in Niagara office.....	6 95	
July 30.	xxxvi	344.	Kearney & Barrett, stone posts.....	45 00	
Sept. 1.	xxxvi	345.	P. C. Flynn & Son, paint- ing.....	781 84	
	3. xxxvi	346.	Geo. E. Wright & Co., car- penter work and mate- rial.....	759 57	
Aug. 1.	xxxvi	347.	Colman Nee, stone for roads.....	25 00	
				<hr/>	2,323 20
Sept. 13.	xxxvii	348.	Hotel Kaltenbach, ex- penses of commission- ers.....	\$36 58	
	14. xxxvii	349.	W. H. Brook, services as accountant, 1886.....	20 00	

1887.	No. of Abstract.	No. of Voucher.		
Sept. 24.	xxxvii	350.	M. B. Anderson, commis- sioner, expenses at meet- ing.....	\$5 54
30.	xxxvii	351.	David Gray, treasurer and secretary, salary, Sep- tember	91 66
30.	xxxvii	352.	David Gray, treasurer and secretary, traveling and office expenses.....	45 70
14.	xxxvii	353.	Haas & Klein, printing..	37 50
30.	xxxvii	354.	Pay-roll at Niagara, for September	1,740 44
				\$1,977 42
June 1.	xxxviii	355.	Niagara Falls Water Works Company, water supply, one year.....	\$140 00
Sept. 1.	xxxviii	356.	Bell Telephone Company of Buffalo, rent of in- strument.....	6 30
12.	xxxviii	357.	Drake Whitney, survey- ing.....	5 00
14.	xxxviii	358.	Jackson Architectural Iron Works, iron railing	116 00
16.	xxxviii	359.	F. P. Lanigan, agent, insurance	3 75
16.	xxxviii	360.	O. Canfield, services as auctioneer.....	5 00
20.	xxxviii	361.	D. Phillips, repairing bridge.....	117 49
23.	xxxviii	362.	J. Binkley, coal.....	16 35
24.	xxxviii	363.	P. C. Flynn & Son, paint- ing buildings.....	168 90
24.	xxxviii	364.	John Johnson, tools, etc.,	13 98
26.	xxxviii	365.	Wm. Shepard, mason work	63 67
26.	xxxviii	366.	A. P. Burdick, machinist work	55 22
26.	xxxviii	367.	Howard Iron Works, 100 park settees.....	400 00
26.	xxxviii	368.	H. S. Ware, metal work and material.....	119 41

	1887.	No. of Abstract.	No. of Voucher.		
	Sept.	26.	xxxviii	369. P. B. Secord, lumber, car- penter work, etc.....	\$487 66
		26.	xxxviii	370. P. B. Secord, plank, etc., for bridge.....	418 16
		26.	xxxviii	371. George E. Wright & Co., carpenter work and material.....	214 48
		26.	xxxviii	372. George E. Wright & Co., timber for Luna Island, stairway.....	97 23
		30.	xxxviii	373. Thos. V. Welch, superin- tendent, traveling and office expenses.....	26 40
		30.	xxxviii	374. P. B. Secord, plank, etc., for main bridge.....	183 20
					<hr/>
					\$2,658 20
	Nov.	1.	xxxix	375. Pay-roll at Niagara, for October.....	\$1,482 33
		1.	xxxix	376. Thos. V. Welch, superin- tendent, office expenses and disbursements.....	23 02
	Dec.	1.	xxxix	377. Pay-roll at Niagara, for November.....	1,224 14
		1.	xxxix	378. Thos. V. Welch, superin- tendent, petty disburse- ments.....	11 00
		29.	xxxix	379. Pay-roll at Niagara, for December.....	676 37
		31.	xxxix	380. David Gray, treasurer and secretary, salary, three months to date.....	275 00
		31.	xxxix	381. David Gray, treasurer and secretary, office and traveling expenses.....	44 73
					<hr/>
					3,736 59
	Oct.	24.	xl	382. Joseph McKenna & Son, furniture, Niagara office	\$6 50
		27.	xl	383. H. S. Ware, hardware, tools, etc.....	70 55
	Nov.	1.	xl	384. Geo. W. Tift, Sons & Co., castings for stairway..	27 00

	No. of Abstract.	No. of Voucher.		
1887.				
Nov. 14.	xl	385.	P. B. Secord, lumber for bridges.....	\$277 33
	12.	xl	386. J. Binkley, coal... ..	5 95
	28.	xl	387. John Johnson, tools and repairing tools.....	19 45
Dec. 1.	xl	388.	Bell Telephone Company of Buffalo, rent of instru- ment.....	6 90
Nov. 29.	xl	389.	H. S. Ware, hardware, etc.,	31 10
Oct. 12.	xl	390.	F. West, ice for Niagara office.....	11 00
Nov. 5.	xl	391.	Wm. Shepard, mason work, Luna Island....	46 19
Dec. 17.	xl	392.	H. S. Ware, hardware...	4 08
	19.	xl	393. Drake Whitney, engineer- ing survey.....	9 00
	24.	xl	394. Geo. E. Wright & Co., carpenter work.....	206 65
	20.	xl	395. P. C. Flynn & Co., paint- ing buildings, etc.....	175 18
Nov. 26.	xl	396.	Ellenbaum & Co., coal ..	9 37
				<hr/>
				\$906 25
Oct. 1.			Balance, all moneys on hand, remitted to State Treasurer ..	1,176 95
Nov. 2.			Amount of receipts in October, remitted to State Treasurer ..	298 65
Dec. 1.			Amount of receipts in November, remitted to State Treasurer.....	81 40
1888.				
Jan. 3.			Amount of receipts in December, remitted to State Treasurer.....	75 18
				<hr/>
			Balance in bank December 31, 1887.....	455 23
				357 16
				<hr/>
				\$26,761 85
				<hr/> <hr/>

DAVID GRAY,
Treasurer.

“A.”

LETTER OF ALBERT H. PORTER.

NIAGARA FALLS, *January 20, 1888.*

To the Commissioners of the New York Reservation, at Niagara:

GENTLEMEN.—I reply to your resolution asking the conditions of a grant for the proposed museum site, as follows:

I will convey to the State of New York, as a site for a Scientific and Historic Museum, in the village of Niagara Falls, a plot of ground described as follows, on the following conditions: The said plot is bounded as follows: westerly by the Niagara Reservation, about 190 feet; easterly by Buffalo street, about 140 feet; southerly by the premises of S. M. Whitney; northerly by the premises of J. S. Townsend; said plot being about 294 feet in length, with an average width of about 170 feet.

The conditions for such a conveyance would be:

First.—To build and maintain a suitable wire fence and hedge, to enclose the premises for purposes connected with the institution *exclusively*, with access thereto from the reservation *only*.

Second.—To erect a *fire-proof* building, near to, and fronting on the reservation, of the value of \$30,000, suitable to contain and exhibit a collection of objects for scientific illustrations. The building also adapted for a collection of books of local history, such as the earliest French and English colonial documents, narratives of early missionaries, traders and travelers, works relating to colonial governments and military expeditions, biography of noted Indian chiefs, and history of Indian tribes, wars and treaties. The earliest and latest maps of the St. Lawrence and lake regions, large photographic views of interesting localities, of the St. Lawrence, the Thousand Islands, Niagara Falls, winter and summer, and views of interesting points on the great lakes. Also, the most valuable works attainable, early and late, both scientific and historical. An institution devoted exclusively to science and history, illustrative of the lake regions, would be of great value to the study of these interesting subjects.

For such an institution, Niagara is the most *appropriate* place, and

the site proposed affords the best, most extensive and commanding views of the River, Rapids and Islands. But such an institution in connection with the reservation, to be successful, must receive State patronage, worthy of the great State of New York, unequalled in wealth, rich in historic lore, and especially favored as including within its bounds—the greatest natural wonder of the world—a central object of attraction to intelligent travelers and savans, and to all classes of our countrymen who come in large and constantly increasing numbers to gratify their curiosity, and by long journeys enlarge their ideas of the growth and greatness of our country.

To realize the value of such an institution would, of course, require a liberal State appropriation, not only to build, but to furnish it suitably with proper facilities for its convenient use. It would also require a competent custodian to take charge of the property, to prepare and keep a catalogue of books and all other objects that may be added to the collection from time to time. Also, to keep a record of all changes that may occur in the Falls, Rapids and Islands, with other matters of interest.

Third.—A third condition would be that the commissioners should give notice as early as practicable of acceptance, on the condition that the Legislature shall make an appropriation of \$30,000 for the building, and \$10,000 for the purchase of objects of the character specified within one year from the first of May, 1888, which would include the sessions of 1888 and '89.

Fourth.—A failure to comply with any of these conditions shall render this offer null and void.

Respectfully submitted.

ALBERT H. PORTER.

CATALOGUE OF THE NIAGARA FLORA.

“B.”

A CATALOGUE

OF THE

Flowering and Fern-like Plants Growing
Without Cultivation in the Vicinity
of the Falls of Niagara.

Prepared at the Request of the Commissioners of the State Reservation
at Niagara, by DAVID F. DAY.

INTRODUCTION.

In December, 1886, the writer, in answer to the request of the Commissioners of the State Reservation at Niagara, promised to prepare for their use a catalogue of the plants growing upon the reservation and its vicinity. He had already on hand the record of his observations made in the neighborhood of the Falls, during a period of more than twenty years. But he well knew that in order to give to the promised catalogue, such a degree of accuracy and completeness as would make it of value to botanists and the public, it would be necessary to revise and renew his observations in the field. To this task, he devoted such leisure as was at his command during the year 1887. The results are presented in this Catalogue. Still he does not doubt that further investigations, made in the vicinity of the Falls, will considerably increase the number of species here recorded. In the more difficult genera of the *Cyperaceæ* and *Gramineæ*, demanding always in a large degree the skill of the specialist, there must be omissions, more or less numerous and important. Yet it is probable that no species, really characteristic of the flora of Niagara, has been overlooked.

To aid him in making the list complete, the writer has regarded it as his duty to consult, so far as was within his power, the observations made in the neighborhood of the Falls, by all other botanists. It is, however, a matter for great regret that references to the botany of the Falls, especially in the reports of the earlier explorers, have proved so few in number. It seems probable that PETER KALM, the friend and correspondent of the great LINNE, left some record of the botanical observations, which he made during his visit at Niagara, in the year 1750. But, the author has failed to find any mention of its publication, either in the Swedish tongue or in an English translation. If his journal still exists, its publication, at the present day, could not but be welcomed as an important contribution to the literature of American botany. It seems not unlikely that the species of *Hypericum* and *Lobelia*, which bear his name, were discovered by him near Table Rock.

It is to be doubted whether either the elder or the younger MICHAUX visited the neighborhood of the great cataract, and it is certain that the enterprising spirit of PURSH brought him no nearer than the site of the present city of Elmira. NUTTALL, who botanized near the Falls sometime previous to the year 1818, mentions but one plant, *Utricularia cornuta*, as found by him in their vicinity. TORREY doubtless visited the region—possibly was familiar with it—yet, in his *Flora of the State of New York*, published in the year 1843, of the 1,511 species of plants, which he described, only fifteen are attributed to Niagara, and none of these, upon his own authority. In the *Flora of North America*, of TORREY and GRAY, published in 1838-1842, Niagara is mentioned as a station only five times.

The labors of later botanists have been far more useful in the preparation of the list. The MS. journals of the HON. GEORGE W. CLINTON, while engaged in his arduous labors upon the botany of Buffalo and its vicinity, have proved of the greatest value; and the "*Flore Canadienne*" of ABBE PROVANCHER and the "*Catalogue of Canadian Plants*" of PROFESSOR MACOUN, the learned and indefatigable botanist of the Canadian Geological Survey, and the "*Canadian Filicineæ*," the joint work of PROFESSOR MACOUN and DR. BURGESS, of London, Ontario, have been of important service.

Wherever use has been made of these or of other authorities due acknowledgment of the obligation appears in the list.

The geology of Niagara Falls, as related to the flora, demands at this place some brief attention. On either side of the river, at a distance not very constant, glacial clays appear. At Clifton they form a considerable elevation. With them, in places, also appear the usual gravel drift of the same period. These make up the soil of the adjacent country. But, as Hall and Lyell long ago pointed out, the evidence is complete that the river once stood at a very considerable height above its present rocky boundaries. At Chippewa, in Prospect park and at other places, the gravel deposits of the river, made whilst it was occupying its higher level, are still to be seen. But before the river formed its present bed in the gorge below the cataract, it cut through and carried away some portion of its former deposit, leaving, as it subsided, a terrace, on either side, still easily traced. This gravel deposit, once extending continuously across the present river, covered all of what is now Goat Island. It is characterized by a great abundance of fresh-

water shells, of the genera *Unio*, *Melania*, *Lymnæa*, etc., identical in species with those still inhabiting the river. The vegetation of the island is that then which might be expected to luxuriate upon a deep calcareous soil, enriched with an abundance of organic matter.

On either side of the river, following its course northerly, for a long distance, the same deposit is met with, alternating with patches from which it has been removed, and in which the underlying rock has but a scanty covering of soil. Near DeVaux College, and immediately above the Devil's Hole, near Lewiston, the rock is almost naked. Yet, even in such places, growing in the crevices of the rock or fringing the verge of the chasm, are to be found some of our most interesting plants. In some places, long since the chasm was excavated, the high rocky bank has given way, through the action of small streams of water, and perhaps by the operation of other causes, forming sheltered recesses of considerable extent, in which a rich humus has accumulated, supporting a dense growth of timber, and giving a congenial situation to some of our rarer plants. Among such places may be named the Devil's Hole, Foster's Flat, above Queenston, and the whirlpool wood, on the Canadian side.

The Niagara Escarpment, as it has been called by the geologists of the State of New York, known at Lewiston as the "Mountain" and in Canada as "Queenston Heights," presents some features entitled to notice in this place. At the point where the river makes its way through it, its height above Lake Ontario is 374 feet, and above Lake Erie, 32 feet. Though it presents a northerly exposure, yet among the plants, growing upon its talus and below, are a number which belong rather to the south and southwestward, and are much more abundant in Ohio than in Western New York. The fact may be explained by the higher annual temperature at Queenston and Lewiston and thence northward to Lake Ontario, than prevails at the Falls or immediately southward.

The flora of Goat Island presents few plants which may be called uncommon in Western New York. For the rarer plants, included in the Catalogue, other localities must be visited. But it is still true that Goat Island is very rich in the number of its species. Probably no tract of land in its vicinity, so restricted in area, can be found, exhibiting so large a number. Its vernal beauty is attributable, not merely to its variety of plants, conspicuous in flower, but also to the extraordinary abundance in which

they are produced. Yet it seems likely that there was a time, probably not long ago, when other species of plants, of great beauty, were common upon the island, but which are not now to be found there. It is hardly possible that several orchidaceous plants and our three native lilies did not once embellish its woods and grassy places. Within a little while the Harebell, (*Campanula rotundifolia*, L.), has gone and the Grass of Parnassus, (*Parnassia Caroliniana*, L.), is fast going. This is undoubtedly due to careless flower-gatherers, who have plucked and pulled without stint or reason. The same fate awaits the *Sanguinaria*, the *Diclytras* and the *Trilliums*, which do so much to beautify the island, unless the wholesale spoliation is soon arrested.

The suggestion may here be made, with great propriety, that pains be taken to re-establish upon the island the attractive plants which it has lost. The effort would entail but little expense, its success would be entirely certain and to many the pleasure of a visit to the island would be greatly enhanced. It would surely be a step, and not an unimportant one, in restoring the island to the state in which nature left it.

Frequent reference has been made in the Catalogue to localities in the neighborhood of the Falls, but not within the boundaries of the Reservation. For this, however, there is a sufficient reason in the fact that if the Catalogue had been confined within the limits of the Reservation, it would have been of far less value to the many who are now interested in botanical science; and to them alone can such a work be of much interest or value. As already stated, some of the rarest plants of western New York and Ontario grow in the neighborhood of Niagara river, but not within the confines of the Reservation.

Thus, it may be mentioned that in the wooded grounds adjoining DeVaux College and belonging to that institution, there may be found *Rhus aromatica*, Ait., *Liatris cylindracea*, Michx., *Aster ptarmicoides*, T. & G., *Asclepias quadrifolia*, Jacq., and *Morus rubra*, L. Among its rocks, perhaps there may still be found a specimen of *Pellaea atropurpurea*, Link., *Camptosorus rhyzophyllus*, Link., and *Asplenium Trichomanes*, L. The Devil's Hole, now almost inaccessible, was once a paradise of ferns—*Phegopteris Dryopteris*, Fée, being its chief rarity. The plateau of rock, which overlooks the ravine, produces *Arabis hirsuta*, Scop., and *Selaginella ruprestis*, Spreng., elsewhere in this region quite

uncommon. Between the "Mountain" and Lewiston, the explorer will find *Ranunculus multifidus*, Pursh. *Xanthoxylum Americanum*, Mill. *Houstonia cærulea*, L. and *Asplenium ebeneum*, Ait., rare plants in western New York. Queenston Heights have yielded us *Anemonella thalictroides*, Spach. *Asimina triloba*, Dunal, *Lupinus perennis*, L., *Frasera Carolinensis*, Walt. and *Celtis occidentalis*, L., — species scarcely found elsewhere in our vicinity. Of Foster's Flat, above Queenston, it may be said that the spring seems to visit its rocky fastnesses some weeks earlier than the table-land above. Among its uncommon plants, it may be mentioned that PROFESSOR MACOUN and DR. BURGESS have detected *Aspidium Lonchites*, Swartz, and *Aspidium Bootii*, Tuckerm., — ferns whose accustomed range is a hundred miles northward. The woods near the whirlpool, on the Canadian side, produce in abundance *Cerastium arvense*, L., *Arctostaphylos Ura-ursi*, Spreng., *Castilleja coccinea*, Spreng., and the only sassafras trees known in the neighborhood of the Falls. The low land, near Clifton, on the Canadian side, only a few inches higher than the river, affords such uncommon plants as *Gentiana serrata*, Gunner, and *Parnassia Caroliniana*, Michx. *Calamintha Nuttallii*, Benth., still grows on the damp rocks, near the border of the river, and *Gerardia purpurea*, L., and *Utricularia cornuta*, Michx., appear sparingly in the wet and oozy soil near by.

In the preparation of this list, the practice has been followed, now almost universal, of indicating introduced plants, (which it will be seen are a large number) by giving their names in small capitals. The later changes in the nomenclature of the species have also been adopted, adding however, (in parentheses) the names under which they were described in the last edition of Gray's Manual.

Of the 909 species of plants named in the Catalogue 758 are native and 151 foreign.

The following table exhibits, synoptically, the number of species and genera belonging to each natural family of plants mentioned in the Catalogue.

Names of families.	No. of genera.	No. of species.
Ranunculaceæ	10	32
Magnoliaceæ	2	2
Anonaceæ	1	1
Menispermaceæ	1	1
Berberidaceæ	4	4
Nymphaeaceæ	2	2
Papaveraceæ	2	2
Fumariaceæ	2	3
Cruciferæ	12	25
Capparidaceæ	1	1
Violaceæ	2	8
Polygalaceæ	1	3
Caryophyllaceæ	7	12
Portulacaceæ	2	3
Hypericaceæ	1	7
Malvaceæ	4	6
Tiliaceæ	1	2
Linaceæ	1	2
Geraniaceæ	4	6
Rutaceæ	1	1
Simarubiaceæ	1	1
Illicaceæ	2	2
Celastraceæ	2	4
Rhamnaceæ	1	1
Vitaceæ	2	4
Sapindaceæ	3	8
Anacardiaceæ	1	6
Leguminosæ	13	33
Rosaceæ	15	42
Saxifragaceæ	6	10
Crassulaceæ	2	4
Hamamliaceæ	1	1
Haloragæ	1	3
Lythraceæ	1	1
Onagraceæ	5	11
Ficoidæ	1	1
Umbelliferæ	15	19
Araliaceæ	1	3
Cornaceæ	2	7
Caprifoliaceæ	6	14
Rubiaceæ	4	13

Names of families.	No. of genera.	No. of species.
Valerianaceæ	1	2
Dipsaceæ	1	1
Compositæ	38	97
Lobeliaceæ	1	3
Campanulaceæ	2	5
Ericaceæ	8	14
Primulaceæ	3	6
Oleaceæ	2	4
Apocynaceæ	2	3
Asclepiadaceæ	2	7
Gentianaceæ	2	3
Polemoniaceæ	2	2
Hydrophyllaceæ	1	2
Borraginaceæ	6	11
Convolvulaceæ	3	7
Solanaceæ	5	7
Scrophulariaceæ	13	26
Orobanchaceæ	3	3
Lentibulaceæ	1	2
Acanthaceæ	1	1
Verbenaceæ	2	3
Labiatae	18	27
Plantaginaceæ	1	4
Amarantaceæ	1	2
Chenopodiaceæ	2	7
Phytolaccaceæ	1	1
Polygonaceæ	2	17
Aristolochiaceæ	1	1
Piperaceæ	1	1
Lauraceæ	2	2
Thymelacæ	2	2
Eleagnaceæ	1	1
Santalaceæ	1	1
Euphorbiaceæ	2	6
Ceratophyllaceæ	1	1 [♂]
Urticaceæ	8	13 [♂]
Platanaceæ	1	1 [♂]
Juglandaceæ	2	6
Betulaceæ	2	4
Cupuliferæ	6	15
Salicaceæ	2	16

Names of families.	No. of genera.	No. of species.
Coniferæ	5	6
Hydrocharidaceæ	2	2
Orchidaceæ	4	7
Iridaceæ	2	3
Smilacaceæ	1	2
Liliaceæ	16	20
Pontederiaceæ	2	2
Juncaceæ	2	9
Typhaceæ	2	4
Araceæ	4	4
Lemnaceæ	3	3
Alismaceæ	3	4
Naiadaceæ	3	18
Cyperaceæ	5	54
Graminæ	31	68
Equisetaceæ	1	6
Ophioglossaceæ	2	3
Filices	12	27
Selaginellaceæ	2	3
Hydropterides	2	2
Total	<u>410</u>	<u>909</u>

CATALOGUE.

RANUNCULACEÆ.

- Clematis Virginiana**, L. **Clematis.** **Virgin's Bower.**
On the Canadian side, near Clifton, and elsewhere.
- Anemone cylindrica**, Gray. **Anemone.** **Wind Flower.**
Goat Island and elsewhere.
- Anemone Virginiana**, L. **Anemone.** **Wind Flower.**
Goat Island and near DeVaux College.
var. **alba**, Wood.
Goat Island.
- Anemone dichotoma**, L. (*A. Pennsylvanica*, L.)
Anemone. **Wind Flower.**
Goat Island and elsewhere.
- Anemone nemorosa**, L. **Anemone.** **Wind Flower.**
Goat Island.
var. **quinquefolia**, Gray.
With the last.
- Anemone Hepatica**, L. (*Hepatica triloba*, Chaix.) . . . **Liverwort.**
Goat Island and near Lewiston. Rather rare.
- Anemone acutiloba**, Lawson. (*Hepatica acutiloba*, DC.)
Liverwort.
Goat Island and elsewhere. Less rare.
- Anemonella thalictroides**, Spach.
(*Thalictrum anemonoides*, Michx.)
Near Brock's Monument, Ontario.
- Thalictrum dioicum**, L. **Meadow Rue.**
Goat Island, Lewiston and elsewhere.
- Thalictrum Cornuti**, L.
Meadow Rue.
Shores of the river above the Falls.
- Thalictrum purpurascens**, L. **Meadow Rue.**
Near Clifton, Canada.
var. **ceriferum**, Austin.
"Near Drummondsville, Niagara Falls." Macoun.

- Ranunculus aquatilis**, L. **Water Crowfoot.**
 var. **trichophyllus**, Chaix.
 In pools above the falls on the Canadian side.
- Ranunculus multifidus**, Pursh. **Buttercup.**
 In a pool not far from the river's bank, above Lewiston.
- Ranunculus Flammula**, L. **Spearwort.**
 var. **reptans**, Meyer.
 At the water's edge on Strawberry and Grand Islands, and, probably, in similar situations nearer the Falls.
- Ranunculus abortivus**, L.
 Goat Island and elsewhere.
- Ranunculus sceleratus**, L. **Cursed Crowfoot.**
 Lewiston, and near Suspension Bridge.
- Ranunculus recurvatus**, Poir. **Hooked Crowfoot.**
 Goat Island.
- Ranunculus Pennsylvanicus**, L. **Bristly Crowfoot.**
 Clifton, Canada.
- Ranunculus fascicularis**, Muhl. **Early Buttercup.**
 Near DeVaux College.
- Ranunculus septentrionalis**, Poir. (*R. repens*, L.): **Buttercup.**
 Clifton, Canada. The large variety of *R. repens*, L. Common in western New York.
- RANUNCULUS BULBOSUS**, L. **BUTTERCUP.**
 Goat Island. Introduced.
- RANUNCULUS ACRIS**, L. **BUTTERCUP.**
 Goat Island and elsewhere.
- Caltha palustris**, L. **Cowslips. Marsh Marygold**
 Lewiston, Clifton, Ontario.
- Aquilegia Canadensis**, L. **Wild Columbine**
 Goat Island and along the rocky banks of the river in many places.
- Hydrastis Canadensis**, L. **Hydrastis**
 Cayuga Island, and probably elsewhere nearer the falls.
- Actæa spicata**, L. **Herb Christopher. Red Cohosh**
 var. **rubra**, Ait.
 Goat Island, near DeVaux College.
- Actæa alba**, Bigelow. **White Cohosh**
 Goat Island.
- Cimicifuga racemosa**, Nutt. **Black Snake-root**
 Probably occurs near Queenston, Ont.

MAGNOLIACEÆ.

- Liriodendron Tulipifera**, L **White wood. Tulip-tree**
Goat Island. Not common. One fine specimen is growing near
the carriage way on the north side of the island.
- Magnolia acuminata**, L **Cucumber tree**
· “Near the falls of Niagara.” *Provancher*. Not seen by us.

ANONACEÆ.

- Asimina triloba**, Dunal **Papaw**
Queenston Heights, Ontario, *Macoun*.

MENISPERMACEÆ.

- Menispermum Canadense**, L **Moon seed**
Common both in New York and Ontario, but not noticed by us
near the Falls. Doubtless overlooked.

BERBERIDACEÆ.

- BERBERIS VULGARIS**, L **BARBERRY.**
Goat Island, near Lewiston.
- Caulophyllum thalictroides**, Michx **Blue Cohosh**
Goat Island. Abundant.
- Jeffersonia diphylla**, Pers. . . **Twin Leaf. Rheumatism Root**
Niagara Falls. *Clinton*. Very rare.
- Podophyllum peltatum**, L **May Apple. Mandrake**
Goat Island. Abundant.

NYMPHACEÆ.

- Nymphæa tuberosa**, Paine **White Water Lily**
Abundant in shallow places in the river, some distance above the
Falls.
- Nuphar advena**, Ait. **Yellow Wnter Lily**
With the last.

PAPAVERACEÆ.

- CHELIDONIUM MAJUS**, L **CELANDINE.**
Clifton, Ontario.
- Sanguinaria Canadensis**, L **Blood Root**
COMMON Goat Island, where it has been found producing pink flowers.

FUMARIACEÆ.

- Diclytra Cucullaria**, DC. (*Dicentra Cucullaria*, DC.) **Dutchman's Breeches**
Goat Island. Abundant.
- Diclytra Canadensis**, DC. (*Dicentra Canadensis*, DC.) **Squirrel Corn**
Goat Island. Abundant. Between the two species numerous hybrids have been noticed on Goat Island.
- Corydalis glauca**, Pursh **Corydalis**
Occurs at Tonawanda, and should be found near the Falls.

CRUCIFERÆ.

- ALYSSUM CALYGINUM**, L. **ALYSSUM**
Near Brock's monument, Ontario.
- DRABA VERNA**, L. **WHITLOW GRASS**
Introduced on Goat Island, but perhaps not established.
- Dentaria diphylla**, Michx. **Pepper Root. Crinkle Root**
Goat Island.
- Dentaria laciniata**, Muhl.
Goat Island.
- Cardamine rhomboidea**, DC **Spring Cress**
var. **purpurea**, Torr.
Goat Island and elsewhere. The typical form, probably, may be found in the low ground near Clifton, Ontario.
- Cardamine hirsuta**, L. **Bitter Cress**
Goat Island.
- Arabis lyrata**, L. **Rock Cress**
Goat Island. The Three Sisters. And along the gorge to Lewiston.
- Arabis hirsuta**, Scop.
Near Devaux College, and at Lewiston, and on the opposite side of the river.
- Arabis lævigata**, Poir.
Devil's Hole, Queenston Heights, Ontario. *Macoun*.
- Arabis Canadensis**, L. **Sickle Pod**
Goat Island, and elsewhere.
- Arabis perfoliata**, Lam. **Tower Mustard**
Near Clifton, Ontario.

Arabis Drummondii, Gray.

Lewiston. Not common.

BARBAREA PRÆCOX, R. Br. **EARLY WINTER CRESS.**
 Brock's monument, Ontario. *Macoun.*

Barbarea vulgaris, R. Br. **Winter Cress**
 Road sides near the falls.

Erysimum cheiranthoides, L. **Worm-seed Mustard**
 Margin of the river above the Falls.

SISYMBRIUM OFFICINALE, Scop. **HEDGE MUSTARD.**
 Road sides and waste places near the Falls.

BRASSICA SINAPISTRUM, Boiss. **MUSTARD. CHARLOCK.**
 Abundant on both sides of the river.

BRASSICA NIGRA, Koch. **BLACK MUSTARD.**
 Between the Falls and DeVaux College.

NASTURTIUM OFFICINALE, R. Br. **WATER CRESS.**
 Near the river's edge above the Falls. Clifton, Ontario.

Nasturtium palustre, DC. **Marsh Cress**
 In damp places above the Falls.

Nasturtium lacustre, Gray **Lake Cress**
 In the river above the Falls.

NASTURTIUM ARMORACIA, Fries. **HORSE RADISH.**
 "At Niagara Falls." *Macoun.*

CAPSELLA BURSA-PASTORIS, Moench. **SHEPHERD'S PURSE**
 Common everywhere.

Lepidium Virginicum, L. **Wild Peppergrass**
 Road sides, near the village.

LEPIDIUM CAMPESTRE, R. Br. **FIELD PEPPERGRASS**
 "Clifton, near Niagara Falls." *Macoun.*

CAPPARIDACEÆ.

Polanisia graveolens, Raf.

"Abundant on the sands at Niagara." *Macoun.*
 Plentiful at the foot of Lake Erie.

CISTACEÆ.

Helianthemum Canadense, Michx. **Frost Weed**
 Common in dry places in Western New York, no doubt occurring
 near DeVaux College, and at Lewiston.

Lechea major, Michx. **Pinweed**
 Probably occurs with the last.

Lechea minor, Lam. **Pinweed**
Probably occurs with *Helianthemum Canadense*.

VIOLACEÆ.

Ionidium concolor, Benth. and Hook. (*Solea concolor*, Ging).
Green Violet

Goat Island. Foster's Flat, Ontario.

Viola blanda, Willd. **Violet**
Goat Island, and near Clifton, Ontario.

Viola palmata, L. **Violet**
var. **cucullata**, Gray. (*V. cucullata*, Ait.)
Goat Island and elsewhere.

Viola canina, L. **Dog Violet**
var. **Muhlenbergii**, Gray. (*Viola canina* L., var. *sylvestris*,
Regel.)
Goat Island and elsewhere.

Viola rostrata, Muhl. **Long-spurred Violet**
Goat Island.

Viola Canadensis, L. **Canada Violet**
Goat Island.

Viola pubescens, Ait. **Downy Yellow Violet**
var. **ericarpa**, Nutt.
Goat Island.
var. **scabriuscula**, Torr. and Gray.
Goat Island.

POLYGALACEÆ.

Polygala verticillata, L.
Near DeVaux College. Queenston Heights, Ontario, *Macoun*.

Polygala Senega, L. **Seneca Snake Root**
Both the narrow and the broad leaved varieties are to be found
near the whirlpool on both sides of the river.

Polygala incarnata, L.
Said by Douglass (1823) to have been found in rocky places on the
Niagara river near the Falls. *Macoun*.

CARYOPHYLLACEÆ.

DIANTHUS ARMERIA, L. **DEPTFORD PINK.**
Lewiston, scarce. In a field near Clifton, Ontario, plentiful.

SAPONARIA OFFICINALIS, L. **SOAPWORT.**
Goat Island and the mainland.

Silene stellata, Ait. **Starry Campion**
Found by Douglass, in 1823, in dry, stony places on the Niagara
river. *Macoun*.

Silene antirrhina, L. **Sleepy Catch-fly**
Near DeVaux College and elsewhere.

SILENE NOCTIFLORA, L. NIGHT-FLOWERING CATCH-FLY.
Above the Falls on the American side of the river.

LYCHNIS GITHAGO, Lam. CORN COCKLE.
Fields on the main land.

CERASTIUM VISCOSUM, L. MOUSE-EAR CHICKWEED.
Goat Island and elsewhere.

CERASTIUM VULGATUM, L. MOUSE-EAR CHICKWEED.
Goat Island and elsewhere.

STELLARIA MEDIA, Smith. CHICKWEED.
Goat Island and elsewhere.

Stellaria longifolia, Muhl. **Long-leaved Stitchwort.**
In damp, grassy places above the Falls.

ARENARIA SERPYLLIFOLIA, L. SAND WORT.
Road sides at Clifton and elsewhere.

Arenaria lateriflora, L.
Goat Island.

PORTULACACEÆ.

PORTULACA OLERACEA, L. PURSLANE.
Waste places on the main land.

Claytonia Caroliniana, Michx. **Spring Beauty**
Goat Island.

Claytonia Virginica, L. **Spring Beauty**
Goat Island.

HYPERICACEÆ.

Hypericum Kalmianum, L. **Kalm's St. John's Wort**
Goat Island. "Rochers au bas de la chute de Niagara." *Pro-*
vancher. (*Fl. Canad.* p. 104.)

HYPERICUM PERFORATUM, L. COMMON ST. JOHN'S WORT.
Goat Island and elsewhere.

Hypericum maculatum, Walt. (*H. corymbosum*, Muhl.)
Margin of the river above the falls.

Hypericum mutilum, L.
Wet places along the river above the falls.

Hypericum Canadense, L.
In similar places as the last.

Hypericum Ascyron, L. (*H. pyramidatum*, Ait.)

Great St. John's Wort

Grand Island. And probably nearer the falls.

Hypericum Virginicum, L. (*Elodes Virginica*, Nutt.)

In swampy places along the river above Clifton, Ontario.

MALVACEÆ.

ALTHÆA ROSEA, L. **HOLLYHOCK.**

Clifton, Ontario. Escaped from cultivation.

MALVA ROTUNDIFOLIA, L. **LOW MALLOW.**

Goat Island and elsewhere.

MALVA SYLVESTRIS, L. **HIGH MALLOW.**

Near the Devil's Hole.

MALVA MOSCHATA, L. **MUSK MALLOW.**

Road sides on the main land.

ABUTILON AVICENNÆ, Gaert. **VELVET LEAF.**

Waste places on the main land.

Hibiscus Moscheutos, L. **Swamp Rose Mallow.**

Probably may be found along the river above the Falls, as it grows in such situations near the foot of Lake Erie.

TILIACEÆ.

Tilia Americana, L. **Linden. Basswood.**

Goat Island. An abundant and conspicuous element of its forest.

Tilia——? **Basswood**

Goat Island. The tree, here indicated, seems to be quite distinct from the last. It may be readily distinguished by its bark, which is as white as that of the white ash, *Fraxinus Americana*, L.

LINACEÆ.

Linum Virginianum, L. **Wild Flax**

"Near Niagara Falls." *Macoun.*

LINUM USITATISSIMUM, L. **COMMON FLAX.**

Occasionally seen on railroad embankments.

GERANIACEÆ.

Geranium maculatum, L. **Wild Geranium**

Goat Island.

Geranium Robertianum, L. **Herb Robert**

Goat Island.

Floerkea proserpinacoides, Willd.

Goat Island.

Impatiens pallida, Nutt. **Impatiens. Wild Balsam**

Goat Island.

Impatiens biflora, Walt. (*I. fulva*, Nutt.)

Impatiens. Wild Balsam

Goat Island and the main land.

Oxalis stricta, L. **Sorrel**

Great Island.

RUTACEÆ.

Xanthoxylum Americanum, Mill. **Prickly Ash**

Near Lewiston.

SIMARUBACEÆ.

Ailanthus glandulosus, Desf. **Ailanthus. Tree of Heaven**

Spontaneous near Clifton, Ontario.

ILICACEÆ.

Ilex verticillata, Gray. **Winter Berry**

Chippewa. *Macoun.* Probably nearer the falls.

Nemopantes Canadensis, DC.

Near Clifton, Ontario.

CELASTRACEÆ.

Celastrus scandens, L. **Bittersweet**

Goat Island.

Euonymus atropurpureus, Jacq. **Burning Bush. Wahoo**

Goat Island.

Euonymus Americanus, L. **Strawberry Bush. Wahoo**

"Niagara." *Macoun.*

var. **obovatus**, Torr. and Gray.

"Hills around Niagara Falls." *Macoun*, on the authority of *Dr.*

MacLagan.

RHAMNACEÆ.

Ceanothus Americanus, L. **New Jersey Tea**

Near DeVaux College.

VITACEÆ.

Vitis æstivalis, Michx. **Summer Grape**

Goat Island and elsewhere.

Vitis riparia, Michx. (*V. cordifolia*, Michx.). **Frost Grape**

Goat Island and elsewhere.

- Vitis Labrusca**, L. **Wild Grape**
 Erroneously attributed to the vicinity of the Falls, as a native, in
 the "*Plants of Buffalo and Vicinity*," (p. 26), and by *Provancher*
 in the *Flore Canadienne*, (p. 112.) Occasionally spontaneous.
- Ampelopsis quinquefolia**, Michx. **Virginia Creeper**
 Goat Island and elsewhere.

SAPINDACEÆ.

- Staphylea trifolia**, L. **Bladder Nut**
 Foster's Flat, Ontario.
- Æsculus glabra**, Willd. **Buckeye**
 Spontaneous near Lewiston. From the west.
- Acer spicatum**, Lam **Mountain Maple**
 Goat Island, near the Horse-shoe falls.
- Acer saccharinum**, Wang. **Sugar Maple**
 Goat Island. One of the most abundant trees.
- Acer dasycarpum**, Erhart. **White Maple**
 Near Clifton, Ontario.
- Acer rubrum**, L. **Red Maple**
 Goat Island. A shade tree in the village.
- Acer Negundo**, L. (*Negundo aceroides*, Mœnch.) **Box Elder**
 Planted in Prospect park, where it is now appearing spontaneously.
- ACER PLATANOIDES, L. **NORWAY MAPLE**
 A common shade tree in the village.

ANACARDIACEÆ.

- Rhus typhina**, L. **Stag-horn Sumach**
 Goat Island.
- Rhus glabra**, L. **Smooth Sumach**
 Queenston Heights. *Macoun*.
- Rhus venenata**, DC. **Poison Sumach**
 Swampy places above the Falls, near Clifton, Ontario.
- Rhus Toxicodendron**, L. **Poison Ivy**
 Goat Island. Too plentiful.
 var. **radicans**, Torrey. **Poison Ivy**
 Goat Island.
- Rhus aromatica**, Ait. **Aromatic Sumach**
 Near DeVaux College and on the opposite side of the river.
 Common in the places named.

LEGUMINOSÆ.

- Lupinus perennis**, L. **Lupine**
Queenston Heights, Ontario.
- MEDICAGO LUPULINA**, L. **BLACK MEDICK**
Above the Falls on the American side.
- MELILOTUS OFFICINALIS**, Willd. **YELLOW MELILOT**
Above the Falls on the American side.
- MELILOTUS ALBA**, Lam. **SWEET CLOVER.**
Goat Island and the main land.
- TRIFOLIUM ARVENSE**, L. **RABBIT'S-FOOT CLOVER**
Abundant near Lewiston.
- TRIFOLIUM PRATENSE**, L. **RED CLOVER.**
Goat Island and elsewhere.
- TRIFOLIUM REPENS**, L. **WHITE CLOVER.**
Goat Island and elsewhere.
- TRIFOLIUM HYBRIDUM**, L. **ALSIKE CLOVER.**
American side of the river above the Falls. Lewiston.
- TRIFOLIUM PROCUMBENS**, L. **HOP CLOVER**
Near Clifton, Ontario.
- Robinia Pseudacacia**, L. **Common Locust**
A frequent shade-tree, often spontaneous.
- Robinia viscosa**, Vent. **Clammy Locust**
Spontaneous in places near Lewiston.
- Astragalus Cooperi**, Gray **Cooper's Milk Vetch**
Goat Island, near the Horse-shoe fall.
- Astragalus Canadensis**, L. **Milk Vetch**
Common on the islands in the river, near Tonawanda. It may be
looked for nearer the Falls.
- Desmodium nudiflorum**, DC. **Tick Trefoil**
Near DeVaux College.
- Desmodium acuminatum**, DC.
Near DeVaux College.
- Desmodium pauciflorum**, DC.
"Woods at Niagara Falls." *Macoun.*
- Desmodium rotundifolium**, DC.
Near DeVaux College.
- Desmodium cuspidatum**, Torr. and Gray.
Queenston Heights, Ontario. *Macoun*, on the authority of *Douglass.*

- Desmodium Dillenii**, Darlington.
Near DeVaux College. Queenston Heights, Ontario. *Macoun.*
- Desmodium paniculatum**, DC.
Near DeVaux College and on the opposite side of the river.
- Desmodium Canadense**, DC.
Near Clifton, Ontario.
- Desmodium ciliare**, DC.
Queenston Heights, Ontario. *Macoun.*
- Lespedeza reticulata**, Pers. (*L. violacea*, Pers. var. *sessiliflora*,
Torr. and Gray.)
Near DeVaux College.
- Lespedeza hirta**, Ell. **Bush Clover**
"Queenston Heights and Niagara Falls," *Macoun.*
- Lespedeza capitata**, Michx. **Bush Clover**
Near DeVaux College.
- Vicia Cracca**, L. **Vetch. Tare**
Near Clifton, Ontario.
- Vicia Caroliniana**, Walt. **Vetch**
Goat Island.
- Vicia Americana**, Muhl. **Vetch**
Goat Island.
- Lathyrus ochroleucus**, Hook **Wild Pea**
Goat Island, and near the whirlpool, Ontario.
- Lathyrus paluster**, L. **Marsh Pea**
var. *myrtifolius*, Gray.
Goat Island and margins of the river above the falls.
- Amphicarpæa monoica**, Elliott **Hog Peanut**
Goat Island.
- Apios tuberosa**, Mœnch **Ground Nut**
Doubtless near the falls, but not yet observed by us.
- Gleditschia triacanthos**, L. **Honey Locust**
Spontaneous along the bank of the river near Lewiston.

ROSACEÆ.

- AMYGDALUS PERSICA**, L. **PEACH**
Spontaneous on Goat Island and near the Devil's Hole.
- Prunus Americana**, Marshall **Wild Plum**
Goat Island and elsewhere.

- PRUNUS CERASUS**, L.....COMMON RED CHERRY
Spontaneous on Goat Island, and abundant along roadsides below
the Falls.
- Prunus Virginiana**, L.....Choke Cherry
Near DeVaux College.
- Prunus serotina**, L.....Black Cherry
Near Clifton, Ontario.
- Spiræa salicifolia**, L...Common Meadow Sweet. **Spiræa**
Above the Falls on the Canadian side.
- Neillia opulifolia**, Benth. and Hook. (*Spiræa opulifolia*, L.)
Goat Island. The Three Sisters. **Nine-bark**
- Rubus odoratus**, L.....Purple Flowering Raspberry
Goat Island and elsewhere.
- Rubus triflorus**, Rich.
Wet places near Clifton, Ontario.
- Rubus strigosus**, Michx.....Red Raspberry
Goat Island.
- Rubus occidentalis**, L.....Black Raspberry
Goat Island.
- Rubus villosus**, Ait.....Blackberry
Goat Island.
- Rubus Canadensis**, L.....Dewberry. Low Blackberry
Goat Island. Lewiston.
- Geum album**, GmelinAvens
Goat Island.
- Geum Virginianum**, L.
Goat Island. Chippewa. *Macoun*, on the authority of *Dr.*
MacLagan.
- Geum strictum**, Ait.
Goat Island.
- Geum rivale**, L.....Purple Avens
Wet places above Clifton, Ontario.
- Waldsteinia fragarioides**, Tratt.....Barren Strawberry
Goat Island.
- Fragaria Virginiana**, Duchesne.....Wild Strawberry
Goat Island and the main land.
- Fragaria vesca**, L.....Wood Strawberry
Goat Island.

- Potentilla Norvegica**, L.
Goat Island and the main land.
- Potentilla Canadensis**, L. **Cinquefoil**
Goat Island.
var. **simplex**, Torr. and Gray.
Near DeVaux College.
- Potentilla argentea**, L. **Silvery Cinquefoil**
Near DeVaux College. Clifton, Ontario.
- Potentilla Anserina**, L. **Silver Weed**
Low grounds above the falls on both sides of the river.
- Potentilla palustris**, Scop. **Marsh Five-finger**
Chippewa. Clinton.
- POTENTILLA PILOSA, Willd.
Near Clifton, Ontario. This is the plant called by us, *P. recta*,
L., in the "*Plants of Buffalo and Vicinity*." The present deter-
mination was by *Prof. Macoun*.
- Agrimonia Eupatoria**, L. **Agrimony**
Goat Island.
- Rosa blanda**, Ait. **Early Wild Rose**
Goat Island.
- Rosa Carolina**, L. **Swamp Rose**
Wet grounds, near Clifton, Ontario.
- Rosa parviflora**, Ehrh. (*R. lucida*, Ehrh.) **Shining Rose**
Goat Island.
- Rosa rubiginosa**, L. **Sweet Briar**
Goat Island. Devil's Hole. Lewiston.
- ROSA MICRANTHA, Smith. SWEET BRIER
Goat Island.
- PYRUS MALUS, L. APPLE
Spontaneous on Goat Island and near the Devil's Hole and
Lewiston.
- PYRUS COMMUNIS, L. PEAR
Spontaneous on Goat Island.
- Pyrus coronaria**, L. **WILD CRAB-APPLE**
Near DeVaux College. Lewiston. Queenston. Queenston Heights,
Ontario.
- PYRUS AUCUPARIA, Gaertn. **ROWAN TREE. MOUNTAIN ASH**
Within the gorge of the River, on the Canadian side, near the
Cantilever Bridge.

- Cratægus coccinea**, L.....**Thorn**
Goat Island.
- Cratægus tomentosa**, L.....**Black Thorn**
Goat Island.
- Cratægus Crus-galli**, L.....**Cockspur Thorn**
Goat Island. Not common in Western New York; but here,
quite abundant.
- Amelanchier Canadensis**, Torr. and Gray.....**Shad-bush**
var. **Botryapium**, Gray.
Goat Island.
var. **oblongifolia**, Gray.
Goat Island. Clifton, Ontario.

SAXIFRAGACEÆ.

- Saxifraga Virginiensis** Michx.....**Spring Saxifrage**
Goat Island. Near De Vaux College. Lewiston.
- Saxifraga Pennsylvanica**, L.....**Swamp Saxifrage**
Cayuga Island, near LaSalle. *Clinton.*
- Tiarella cordifolia**, L.....**Mitre Wort**
Goat Island.
- Mitella diphylla**, L.....**Mitre Wort**
Goat Island.
- Mitella nuda**, L.....**Naked Mitre Wort**
Near Chippewa. *Clinton.*
- Chrysosplenium Americanum**, Schw.....**Golden Saxifrage**
Wet grounds near Clifton, Ontario.
- Parnassia Caroliniana**, Michx.
Goat Island near the Horse-shoe Fall. Wet grounds near Clifton,
Ontario. Near the water's edge at the Whirlpool on the Canadian
side.
- Ribes Cynosbati**, L.....**Wild Gooseberry**
Goat Island.
- Ribes oxycanthoides**, L. (*R. hirtellum*, Michx.) **Swamp Goose-**
berry. Wet places near Clifton, Ontario.
- Ribes floridum**, L. **Wild Black Currant**
Along the descent to the Ferry on the Canadian side.

CRASSULACEÆ.

- Penthorum sedoides**, L. **Ditch Stone Crop**
Damp places near Clifton, Ontario.
- SEDUM ACRE, L. **STONE CROP**
Goat Island and the mainland. Abundant.
- Sedum ternatum**, Michx. **STONE CROP**
Attributed to rocky places on Niagara River by Douglass. Not
seen by us.
- SEDUM TELEPHIUM, L. **LIVE-FOR-EVER**
Near De Vaux College.

HAMAMELACEÆ.

- Hamamelis Virginica**, L. **Witch Hazel**
Near De Vaux College.

HALORAGEÆ.

- Myriophyllum spicatum**, L. **Water Milfoil**
Niagara River above the Falls in shallow and quiet places.
- Myriophyllum verticillatum**, L. **Water Milfoil**
With the last.
- Myriophyllum heterophyllum**, Michx. **Water Milfoil**
Pools near Clifton, Ontario.

LYTHRACEÆ.

- Nesæa verticillata**, H. B. K. **Swamp Loosestrife**
Found in several places along the shores of Niagara River near
Lake Erie. Therefore very likely to occur near the Falls, but
not yet observed by us.

ONAGRACEÆ.

- Epilobium spicatum**, L. (*E. augustifolium*, L.) **Willow Herb**
Near De Vaux College.
- EPILOBIUM HIRSUTUM, L.
Introduced near Clifton, Ontario. Perhaps not established.
- Epilobium palustre**, L.
var. **lineare**, Gray.
Near Clifton, Ontario.
- Epilobium molle**, Torr.
In wet places near Clifton, Ontario.

Epilobium coloratum, Muhl.

Above the Falls on the American side.

Ludwigia palustris, Ell.

Not yet seen by us near the Falls, but may be confidently looked for.

Oenothera biennis, L. **Evening Primrose**
Goat Island and elsewhere.**Oenothera pumila**, L. (*O. chrysantha*, Michx.) . . **Dwarf Evening Primrose.**

Near the Cantilver Bridge on the Canadian side of the River.
Queenston Heights, Ontario. *Macoun.*

Gaura biennis, L. **Gaura**
Near the Devil's Hole.**Circœa Lutetiana**, L. **Enchanter's Nightshade**
Goat Island.**Circœa alpina**, L. **Enchanter's Nightshade**
Damp and shady woods near Clifton, Ontario.

CUCURBITACEÆ.

Echinocystis lobata, Torr. and Gray. **Wild Cucumber****Sicyos augulatus**, L. **Star Cucumber**

These two members of the Gourd family, occurring not rarely in Ontario and Western New York, have not been observed by us near the Falls. They may be expected.

FICOIDEÆ.

Mollugo verticillata, L. **Carpet Weed**
"On the railway track between Niagara Falls and Queenston."
Macoun.

UMBELLIFERÆ.

Hydrocotyle Americana, L. **Penny Wort**
Damp and shady places near Clifton, Ontario.**Sanicula Canadensis**, L. **Sanicle**
Goat Island.**Sanicula Marilandica**, L. **Sanicle**
Goat Island.**CONIUM MACULATUM**, L. **POISON HEMLOCK**
Road sides on the mainland.

- Cicuta maculata**, L. **Water Hemlock**
Goat Island.
- Cicuta bulbifera**, L. **Water Hemlock**
Wet places near Clifton, Ontario.
- CARUM CARUI**, Koch. **CARAWAY**
Goat Island.
- Sium cicutæfolium**, Gmel., (*S. lineare*, Michx.) . . **Water Parsnip**
Wet places near Clifton, Ontario.
- Pimpinella integerrima**, Benth. and Hooker. (*Zizia integerrima*,
DC.)
Near De Vaux College.
- Cryptotaenia Canadensis**, DC. **Hone Wort**
Goat Island.
- Osmorrhiza longistylis**, DC. **Smooth Sweet Cicely**
Goat Island.
- Osmorrhiza brevistylis**, DC. **Hairy Sweet Cicely**
Goat Island.
- Thaspium barbinode**, Nutt.
Near De Vaux College. Foster Flat, Ontario. *Macoun.*
- Thaspium aureum**, Nutt. **Golden Alexanders**
Goat Island.
- Archangelica atropurpurea**, Hoffm. **Great Angelica**
Wet grounds near Clifton, Ontario.
- PEUCEDANEUM SATIVUM**, Benth. and Hook. (*Pastinaca sativa*, L.) . . **PARSNIP**
Along the descent to the Ferry on the Canadian side.
- Heracleum lanatum**, Michx. **Cow Parsnip**
Goat Island. More abundant on the mainland.
- DAUCUS CAROTA**, L. **CARROT**
Near the Cantilever Bridge on the Canadian side.
- Erigenia bulbosa**, Nutt. **Harbinger of Spring**
Goat Island. Introduced. Established?

ARALIACEÆ.

- Aralia nudicaulis**, L. **Wild Sarsaparilla**
Goat Island. The Three Sisters.
- Aralia quinquefolia**, Gray. **Ginseng**
Goat Island, but rare.
- Aralia trifolia**, Gray. **Dwarf Ginseng**
Goat Island.

CORNACEÆ.

- Cornus florida**, L. **Flowering Dogwood**
Goat Island. Near De Vaux College.
- Cornus circinata**, L'Her. **Round-leaved Dogwood**
Goat Island near the Horse-shoe Fall.
- Cornus sericea**, L. **Silky Dogwood**
Goat Island.
- Cornus stolonifera**, Michx. **Red Osier**
Goat Island.
- Cornus paniculata**, L'Her. **Dogwood**
Goat Island. Near De Vaux College.
- Cornus alternifolia**, L.
Not uncommon in Western New York. Probably overlooked.
- Nyssa multiflora**, Wang. **Pepperidge. Tupelo**
Not a rare tree in Erie and Niagara Counties. Ought to be found
near the Falls.

CAPRIFOLIACÆ.

- Sambucus racemosa**, L. **Red-berried Elder**
var. **pubens**; Watson.
Goat Island.
- Sambucus Canadensis**, L. **Elder**
Goat Island.
- Viburnum Opulus**, L. . . . **Snowball. Guelder Rose. High
Cranberry.**
Grand Island. Likely to be found on either side of the River
near the Falls.
- Viburnum acerifolium**, L. **Arrow wood**
Near De Vaux College.
- Viburnum pubescens**, Pursh. **Arrow wood**
Goat Island. Near De Vaux College. Along the descent to the
Ferry on the Canadian side.
- Viburnum dentatum**, L. **Arrow wood**
Chippewa, Ontario. *Macoun*, on the authority of *Dr. MacLagan*.
Common on Grand Island.
- Viburnum nudum**, L. **Withe rod**
Probably in the wet grounds near Clifton, Ontario.
- Viburnum Lentago**, L. . . . **Sheep-berry. Sweet Viburnum**
Wet grounds near Clifton, Ontario.

- Triosteum perfoliatum**, L. **Horse Gentian**
Near De Vaux College.
- Symphoricarpus racemosus**, Michx. **Snowberry**
var. **pauciflorus**, Robbins.
Goat Island. Near De Vaux College and elsewhere.
- Lonicera ciliata**, Muhl. **Fly Honeysuckle**
Goat Island. Near Clifton, Ontario.
- LONICERA TARTARICA**, L. **TARTARIAN HONEYSUCKLE**
Goat Island. Near De Vaux College. Well established.
- Lonicera glauca**, Hill. (*L. parviflora*, Lam., var. *Douglasii*, Gray.)
Goat Island.
- Diervilla trifida**, Moench. **Bush Honeysuckle**
Near Clifton, Ontario.

RUBIACEÆ.

- Houstonia cærulea**, L. **Bluets. Innocence**
Near Lewiston.
- Houstonia purpurea**, L.
var. **ciliolata**, Gray.
Goat Island. Near the Whirlpool, on both sides of the River.
- Cephalanthus occidentalis**, L. **Button Bush**
Wet places near Clifton, Ontario.
- Mitchella repens**, L. **Partridge Berry**
Goat Island.
- Galium Aparine**, L. **Cleavers**
Goat Island and elsewhere.
- GALIUM MOLLUGO**, L. **BED STRAW**
Goat Island. Introduced.
- Galium pilosum**, Ait. **Bedstraw**
Near De Vaux College. Queenston, Ontario. *Macoun.*
- Galium circæzans**, Michx.
Lewiston. Queenston Heights, Ontario. *Macoun.*
- Galium lanceolatum**, Michx.
Near De Vaux College. Near the Whirlpool. Ontario. *Macoun,*
on the authority of *Dr. MacLagan.*
- Galium boreale**, L. **Northern Bed straw**
Goat Island. Near De Vaux College.
- Galium trifidum**, L.
var. **tinctorum**, Gray.
Goat Island.

Galium asprellum, Michx. **Rough Bedstraw**
Goat Island.

Galium triflorum, Michx. **Sweet Bedstraw**
Goat Island. Woods near De Vaux College.

VALERIANACEÆ.

VALERIANA OFFICINALIS, L. MILLEFLEUR. VALERIAN
Near the Cantilever Bridge on the Canadian side.

Valeriana dioica, L., var. **sylvatica**, Gray. (*V. sylvatica*, Rich.)
“Meadows, Niagara Falls.” [Ontario.] *Macoun*, on the authority
of *Dr. MacLagan*. Not seen by us.

DIPSACEÆ.

DIPSACUS SYLVESTRIS, Huds. TEASEL
Above the Falls, on the American side of the River. Near the
Devil’s Hole.

COMPOSITÆ.

Eupatorium purpureum, L. **Purple Thoroughwort**
Damp grounds near Clifton, Ontario.

Eupatorium perfoliatum, L. **Boneset. Thoroughwort**
Above the Falls on the American side.

Eupatorium ageratoides, L. f. **White Snakeroot**
Goat Island and elsewhere.

Liatrix cylindracea, Michx. **Button Snakeroot**
Near De Vaux College.

Solidago cæsia, L. **Golden Rod**
Near De Vaux College.

Solidago latifolia, L. **Golden Rod**
Goat Island.

Solidago bicolor, L. **Golden Rod**
Goat Island. Near De Vaux College.

var. **concolor**, Torr and Gray.
Near De Vaux College.

Solidago ulmifolia, Muhl. **Golden Rod**
Goat Island.

Solidago neglecta, Torr. and Gray. **Golden Rod**
“Niagara Falls.” *Macoun*, on the authority of *Dr. Burgess*.

Solidago arguta, Ait. **Golden Rod**
Chippewa. *Macoun*, on the authority of *Dr. MacLagan*.

- Solidago juncea**, Hook. (*S. arguta*, Ait.)..... **Golden Rod**
Goat Island.
- Solidago serotina**, Ait. **Golden Rod**
Goat Island. "Niagara District." *Macoun*.
var. **gigantea**, Gray.
Goat Island.
- Solidago Canadensis**, L. **Golden Rod**
Goat Island. Near Clifton, Ontario.
- Solidago nemoralis**, Ait. **Golden Rod**
Goat Island. Near Clifton, Ontario.
- Solidago rigida**, L. **Golden Rod**
Near De Vaux College.
- Solidago lanceolata**, Ait. **Golden Rod**
Margin of Niagara River above the Falls on the American side.
- BELLIS PERENNIS**, L. **ENGLISH OR TRUE DAISY**
In a lawn at Clifton, Ontario, where it has maintained itself a
number of years.
- Aster corymbosus**, Ait. **Aster**
Goat Island. Lewiston.
- Aster macrophyllus**, L. **Aster**
Goat Island. Near De Vaux College.
- Aster Novæ-Angliæ**, L. **New England Aster**
Goat Island and above the Falls on either side.
- Aster patens**, Ait. **Aster**
Near De Vaux College,
var. **phlogifolius**, Nees.
With the typical variety.
- Aster azureus**, Lindl. **Aster**
Near De Vaux College. La Salle. *Clinton*.
- Aster cordifolius**, L. **Aster**
Near De Vaux College.
- Aster sagittifolius**, Willd. **Aster**
Goat Island. "Niagara." *Macoun*, on the authority of *Dr.*
Maclagan.
- Aster lævis**, L. **Aster**
Near De Vaux College.
- Aster ericoides**, L. **Aster**
Near De Vaux College.
- Aster multiflorus**, L. **Aster**
Goat Island.

Aster vimineus, Lam. (*A. puniceus*, L., var. *vimineus*. Gray.
Aster.

Near Clifton, Ontario.

Aster diffusus, Ait. (*A. miser*, Nutt.).....**Aster**
Goat Island. Near Clifton, Ontario.

Aster Tradescanti, L.....**Aster**
Goat Island.

Aster paniculatus, Lam.....**Aster**
Goat Island. Near De Vaux College.

Aster prenanthoides, Muhl.....**Aster**
Near Clifton, Ontario.

Aster puniceus, L.....**Aster**
Goat Island.

Aster umbellatus, Mill. (*Diplopappus umbellatus*, Torr. and Gray.)
Aster.

Goat Island. Near Clifton, Ontario.

Aster ptarmicoides, Torr. and Gray.....**Aster**
Near De Vaux College. A species not common in our region, but
here rather abundant.

Erigeron bellidifolius, Muhl.....**Poor Robin's Plantain**
Goat Island.

Erigeron Philadelphicus, L.....**Pink Fleabane**
Near Clifton, Ontario.

Erigeron annuus, Pers.....**Fleabane**
Waste places on the mainland.

Erigeron strigosus, Muhl.....**Fleabane**
Goat Island.

Erigeron Canadensis, L.....**Horseweed**
Mainland above the Falls on the American side.

Antennaria plantaginifolia, Hook.....**Everlasting**
Lewiston.

Anaphalis margaritacea, Benth. and Hook. (*Antennaria mar-*
garitacea, R. Br.).....**Pearly Everlasting**
Near De Vaux College.

Gnaphalium polycephalum, Michx.....**Everlasting**
Near De Vaux College.

Gnaphalium uliginosum, L.

Damp places along road sides on the main land.

- INULA HELENIUM, L.**.....**ELECAMPANE**
Goat Island.
- Polymnia Canadensis, L.**.....**Leaf-cup**
Along the descent to the Ferry on the Canadian side of the River,
and at the Whirlpool and Foster's Flat, Ontario.
- Silphium trifoliatum, L.**
Attributed to the Falls, by *Torrey*, on the authority of *Dr. Eddy*.
Not observed by us.
- Ambrosia trifida, L.**.....**Rag Weed**
Margin of the River above the Falls.
- Ambrosia artemisiæfolia, L.**..... **Rag Weed**
Goat Island and with the foregoing species.
- Xanthium Canadense, Mill.**.....**Cockle-bur**
Above the Falls on the American side.
var. **echinatum, Gray.**
Chippewa, Ontario. *Macoun*, on the authority of *Dr. MacLagan*.
- Heliopsis lævis, Pers.**.....**False Sun-flower**
Near Clifton, Ontario.
- Rudbeckia hirta, L.**.....**Yellow Daisy**
Near Lewiston.
- Rudbeckia laciniata, L.**..... **Cone Flower**
Wet places near Clifton, Ontario.
- HELIANTHUS ANNUUS, L.**..... **COMMON SUN-FLOWER**
Escaped near Lewiston.
- Helianthus divaricatus, L.**.....**Sun-flower**
Goat Island.
- Helianthus strumosus, L.**.....**Sun-flower**
Goat Island. Near DeVaux College.
- Helianthus decapetalus, L.**.....**Sun-flower**
Damp places near Clifton, Ontario.
- Bidens frondosa, L.**.....**Cockle. Beggar's ticks**
Waste places on the main land.
- Bidens connata, Muhl.**.....**Beggar's ticks**
Goat Island.
- Bidens cernua, L.**
Wet places near Clifton, Ontario.
- Bidens chrysanthemoides, Michx.**
With the last and on the American side of the River above the
Falls.

Bidens Beckii, Torr.

Chippewa, Ontario. *Macoun*, on the authority of *Dr. MacLagan*.
Niagara River near Grand Island.

Helenium autumnale, L. Sneeze-weed
Goat Island and elsewhere in wet ground.

ANTHEMIS COTULA, L. (*Maruta Cotula*, D. C.). MAYWEED
Road sides on the main land.

Achillæa Millefolium, L. Yarrow
Goat Island.

CHRYSANTHEMUM LEUCANTHEMUM, L. OX-EYE DAISY
Goat Island and elsewhere.

CHRYSANTHEMUM PARTHENIUM, Pers. FEVERFEW
Lewiston. A garden scape.

TANACETUM VULGARE, L. TANSY
Near the Cantilever Bridge on the Canadian side.

ARTEMISIA VULGARIS, L. MUGWORT
Along the descent to the old landing on the American side of the
River, of the steamer "Maid of the Mist."

TUSSILAGO FARFARA, L. COLTSFOOT
By the railroad track between the Devil's Hole and Lewiston.

Senecio aureus, L. Golden Ragwort
Goat Island.

var. **Balsamitæ**, Torr. and Gray.

Near DeVaux College. Rays sometimes wanting.

SENECIO VULGARIS, L. GROUNDSEL
American side of the River above the Falls.

Erechtites hieracifolia, Raf. Fireweed
Goat Island. Near Clifton, Ontario.

ARCTIUM LAPPA, L. BURDOCK
Goat Island.

CNICUS ARVENSIS, Hoffm. CANADA THISTLE
Goat Island and elsewhere.

CNICUS LANCEOLATUS, Hoffm. COMMON THISTLE
Goat Island and elsewhere.

Cnicus pumilus, Torr. Pasture Thistle
Near DeVaux College.

Cnicus altissimus, Willd. Tall Thistle
var. **discolor**, Gray.
Goat Island.

- PICRIS ECHIOIDES, L.**
 "Along the road side between Clifton and Niagara Falls." *Macoun*.
- LAMPSANA COMMUNIS, L.**
 Queenston Heights, Ontario. *Macoun*, on the authority of *Millman*.
- HIERACIUM AURANTIACUM, L.**.....Hawkweed
 Goat Island. Introduced.
- Hieracium Canadense, Michx.**..... Canadian Hawkweed
 Near DeVaux College.
- Hieracium paniculatum, L.**.....Hawkweed
 With the last.
- Hieracium venosum, L.**.....Hawkweed
 Goat Island.
- Hieracium scabrum, Michx.**.....Hawkweed
 Near DeVaux College.
- Hieracium Gronovii, L.**.....Hawkweed
 Goat Island. Near Clifton, Ontario.
- Prenanthes alba, L. (*Nabalus albus*, Hook.)**.....White Lettuce
 Goat Island.
- Prenanthes altissima, L. (*Nabalus altissimus*, Hook.)**
 Lewiston. Foster's Flat, Ontario.
- TARAXACUM OFFICINALE, Web.**.....DANDELION
 Goat Island and elsewhere.
- Lactuca Canadensis, L.**.....Wild Lettuce
 Goat Island.
- Lactuca integrifolia, Bigelow. (*L. Canadensis* L., var. *integrifolia*,
 Torr. and Gray.)**
 Goat Island. Near Clifton, Ontario.
- Lactuca leucophæa, Gray. (*Mulgedium leucophæum*, DC.)** Blue
 Lettuce.
 Goat Island.
- SONCHUS OLERACEUS, L.**..... SOW THISTLE
 Goat Island.
- LOBELIACEÆ.**
- Lobelia siphilitica, L.**.....Blue Lobelia
 On the American side of the river above the Falls.
- Lobelia Kalmii, L.**.....Kalm's Lobelia
 Goat Island. Low grounds near Clifton, Ontario.
- Lobelia inflata, L.**.....Indian Tobacco
 Lewiston and elsewhere.

CAMPANULACEÆ.

- Specularia perfoliata**, A. DC **Venus's Looking Glass**
Niagara Falls. *Macoun*, on the authority of *Dr. Burgess*.
- CAMPANULA RAPUNCULOIDES, L BELLWORT
Road sides on the main land. Escaped from cultivation.
- Campanula rotundifolia**, L. **Harebell**
Goat Island, and thence to Lewiston.
- Campanula aparinoides**, Pursh **Marsh Bellflower**
Goat Island, in grassy places on the edge of the River.
- Campanula Americana**, L **Tall Bellflower**
Near Clifton, Ontario.

ERICACEÆ.

- Gaylussacia resinosa**, Torr. and Gray **Huckleberry**
Goat Island, and thence to Lewiston.
- Vaccinium stamineum**, L **Deerberry**
Near DeVaux College and at Lewiston.
- Vaccinium vacillans**, Solander **Low Blueberry**
Goat Island.
- Vaccinium corymbosum**, L. **Swamp Blueberry**
Wet ground near Clifton, Ontario.
- Arctostaphylos Uva-ursi**, Spreng. **Bearberry. Killikin-**
nick.
Goat Island. Vicinity of the Whirlpool on both sides of the River.
- Gaultheria procumbens**, L. **Winter-green**
Near the Whirlpool on the Canadian side.
- Chimaphila umbellata**, Nutt. **Prince's Pine**
Near DeVaux College.
- Pyrola secunda**, L.
Near DeVaux College.
- Pyrola chlorantha**, Swartz.
Niagara Falls. *Clinton*. Near the Whirlpool on the Canadian side.
- Pyrola elliptica**, Nutt.
Goat Island.
- Pyrola rotundifolia**, L **False Winter-green**
Near DeVaux College.
- Pterospora andromedea**, Nutt.
Near the Whirlpool on the American side.

Monotropa uniflora, L. **Indian Pipe**
Near the Whirlpool on the Canadian side.

Monotropa Hypopitys, L. **Pine-sap**
Goat Island. *Clinton*.

A sphagnous swamp, near Black Creek, Ontario, a few miles south of Chippewa, has produced the following named plants of this family:

Chiogenes hispidula, Torr. and Gray .. **Creeping Snowberry**

Andromeda polifolia, L. **Andromeda**

Cassandra calyculata, Don. **Leather Leaf**

Ledum latifolium, Ait. **Labrador Tea**

PRIMULACEÆ.

Dodecatheon Meadia, L. American Cowslip. . . **Shooting Star**
Goat Island. Introduced.

Steironema ciliatum, Raf.
Goat Island.

Steironema longifolium, Gray.
“Crevices of rocks at Niagara Falls.” *Macoun*.

Lysimachia stricta, Ait.
Wet grounds near Clifton, Ontario.

LYSIMACHIA NUMMULARIA, L. **MONEYWORT**
Escaping from gardens on the main land.

Lysimachia thyrsoiflora.
Wet grounds near Clifton, Ontario.

OLEACEÆ.

LIGUSTRUM VULGARE, L. **PRIVET**
Well established near Clifton, Ontario.

SYRINGA VULGARIS, L. **LILAC**
A well-grown lilac-tree was observed in flower in the gorge of the River, on the Canadian side, near the Cantilever Bridge, where it could not have been planted by man.

Fraxinus Americana, L. **White Ash**
Goat Island and elsewhere.

Fraxinus sambucifolia, Lam. **Black Ash**
Goat Island. Near Clifton, Ontario.

APOCYNACEÆ.

Apocynum androsæmifolium, L. **Dog Bane**
Near DeVaux College.

- Apocynum cannabinum**, L. **Indian Hemp**
Goat Island. Prospect Park. Lewiston.
- VINCA MINOR, L. PERIWINKLE. CREEPING MYRTLE
Goat Island. Introduced and spreading.

ASCLEPIADACEÆ.

- Asclepias tuberosa**, L. **Butterfly Weed**
Below the Falls on both sides of the River.
- Asclepias incarnata**, L. **Swamp Milkweed**
Goat Island. Wet grounds near Clifton, Ontario.
- Asclepias Cornuti**, Decaisne. **Common Milkweed**
Goat Island and elsewhere.
- Asclepias phytolaccoides**, Pursh. **Wood Milkweed**
Goat Island.
- Asclepias quadrifolia**, L. **Four-leaved Milkweed**
Near DeVaux College.
- Asclepias verticillata**, L. **Whorled Milkweed**
Near DeVaux College.
- Acerates viridiflora**, Ell. **Green-flowered Milkweed**
"Niagara Falls." *Macoun*.

GENTIANACEÆ.

- Gentiana serrata**, Gunner **Shorn Gentian**
Goat Island. Wet grounds near Clifton, Ontario.
- Gentiana Andrewsii**, Grieseb **Closed Gentian**
Chippewa, Ontario. *Macoun*, on the authority of *Dr. MacLagan*.
- Gentiana crinita*, Froel, occurs on Islands in Niagara River, near Lake Erie. *Gentiana Saponaria*, L., may be looked for on either side of the River above the Falls. *Gentiana quinqueflora*, Lam., probably will be found on the wooded hillsides near the Whirlpool on the Canadian side.
- Frasera Carolinensis**, Walt. **American Columbo**
Queenston Heights, Ontario. *Jos. Sturdy*. *Macoun*.

POLEMONIACEÆ.

- Phlox divaricata**, L. **Blue Phlox**
Goat Island and elsewhere.
- Polemonium reptans**, L. **Polemonium**
Goat Island. Uncommon.
[Assembly, No. 19.]

HYDROPHYLLACEÆ.

- Hydrophyllum Virginicum**, L. **Water Leaf**
Goat Island. Clifton, Ontario.
- Hydrophyllum Canadense**, L. **Water Leaf**
Near Clifton, Ontario.

BORRAGINACEÆ.

- CYNOGLOSSUM OFFICINALE, L. HOUNDS-TONGUE
Goat Island and elsewhere.
- Cynoglossum Virginicum**, L. Wild Comfrey
Near DeVaux College.
- Echinosperrum Virginicum**, Lehm. (*Cynoglossum Morisoni*,
DC.)
Goat Island.
- ECHINOSPERMUM LAPPULA, Lehm STICKWEED
Road sides on the main land.
- Myosotis laxa**, Lehm **Forget-me-not**
Wet grounds, near Clifton, Ontario.
- Myosotis verna**, Nutt.
Lewiston.
- LITHOSPERMUM ARVENSE, L. CORN GROMWELL
Goat Island and elsewhere.
- LITHOSPERMUM OFFICINALE, L. COMMON GROMWELL
Goat Island and elsewhere.
- Lithospermum latifolium**, Michx.
Near DeVaux College.
- SYMPHYTUM OFFICINALE, L. COMFREY
Niagara Falls. *Macoun*, on the authority of *Dr. MacLagan*.
- ECHIUUM VULGARE, L. VIPER'S BUGLOSS
Below the Falls on the American side.

CONVOLVULACEÆ.

- IPOMCEA PURPUREA, Lam. MORNING GLORY
Occasionally seen as a garden scape.
- CONVOLVULUS ARVENSIS, L. BINDWEED.
Above the Falls on the American side. Lewiston.
- Convolvulus spithamæus**, L. (*Calystegia spithamæa*, Pursh.)
Hedge-Bindweed.
Near the Whirlpool, Ontario. *Clinton*. Abundant near Lewiston.

Convolvulus sepium, L. (*Calystegia sepium*, B. R.) **Wild Morning Glory.**

Below Prospect park. Near DeVaux College.

Cuscuta inflexa, Englemann. **Dodder**Below Lewiston. Identified by *Dr. Englemann.***Cuscuta Gronovii**, Willd. **Dodder**

Above the Falls on the American side.

CUSCUTA EPILINUM, Weihe. **FLAX DODDER**Flax fields near Lewiston. *Clinton.*

SOLANACEÆ.

SOLANUM NIGRUM, L. **COMMON NIGHTSHADE**

Waste places on the main land.

SOLANUM DULCAMARA, L. **BITTERSWEET**

Goat Island.

Physalis Virginiana, Mill. (*P. viscosa* L.) **Ground Cherry**

Below the Falls on the Canadian side.

LYCIUM VULGARE, Dunal. **MATRIMONY VINE**Near the lower Suspension Bridge, on the American side. *Clinton.***DATURA STRAMONIUM**, L. **STRAMONIUM. THORN APPLE**

Waste places on the main land.

DATURA TATULA, L. **PURPLE THORN APPLE**

Near Lewiston.

HYOSCYAMUS NIGER, L. **HENBANE**Niagara. *Judge Logie.*

SCROPHULARIACEÆ.

VERBASCUM THAPSUS, L. **MULLEIN**

Goat Island and elsewhere.

VERBASCUM BLATTARIA, L. **MOTH MULLEIN**Niagara Falls, Ontario, and between Queenston and Niagara.
*Macoun.***LINARIA VULGARIS**, Mill. **BUTTER-AND-EGGS. TOAD FLAX**

Above the Falls on the American side. Lewiston.

Collinsia verna, Nutt.

Goat Island. Introduced.

Scrophularia nodosa, M. **Figwort**var. **Marilandica**, Gray.

Goat Island.

- Chelone glabra**, L. **Turtle-Head**
Wet ground near Clifton, Ontario.
- Pentstemon pubescens**, Solander **Pentstemon**
Goat Island and elsewhere.
- Pentstemon lævigatus**, Solander. (*P. Digitalis*, Nutt.) . . . **Pent-**
stemon.
Goat Island. Introduced.
- Mimulus ringens**, L. **Monkey-Flower**
Low grounds on the American side above the Falls.
- Gratiola Virginiana**, L.
With the last. Gill Creek. *Clinton.*
- Veronica Virginica**, L. **Culver's Physic**
Goat Island. Introduced.
- Veronica Anagallis**, L. **Water Speedwell**
Wet grounds near Clifton, Ontario.
- Veronica Americana**, Schw **Brooklime**
Margin of river on the American side above the Falls.
- Veronica scutellata**, L. **Marsh Speedwell**
Wet grounds near Clifton, Ontario.
- Veronica officinalis**, L. **Speedwell**
Near Lewiston.
- Veronica serpyllifolia**, L. **Thyme-leaved Speedwell**
Goat Island.
- Veronica peregrina**, L.
Above the Falls on the American side.
- VERONICA ARVENSIS**, L. **CORN SPEEDWELL**
Goat Island.
- Gerardia flava**, L. **Downy False Foxglove**
Near DeVaux College.
- Gerardia quercifolia**, Pursh. **Smooth False Foxglove**
Goat Island. Near DeVaux College.
- Gerardia purpurea**, L. **Purple Gerardia**
Goat Island. Wet grounds near Clifton, Ontario.
- Gerardia tenuifolia**, Vahl.
Near DeVaux College.
- Castilleia coccinea**, Spreng. **Painted Cup**
Near the Whirlpool on the Canadian side.
- Pedicularis Canadensis**, L. **Lousewort**
Goat Island.

Pedicularis lanceolata, Michx.

Wet grounds near Clifton, Ontario.

Melampyrum Americanum, Michx. **Cow-wheat**

Goat Island. Near DeVaux College.

OROBANCHACEÆ.

Aphyllon uniflorum, Gray **Broom-rape**

Near the Whirlpool on the Canadian side.

Conopholis Americana, Wallr. **Cancer-root**Above the Falls on the American side. *Clinton*. "Vicinity of Niagara Falls." *Macoun*, on the authority of *Dr. Maclagan*.**Epiphegus Virginiana**, Bart **Beechdrops**

Goat Island. Not common.

LENTIBULARIACEÆ.

Utricularia vulgaris, L. **Bladderwort**

Shallow and quiet places in Niagara river, near the American shore above the Falls.

Utricularia cornuta, Michx.Wet grounds near Clifton, Ontario. Not common now. "Abundant on the Table Rock." [1818.] *Nuttall*, *Gen. Am. Pl.*, vol. 1, p. 14.

ACANTHACEÆ.

Dianthera Americana, L. **Water Willow**Margin of Niagara River above the Falls on the American side. Chippewa, Ontario. *Macoun* on the authority of *Dr. Maclagan*.

VERBENACEÆ.

Phryma Leptostachya, L. **Lop-seed**

Goat Island.

Verbena urticæefolia, L. **White Vervain**

Above the Falls on the American side.

Verbena hastata, L. **Blue Vervain**

Goat Island and elsewhere.

LABIATÆ.

Teucrium Canadense, L. **Germander**Goat Island. Chippewa, Ontario. *Macoun*, on the authority of *Dr. Maclagan*.AJUGA REPTANS, L. **BUGLE**

Goat Island. Introduced.

- Collinsonia Canadensis**, L. **Horse Balm**
Near Clifton, Ontario.
- MENTHA VIRIDIS**, L. **SPEARMINT**
Goat Island. *Clinton*. Niagara Falls. *Macoun*, on the authority
of *Dr. Burgess*.
- MENTHA PIPERITA**, L. **PEPPERMINT**
Above the Falls on the American side. Near Lewiston.
- Mentha Canadensis**, L. **Wild Mint**
Goat Island and elsewhere.
- Lycopus Virginicus**, L. **Bugle Weed**
Goat Island.
- Lycopus sinuatus**, Ell. (*L. Europæus*, L., var. *sinuatus*, Gray.)
Shore of Niagara River on the American side above the Falls.
- Pycnanthemum lanceolatum**, Pursh **Mountain Mint**
Near DeVaux College.
- Calamintha Nuttallii**, Benth. (*C. glabella*, Benth., var. *Nuttallii*,
Gray.)
In wet, rocky places above Clifton, Ontario.
- Calamintha Clinopodium**, Beuth. **Basil**
Goat Island.
- MELISSA OFFICINALIS**, L. **LEMON BALM**
Niagara Falls. *Macoun*, on the authority of *Dr. Burgess*.
- Hedeoma pulegioides**, Pers. **False Penny Royal**
Near Lewiston.
- SALVIA OFFICINALIS**, L. **SAGE**
Near DeVaux College. Well established.
- Monarda fistulosa**, L. **Horse Mint**
Goat Island and elsewhere.
- Monarda didyma**, L., **Scarlet Balm**, ought to be found in the
low, rich grounds along the River, near Clifton, Ontario.
- Lophanthus nepetoides**, Benth. **Giant Hyssop**
Near DeVaux College. Between Niagara Falls and Lake Ontario.
Macoun, on the authority of *Dr. MacLagan*.
- Lophanthus scrophulariæfolius**, Benth.
Slopes of Queenston Heights. *Macoun*.
- NEPETA CATARIA**, L. **CATNEP**
Goat Island.
- NEPETA GLECHOMA**, Benth. **GROUND IVY**
Goat Island.

- Scutellaria lateriflora**, L. **Skull-Cap**
Wet grounds near Clifton, Ontario.
- Scutellaria parvula**, Michx. **Skull-Cap**
Near the Whirlpool on the Canadian side.
- Scutellaria galericulata**, Michx. **Skull-Cap**
Goat Island and elsewhere.
- Brunella vulgaris**, L. **Heal-All**
Goat Island and elsewhere.
- Physostegia Virginiana**, Benth.
Shores of the river above the Falls.
- LEONURUS CARDIACA, L. **MOTHERWORT**
Goat Island.
- Stachys aspera**, Michx. (*S. palustris*, L., var. *aspera*, Gray.) **Hedge**
Nettle.
Goat Island.

PLANTAGINACEÆ.

- PLANTAGO MAJOR, L. **COMMON PLAINTAIN**
Goat Island and elsewhere.
- Plantago Rugellii**, Decaisne. (*P. Kamtschatica*, Cham.) **Plaintain**
Goat Island and elsewhere.
- PLANTAGO LANCEOLATA, L. **RIB GRASS**
Near Clifton, Ontario.
- PLANTAGO MEDIA, L.
"Niagara." *Provancher, Flore Canadienne*, p. 474. Not seen by us.

AMARANTACEÆ.

- AMARANTUS RETROFLEXUS, L. **PIGWEEED**
Road sides on the main land.
- AMARANTHUS ALBUS, L. **WHITE AMARANT**
Road sides on the main land.

CHENOPODIACEÆ.

- CHENOPODIUM ALBUM, L. **PIGWEEED**
Goat Island and elsewhere.
- CHENOPODIUM GLAUCUM, L.
Road sides and waste places on the main land.
- CHENOPODIUM URBICUM, L. **PIGWEEED**
Bath Island.
- CHENOPODIUM HYBRIDUM, L.
Goat Island.

CHENOPUDIUM BOTRYS, L. **OAK-OF-JERUSALEM**
 "Niagara Falls." *Macoun*.

ATRIPLEX PATULA, L. **ORACHE**
 var. **HASTATA**, Gray.
 American side of the River above the Falls.
 var. **LITTORALIS**, Gray.
 With the last.

PHYTOLACCACEÆ.

Phytolacca decandra, L. **Poke weed**
 Goat Island.

POLYGONACEÆ.

POLYGONUM AVICULARE, L. **KNOT GRASS**
 Waste places on the main land.

POLYGONUM ERECTUM, L.
 Above the Falls on the American side.

Polygonum incarnatum, Ell.
 Shores of the River above the Fall.

Polygonum Pennsylvanicum, L.
 "In the Niagara District." *Macoun*, on the authority of *Dr. MacLagan*.

Polygonum amphibium, L.
 Islands of Niagara River. *Clinton*.

Polygonum Muhlenbergii, Watson. (*P. amphibium*, L. var. *terrestre*, Willd.)
 Margin of the River above the Falls.

POLYGONUM PERSICARIA, L. **LADY'S THUMB**
 Waste places on the main land.

Polygonum Hydropiper, L. **Smart weed**
 Margin of the River above the Falls.

Polygonum acre, H. B. K. **Smart weed**
 On the American side of the River above the Falls.

Polygonum hydropiperoides, Michx.
 Wet places near Clifton, Ontario.

Polygonum arifolium, L. **Tear-thumb**
 Chippewa, Ontario. *Macoun*, on the authority of *Dr. MacLagan*.

Polygonum sagittatum, L. **Tear-thumb**
 Doubtless to be found in the low, wet ground near Clifton,
 Ontario.

POLYGONUM CONVULVULUS, L. **BLACK BINDWEED**
 Waste places and road sides of the main land.

Polygonum dumetorum, L. **False Buckwheat**
var. **scandens**, Gray.

Chippewa, Ontario. *Macoun*, on the authority of *Dr. Maclagan*.

RUMEX CRISPUS, L. **YELLOW DOCK**
Road sides on the main land.

RUMEX OBTUSIFOLIUS, L. **BITTER DOCK**
In similar places as the last.

RUMEX ACETOSELLA, L. **SHEEP SORREL**
Near Clifton, Ontario.

ARISTOLOCHIACEÆ.

Asarum Canadense, L. **Wild Ginger**
Near Clifton, Ontario. Lewiston. Only the larger form (or species?) noticed.

PIPERACEÆ.

Saururus cernuus, L. **Lizard's Tail**
"Charles's Island above the Falls." [Ontario.] *Macoun*, on the authority of *Dr. Burgess*.

LAURACÆ.

Sassafras officinale, Nees. **Sassafras**
Lewiston. Near the Whirlpool on the Canadian side.

Lindera Benzoin, Meisner. **Spice bush**
Goat Island and the Three Sisters.

THYMELACEÆ.

Dirca palustris, L. **Moosewood**
Niagara, Ontario. *Macoun*, on the authority of *Dr. Maclagan*.

DAPHNE MEZEREUM, L. **MEZEREON**
Goat Island. Introduced and spreading.

ELEAGNACEÆ.

Shepherdia Canadensis, Nutt. **Shepherdia**
Goat Island and on each side of the River to Lewiston and Queenston.

SANTALACEÆ.

Comandra umbellata, Nutt. **Bastard Toad-Flax**
Goat Island. Lewiston and elsewhere.

EUPHORBIACEÆ.

- Euphorbia maculata**, L. **Spotted Spurge**
Main land on both sides of the River.
- Euphorbia platyphylla**, L. **Spurge**
Road sides on the main land.
- EUPHORBIA HELIOSCOPIA, L. SPURGE
With the last.
- EUPHORBIA CYPARISSIAS, L. CYPRESS SPURGE
Escaped.
- Euphorbia hypericifolia**, L. **Spurge**
Above the Falls on the American side.
- Acalypha Virginica**, L. **Three-seeded Mercury**
Near DeVaux College.

CERATOPHYLLACEÆ.

- Ceratophyllum demersum**, L. **Hornwort**
In shallow places in the River above the Falls on the American side. In pools near Clifton, Ontario.

URTICACEÆ.

- Ulmus fulva**, Michx. **Slippery Elm**
Goat Island. Lewiston.
- Ulmus Americana**, L. **American Elm**
Goat Island.
- ULMUS CAMPESTRIS, L. ENGLISH ELM,
Luna Island. Planted.
- Celtis occidentalis**, L. **Nettle Tree. Sugar Berry**
"Rather common between Queenston and Niagara." *Macoun.*
- Morus rubra**, L. **Red Mulberry**
Near DeVaux College. One small specimen observed near the Ferry landing on the Canadian side. "Not uncommon from Niagara Town along the river to the Whirlpool." *Macoun.*
- MORUS ALBA, L. WHITE MULBERRY
Spontaneous near Lewiston. Niagara Falls. *Macoun.*

- Urtica gracilis**, Ait. **Tall Nettle**
Goat Island.
- Laportea Canadensis**, Gaud. **Wood Nettle**
Damp grounds above Clifton, Ontario.
- Pilea pumila**, Gray. **Richweed**
Goat Island.
- Boehmeria cylindrica**, Willd. has probably been overlooked.
- CANNABIS SATIVA**, L. **HEMP**
Waste places on the main land.

PLATANACEÆ.

- Platanus occidentalis**, L. **Button Wood. Sycamore**
Goat Island.

JUGLANDACEÆ.

- Juglans cinerea**, L. **Butternut**
American side of the River above the Falls.
- Juglans nigra**, L. **Black Walnut**
Near DeVaux College. "Niagara Falls." *Macoun.*
- Carya alba**, Nutt. ... **White Hickory. Shell-bark Hickory**
Goat Island. Near DeVaux College. "At Queenston Heights
and the Falls it constitutes the greater part of the forest."
Macoun.
- Carya tomentosa**, Nutt. **Hairy Hickory**
"Amongst other hickories in the Niagara peninsula." *Macoun.*
- Carya porcina**, Nutt. ... **Pignut Hickory**
"Queenston Heights and Niagara Falls." *Macoun.*
- Carya amara**, Nutt. **Bitter Hickory**
Goat Island. In the village near the River. Below Lewiston.

BETULACEÆ.

- Betula lenta**, L. **Black Birch**
Goat Island.
- Betula lutea**, Michx. **Yellow Birch**
Goat Island near the Horse-shoe Fall.
- Betula papyracea**, Ait. **Paper Birch**
Goat Island. Below Lewiston.
- Alnus incana**, Willd. **Alder**
Goat Island. Wet grounds near Clifton, Ontario.

CUPULIFERÆ.

Carpinus Caroliniana, Walt. (*Carpinus Americana*, Michx.)
Blue Beech.

Goat Island.

Ostrya Virginica, Willd. **Iron Wood. Hop Hornbean**
Goat Island. Some of the trees very large.

Corylus rostrata, Ait **Hazelnut**
Near DeVaux College.

CORYLUS AVELLANA, L. **EUROPEAN FILBERT**
Planted on Luna Island.

Fagus ferruginea, Ait. **Beech**
Goat Island. Abundant.

Castanea vulgaris, Lam. **Chestnut**
var. **Americana**, A. DC.
Near DeVaux College. Lewiston. Queenston.

Quercus alba, L. **White Oak**
Goat Island; but more abundant near DeVaux College.

Quercus obtusiloba, Michx. **Post Oak**
"Niagara Falls." *Provancher, Flore Canadienne*, p. 543.

Quercus Prinus, L. **Chestnut Oak**
"Niagara." *Provancher, Flore Canadienne*, p. 543.

Quercus macrocarpa, Michx. **Bur Oak**
"Niagara." *Provancher, Flore Canadienne*, p. 543.

Quercus prinoides, Willd. (*Q. Prinus*, L., var. *humilis*, Gray.)
Dwarf Chestnut Oak.

Goat Island. "Common on Queenston Heights and in numerous
places around Niagara." *Macoun.*

Quercus rubra, L. **Red Oak**
Near Clifton, Ontario.

Quercus coccinea, Wang. **Scarlet Oak**
Goat Island. "In the forest along the Niagara river it is an
adundant tree." *Macoun.*

Quercus tinctoria, Bartram. **Quercitron**
Near DeVaux College. "Not uncommon at Niagara." *Macoun.*

Quercus palustris, Du Roi. **Pin Oak**
"Wet woods below Queenston Heights." *Macoun.*

SALICACEÆ.

Salix nigra, Marsh **Black Willow**
Goat Island. Moist places near Queenston, Ontario. *Macoun.*

- Salix lucida**, Muhl. **Shining Willow**
Goat Island. Near Clifton, Ontario.
- Salix discolor**, Muhl. **Glaucous Willow**
Goat Island.
- Salix rostrata**, Richardson. (*S. livida*, Wahl., var. *occidentalis*, Gray.)
Livid Willow.
Above the Falls on both sides of the River.
- Salix petiolaris**, Smith.
American side of the River above the Falls.
- Salix cordata**, Muhl. **Heart leaved Willow**
Goat Island.
- SALIX PURPUREA**, L. **BASKET WILLOW**
On the American side of the River, above the Falls. "Between
Niagara Town and Queenston." *Macoun.*
- SALIX ALBA**, L., and
SALIX BABYLONICA, L. are not uncommon in cultivation.
- POPULUS ALBA**, L. **ABELE. WHITE POPLAR**
Near DeVaux College.
- POPULUS CANESCENS**, Smith. **WHITE POPLAR**
Planted as a shade tree in places. This and the last species have
been often confounded by American botanists. *P. canescens* is
much the commoner.
- Populus tremuloides**, Michx. **American Aspen**
Goat Island.
- Populus grandidentata**, Michx. **Large-toothed Aspen**
Goat Island. The Three Sisters.
- Populus monilifera**, Ait. **Cotton wood**
Goat Island and occasionally on both sides of the River, above the
Falls to Lake Erie.
- Populus balsamifera**, L.
var. **candicans**, Gray. **Balm of Gilead**
Lewiston. A single tree near the Ferry landing on the Canadian
side ; probably not planted. The typical form may occur in
the vicinity of the Falls as it is not uncommon on the islands in
the River near Lake Erie. Not yet observed near the Falls.
- POPULUS DILATATA**, L. **LOMBARDY POPLAR**
Planted as a shade tree on the main land and spreading by the
root.

CONIFERÆ.

- Thuja occidentalis**, L. **Arbor-vitæ. White Cedar**
Goat Island. Near DeVaux College. The most abundant of the
evergreens growing near the Falls.
- **Juniperus communis**, L. **Juniper**
Goat Island.
- Juniperus Virginiana**, L. **Red Cedar**
Goat Island. Apparently disappearing.
- Taxus baccata**, L., var. **Canadensis**, Gray. **Ground Hemlock**
American Yew.
Goat Island.
- Pinus Strobus**, L. **White Pine**
Goat Island. A few specimens. More plentiful and of larger
growth near De Vaux College and below.
- Tsuga Canadensis**, Carriere. (*Abies Canadensis*, Michx.) **Hemlock**
Goat Island. Not a prevailing tree.

HYDROCHARIDACEÆ.

- Elodea Canadensis**, Mich. (*Anacharis Canadensis*, Planch.)
Water Snake-Weed.
In the old mill-race above the Falls on the American side and
elsewhere.
- Vallisneria spiralis**, L. **Tape-grass. Ell-grass**
With the last.

ORCHIDACEÆ.

- Corallorhiza multiflora**, Nutt. **Coral root**
Near the Whirlpool, Ontario.
- Spiranthes latifolia**, Torr. **Ladies' Tresses**
Wet places near Clifton, Ontario.
- Spiranthes cernua**, Rich. **Ladies' Tresses**
In the same places as the last.
- Habenaria Hookeri ana**, Torr. (*Habenaria Hookeri*, Torr.) **Twa**
Blade.
Near the Whirlpool, Ontario.
- Habenaria hyperborea**, R. Br.
Goat Island near the Horse-shoe Fall.
- Cypripedium pubescens**, Willd. **Ladies' Slipper. Moccasin**
Flower.
Near De Vaux College.

Cypripedium parviflorum, Salisb. . . **Ladies' Slipper. Moccasin Flower.**

Near the Whirlpool, Ontario.

IRIDACEÆ.

Iris versicolor, L **Blue Flag**
Goat Island. In wet places above the Falls on both sides of the River.**Sisyrinchium anceps**, Cav. (*Sisyrinchium Bermudiana*, L. var. *anceps*, Gray.) **Blue-eyed Grass**
Near De Vaux College.**Sisyrinchium mucronatum**, Mich. (*Sisyrinchium Bermudianum*, L. var. *mucronatum*, Gray.)
Not seen by us. Probably overlooked.

SMILACEÆ.

Smilax herbacea, L. **Carrion Flower**
Near De Vaux College.**Smilax hispida**, Muhl. (**Cat-Brier**), and **Smilax rotundifolia**, L., (**Green Brier**), have not been observed, but probably may be found.

LILIACEÆ.

Allium tricoccum, Ait. **Wild Leek**
Goat Island. Abundant.**Allium Canadense**, Kalm.
Goat Island. Not common.**Polygonatum biflorum**, Ell **Solomon's Seal**
Goat Island.**Smilacina racemosa**, Desf **False Solomon's Seal**
Goat Island and elsewhere.**Smilacina stellata**, Desf.
Goat Island. Only the small variety.**Maianthemum Canadense**, Desf. (*Smilacina bifolia*, Ker. var. *Canadensis*, Gray.) **Two-leaved Solomon's Seal****ASPARAGUS OFFICINALIS**, L **ASPARAGUS**
Goat Island and elsewhere. Not common.**Lilium Philadelphicum**, L **Fire Lily**
Near De Vaux College.**HEMEROCALLIS FULVA**, L. **DAY LILY**
Near the Cantilever bridge on the Canadian side. Escaped from cultivation.

- Erythronium Americanum**, Ker. **Yellow Adder's-Tongue**
Goat Island and elsewhere.
- Uvularia grandiflora**, Smith.....**Bellwort**
Goat Island.
- Oakesia sessilifolia**, Watson. (*Uvularia sessilifolia*, L.).... **Small Bellwort.**
Goat Island.
- Streptopus roseus**, Michx.....**Streptopus**
Goat Island.
- Prosartes lanuginosa**, Don.....**Prosartes**
Goat Island.
- Veratrum viride** Ait.....**False Helebore**
Low grounds near Clifton, Ontario.
- Chamælririum Carolinianum**, Wild. (*Chamælririum luteum*, Gray.)
Devil's Bit.
Between Stamford and the Whirlpool, Ontario. Abundant.
- Medeola Virginica**, L.....**Cucumber Root**
Goat Island. Not common.
- Trillium erectum**, L.....**Purple Trillium**
Goat Island.
var. **album**, Pursh.
With the typical form.
- Trillium grandiflorum**, Salisb.....**Large White Trillium**
Goat Island. Flower with green stripes through the petals
frequently produced.

PONTEDERIACEÆ.

- Pontederia cordata**, L.....**Pickerel Weed**
Niagara River above the Falls in quiet places.
- Schollera graminifolia**, Willd.....**Water Star Grass**
Not uncommon along the margin of Niagara River near Lake
Erie and likely to be found in places nearer the Falls.

JUNCACEÆ.

- Luzula pilosa**, Willd.....**Hairy Wood-Rush**
Near De Vaux College.
- Luzula campestris**, DC
With the last.
- Juncus effusus**, L.....**Soft Rush**
Above the Falls near the River on the American side.

- Juncus bufonius**, L..... Rush
In similar situations as the last.
- Juncus tenuis**, Willd..... Rush
Low places on the main land.
- Juncus acuminatus**, Mich..... Rush
var. **debilis**, Engleman.
In low grounds.
- Juncus nodosus**, L..... Rush
Goat Island, in wet places near the margin of the River.
var. **megacephalus**, Torr.
With the last.
- Juncus Canadensis**, J. Gay..... Rush
On both sides of the River above the Falls.

TYPHACEÆ.

- Typha latifolia**, L..... Cat-tail Flag
At the water's edge near the foot of the American staircase.
- Typha angustifolia**, L.... Narrow-leaved Cat-tail Flag
Niagara Falls. *Clinton*.
- Sparganium eurycarpum**, Engleman..... Bur Reed
American side of the River above the Falls.
- Sparganium simplex**, Hudson..... Bur Reed
With the last.

AROIDEÆ.

- Arisæma triphyllum**, Torr ... Indian Turnip. Jack-in-the-Pulpit.
Goat Island. A large and small variety common.
- Peltandra Virginica**, Raf... Arrow Arum
Niagara Falls. *Clinton*. Not seen by us. Perhaps *P. undulata*, Raf.
- Symplocarpus foetidus**, Salisb..... Skunk's Cabbage
Wet places above Clifton, Ontario.
- Acorus Calamus**, L..... Calamus. Sweet Flag
With the last.

LEMNACEÆ.

- Lemna trisulca**, L..... Duck's meat
Niagara River above the Falls in quiet places.
- Spirodela polyrrhiza**, Schleid..... Duck's meat
In similar places as the last.
- Wolffia Columbiana**, Karst.
Niagara River above the Falls. *Prof. Kellicott*.
[Assembly, No. 19.]

ALISMACEÆ.

- Alisma Plantago**, L. **Water Plantain**
 var. *Americana*, Gray.
 Margin of Niagara River above the Falls.
- Sagittaria variabilis**, Engelman. **Arrow-Head**
 Above the Falls in wet places on the Canadian side.
- Sagittaria heterophylla**, Pursh.
 Niagara River, near La Salle. *Clinton*.
- Triglochin palustre**, L.
 Wet ground above Clifton, Ontario. Of unusual size.

NAIADACEÆ.

- Naias flexilis**, Rostk. **Naiad**
 Niagara River above the Falls.
- Zannichellia palustris**, L. **Horned Pondweed**
 Abundant in the upper portion of Niagara River and therefore to
 be expected nearer the Falls.
- Potamogeton natans**, L. **Pondweed**
 Niagara River near Strawberry Island. *Clinton*.
- Potamogeton hybridus**, Michx. **Pondweed**
 Black Creek, Ontario, opposite Grand Island.
- Potamogeton rufescens**, Schrader. **Pondweed**
 Niagara River. *Rev. Thomas Morong*.
- Potamogeton fluitans**, Roth. (*P. lonchites*, Tuckerman.) . . **Pond-**
weed.
 Niagara River. *Rev. Thomas Morong*.
- Potamogeton lucens**, L. **Pondweed**
 Niagara River.
- Potamogeton amplifolius**, Tuckerman. **Pondweed**
 Niagara River. *Rev. Thomas Morong*.
- Potamogeton gramineus**, L. **Pondweed**
 var. **heterophyllus**, Fries.
 Niagara River.
 var. **elongatus**, Morong.
 Niagara River. *Rev. Thomas Morong*.
- Potamogeton prælongus**, Wulfen **Pondweed**
 Niagara. *Provancher, Flore Canadienne*, p. 627.
- Potamogeton perfoliatus**, L. **Pondweed**
 var. **lanceolatus**, Robbins.
 Niagara River. *Rev. Thomas Morong*.

Potamogeton zosteriæfolius, Schum. (*P. compressus*, L.).. **Pondweed.**

Niagara River.

Potamogeton Niagarensis, Tuckerman.....**Pondweed**

“Rapids above the Falls.” *Gray’s Manual*, (5th Ed.) p. 489.

Rediscovered, after many years, in 1886, in the old mill-race above the Falls, on the American side, by the *Rev. Thomas Morong*.

Potamogeton pauciflorus, Pursh.....**Pondweed**

Niagara River.

Potamogeton pusillus, L.....**Pondweed**

Niagara River.

Potamogeton pectinatus, L.....**Pondweed**

Niagara River.

Potamogeton Robbinsii, Oakes.....**Pondweed**

Niagara River.

[NOTE.—It is not asserted that all the species of *Potamogeton*, above named, have yet been detected in the immediate vicinity of the Falls, but as they all occur more or less abundantly in the upper portion of the River (except as noted), they may well be expected nearer the Falls.]

CYPERACEÆ.

Cyperus diandrus, Torr..... **Galingale**

var. *castaneus*, Torr.

Goat Island, on the east side, near the River.

Cyperus esculentus, L. (*Cyperus phymatodes*, Muhl.).. **Galingale**

Goat Island near the River.

Cyperus strigosus, L.....**Galingale**

Wet places near Clifton, Ontario.

Cyperus filiculmis, Vahl, has probably been overlooked.

Dulichium spathaceum, Richard.....**Dulichium**

Wet places near Clifton, Ontario.

Eleocharis ovata, R. Br. (*Eleocharis obtusa*, Schult.).. **Spike Rush**

Near the shores of the River above the Falls.

Eleocharis palustris, R. Br.....**Spike Rush**

With the last and growing in the water.

Eleocharis tenuis, Schult.....**Spike Rush**

Damp places above the Falls.

Eleocharis acicularis, R. Br.....**Spike Rush**

Shores of the River above the Falls on either side.

- Scirpus planifolius**, Muhl. **Spike Rush**
Near De Vaux College.
- Scirpus pungens**, Vahl **Spike Rush**
Wet places above Clifton, Ontario.
- Scirpus lacustris**, L. (*S. validus*, Vahl.) **Great Bull Rush**
Margin of the River, on the American side, above the Falls. Wet
places above Clifton, Ontario.
- Scirpus fluviatilis**, Gray **Club Rush**
Wet places above Clifton, Ontario.
- Scirpus atrovirens**, Muhl.
Wet places along the River above the Falls on either side.
- Scirpus lineatus**, Michx.
East side of Goat Island in wet places near the River.
- Eriophorum cyperinum**, L. (*Scirpus Eriophorum*, Mich.).. **Wool
Grass.**
Wet places above Clifton, Ontario.
- Carex polytrichoides**, Muhl. **Sedge**
Wet places above Clifton, Ontario.
- Carex Steudellii**, Kunth. **Sedge**
Near Clifton, Ontario.
- Carex bromoides**, Schkr. **Sedge**
Wet places near Clifton, Ontario.
- Carex vulpinoides**, Michx. **Sedge**
Above the Falls, on the American side, in low places.
- Carex stipata**, Muhl. **Sedge**
With the last.
- Carex rosea**, Schkr. **Sedge**
Goat Island in damp places.
var. **retroflexa**, Torr. (*Carex retroflexa*, Muhl.) **Sedge**
Goat Island in damp places.
- Carex sterilis**, Willd. **Sedge**
Near Clifton, Ontario.
- Carex scoparia**, Schkr. **Sedge**
With the last.
- Carex tribuloides**, Wahl. (*Carex lagopodioides*, Schkr.)... **Sedge**
With the last.
var. **cristata**, Bailey. (*Carex cristata*, Schw.) **Sedge**
Goat Island.

- Carex straminea**, Schkr. Sedge
Near De Vaux College.
- Carex aquatilis**, Willd. Sedge
Margin of the River above the Falls.
- Carex torta**, Boott. Sedge
Near Clifton, Ontario.
- Carex stricta**, Lam. Sedge
In wet, grassy places on the American side above the Falls.
- Carex crinita**, Lam. Sedge
Near Clifton, Ontario.
- Carex aurea**, Nutt. Sedge
Near Clifton, Ontario.
- Carex granularis**, Muhl. Sedge
Near Clifton, Ontario.
- Carex conoidea**, Schkr. Sedge
Moist places on the American side above the Falls.
- Carex grisea**, Wahl. Sedge
With the last.
- Carex virescens**, Muhl. Sedge
Near De Vaux College.
- Carex plantaginea**, Lam. Sedge
Near Lewiston.
- Carex retrocurva**, Dew. Sedge
Goat Island.
- Carex platyphylla**, Carey. Sedge
Near De Vaux College.
- Carex digitalis**, Willd. Sedge
Goat Island.
- Carex laxiflora**, Lam. Sedge
var. *plantaginea*, Boott.
Near De Vaux College.
- Carex eburnea**, Boott. Sedge
Goat Island, and near De Vaux College.
- Carex Pennsylvanica**, Lam. Sedge
Lewiston.
- Carex varia**, Muhl. Sedge
Near Clifton, Ontario.
- Carex prasina**, Wahl. (*Carex miliacea*, Muhl.) Sedge
Wet places above Clifton, Ontario.

- Carex debilis**, Michx. Sedge
With the last.
- Carex Oederi**, Retz. Sedge
Goat Island, near the Horse-shoe Fall. Niagara. *Provancher*,
Flore Canadienne, p. 658.
- Carex riparia**, Curtis. Sedge
Eastern side of Goat Island.
- Carex trichocarpa**, Muhl. Sedge
Near Clifton, Ontario.
- Carex comosa**, Boott. Sedge
Near Clifton, Ontario.
- Carex intumescens**, Rudge. Sedge
Near Clifton, Ontario.
- Carex lupulina**, Muhl. Sedge
Wet grounds above the Falls on either side.
- Carex rostrata**, With. var. *utriculata*, Bailey. (*Carex utriculata*,
Boott.) Sedge
With the last.

[NOTE.—It is not unlikely that a number of other species of this large and difficult genus may still be found in the vicinity of the Falls; and, as our specimens have not been submitted to any one who has made the *Carices* a special study, it is quite probable that some of our determinations may prove erroneous.]

GRAMINEÆ.

- Panicum glabrum**, Gaudin. PANIC GRASS
Road sides on the main land.
- Panicum sanguinale**, L. CRAB GRASS. PANIC GRASS
Above the Falls on the American side of the River.
- Panicum capillare**, L. Witch Grass
A garden weed on the main land.
- Panicum virgatum**, L. Panic Grass
Wet grounds near Clifton, Ontario. Dry places near De Vaux
College. The latter an unusual situation.
- Panicum latifolium**, L. Panic Grass
Near De Vaux College.
- Panicum clandestinum**, L. Panic Grass
Goat Island.
- Panicum dichotomum**, L. Panic Grass
Near De Vaux College.

- Panicum depauperatum**, Muhl. **Panic Grass**
Goat Island and the Three Sisters in rocky places.
- Panicum CRUS-GALLI**, L. **BARN-YARD GRASS**
Waste places on the main land.
- SETARIA VIRIDIS**, Beauv. **GREEN FOX-TAIL GRASS**
Above the Falls on the American side.
- Spartina cynosuroides**, Willd. **Cord Grass**
Margin of the River above the Falls on either side.
- Zizania aquatica**, L. **Wild Rice**
Niagara River above the Falls.
- Leersia Virginica**, Willd. **White Grass**
Goat Island.
- Leersia oryzoides**, Swartz. **Rice Cut Grass**
Wet places above Clifton, Ontario.
- Andropogon provincialis**, Lam. (*A. furcatus*, Muhl.) **Beard Grass.**
Near De Vaux College.
- Andropogon scoparius**, Michx. **Beard Grass**
Near De Vaux College.
- Chrysopogon nutans**, Benth. (*Sorghum nutans*, Gray.) . **Indian Grass.**
Near DeVaux College.
- Phalaris arundinacea**, L. **Reed Canary Grass**
Near Clifton, Ontario. Islands in the River above the Falls.
- Oryzopsis melanocarpa**, Muhl. **Mountain Rice**
Near the Whirlpool, Ontario.
- Oryzopsis asperifolia**, Michx. **Mountain Rice**
Goat Island. Near DeVaux College.
- Oryzopsis juncea**, Michx. (*Oryzopsis Canadensis*, Torr.) . **Mountain Rice.**
Near Lewiston.
- Muhlenbergia glomerata**, Trin. **Drop-seed Grass**
Niagara Falls. *Clinton.*
- Muhlenbergia Mexicana**, Trin. : **Drop-seed Grass**
Niagara Falls. *Clinton.*
- Muhlenbergia sylvatica**, Torr. and Gray. **Drop-seed Grass**
Foster's Flat, Ontario. *Clinton.*
- Muhlenbergia Willdenovii**, Trin. **Drop-seed Grass**
Lewiston.

- Muhlenbergia diffusa**, Schreb. **Nimble Will**
Near the Whirlpool, Ontario. *Clinton.*
- Muhlenbergia capillaris**, Kunth. **Hair Grass**
"On the talus below the Falls on the American side." *Clinton.*
- Brachyelytrum aristatum**, Beauv.
¹Goat Island. Near De Vaux College.
- PHLEUM PRATENSE, L. **TIMOTHY**
Goat Island and the main land.
- Alopecurus geniculatus**, L. **Fox-tail Grass**
Near the lower Suspension bridge, Ontario.
- Sporobolus vaginæflorus**, Vasey. (*Vilfa vaginæflora*, Torr.).. **Rush**
Grass.
Lewiston. Near the Whirlpool, Ontario.
- Agrostis perennans**, Tuckerman. **Thin Grass**
Lewiston.
- Agrostis scabra**, Willd.. . . . **Hair Grass**
Near DeVaux College.
- Agrostis alba**, L. (*Agrostis vulgaris*, With.) **Red Top Grass**
Grassy places. Goat Island and elsewhere.
var. **vulgaris**, Thurb. **Fiorin**
Margin of the River above the Falls on the American side.
- Cinna arundinacea**, L. **Reed Grass**
Near Clifton, Ontario.
- Deyeuxia Canadensis**, Beauv. (*Calamagrostis Canadensis*, Beauv.)
Blue-joint Grass.
Goat Island, on the water's edge.
- Deschampsia flexuosa**, Griseb. (*Aira flexuosa*, L.) **Common**
Hair Grass.
Near DeVaux College.
- Deschampsia cæspitosa**, Beauv. (*Aira cæspitosa*, L.) **Hair**
Grass.
Goat Island.
- Avena striata**, Michx. **Wild Oat**
Lewiston and elsewhere.
- AVENA SATIVA, L. **OAT**
Road sides above the Falls. Not persistent.
- Danthonia spicata**, Beauv. **Wild Oat Grass**
Near DeVaux College. Near the Whirlpool, Ontario.

- Phragmites communis**, Trin. **Reed**
Niagara River above the Falls.
- Eatonia Pennsylvanica**, Gray. **Eatonia**
Moist places above the Falls.
- DACTYLIS GLOMERATA**, L. **ORCHARD GRASS**
Above the Falls on the American side.
- Poa annua**, L. **Low Spear Grass**
Goat Island and the main land.
- Poa compressa**, L. **Wire Grass**
Goat Island and the main land.
- Poa serotina**, Ehrh. **False Red Top**
Wet grounds above Clifton, Ontario.
- Poa pratensis**, L. **Common Meadow Grass. Kentucky Blue Grass.**
Goat Island.
- Poa debilis**, Torr.
Near De Vaux College.
- Poa alsodes**, Gray.
Near De Vaux College.
- Glyceria nervata**, Trin. **Fowl-Meadow Grass**
Above the Falls on both sides of the River.
- Glyceria pallida**, Trin.
Niagara river above the Falls on the American side.
- Glyceria arundinacea**, Kunth. (*G. aquatica*, Smith.) **Reed Meadow Grass.**
Wet places above Clifton, Ontario.
- Glyceria fluitans**, R. Br.
Old mill-race above the Falls on the American side.
- Festuca duriuscula**, L. (*F. ovina*, L., var. *duriuscula*, Gray.)
Sheep's Fescue.
Goat Island.
- FESTUCA ELATIOR**, L. **MEADOW FESCUE**
Goat Island.
- Festuca nutans**, Spreng. **Fescue**
Near DeVaux College. Lewiston.
- BROMUS SECALINUS**, L. **CHESS**
Fields near Lewiston.

- BROMUS RACEMOSUS**, L. **CHESS**
Fields near Lewiston.
- Bromus Kalmii**, Gray. **Wild Chess**
Near the Whirlpool, Ontario.
- Bromus ciliatus**, L. **Wild Chess**
Near De Vaux College.
- LOLIUM TEMULENTUM**, L. **BEARDED DARNEL**
Near the landing of the old steamer "Maid of the Mist," on the
American side. *Clinton.*
- Agropyrum repens**, Beauv. (*Triticum repens*, L.) **Couch,**
Quitch, or Quick Grass.
Road sides near Clifton, Ontario.
- Agropyrum caninum**, R. and S. (*Triticum caninum*, L.) . . **Awned**
Wheat Grass.
Goat Island.
- Elymus Virginicus**, L. **Lyme Grass**
On either side of the River above the Falls.
- Elymus Canadensis**, L. **Lyme Grass**
Near the Whirlpool, Ontario.
- Elymus striatus**, Willd. **Lyme Grass**
Near De Vaux College.
- Asprella Hystrix**, Willd. (*Gynostichum Hystrix*, Schreb.) . **Bottle-**
Brush Grass.

EQUISETACEÆ.

- Equisetum arvense**, L. **Horse-Tail**
Goat Island and elsewhere.
- Equisetum limosum**, L. **Horse-Tail**
Islands of Niagara River. *Clinton.*
- Equisetum palustre**, L. **Horse-Tail**
Wet places above Clifton, Ontario.
- Equisetum hyemale**, L. **Scouring Rush**
Near the Whirlpool, Ontario, and elsewhere.
- Equisetum variegatum**, Schleicher.
Goat Island. Wet places above the Falls, on the Canadian side.
- Equisetum scirpoides**, Michx.
Near the Whirlpool, Ontario.

OPHIOGLOSSACEÆ.

Botrychium Virginianum, Swartz. (*B. Virginicum*, Swartz.)
Moonwort.

Goat Island and elsewhere.

Botrychium ternatum, Swartz. **Moonwort**
var. **intermedium**, D. C. Eaton. (*B. lunarioides*, D. C. Eaton.)
Near Clifton, Ontario.

Ophioglossum vulgatum, L. **Adder's Tongue**
Occurs on Grand Island, and may, therefore, be confidently looked
for in favorable situations near the Falls.

FILICES.

Onoclea Struthiopteris, Hoffm. (*Struthiopteris Germanica*, Willd.)
Ostrich Fern.

Goat Island and elsewhere.

Onoclea sensibilis, L. **Sensitive Fern**
Goat Island and elsewhere.

Osmunda regalis, L. **Royal Fern**
Goat Island. Not common. Near Clifton, Ontario.

Osmunda Claytoniana, L. **Interrupted Fern**
Near Clifton, Ontario.

Osmunda cinnamomea, L. **Cinnamon Fern**
Near Clifton, Ontario.

Cystopteris fragilis, Swartz.

Between Lewiston and Youngstown. Near De Vaux College.

Cystopteris bulbifera, Bern. **Bladder Fern**
Goat Island and along the American stair-case. Near the Whirl-
pool, Ontario.

Aspidium Noveboracense, Swartz. **New York Fern**
Goat Island.

Aspidium Thelypteris, L. **Shield Fern**
Goat Island.

Aspidium spinulosum, Swartz. **Shield Fern**
var. **intermedium**, D. C. Eaton.
Near Clifton, Ontario.

Aspidium cristatum, Swartz. **Shield Fern**
Foster's Flat, Ontario.

- Aspidium Goldianum**, Hook. **Shield Fern**
Near the Whirlpool, Ontario.
- Aspidium marginale**, Swartz. **Shield Fern**.
Goat Island. Devil's Hole. Foster's Flat, Ontario.
- Aspidium Lonchitis**, Swartz. **Shield Fern**
"Sparingly at Foster's Flat," Ontario. *Burgess*.
- Aspidium achrostichoides**, Swartz. **Christmas Fern**
Goat Island. Near De Vaux College. Lewiston.
- Phegopteris Dryopteris**, Fée. **Beech Fern**
Devil's Hole.
- Camptosorus rhizophyllus**, Link. **Walking Fern**
Not uncommon near the Whirlpool, Ontario. Foster's Flat,
Ontario. Near De Vaux College, but rare.
- Scolopendrium vulgare**, Smith. **Hart's tongue Fern**
Introduced in one place in the gorge of the River by Judge
Clinton several years ago.
- Asplenium Trichomanes**, L. **Spleen wort**
Near De Vaux College. Foster's Flat, Ontario.
- Asplenium ebeneum**, Ait. **Spleen wort**
Near De Vaux College, but rare. Near Lewiston, abundant.
- Asplenium achrostichoides**, Swartz. (*Asplenium thelypteroides*,
Michx.) **Spleen wort**
Near the Whirlpool, Ontario.
- Asplenium Filix-fœmina**, Bern. **Lady-Fern**
Foster's Flat, Ontario.
- Pellæa gracilis**, Hook. **Cliff-Brake**
"Crevices of rocks at Foster's Flat," Ontario. *Burgess*. Not
seen by us.
- Pellæa atropurpurea**, Link. **Cliff-Brake**
Formerly on Goat Island and the Three Sisters. Not lately seen
by us. Probably extirpated. Near De Vaux College. Foster's
Flat, Ontario. Rare.
- Pteris aquilina**, L. **Common Brake**
Near De Vaux College and at Lewiston.
- Adiantum pedatum**, L. **Maiden-Hair Fern**
Goat Island. Not abundant. Near Clifton, Ontario.
- Polypodium vulgare**, L. **Polypody**
Goat Island. The Three Sisters. Near De Vaux College.
Lewiston.

LYCOPODIACEÆ.

Lycopodium lucidulum, Michx.**Lycopodium dendroideum**, Michx.**Lycopodium complanatum**, L.

No species of **Lycopodium** (or **Ground Pine**) has been seen by us in the immediate vicinity of the Falls. Yet it is likely that the three species here mentioned may be found, as they are not rare elsewhere in Western New York.

SELAGINELLACEÆ.

Selaginella ruprestis, Spring..... **Rock Selaginella**
Cliffs of Niagara River near the Devil's Hole.

Selaginella Apus, Spring..... **Selaginella**
Goat Island near the Horse-shoe Falls. Damp grounds on both
sides of the River above the Falls.

Isoetes echinospora, Duiren..... **Quill wort**
var. *Braunii*, Englemann.

Not seen by us; but occurring in the River above the Falls.
Clinton.

HYDROPTERIDES.

Marsilia quadrifolia, L..... **Marsilia**
Introduced into the Niagara River above the Falls and in a pool
near Lewiston.

Azolla Caroliniana, Willd..... **Azolla**
"At a saw-mill half a mile above the village." Niagara. *Dr.*
Robbins.

NOTE.—The unnamed species of *Tilia*, herein referred to seems to be only a variety of *Tilia Americana*, L. July 26, 1888.

FIFTH ANNUAL REPORT

OF THE

COMMISSIONERS

OF THE

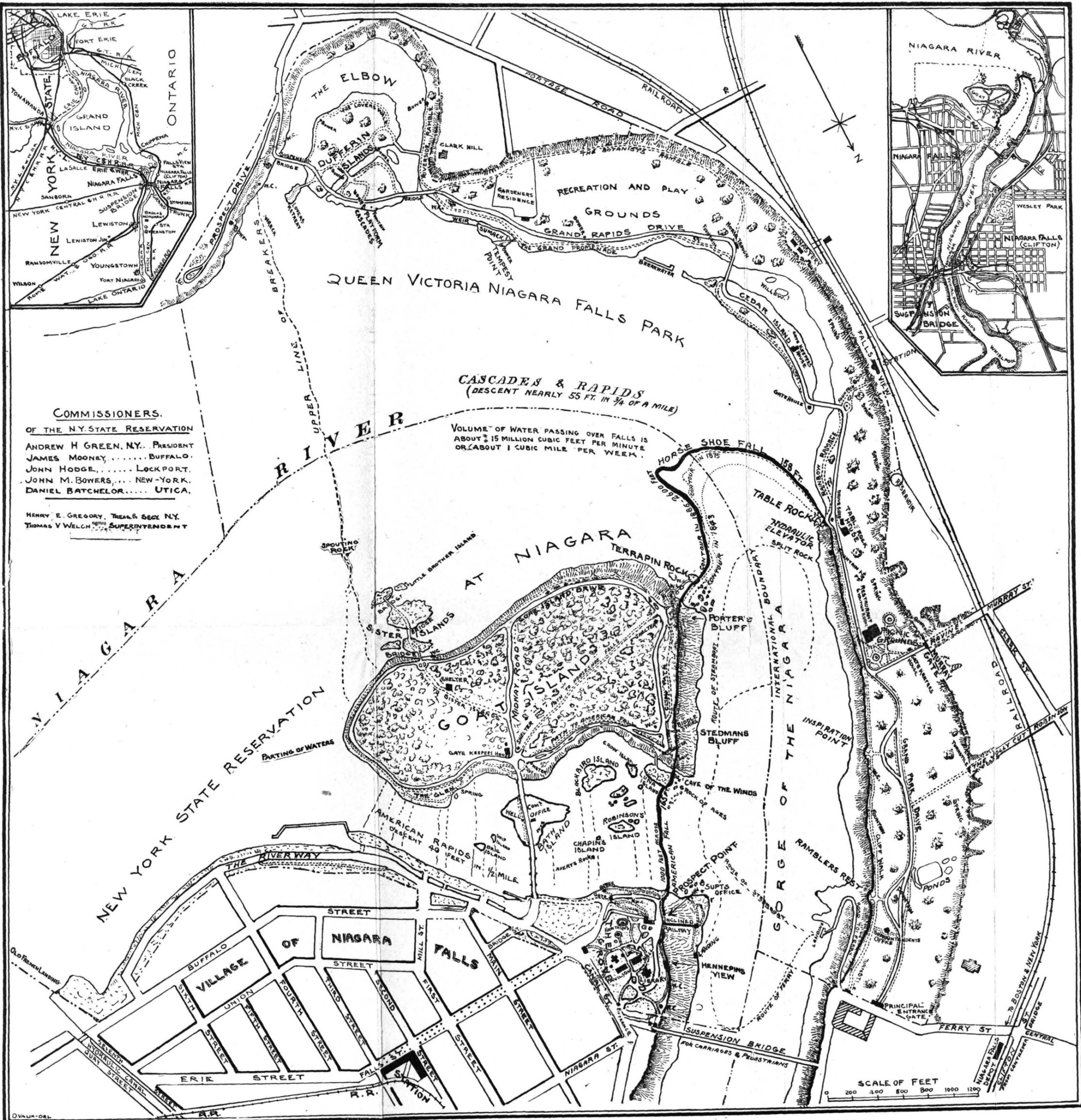
State Reservation at Niagara,

FOR THE YEAR 1888.

TRANSMITTED TO THE LEGISLATURE FEBRUARY 6, 1889.

ALBANY:
THE TROY PRESS COMPANY, PRINTERS.

1889.



COMMISSIONERS.

OF THE N.Y. STATE RESERVATION

ANDREW H. GREEN, N.Y., PRESIDENT
 JAMES MOONEY, BUFFALO
 JOHN HODGE, LOCKPORT
 JOHN M. BOWERS, NEW-YORK
 DANIEL BATCHELOR, UTICA

HENRY E. GREGORY, TREAS. & SECY. N.Y.
 THOMAS V. WELCH, SUPERINTENDENT

CASCADERS & RAPIDS
 (DESCENT NEARLY 55 FT. IN 3/4 OF A MILE)

VOLUME OF WATER PASSING OVER FALLS IS
 ABOUT 15 MILLION CUBIC FEET PER MINUTE
 OR ABOUT 1 CUBIC MILE PER WEEK.

SCALE OF FEET
 0 200 400 600 800 1000 1200

FIFTH ANNUAL REPORT

OF THE

N. Y. COMMISSIONERS

OF THE

State Reservation at Niagara,

FOR THE YEAR 1888.

TRANSMITTED TO THE LEGISLATURE FEBRUARY 6, 1889.

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THE TROY PRESS COMPANY, PRINTERS.
1889.

STATE OF NEW YORK.

No. 23.

IN ASSEMBLY,

FEBRUARY 6, 1889.

FIFTH ANNUAL REPORT

OF THE

COMMISSIONERS OF THE STATE RESERVATION
AT NIAGARA, FOR THE FISCAL YEAR FROM
OCTOBER 1, 1887, TO SEPTEMBER 30, 1888.

COMMISSIONERS. — Andrew H. Green, President; James Mooney, John Hodge, John M. Bowers.

Treasurer and Secretary — Henry E. Gregory; *Superintendent* — Thomas V. Welch.

To the Honorable the Legislature of the State of New York:

The Commissioners of the State Reservation at Niagara, as required by law, submit their report for the fiscal year from October 1, 1887, to September 30, 1888.

The acts of the Legislature, passed in 1883 and 1885, under which the State acquired title to the lands now included within the reservation at Niagara, received the approval of the intelligent people of the State. Indeed it may be said, that an enlightened public sentiment demanded that the islands and shore of the Niagara in close proximity to "the imperial cataract," should become the property of the State in order that the defacement to which,

during the continuance of private ownership, they had been subjected, might cease and thereafter be effectually prevented.

It seemed proper that the State's most marvelous natural phenomenon should receive the care and protection of the State, not only that the scenery about the Falls might be made more attractive, but that the value of the cataract itself, as a source of edification and of pleasure, might be increased and permanently preserved.

By the act of 1885 nearly a million and a half of dollars were appropriated to pay for the lands of the reservation, and the people, through their representatives, said: "They shall forever be reserved by the State for the purpose of restoring the scenery of the Falls of Niagara to, and preserving it in its natural condition; they shall forever be kept open and free of access to all mankind, without fee, charge or expense to any person for entering upon, or passing to, or over any part thereof."

In establishing the Niagara Reservation, the State, it is now generally conceded, wrought a good work. It has been well said that "The purchase by the State of the grounds surrounding Niagara Falls, for the purpose of removing obstructions and securing the inviolable grandeur of the spectacle, is one of the most striking recent illustrations of true public spirit. The argument was that it was an unparalleled scene of natural sublimity within the domain of the State; that its unobstructed contemplation was a high moral benefit to the community, and that the consciousness of its neglect and of its practical destruction, as a natural spectacle, would be morally injurious to the people."

The exceptional magnificence of the cataract renders it in some sort the heritage of all mankind, and justifies a departure from the rigid rules that should ordinarily govern the acquisition of property by the State.

Men influenced only by the spirit of trade and personal advantage had wrought an injury to the scenery of Niagara, not to repair which, would be a neglect of public duty. It is the privilege of the State hereafter to guard the lands of the Niagara Reservation from profanation.

That, in the long period during which the islands and shore of the river in the immediate vicinity of the Falls were under private



ARTOTYPE,

E. BIENSTADT, N. Y.

NIAGARA FALLS, FROM THE SUSPENSION BRIDGE.

proprietorship, the scenery should suffer disfigurement, was, in the nature of things, inevitable. The utility of the swift-rushing stream to owners of mills and factories was early recognized. Useful as mills and factories are, they are never beautiful, and the presence of a number of such architectural deformities near the Falls could not fail to strike the sense of all lovers of nature as incongruous. But the dominant materialism of the age, refusing to spare even Niagara, exacted service of the river, and extorted therefrom a tribute to commerce.

Hence, when the Commissioners entered upon the discharge of their duties, they found upon the territory of the reservation a collection of structures that would be deemed unornamental anywhere, but that were particularly objectionable near the Falls of Niagara.

Plainly the first duty of the Commissioners was to displace the edifices which offended the sight and disfigured the landscape. With this work they were occupied principally in the years 1885 and 1886, although improvements, such as necessary repairs to bridges, paths and roads, were not neglected.

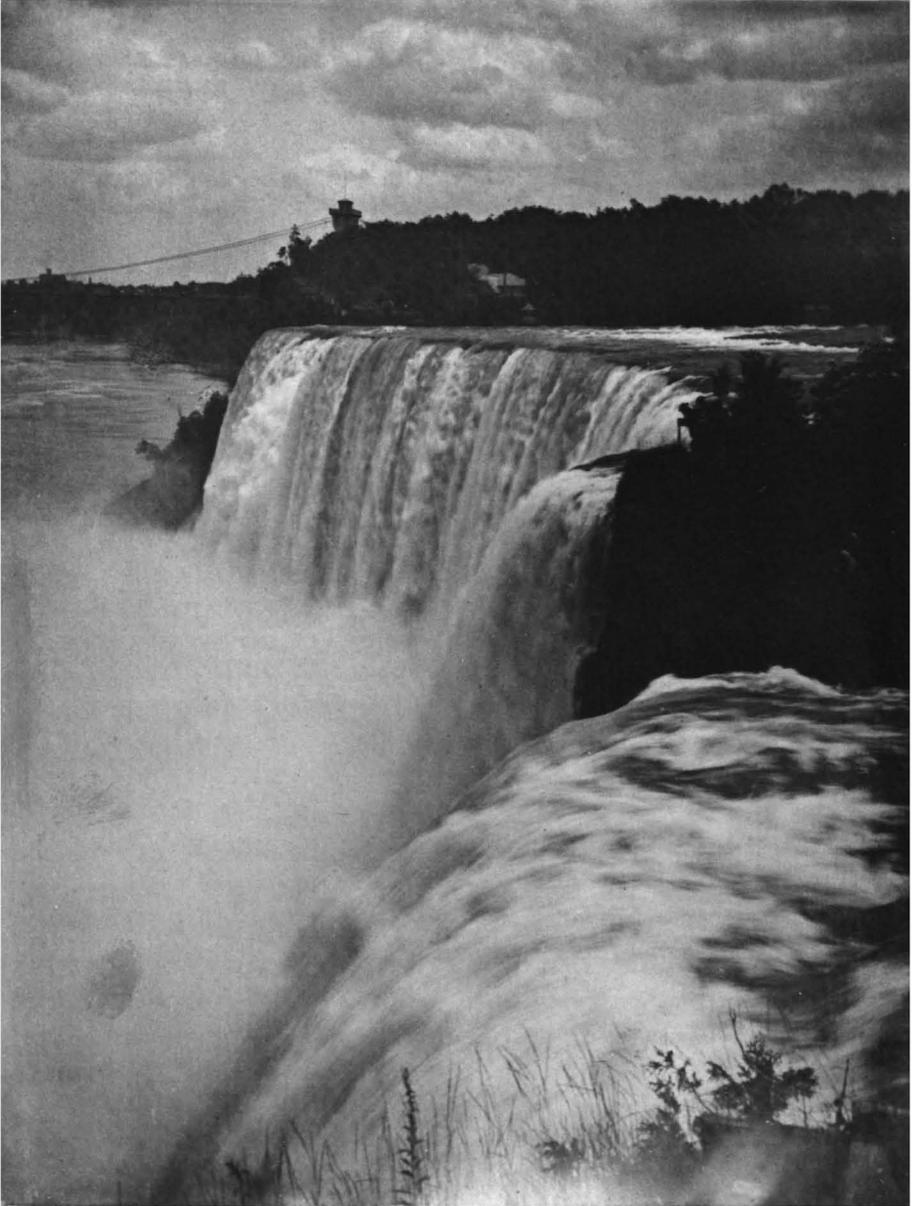
Previous reports show what has been done by way of demolition and removal, and it is sufficient here to state that obtrusive objects and blemishes upon the landscape no longer excite the aversion of visitors at Niagara.

The demolition and removal of the buildings to which reference has been made, may be said to have been merely the beginning of the labors of the Commissioners. "The work of destruction," they concisely said, "must be followed by one of construction." The restoration of the scenery of the Falls requires the exercise of a sound judgment under the guidance of an observant and refined taste. In order to carry their plans into effect the commissioners respectfully represent that a considerable appropriation is indispensable. Without a sufficient provision for the protection and improvement of certain portions of the reservation, the property of the State will suffer permanent damage. Goat Island, for example, the largest and most beautiful island of the reservation, receiving, as it does, along its southern shore the unbroken force of the current, is continually being worn away and its acreage annually diminished. The necessity of taking measures

to prevent this abrasion, or erosion at Goat Island was referred to in the last annual report, and the subject was again brought to the attention of the Legislature in a special communication in April, 1888. The Hon. John Bogart, State Engineer and Surveyor, in compliance with a request of the Commissioners, visited the reservation in the same month, and after examining the island, reported that a timber wall or crib was necessary to protect the southern shore from the destructive abrasion of the river. It was at that time estimated that the sum of \$10,000 would be sufficient for the construction of such wall, and the Legislature was asked to appropriate that sum.

The Commissioners this year renew their request for the same amount for this purpose. The soil of the island is composed largely of gravel and quicksand, and no argument is needed to prove that the incessant attrition of the swift current is constantly reducing the size and slowly changing the configuration of Goat Island. Ordinary prudence would justify and commend the expenditure of the amount needed to arrest this serious damage. Situated most beautifully, with its varied wealth of trees and shrubs, Goat Island is the garden of the reservation. Referring to its flora, Mr. Day, in the introduction to his botanical catalogue, said: "Goat Island is very rich in the number of its species—probably no tract of land in its vicinity can be found exhibiting so large a number. Its vernal beauty is attributable not merely to its variety of plants conspicuous in flower, but also to the extraordinary abundance in which they are produced."

Its forest growths make Goat Island a place of many enchantments to appreciative visitors, who ramble at leisure up and down its shaded paths. From almost every point along its margin superb views are to be had. On the south one may look in the direction of Lake Erie, across the smooth, wide surface of the river, with the gently sloping banks on either side. From other points the wild music of the rapids salutes the ear, and the turbulent rushing waters fascinate the sight. From the western brink there is to be seen the transcendent spectacle of the Horse-shoe and American Falls, with the gorge of the river below and the Canadian escarpment opposite.



ARTOTYPE,

E. BIERSTADT, N. Y.

AMERICAN FALLS, FROM GOAT ISLAND.

It was from Terrapin Tower, formerly on the southwest margin of the island, that Professor Tyndall, in 1872, observed with so great interest and pleasure the falling waters. From this tower," he wrote, "at all hours of the day and at some hours of the night, I watched and listened to the Horse-shoe Fall. The river here is evidently much deeper than the American branch, and instead of bursting into foam where it quits the ledge, it bends solidly over and falls in a continuous layer of the most vivid green. The tint is not uniform, but varied, long stripes of deeper hue alternating with bands of brighter color. Close to the ledge over which the water rolls, foam is generated, the light falling upon which, and flashing back from it, is sifted in its passage to and fro, and changed from white to emerald green. Heaps of superficial foam are also formed at intervals along the ledge, and immediately drawn down in long white striæ. Lower down, the surface, shaken by the reaction from below, incessantly rustles into whiteness. The descent finally resolves itself into a rhythm, the water reaching the bottom of the fall in periodic gushes. Nor is the spray uniformly diffused through the air, but is wafted through it in successive veils of gauze-like texture. From all this it is evident that beauty is not absent from the Horse-shoe Fall, but majesty is its chief attribute. The plunge of the water is not wild, but deliberate, vast and fascinating."

While the defense of the southern shore of the island from the action of the river should immediately commend itself to the Legislature, the opportunities that are presented for the judicious expenditure of money in the direction of permanent improvements upon Goat Island are not to be neglected. A comparatively moderate outlay would make Goat Island, what it should be, a park of unequalled attractions. Particularly would the Commissioners urge upon the Legislature the need of an appropriation sufficient for the construction of roads and paths permanently solid and substantial. This matter was referred to in the third and fourth annual reports. The Goat Island roads are not in the condition they should be, and we respectfully request that the sum of \$25,000 be appropriated for the purpose of improving them. Nor should the shore of the river, from Port Day to Pros-

pect Park, fail to receive the attention it deserves. There is need here not only of improved paths and roads, but also of much grading, sodding, filling, planting.

The last report contained an account of what had been done by the Ontario authorities towards freeing the Canadian bank of the river from the disfigurements and repairing the injuries to which it also had for long years been exposed. On the 24th of May, 1888, the Queen Victoria Niagara Falls Park was declared open. Its area is much greater than that of the New York reservation, and extends from a point near the Suspension Bridge southerly along the river towards Chippewa, a distance of about two miles and a half. By an order in council, dated July 15th, 1887, a strip of land along the bank of the river, stretching from the Clifton House almost to Queenston, has been placed under the control of the commissioners of the Queen Victoria Park. This accession of territory increases the domain under the Ontario commissioners to more than three hundred acres. The New York reservation, it will be remembered, includes only one hundred and six acres.

No visitor to Niagara will fail either to recognize the attractiveness or admire the beauty of the Queen Victoria Park, with its smooth lawns, well-kept roads and charming views of the Horse-shoe and American Falls. The people of Canada may well be congratulated upon the acquisition of so extensive a territory for a public park.

That there should be some means of communication between the two countries at or near the Whirlpool bluffs, as a convenience to visitors, if for no other purpose, may be regarded as a reasonable improvement, which should not long be postponed. A bridge thrown across the river at a point near the Whirlpool would prove to be of great service to the public and of permanent value to both jurisdictions. People having descended from the Falls by a suitable roadway, could then, without inconvenience, cross the river and find themselves within the limits or near the entrance of the Ontario Park. The Commissioners deem such a roadway and bridge highly desirable as an additional attraction to the vicinity as well as a great public convenience. The cañon at this point is about eight hundred feet in width, and the banks on either side are naturally adapted for a bridge.



ARTOTYPE,

E. BIERSTADT, N. Y.

CAVE OF THE WINDS.

An expression of these views has been communicated to the chairman of the Ontario commissioners, who has assured us of his approval of the general project as above indicated. The Hon. John Bogart, State Engineer and Surveyor, has expressed his willingness, if the requisite authority were given him, to make the surveys that such an undertaking would necessitate. The correspondence is appended to this report.

It is to be regretted that the *débris* slope from the Falls to the Whirlpool is not within the limits of the reservation. The third annual report, with reference to this subject, said: "It is an essential element in the great spectacle of Niagara, and forms the connecting link, bridging together the Falls and Whirlpool, which are a source of almost equal interest to visitors. As at present bounded, the reservation is located almost entirely above the Falls, so that the many important features which lie below are outside of its limits and beyond the protection of the State."

The unique and impressive beauty of the Whirlpool has been admirably described by Professor Tyndall. "At some distance below the Whirlpool Rapids," he writes, "we have the celebrated Whirlpool itself. Here the river makes a sudden bend to the northeast, forming nearly a right angle with its previous direction. The water strikes the concave bank with great force, and scoops it incessantly away. A vast basin has been thus formed, in which the sweep of the river prolongs itself in gyrotory currents. Bodies and trees, which have come over the Falls, are stated to circulate here for days without finding the outlet. From various points of the cliffs above, this is curiously hidden. The rush of the river into the Whirlpool is obvious enough; and though you imagine the outlet must be visible, if one existed, you cannot find it. Turning, however, round the bend of the precipice to the northeast, the outlet comes into view.

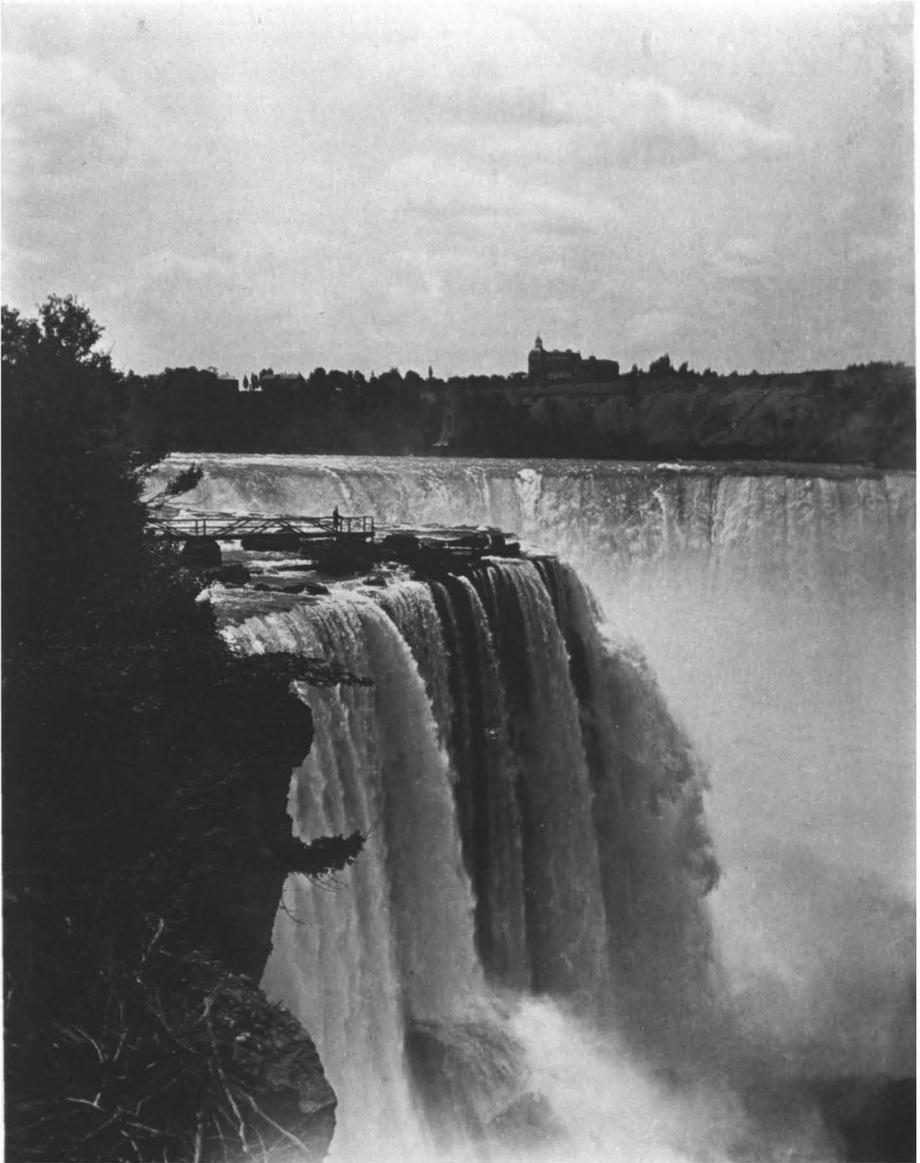
"The Niagara season had ended; the chatter of sight-seers had ceased, and the scene presented itself as one of holy seclusion and beauty. I went down to the river's edge, where the weird loneliness and loveliness seemed to increase. The basin is inclosed by high and almost precipitous banks, covered, when I was there, with russet woods. A kind of mystery attaches itself to gyrating water, due perhaps to the fact that we are to some extent ignorant

of the direction of its force. It is said that at certain points of the Whirlpool pine trees are sucked down, to be ejected mysteriously elsewhere. The water is of the brightest emerald green. The gorge through which it escapes is narrow, and the motion of the river swift, though silent. The surface is steeply inclined, but it is perfectly unbroken. There are no lateral waves, no ripples with their breaking bubbles to raise a murmur, while the depth is here too great to allow the inequality of the bed to ruffle the surface. Nothing can be more beautiful than this sloping liquid mirror, formed by the Niagara in sliding from the Whirlpool."

It is surely evidence of the growth of a wholesome sentiment and a liberal taste, that in the two countries, Niagara should have been considered so interesting and important as to induce the two governments to assume the ownership of lands circumjacent to the Falls, in order that the scenery, restored to its primeval beauty, might afford instruction and give delight to mankind.

While there are two parks or reservations, and two boards of commissioners charged with the management of the public domain at Niagara, there will no doubt be substantial agreement between the Canadian and New York boards as to the course to be pursued in the improvement of both sides of the river. In the work of restoration and development it is to be expected that both boards will recognize the importance of progressing along parallel lines, keeping constantly in view essentially the same ends, clearly perceiving the value of harmony and congruity in the final results. Entire conformity, especially in details, is not demanded by the most exacting taste. Nature, it should be remembered, may be assisted, but it is difficult to improve her works. Artificial adornment should be confined within the limits of a reasonable provision for the necessities, sensible satisfactions and beneficial enjoyments of the public.

The Commissioners are unanimously of the opinion that nothing in the direction of restoration or improvement on the reservation should be tolerated that would in the slightest degree tend to divert the attention of visitors from the river and the Falls. Rather should all efforts be directed towards making them the chief objects of popular interest and observation. No garish or glaring structures are to be erected; no pretentious exhibitions of



ARTOTYPE,

E. BIERSTADT, N. Y

HORSE SHOE FALLS, FROM GOAT ISLAND.

statuary or architecture are to be permitted; the simplicity of nature should at all times be preserved. The contemplation of natural scenery unquestionably tends to refine the sentiments and elevate the mind, and it is entirely unnecessary to descant upon the important educating and moral influence of so majestic and marvelous a natural object as Niagara Falls. Sir Charles Lyell, many years ago, said: "The Falls of Niagara teach us not merely to appreciate the power of moving water, but furnish us at the same time with data for estimating the enormous lapse of ages during which that force has operated. A deep and long ravine has been excavated, and the river has required ages to accomplish the task; yet the same region affords evidence that the sum of these ages is as nothing, and as the work of yesterday, when compared to the antecedent periods, of which there are monuments in the same district."

The task before the Commissioners is by no means a slight one. The restoration of the scenery of the Falls, and the preservation of it in its natural condition, were the main purposes for which they were appointed. The work will necessarily be slow. Nature, long exposed to injury and outrage, can only gradually be restored to its original condition. The Commissioners, with such assistance as may be obtainable, working "in the spirit of nature with an invisible hand of art," will at length be able to repair the ravages of human kind, and effect a transformation which they trust will be both creditable to them and adequately correspondent to the reasonable expectations of the public.

The Commissioners regret their inability to report that the work of the past year has been of that essentially progressive character such as they have desired to undertake. On account of an insufficient appropriation they have been forced very largely to maintain an inactivity which is neither agreeable to them nor creditable to the State.

During the winter the collection of masses of ice in the river below the Falls formed what is called an ice-bridge. This proved to be an attraction to large numbers of visitors who considerably augmented the receipts from the inclined railway. These receipts in January were only \$42.60, while in February they amounted to \$748.05, and in March to \$142.15.

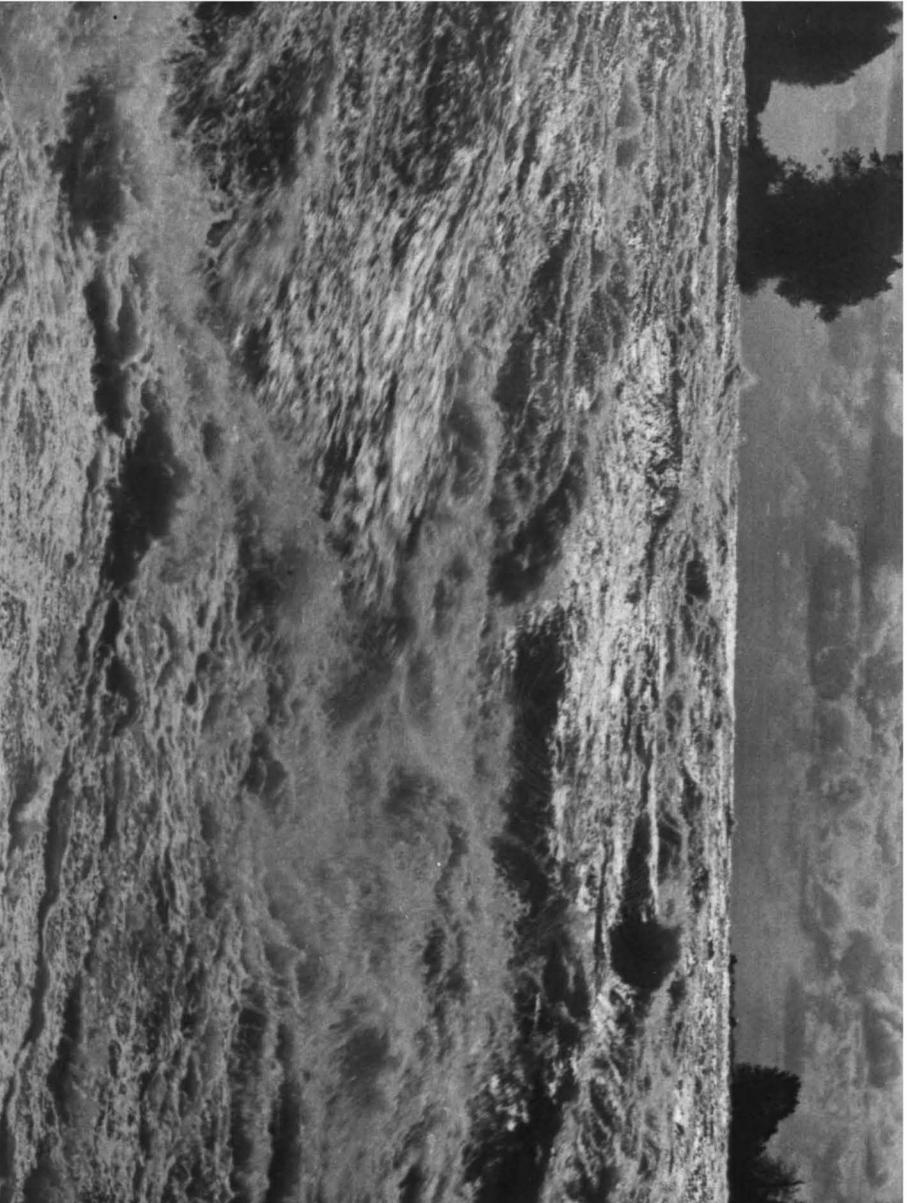
It has been thought best, as a matter of prudence, to substitute in place of the old wooden beams in the main bridges iron needle beams, which are much more safe and durable. Five pairs of these, at a cost of \$280, have been inserted. The Three Sister Islands' bridges have been replanked. Two hundred feet of an approved iron railing have been placed on Goat Island, where it was especially needed for the safety of visitors.

The number of persons who have visited the reservation during the year is probably somewhat larger than in 1887, although the summer was exceptionally unfavorable. The report of the superintendent specifies the number of visitors in excursion parties during each month.

The monthly receipts from the inclined railway were as follows :

1887.	
October	\$276 70
November	69 40
December.....	48 20
1888.	
January	42 60
February	748 05
March	142 15
April	70 80
May.....	251 00
June	586 70
July.....	1,265 65
August	1,946 30
September	1,065 00
Total	<u>\$6,512 55</u>

As required by law, the Commissioners, on October 1, 1887, paid to the State Treasurer \$1,176.95, said amount being the total of cash in their possession, as commissioners ; and at the beginning of each month during the fiscal year the total of receipts and earnings of the reservation for the month preceding has been transmitted to the State Treasurer. A requisition made quarterly upon the Comptroller for the fourth part of the sum of \$20,000, appropriated by chapter 656, Laws of 1887, has been honored by the State Treasurer.



ANTHTYPE,

RAPIDS ABOVE NIAGARA FALLS.

E. BIRNBAUM, N. Y.

The treasurer appointed by the Commissioners has given a bond to the people of the State, with two sureties approved by the Comptroller, in the sum of \$10,000. Said bond has been filed in the office of the Secretary of State.

The treasurer's report, herewith submitted, contains a statement in detail of all the Commissioners' receipts and expenditures for the fiscal year, ending September 30, 1888, of which the following is a summary :

Balance on hand, September 30, 1887..... \$1,176 95

RECEIPTS.

Inclined railway (including \$11.95, receipts of September 30, 1887, added to October statement).....	6,524 50
Rentals.....	1,580 00
Sales.....	35 72
Interest, 1887.....	14 38
	<hr/>
	\$9,331 55
Interest, 1888.....	35 14
From State Treasurer.....	20,000 00
	<hr/>
Total.....	\$29,366 69

DISBURSEMENTS.

Pay-roll at Niagara.....	\$12,512 58
Labor and material.....	3,549 73
Commissioners and treasurer.....	3,949 37
	<hr/>
	\$20,011 68
Remitted to State Treasurer.....	9,331 55
	<hr/>
	29,343 23
	<hr/>
Balance on hand, September 30, 1888.....	\$23 46
	<hr/> <hr/>
Total receipts since organization of the commission, June 9, 1883.....	\$82,422 47
Total disbursements.....	82,399 01
	<hr/>
Balance.....	\$23 46
	<hr/> <hr/>

The following is "an estimate of the work necessary to be done, and of the expenses of maintaining the said reservation for the ensuing fiscal year," ending with September 30, 1889 :

IMPROVEMENTS.

To prevent erosions on Goat Island	\$10,000 00
For repairs of roads, grading, filling, etc.	25,000 00
For an hydraulic elevator	35,000 00
	<hr/>
	\$70,000 00
	<hr/> <hr/>

MAINTENANCE.

Salaries, office and traveling expenses	\$4,500 00
Reservation police, watchmen, etc.	4,500 00
Mechanics and laborers	5,500 00
Materials and tools, trees and shrubs	5,000 00
Stationery, maps, printing and advertising	500 00
	<hr/>
	\$20,000 00
	<hr/> <hr/>

Estimated receipts from October 1, 1888, to September 30, 1889 :

Inclined railway	\$7,000 00
Cave of the Winds	1,250 00
Ferry and steamboat landing	500 00
Carriage service	100 00
Baggage room	50 00
	<hr/>
	\$8,900 00
	<hr/> <hr/>

An hydraulic elevator in place of the Biddle stairs, which are now old, and afford but a laborious and imperfect mode of reaching a point from which to view the Falls from below, is much needed, and would be of great convenience to the public. The income to be derived from the use of such elevator, at a trifling fee, would largely increase the annual receipts of the reservation. An elevator has recently been placed on the Canadian side, and is much used by visitors.

The frame building in the upper grove that was formerly occupied as an art gallery is tolerably well adapted for a library and museum. It might readily be made a depository for books,

pamphlets, maps and objects of interest especially relating to the Falls and the Niagara region, and, by being always accessible, would be appreciated by visitors as well as the people residing in the vicinity.

The Commissioners recommend that the State Engineer and Surveyor be authorized to make a resurvey of the Falls and vicinity, that a new series of monuments be set out and a reliable triangulation made.

No triangulation has been made since Professor James Hall performed that labor forty-five years ago.

Extracts from Professor Tyndall's well-known article on Niagara and Sir Charles Lyell's *Travels in North America* on the recession of the Falls, together with some details respecting other famous cataracts, are hereto appended.

The report of the superintendent, submitted herewith, contains a particular account of the work of the year on the reservation and a statement in detail of facts that may be interesting to the public.

ANDW. H. GREEN,
JAMES MOONEY,
JOHN HODGE,
JOHN M. BOWERS,

Commissioners of the State Reservation at Niagara.

HENRY E. GREGORY,
Secretary.

REPORT OF THE SUPERINTENDENT
OF THE
STATE RESERVATION AT NIAGARA
FOR THE
Fiscal Year Ending September 30, 1888.

Assembly, No. 23.

3

REPORT OF THE SUPERINTENDENT.

To the Board of Commissioners of the State Reservation at Niagara:

GENTLEMEN.—I respectfully submit the annual report of the superintendent.

During the fiscal year ending September 30, 1888, good results have attended the management of the reservation. Owing to the cool and wet weather, the number of visitors during the summer months was not as large as usual. The number was more uniform during the other months of the year, and the formation of an ice bridge, the first since the establishment of the reservation, greatly increased the attendance during the winter, and visitors almost invariably have been disposed to observe the ordinances of the commissioners, so that little difficulty has been experienced in maintaining order. The year has been entirely free from accident within the reservation.

During the year the pulp-mill building has been taken down, and the dwelling-house in Prospect Park removed. The river bank is now free from buildings, and the work of grading and planting may be commenced as soon as adequate appropriations for carrying on the work shall be obtained. To keep the grounds in a sightly condition, filling of excavations, covering with loam and grading in some places have been done incidentally during the process of clearing away, at the expense of the maintenance fund, but the territory is so large that temporary patchwork of this description is almost lost sight of, and good results can only be attained by carrying out a general plan of improvement.

Since the establishment of the reservation, over fifty buildings have been taken down or removed, the cellars have been filled in, fences cleared away, all of the débris removed, and the grounds put in condition to be raked and mown when necessary. The improvement made in the appearance of the reservation by what has been done foreshadows the great change in the appearance of the locality which might be made by carrying out a systematic scheme of permanent improvement.

THE NUMBER OF VISITORS.

There is no means of determining the actual number of visitors to the reservation during the year. It is estimated at 300,000 persons, of which number 171,600 were "excursionists." The number of excursionists in 1886 was 187,781, and in 1887, 166,280. The largest number of excursionists who arrived in one day came on August fifteenth, on which day 112 excursion cars arrived, containing 6,720 persons. The number of excursionists in each month was as follows :

1887.	
October.....	4,140
November.....	.....
December.....	1,200
1888.	
January.....	1,920
February.....	6,300
March.....	420
April.....	.....
May.....	900
June.....	16,140
July.....	38,820
August.....	69,840
September.....	31,920

A detailed statement of the number of excursion cars, the places of departure from, and the estimated number of people, is hereto appended. A large proportion of the visitors were residents of the the State of New York, but many of the States of the Union were represented, and a notably large number of excursionists arrived from Canada.

THE INCLINED RAILWAY.

The receipts from the inclined railway during the fiscal year were \$6,512.55, the largest amount received in any one year since the establishment of the reservation.

The receipts for the year 1886 were \$6,457.65, and for the year 1887 \$6,359.05. The receipts from the inclined railway in each month, during the last fiscal year, were as follows:

1887.	
October.....	\$276 70
November.....	69 40
December.....	48 20

1888.	
January	\$42 60
February	748 05
March	142 15
April	70 80
May	251 00
June	586 70
July	1,265 65
August	1,946 30
September	1,065 00

The increased receipts from the inclined railway, during the months of February and March, were due to the formation of an ice bridge, which attracted large numbers of visitors to the reservation.

The ice bridge formed January fourteenth, was passable until March nineteenth, and was not carried away until May ninth, having endured longer than similar formations in former years. The removal of the buildings at the foot of the inclined railway, affording better views of the Falls from below, has also served to increase the usefulness and benefit of the inclined railway to the public.

RECEIPTS.

The amount received during the fiscal year was as follows:

Inclined railway	\$6,512 55
Leases	1,580 00
Sales	35 72
Total	<u>\$8,128 27</u>

Detailed statements of the receipts from the inclined railway, rentals and sales are hereto appended.

EXPENDITURES.

The expenditures by the superintendent during the fiscal year were as follows :

Pay-rolls for the year.....	\$12,512 58
Accounts for labor and material.....	3,549 73
Total	<u>\$16,062 31</u>

A statement of the pay-roll for each month, a classification of the amount expended for labor and materials, and the names of persons to whom amounts have been paid, are hereto appended.

From the foregoing it will be seen that the income from the inclined railway and leases amounted to more than one-half as much as the total expenditures by the superintendent for maintenance. If the present sources of revenue were supplemented by an elevator at Goat Island, operated for a nominal charge, and having a free stairway attached, the aggregate revenue derived from the inclined railway and such an elevator would probably render the reservation self-sustaining.

THE RESERVATION CARRIAGE SERVICE.

During the past season the carriage service has been operated in a satisfactory manner. Owing to the cool weather, the season was shorter than usual. The existence of this service has become more generally known, and a larger number of passengers than usual were carried during the season. The service will continue to be a great benefit and convenience to the public, so long as it is maintained free from combination with other local interests, liveries and places where admission fees are charged and commissions paid. It furnishes cheap and reliable transportation, directly under the control of the commissioners, and to an extent regulates and improves other existing methods of transportation. A carriage service similar to that within the reservation has been established within the Queen Victoria Niagara Falls Park.

LICENSED CARRIAGE DRIVERS.

Eight public carriage stands have been designated within the reservation, in the territory outside of Prospect Park and the islands, at points under the supervision of the reservation police. The arrangement is a convenience to the traveling public.

The privilege of using such stands is subject to revocation in case the driver violates the ordinances of the commissioners. During the year ten complaints have been made against licensed carriage drivers. Six drivers have been excluded from the reservation for violation of the ordinances of the board. The names of ninety-one carriage drivers have been reported to the trustees of the village for violation of the village law requiring the rates of fare and the number of carriage to be kept in plain sight.

EXCLUSIVE LIVERY PRIVILEGES AT RAILROAD DEPOTS.

The contract of the New York Central and Hudson River Railroad Company with C. W. Miller & Company for exclusive livery privileges on the railroad trains, and at the railroad stations, was renewed for the year 1888, subject to the restrictions suggested in the correspondence between the general passenger agent of that company and the

superintendent of the reservation. The restrictions referred to guaranteed that the business would be conducted in an entirely neutral spirit, and without identification of any character with particular hotels, bazaars or points of interest.

Since the matter was first brought to the attention of the commissioners, some improvement has been made in the methods of the company enjoying the exclusive livery privilege at the railroad stations. Drivers are paid entirely by salary, instead of ten dollars per month and "commissions," as formerly; and since October 26, 1887, passengers, as a rule, are conveyed first to the reservation grounds, instead of being taken to outside points of interest, such as the Whirlpool and Whirlpool Rapids, where admission fees are charged and commissions paid.

THE EROSIONS ON THE SHORE OF GOAT ISLAND.

April sixteenth, State Engineer Bogart, at the request of the board, visited the reservation and made an examination of the erosions on the southern shore of Goat Island. He was of the opinion that further erosion would be best prevented by the construction of a timber wall filled with stone along the exposed margin of the island. A statement by State Engineer Bogart that such work was desirable, in order to save the property of the State, was submitted by the superintendent to the Finance Committee of the Senate, at a hearing upon the matter given April eighteenth. The Finance Committee did not grant the request of the commissioners, made in their communication to the Legislature for an appropriation of \$10,000 for the protection of Goat Island.

During the year the erosions have been the subject of special observations. The ceaseless action of the current has in many places carried away portions of the gravel and quicksand of which the bed of the island is largely composed. In some places the abrasions impinge upon the foot-path and the roadway, and will soon necessitate their removal further from the margin.

It is very desirable that an appropriation for the protection of the shore of the island be made during the next session of the Legislature.

THE CAVE OF THE WINDS.

May fifteenth, the Biddle stairway at the Cave of the Winds was examined and reported to be in a safe condition. During this year visitors have been conducted through the Cave of the Winds without accident or complaint. The great drawback to the enjoyment of visitors at this point is the labor of descending and ascending a stair-

way eighty feet in height. The structure is old and unsuitable for the accommodation of the number of persons who desire to see the Falls from this favorable point of view. The *débris* slope under the cliff between the American and Horse-shoe Falls commands unrivaled views of the cataract. It is the central point from which the magnificent scenery on either hand may be viewed to advantage. Near the edge of the water a walk of a quarter of a mile in extent can be constructed from the American to the Horse-shoe Falls. Such a footway would be as free from danger as the walk from the steamboat landing to the base of the American Falls at Prospect Park, which is now visited by more than one hundred thousand people each year. The general public are practically debarred from the enjoyment of the views of the scenery to be obtained from the slope between the two Falls for want of proper facilities for descending and ascending. An hydraulic elevator could be operated to advantage in the locality. A bill providing for an appropriation for the construction of an elevator was passed by the Assembly in 1886. An elevator would be more safe and sightly than the present structure, and would not only be a means of great enjoyment to the public, but a sure and unobjectionable source of revenue to the State, which would aid largely in making the reservation self-sustaining.

THE STEAMBOAT LANDING.

During the year the dock at the steamboat landing has been enlarged and improved by the lessee, the Maid of the Mist Association. A substantial canopy or place of shelter for visitors has also been erected upon the dock by the lessee. No complaints have been made by visitors during the year concerning the steamboat management.

THE BRIDGES.

During the month of May an examination was made of the bridges within the reservation. The report of the examiners stated that the bridge to Luna Island, the bridges to the Three Sisters Islands and all of the approaches thereto needed new floors and joists; also that about a dozen of the needle beams of the main bridge should be renewed. In renewing the needle beams the examiners recommended that the wooden beams be replaced by iron or steel. Iron beams can be more readily adjusted, they cost little more than wooden beams and are much more safe and durable. Five pairs of ten-inch iron channel beams, thirty feet long, with cast-iron saddles and separators, have been procured for the bridges. Four pairs have been placed in the bridges between the mainland and Bath Island, and

one pair in the bridge between Bath Island and Goat Island. The iron beams are longer than the wooden beams in the bridges, so as to provide for widening the sidewalks of the bridges as soon as all of the wooden beams shall have been replaced. A number of joists which were decayed have also been removed. The two bridges between the mainland and Goat Island have been examined by suspending a scaffold under the bridges and moving it along so as to be able to inspect closely the understructure. The report of the examiner recommends that eight additional pairs of iron needle beams be procured, and also that the upper plank in the roadway of the main bridge be renewed before another season, after which no further repairs will be required by the bridges for three years to come. New floors and joists have been placed in the bridge to Luna Island and in the Three Sisters Island bridges and in all the approaches to the same. The materials were thoroughly painted on all sides before being used. In some cases the ends of the timber cords sustaining the Sisters Island bridges were found to be decayed. The decayed portions have been removed, making it necessary to entirely support one of the bridges by props underneath, and also to construct a temporary bridge from Goat Island to the first Sister Island for the convenience of visitors. The Luna Island bridge and the bridges to the Three Sisters Islands are now in good condition.

MISCELLANEOUS WORK OF THE YEAR.

January fourth the water in the raceway was so low as to prevent the operation of the inclined railway. The low water was caused by the destruction of the pier at the head of the raceway by floating ice. A new pier was constructed, filled with stone and covered with heavy boiler iron. An additional 100 feet of iron guard-rail has been erected on Goat Island, in the vicinity of the Horse-shoe Falls. The raceway on River street, adjacent to the Cataract House, has been walled off, and the end of the raceway filled for a distance of about seventy-five feet. The street in that locality and the river bank have been graded down, so that an unobstructed view of the rapids and islands is now obtained from River street. When the grading of the locality is completed it will show in part how the river bank below Bridge street and Mill street would appear if the raceway were filled, River street widened, and the bank graded down to the edge of the water.

More than one thousand loads of loam, obtained in grading, have been spread upon the sites formerly occupied by the mills on Cascade street and the territory seeded down. Material has also been procured, at the cost of cartage, for filling on Bath Island, at the site of

the Tugby building and of the dwelling house removed from Prospect Park.

The large platform at the point of observation known as "Hennepin's View" was unsafe, owing to the dangerous condition of the cliff below. The platform has been moved inward from the edge of the cliff and substantially rebuilt. The electric light building under the cliff at Prospect Park has been removed, the operator's room at the inclined railway enlarged, new steps to the approach to the inclined railway building on the north side constructed, the fence along the cliff in Prospect Park repainted, a large space at Prospect Point covered with sod, the pipes for the water supply repaired and three large water coolers constructed, lattice-work screens provided for the outbuildings on the reservation, new steps to the first Sister Island bridge constructed, a dozen of new signs and finger boards procured, and all of the territory on the main shore raked and the *débris* removed. The dilapidated plank walk on Bath Island has been replaced by a gravel walk. A chain and post inclosure has been extended 200 feet along River street at the locality lately graded. A small bridge, made necessary by the changes in the grounds at this place, has been constructed at the northern end of the race. An additional building has been provided at the steamboat landing, and an amount of filling has also been done at the eastern terminus of the reservation.

EMPLOYEES.

The number of regular employés is ten. The number of laborers employed during the year was as follows: October, twenty; November, twenty; December, three; January, ten; February, nine; March, eight; April, sixteen; May, twenty-three; June, seven; July six; August, seven; September, seven. The number of teams employed: October, four; November, two; January, one; February, one; April, ten; May, six. A road-sprinkler was employed from May to September, inclusive. Owing to the condition of the funds only six laborers were employed in July, and seven in August and September. These were barely sufficient to keep the grounds mown, the roads and walks trimmed, the bridges properly swept and to attend to other incidental work.

THE BUILDINGS.

The buildings in Prospect Park are in fair condition. Some painting and repairs will be required during the coming year. The office building on Bath Island is in good condition. The cottage on Goat Island should be painted and repaired. The Cave of the Winds building and the pavilion for shelter are in good condition.

ROADS AND WALKS.

The roads within the reservation are mainly common dirt roads, and are entirely inadequate and unsuitable. After rain, the road through the woods on Goat Island is very heavy, and, being shaded, dries slowly. Upon the main land included within the reservation are about two miles of village streets, upon which the village authorities, since the establishment of the reservation, have ceased to make repairs. These streets, within the reservation, are in some places in bad condition. The roadway on Rapids street and on Bath Island are also unsuitable for the present heavy traffic.

A considerable amount has been expended each year in temporary repairs of the roads, which, owing to their defective construction, lack of proper bottoming, drainage and material, has been largely wasted. Properly constructed roads, such as are eventually contemplated, once established, would cost little for maintenance. Public economy, as well as State pride, urge the early adoption of measures for the permanent improvement of the roads within the reservation.

The walks upon the main land are common plank side-walks. The foot-paths on the islands are of gravel. Both are in need of extension and improvement.

GRADING AND PLANTING.

○ Unnecessary and unsightly buildings having been removed from the river banks, the work of grading and planting may be commenced as soon as the necessary appropriation shall be made.

The bank of the river should be graded and planted as soon as possible. This is particularly true of the strip of land between Cascade street and Mill street, from which buildings have been recently removed. The surface is traversed by raceways. It is bare and uneven, with large hotels and other structures standing out prominently in the back-ground. The river bank in this locality is almost entirely denuded of trees, and it mars the appearance of the reservation, especially when viewed from the islands or the Canadian shore. Judicious planting would partially shut out the village from the river bank. Bath Island was almost entirely covered by buildings when the reservation was established. With the exception of the office building all have been removed, and considerable grading and filling done, but the island is almost bare of trees or shrubbery, and presents a bleak and unnatural appearance. It should be properly graded and planted as soon as possible.

FUTURE OPERATIONS.

It having been determined to discontinue the upper raceway between Bridge street and Mill street, the filling of the channel and the grading of the bank of the river in that locality could be carried forward with advantage during the coming season. The removal of the retaining walls, tail races and overflows in the vicinity would greatly improve the appearance of the reservation.

To do the work already directed to be done, including the graveling of the roads around Goat Island, placing boundary monuments at the old French landing, constructing a closed railing for the stairs at the inclined railway, erecting additional iron guard rails on Goat Island, providing an iron pipe in place of the box conduit extending from the lower race under Cascade street to the basin in Prospect Park, and placing additional iron needle beams in the bridges, will require a large portion of the maintenance fund for the coming year.

The depletion of the maintenance fund for the past year, by filling and grading, which had to be done to maintain the grounds in an orderly condition, shows the great necessity existing for a separate appropriation to begin the work of permanent improvement.

Respectfully,

THOMAS V. WELCH,
Superintendent.

REPORT OF THE TREASURER.

THE COMMISSIONERS OF THE STATE RESERVATION AT NIAGARA, *in Account with HENRY E. GREGORY, Treasurer.*

1887.

Oct. 1. By balance \$1,176 95

RECEIPTS.

Oct. 22. Quarterly advance from State Comptroller . . . 5,000 00

1888.

Jan. 3. Quarterly advance from State Comptroller . . . 5,000 00

April 17. Quarterly advance from State Comptroller . . . 5,000 00

July 13. Quarterly advance from State Comptroller . . . 5,000 00

1887.

Nov. 2. Draft on Cataract Bank, October receipts . . . 298 65

Dec. 1. Draft on Cataract Bank, November receipts . . . 81 40

1888.

Jan. 3. Draft on Cataract Bank, December receipts . . . 60 80

Feb. 3. Draft on Cataract Bank, January receipts . . . 43 72

March 2. Draft on Cataract Bank, February receipts . . . 748 05

April 2. Draft on Cataract Bank, March receipts 142 15

May 2. Draft on Cataract Bank, April receipts 70 80

June 2. Draft on Cataract Bank, May receipts 351 00

July 1. Draft on Cataract Bank, June receipts 1,021 70

August 2. Draft on Cataract Bank, July receipts 1,375 65

Sept. 4. Draft on Cataract Bank, August receipts 2,381 30

Sept. 30. Draft on Cataract Bank, September receipts . . . 1,565 00

Jan. 3. Interest on balances at Manufacturers and Traders' Bank 14 38

April 1. Interest on balances at Manufacturers and Traders' Bank 9 32

July 1. Interest on balances at Manufacturers and Traders' Bank 11 35

Sept. 30. Interest on balances at Manufacturers and Traders' Bank 14 47

\$29,366 69

EXPENDITURES.

	1887.	No. of abstract.	No. of voucher.			
Nov.	1.	xxxix	375.	Pay-roll at Niagara for October	\$1,482	33
	3.	xxxix	376.	T. V. Welch, office ex- penses.....	23	02
Dec.	1.	xxxix	377.	Pay-roll at Niagara for November	1,224	14
	1.	xxxix	378.	T. V. Welch, office ex- penses.....	11	00
	31.	xxxix	379.	Pay-roll at Niagara for December.....	676	37
	31.	xxxix	380.	David Gray, salary for three months to date..	275	00
	31.	xxxix	381.	David Gray, office ex- penses.....	44	73
	31.	xl	382.	Joseph McKenna & Son, furniture	\$6	50
	31.	xl	383.	H. S. Ware, hardware...	70	55
	31.	xl	384.	G. W. Tift, Sons & Co., castings for Luna Island	27	00
	31.	xl	385.	P. B. Secord, lumber	277	33
	31.	xl	386.	J. Binkley, coal for office,	5	95
	31.	xl	387.	John Johnson, tools.....	19	45
	31.	xl	388.	Bell Telephone Company, rent of instrument.....	6	90
	31.	xl	389.	H. S. Ware, hardware	31	10
	31.	xl	390.	F. West, ice for office....	11	00
	31.	xl	391.	Wm. Shepard, mason work	46	19
	31.	xl	392.	H. S. Ware, hardware....	4	08
	31.	xl	393.	Drake Whitney, engineer- ing survey	9	00
	31.	xl	394.	George E. Wright & Co., carpenter work.....	206	65
	31.	xl	395.	P. C. Flynn & Co., painting	175	18
	31.	xl	396.	Ellenbaum & Co., coal for office	9	37
					<hr/>	\$3,736 59
						906 25
1888.						
Jan.	5.	xli	397.	M. B. Anderson, traveling expenses.....	\$35	71
	12.	xli	398.	F. L. Olmstead & C. Vaux	2,320	00

1888.	No. of abstract.	No. of voucher.		
	2. xliii	424.	Pay-roll for April (supplemental)	\$308 25
	2. xliii	425.	T. V. Welch, traveling expenses	49 69
	31. xliii	426.	H. E. Gregory, office expenses	9 22
	31. xliii	427.	H. S. Ware, hardware . . .	173 65
	31. xliii	428.	P. B. Secord, carpenter . .	35 06
	31. xliii	429.	J. H. Ellenbaum, Jr., plumbing	35 23
	31. xliii	430.	J. Binkley, coal	42 12
	31. xliii	431.	H. S. Ware, hardware . . .	53 55
	31. xliii	432.	Bell Telephone Company,	6 00
	31. xliii	433.	Geo. S. Hanes, tools	11 85
	31. xliii	434.	Kearney & Barrett, railing	45 00
	31. xliii	435.	H. S. Ware, hardware . . .	28 62
	31. xliii	436.	Geo. W. Wright & Co. . . .	175 87
			—————	\$2,072 42
	31. xliv	437.	John Hodge, *traveling expenses	\$28 60
June	5. xliv	438.	T. V. Welch, office expenses	39 05
	5. xliv	439.	H. E. Gregory, salary for May	91 66
	5. xliv	440.	Pay-roll for May	1,151 97
	5. xliv	441.	Pay-roll for May (supplemental)	638 96
July	13. xliv	442.	T. W. Robinson, tools . . .	6 75
	13. xliv	443.	Wm. Shepard, mason work	22 67
	13. xliv	444.	H. S. Ware, tools, water supply, etc.	71 28
	13. xliv	445.	P. C. Flynn & Son, signs, fences, etc.	171 76
	13. xliv	446.	H. S. Ware, water supply, etc	40 41
	13. xliv	447.	Jackson Architectural Works, railing	100 00
	13. xliv	448.	J. McKenna & Son, shades for office, etc.	10 89
	2. xliv	449.	Pay-roll for June	847 50

	1888.	No. of abstract.	No. of voucher.			
	July	13.	xliv	450. Niagara Falls Printing House	\$9 50	
						\$3,231 00
		13.	xlv	451. T. V. Welch, office ex- penses.....	\$13 83	
		13.	xlv	452. S. S. Rogers, traveling expenses.....	79 50	
		13.	xlv	453. Andrew H. Green, travel- ing expenses	34 82	
Aug.		2.	xlv	454. Pay-roll for July.....	944 35	
		2.	xlv	455. T. V. Welch, office ex- penses.....	6 33	
		3.	xlv	456. John M. Bowers, travel- ing expenses.....	23 50	
		11.	xlv	457. F. P. Lanigan, insurance,	20 00	
Sept.		5.	xlv	458. Pay-roll for August....	990 92	
		5.	xlv	459. T. V. Welch, office ex- penses.....	7 15	
		6.	xlv	460. Henry E. Gregory, salary, June, July, August....	275 00	
		15.	xlv	461. James Mooney, traveling expenses.....	30 88	
		29.	xlv	462. George E. Wright & Co., repairs	35 79	
		29.	xlv	463. George E. Wright & Co., repairs	448 89	
		29.	xlv	464. John F. Anders, stone cutting	30 00	
		29.	xlv	465. J. Johnson, blacksmith..	32 85	
		29.	xlv	466. Bell Telephone Company,	12 40	
		29.	xlv	467. H. S. Ware, hardware ...	60 65	
		29.	xlv	468. Frederick West, water supply.....	5 00	
		29.	xlv	469. William Young, carting..	32 57	
		29.	xlv	470. Rhodes & Babcock, sta- tionery	11 98	
		29.	xlv	471. H. C. Harrower, bridges,	280 00	
		29.	xlv	472. D. Phillips, repairs.....	86 50	
		29.	xlv	473. Pay-roll for September..	885 10	

1888.	No. of abstract.	No. of voucher.		
	29.	xlv	474. M. C. Johnson & Co., check book.....	\$5 00
	29.	xlv	475. J. C. Rankin, Jr., sta- tionery, etc.....	23 75
	29.	xlv	476. H. E. Gregory, traveling expenses.....	45 46
Sept.	29.	xlv	477. Henry E. Gregory, office expenses	19 17
	29.	xlv	478. Henry E. Gregory, salary for September.....	91 66
	29.	xlv.	479. T. V. Welch, office ex- penses	3 62
				\$4,536 67
				\$20,011 68

Remittances to State Treasurer.

1887.				
Oct.	1.		Draft for balance on hand.....	\$1,176 95
Nov.	2.		Draft for October receipts.....	298 65
Dec.	1.		Draft for November receipts	81 40
1888.				
Jan.	3.		Draft for December receipts. \$60 80	
			Interest, receipts.....	14 38
				75 18
Feb.	3.		Draft for January receipts.....	43 72
Mar.	2.		February	748 05
Apr.	2.		March	142 15
May	2.		April	70 80
Jun.	2.		May	351 00
July	1.		June.....	1,021 70
Aug.	2.		July	1,375 65
Sept.	4.		August	2,381 30
Oct.	1.		September	1,565 00
				9,331 55
Oct.	1.		Balance in bank.....	23 46
				\$29,366 69

HENRY E. GREGORY,
Treasurer.

CLASSIFICATION OF RESERVATION ACCOUNTS FOR THE YEAR ENDING SEP-
TEMBER 30, 1888.

Bridges	\$1,102 82
Buildings	390 98
Coal	103 62
Cartage	40 11
Fences	107 73
Inclined railway	231 99
Insurance	20 00
Luna Island stairway	241 41
Office	282 89
Prospect Park	43 92
Printing	9 50
Race	256 11
Railing	183 21
Stationery	26 08
Signs	62 56
Seed	9 75
Settees	8 50
Sidewalks	3 25
Tools	168 03
Water supply	257 27
	<hr/>
	\$3,549 73
	<hr/> <hr/>

PAY-ROLLS FOR THE YEAR ENDING SEPTEMBER 30, 1888.

1887.	
October	\$1,482 33
November	1,224 14
December	676 37
1888.	
January	816 82
February	840 51
March	790 37
April	1,223 24
May	1,790 93
June	847 50
July	944 35
August	990 92
September	885 10
	<hr/>
	\$12,512 58
	<hr/> <hr/>

CLASSIFICATION OF PAY-ROLLS FOR THE YEAR.

Salaries.....	\$2,502 83
Police.....	3,269 11
Inclined railway.....	1,290 32
Buildings.....	1,282 01
Prospect Park.....	1,512 76
Goat Island.....	901 00
Fences.....	72 75
Railing.....	28 50
Bath Island.....	390 00
Race.....	259 46
Grading (River street).....	819 75
Roads.....	184 09

\$12,512 58

NUMBER OF EMPLOYEES DURING THE YEAR ENDING SEPTEMBER 30, 1888.

YEAR.	Permanent employees.	Laborers.	Teamsters.	Sprinkling roads.	Total.
1887.					
October.....	9	20	4	...	33
November.....	9	20	2	...	31
December.....	9	3	...	...	12
1888.					
January.....	9	10	1	...	20
February.....	9	9	1	...	19
March.....	9	8	...	...	17
April.....	9	16	10	...	35
May.....	9	23	6	1	39
June.....	10	7	...	1	18
July.....	10	6	...	1	17
August.....	10	7	...	1	18
September.....	10	7	...	1	18

STATEMENT OF EXCURSIONS, 1887-8.

Number of Excursion Trains and places of Departure, from October 1, 1887, to September 30, 1888, inclusive.

1887.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
Oct. 1	Dunkirk, N. Y., via New York Central and Hudson River railroad.....	5	300
" 1	Buffalo, N. Y., G. A. R. convention....	2	120
" 4	Boston, Mass., Raymond excursion....	2	120
" 5	Scranton, Pa.....	11	660
" 13	Marquette, Mich., via H. & N. W. Ry....	12	720
" 13	Cleveland, O., via New York, Penn. and Ohio railway.....	4	240
" 14	Auburn, N. Y., via New York Central and Hudson River railroad.....	6	360
" 15	Geneva, O.....	8	480
" 15	Buffalo, N. Y., via New York Central and Hudson River railroad.....	5	300
" 18	Salamanca & Allentown, Pa., via Erie railway.....	8	480
" 21	Chicago, Ill., via Lake Shore railroad..	6	360
		<u>69</u>	<u>4,140</u>
Dec. 2	Excursion from Minnesota, on a trip to Europe.....	20	1,200
		<u>20</u>	<u>1,200</u>
1888.			
Jan. 22	Buffalo, N. Y., ice bridge excursion, via New York Central railroad.....	10	600
" 22	Rochester, N. Y., ice bridge excursion, via West Shore railroad.....	5	300
" 22	Buffalo, N. Y., ice bridge excursion, via Erie railway.....	5	300
" 25	Buffalo, N. Y., ice bridge excursion, via New York Central railroad.....	7	420
" 25	Buffalo, N. Y., ice bridge excursion, via Erie railway.....	5	300
		<u>32</u>	<u>1,920</u>
Feb. 12	Rochester, N. Y., ice bridge excursion, via Erie railway.....	5	300
" 12	Buffalo, N. Y., ice bridge excursion, via West Shore railroad.....	7	420
" 12	New York city, ice bridge excursion, via New York Central and Hudson River railroad.....	1	30

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
Feb. 12	Buffalo, N. Y., ice bridge excursion, via New York Central and Hudson River railroad	15	900
" 12	Buffalo, N. Y., ice bridge excursion, via West Shore railroad	7	420
" 18	Rochester, N. Y., ice bridge excursion, via Erie railway	5	300
" 18	Buffalo, N. Y., ice bridge excursion, via New York Central and Hudson River railroad	5	300
" 19	Buffalo, N. Y., ice bridge excursion, via New York Central and Hudson River railroad	21	1,260
" 19	New York city, ice bridge excursion, via sleeping cars	2	60
" 18	Buffalo, N. Y., ice bridge excursion, via Erie railway	5	300
" 19	Buffalo, N. Y., ice bridge excursion, via Erie railway	7	420
" 19	Lockport, ice bridge excursion, via Erie railway	5	300
" 23	Buffalo, N. Y., ice bridge excursion, via New York Central and Hudson River railroad	7	420
" 26	Buffalo, N. Y., ice bridge excursion, via Erie railway	3	180
" 26	Lockport, ice bridge excursion, via Erie railway	2	120
" 26	Philadelphia, Pa., ice bridge excursion, via sleeping cars	5	150
" 26	Buffalo, N. Y., ice bridge excursion, via New York Central and Hudson River railroad	7	420
		109	6,300
Mar. 18	Buffalo, N. Y., ice bridge, via New York Central and Hudson River railroad	7	420
May 30	West Shore railroad, along the line	7	420
" 30	Rochester, N. Y., via New York Central and Hudson River railroad	6	360
" 30	Buffalo, via New York Central and Hudson River railroad	2	120
		15	900

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
June 8	Scandinavian delegates (en route to Europe).....	12	720
" 10	Buffalo, N. Y., via New York Central and Hudson River railroad.....	12	720
" 10	Buffalo, N. Y., via Erie.....	4	240
" 10	Buffalo, N. Y., via Michigan Central and West Shore.....	8	480
" 10	Jamestown, N. Y., via New York Central and Hudson River railroad....	4	240
" 16	Cincinnati, O., via L. S. & M. S. railroad.	3	180
" 17	Buffalo, N. Y., via Erie railway.....	11	660
" 17	New York city via New York Central and Hudson River railroad.....	3	180
" 18	Buffalo, N. Y., via New York Central and Hudson River railroad....	24	1,440
" 18	Buffalo, N. Y., via West Shore railroad.	6	360
" 19	Toronto, Ont., St. James' cathedral....	2	120
" 19	Physicians' convention.....	2	120
" 19	New Market and Aurora, Ont., via Grand Trunk.....	4	240
" 22	Gowanda, N. Y., Axle Manufacturing company's employés.....	3	180
" 22	Toronto, Ont., three excursions, eight cars each.....	24	1,440
" 22	Hamilton, Ont.....	9	540
" 22	Via Rome, Watertown and Ogdensburg railroad.....	3	180
" 22	Lockport, N. Y.....	2	120
" 22	Rochester, N. Y.....	4	240
" 22	Rochester, N. Y., via Buffalo, New York and Philadelphia railway.....	10	600
" 22	Buffalo, N. Y., via New York Central and Hudson River railroad.....	15	900
" 23	Toronto, Ont., conductors.....	4	240
" 23	Toronto, Ont., general excursion....	3	180
" 23	Buffalo, N. Y., public school No. 38....	4	240
" 24	Cleveland, O., via Nickel Plate railway.	6	360
" 24	Buffalo, N. Y., New York Central and Hudson River railroad.....	14	840
" 24	Buffalo, N. Y., West Shore.....	8	480
" 25	Homœopathic convention.....	4	240
" 26	Toba Mine, Penn.....	2	120
" 26	Toronto, Ont., cooks ch.....	3	180
" 26	Jamestown, N. Y.....	3	180
" 26	Seranton, Penn.....	5	300
" 26	Delegates from Chicago convention....	12	720
" 27	Homœopathic convention.....	4	240

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
June 28	Erie, Penn., First M. E. church	7	420
“ 29	Toronto, Ont., Switchmen's Association	4	240
“ 30	Jamestown, N. Y.	4	240
“ 30	Rochester, N. Y.	9	540
“ 30	Prescott's excursion, via New York and Erie railway	8	480
		269	16,140
July 1	Buffalo, N. Y., via New York Central and Hudson River railroad	17	1,020
“ 1	Buffalo, N. Y., via Erie railway	5	300
“ 1	Buffalo, N. Y., via West Shore railway.	6	360
“ 2	Toronto, Ont., via Steamer Chicora . . .	6	360
“ 2	Toronto, Ont., via Str. Empress of India	7	420
“ 2	Toronto, Ont., via Steamer Cibola	8	480
“ 2	Rochester, N. Y., St. Bridget's parish . .	9	540
“ 2	Guélfh, Ont.	4	240
“ 2	Montreal, Victoria Rifles	5	300
“ 3	Cleveland, O., via Nickel Plate railway.	8	480
“ 3	Delegates to Chicago convention	18	1,080
“ 3	Toronto, Ont., trunk manufacturers . .	7	420
“ 3	St. Thomas, Ont.	6	360
“ 4	Erie, Pa., via Nickel Plate railway . . .	7	420
“ 4	Cleveland, O., via Nickel Plate railway .	9	540
“ 4	Buffalo, N. Y., via New York Central and Hudson River railroad	44	2,640
“ 4	Albany, Syracuse and Utica, via New York Central and Hudson River railroad	22	1,320
“ 4	Kearsons' organ factory, Emp., Ont. . .	6	360
“ 5	Buffalo, N. Y., Delaware Avenue Sunday school	4	240
“ 6	Buffalo, N. Y., Asbury Methodist Episcopal Sunday school	5	300
“ 7	Boston, Mass., teachers' excursion to California	6	360
“ 7	Connecticut teachers' excursion to California	3	180
“ 7	Buffalo, N. Y., via New York Central and Hudson River railroad	3	180
“ 8	Cleveland, O., via Nickel Plate and Erie	5	300
“ 8	Buffalo, N. Y., via New York Central and Hudson River railroad	27	1,620
“ 9	Toronto, Ont., piano manufacturers . .	4	240
“ 10	Toronto, Ont., Western Methodist Episcopal church Sunday school	6	360

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
July 11	Toronto, Ont., general excursion.....	3	180
" 12	Buffalo, N. Y., Baptist church Sunday school	7	420
" 12	Warsaw, N. Y.....	8	480
" 12	Toronto, Ont.....	2	120
" 13	Toronto, Ont., bolt manufacturers....	5	300
" 13	Toronto, Gray and Bruce railway, "A. O. U. W.".....	5	300
" 14	Cleveland, O., via Nickel Plate railway	8	480
" 14	Buffalo, N. Y., half-holiday excursion..	5	300
" 15	Cleveland, O., "Schwabian Verein"....	3	180
" 15	Lockport, N. Y., via Erie railway.....	5	300
" 15	Lehigh Valley railway, along the line..	6	360
" 15	Buffalo, N. Y., via New York Central and Hudson River railroad.....	18	1,080
" 15	Rochester, N. Y., via Erie railway.....	7	420
" 15	Buffalo, N. Y., via West Shore railway..	6	360
" 16	Cleveland and Rochester, "Schwabische Unterstutzung Verein."	14	840
" 16	Bradford and Ridgeway, via Rochester and Pittsburg railway.....	6	360
" 17	Toronto, Ont., general excursion.....	4	240
" 18	Buffalo, N. Y., reunion One Hundredth regiment veterans.....	3	180
" 19	Toronto, Ont., Young Men's Christian Association	5	300
" 19	Oil City, Pa.	4	240
" 20	Toronto, Ont., Caledonian Society...	6	360
" 20	St. Catherines, St. Paul M. E. church..	2	120
" 20	Canadian Foresters' Association, via Toronto, Gray and Bruce railway...	5	300
" 21	Brantford, Ont., Waters' engine works	7	420
" 21	Buffalo, N. Y., Young Men's Christian Association convention.....	6	360
" 22	Buffalo, N. Y., via Erie railway.....	7	420
" 22	Buffalo, N. Y., via New York Central and Hudson River railroad.....	21	1,260
" 22	Buffalo, N. Y., via West Shore railroad..	9	540
" 22	Olean, N. Y., via Buffalo, New York and Philadelphia railroad.....	8	480
" 22	Newark, Binghamton, Hillsville, Elmira and C. Erie railway.....	35	2,100
" 23	Chicago, Joliet, Ill., shoe dealers' convention	2	120
" 24	Toronto, Ont., Church of Ascension...	8	480
" 26	Buffalo, N. Y., Zion church.....	8	480
" 26	Toronto, Ont., general excursion.....	7	420

Statement of Excursions, 1887 and 1888. — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
July 26	Brantford, Ont, United Methodist Episcopal church.....	9	540
“ 26	Masonic excursion, Toronto, Ont.....	4	240
“ 26	Toledo, Warren, O., and Jamestown, N. Y., via Atlantic and G. W. railway.....	12	720
“ 26	Shelburn, Ont.....	8	480
July 28	Woodstock, Ont., wagon manuf'rs.....	10	600
“ 28	Toronto, Ont., Christie Brown bakers.....	8	480
“ 28	Chautauqua, N. Y.....	8	480
“ 29	Ft. Wayne, Ind., Toledo and Cleveland, O.....	11	660
“ 29	Buffalo, N. Y., via Erie railway.....	5	300
“ 29	Buffalo, N. Y., via West Shore railroad.....	11	660
“ 29	Buffalo, N. Y., via New York Central and Hudson River railroad.....	14	840
“ 29	Lockport, N. Y., via Erie railway.....	4	240
“ 29	Jersey City, N. J., via Erie railway.....	13	780
“ 30	Toronto, Ont., Hibernian Society.....	5	300
“ 31	Toronto, Ont., Zion's church.....	5	300
“ 31	Toronto, Ont., M. E. church.....	5	300
“ 31	St. Catherines, St. Thomas' church.....	3	180
		647	38,820
Aug. 1	Toronto, Ont., general excursion.....	2	120
“ 2	Toronto, Ont., ushers Toronto Opera House.....	3	180
“ 2	“Niagara on the Lake,” St. Paul's church Sunday school.....	4	240
“ 2	Rochester, N. Y., Prescott's excursion, via Erie railway.....	10	600
“ 2	Oil Regions, Buffalo, New York and Philadelphia railway.....	10	600
“ 3	Albion, N. Y., Baptist church Sunday school.....	6	360
“ 4	Chautauqua, N. Y., Buffalo, New York, Philadelphia, Roch. and Pitts.....	6	360
“ 5	Jersey City, N. J., via Erie railway.....	8	480
“ 5	Blossburg, Oil City and Bradford.....	7	420
“ 5	Rochester, N. Y., via Rome, Watertown and Ogdensburg railway.....	6	360
“ 5	Lockport, N. Y., via Erie railway.....	5	300
“ 6	Toronto, Ont., general excursion.....	4	240
“ 7	Toronto, Ont., Odd Fellows.....	4	240
“ 7	Rochester, N. Y., German Lutheran church.....	5	300

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
"	7 Western New York and Pennsylvania railway, excursion along the line. . .	7	420
"	7 Sandusky, O.	6	360
"	8 Via Lake Erie and Western, Chicago and Alton, Fort Wayne and St. Louis, Wheeling and Lake Erie and Toledo railways	48	2,880
"	8 Meadville, Pa., and Oil City, via Erie railway	14	840
"	9 Cleveland, O., via Chicago, Cincinnati, Cleveland and Indianapolis, (3 sec.).	30	1,800
"	9 Erie, Pa., M. E. and Central church Sunday schools	10	600
"	9 Pelham, Ont. (six wagon loads)		60
"	9 Jamestown, N. Y., Akron, O., Cincinnati and Columbus	35	2,100
"	9 Indianapolis, Ind., via New York Central and Hudson River railroad	10	600
"	10 Lockport, N. Y., combination churches.	11	660
"	10 Rome, Watertown and Ogdensburg railway, general excursion	10	600
"	10 Toronto, Ont., St. Philip's church	10	600
"	11 Kincardine, Guelph and Galt, via Gray and Bruce railway	8	480
"	11 Chautauqua, N. Y.	4	240
"	11 St. Louis, Mo.	4	240
"	11 Via Buffalo, New York and Philadelphia railway, along line	20	1,200
"	11 Via Rome, Watertown and Ogdensburg railway, along line	22	1,320
"	12 Youngstown, O.	7	420
"	12 Hamilton and Northwestern railway Canada	12	720
"	12 Buffalo, N. Y., via Erie railway	5	300
"	12 Syracuse N. Y., via New York Central and Hudson River railway	4	240
"	12 Buffalo, N. Y., via New York Central and Hudson River railroad	15	900
"	12 Buffalo, N. Y., via West Shore railway .	5	300
"	13 Hamilton, Ont., civic holiday	10	600
"	13 Toronto, Ont., civic holiday	8	480
Aug.	14 Ohio, Indiana and Illinois, via Pittsburgh and Western and Nickel Plate	24	1,440
"	14 Lockport, N. Y., Lutheran church Sunday school	8	480

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
Aug. 14	Harrison Valley, Pa.....	10	600
" 15	Via Bee Line, Cleveland, Columbus, Cincinnati and Indianapolis, Michigan Central, and Pittsburgh and Western..	104	6,240
" 15	Binghamton, N. Y., via Erie railway...	8	480
" 16	Beansville, Grimsby and Gordon, Ont., Union Sunday school.....	8	480
" 16	Batavia, N. Y., Baptist church.....	6	360
" 16	Oil City, Titusville, Corry, via Buffalo, New York and Philadelphia railway,	9	540
" 16	Binghamton, N. Y., via Erie railway...	7	420
" 17	Cincinnati, Ohio, via Cleveland, Columbus, Cincinnati and Indianapolis railway.....	34	2,040
" 17	Toronto, Ont., Central church.....	5	300
" 17	Galt and Guelph, Ont., civic holiday..	8	480
" 18	St. George, Ont., Mechanics' Institute.	5	300
" 18	Simcoe, Ont.....	5	300
" 18	Toronto, Ont., Bricklayers' Union....	9	540
" 18	Toronto, Ont., via Empress India....	7	420
" 18	Coburg, Ont.....	5	300
" 18	Boston, Mass., Raymond excursion....	6	360
" 18	St. Thomas, Ont.....	9	540
" 18	Toronto, Ont., Hingman band.....	7	420
" 18	Chautauqua, N. Y.....	8	480
" 18	Woodstock, Ont.....	8	480
" 19	Lockport, N. Y., via Erie railway....	4	240
" 19	Buffalo, N. Y., via New York Central and Hudson River railroad.....	26	1,560
" 19	Buffalo, N. Y., via West Shore.....	8	480
" 20	St. Catherines, Ont., Baptist church...	4	240
" 20	Brantford, Ont., civic holiday....	9	540
" 21	Wheeling, W. Va.....	5	300
" 21	Janesville, Wis.....	7	420
" 21	Wilkesbarre, Pa., and along line Lehigh Valley railway.....	10	600
" 21	New York city.....	6	360
" 21	Hake's Family, Pa. (reunion).....	4	240
" 21	Albany, N. Y., Eintracht Singing Society.....	2	120
" 21	Toronto, Ont., Elm Street church....	6	360
" 22	Cincinnati, O., via Cleveland, Columbus, Cincinnati & Indianapolis and Lake Shore and Michigan Southern railroads.....	35	2,100

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
Aug. 22	Toronto, Ont., Grand Trunk railway employés	16	960
" 23	Rochester, N. Y., via Rochester & Pittsburgh railway	20	1,200
" 23	Cambria, Le Roy and Batavia, Presbyterian Sunday school	11	660
" 23	Toronto, Ont., Ancient Order United Workmen	8	480
" 23	London, Ont., Railway Car Builders' Society	22	1,320
" 24	Via Western Ontario railway	8	480
" 24	Ingersoll, Grimsby, via Grand Trunk railway	9	540
" 24	Chautauqua & Jamestown	8	480
" 25	Toronto, Ont., McDoughey machine shop	9	540
" 25	Hornellsville, Arcade, via Erie railway, Chautauqua, Jamestown, N. Y.	10	600
" 25	Chautauqua, Jamestown, N. Y.	8	480
" 26	Detroit, Mich., via Michigan Central railway	13	780
" 26	Albany, N. Y., Independent Order of Odd Fellows	8	480
" 26	Lockport, N. Y., via Erie railway	7	420
" 26	London and Chatham, Ont., via Grand Trunk railway	26	1,560
" 26	Buffalo, N. Y., via New York Central & Hudson River railroad	26	1,560
" 26	Buffalo, N. Y., via West Shore	9	540
" 27	Toronto, Ont., Abell Iron and Wood Works	7	420
" 28	Buffalo, N. Y., Hudson street Baptist church	8	480
Aug. 29	Hamilton, Ont., via Grand Trunk railway	12	720
" 29	Toronto, Gray and Bruce railway, Union band	11	660
" 29	Buffalo, N. Y., industrial school and asylum	1	60
" 29	Western Indiana and Ohio (2 sec.)	26	1,560
" 29	Rochester, N. Y.	11	660
" 29	Rome, Watertown and Ogdensburg railway	8	480
" 30	Toronto, Ont., Masonic excursion	8	480
" 30	Aylmer, Ont., along line Grand Trunk railway	10	600

Statement of Excursions, 1887 and 1888. — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of visitors.
Aug. 31	West Shore railway, this side of New York	22	1,320
		1,163	69,840
Sept. 1	Hamilton, Ont., Sands' wholesale clothing	9	540
" 2	Great Bend and Binghamton, via Erie railway	6	360
" 2	Rochester, N. Y., via Erie railway.....	8	480
" 2	Buffalo, N. Y., via New York Central and Hudson River railway.....	28	1,680
" 2	Buffalo, N. Y., via West Shore railway,	7	420
" 3	Scranton, Pa	6	360
" 4	Bath, N. Y. (Masonic), via Delaware, Lackawanna and Western railway...	20	1,200
" 4	Meadville and Salamanca	12	720
" 5	Watkins, N. Y.....	5	300
" 5	Buffalo, N. Y., reunion One Hundred and Sixteenth Regiment N. Y. S. V	8	480
" 7	Buffalo, N. Y., fair excursion.....	10	600
" 7	Jamestown, A. O. U. W.....	9	540
" 7	Buffalo, N. Y., from fair	10	600
" 7	Preston and Perth, Ont	10	600
" 8	St. Thomas, Ont	8	480
" 9	Lockport, N. Y., via Erie railway	4	240
" 9	Jamestown, N. Y., via Erie railway....	8	480
" 9	Dunkirk, N. Y., via Erie railway	6	360
" 9	Buffalo, N. Y., from fair.....	41	2,460
" 9	Grand Army vets, from Columbus, O..	12	720
" 10	Buffalo, N. Y., from fair.....	20	1,200
" 11	Buffalo, N. Y., from fair.....	40	2,400
" 11	New Hampshire and Connecticut I. O. of O. F.....	8	480
" 12	Buffalo, N. Y., via New York Central and Hudson River railroad.....	54	3,240
" 12	Buffalo, N. Y., via Erie railway	15	900
" 13	Buffalo, N. Y., via Erie railway.....	20	1,200
" 14	Buffalo, N. Y., via Erie railway	12	720
" 16	Newark, N. J., via Erie (Prescott's) ...	7	420
" 16	Buffalo, N. Y., via New York Central and Hudson River railroad.....	8	480
" 17	Waterloo, Ont., Grand Trunk railway.	4	240
" 19	Akron, O.....	5	300
" 19	Via New York, Pennsylvania and Ohio, New York, Lake Erie and Western railways	16	960

Statement of Excursions, 1887 and 1888 — (Continued).

1888.	WHERE FROM.	No. of cars.	Estimated No. of Visitors.
Sept. 20	New York city and along New York Central and Hudson River railroad..	22	1,320
" 20	Raymond excursion, Boston, Mass. . . .	4	240
" 21	Syracuse, along New York Central and Hudson River railroad.	10	600
" 22	Canandaigua, Rushvill, etc., New York Central railroad.	13	780
" 23	Cincinnati, Cleveland, etc., Nickle Plate	12	720
" 23	Lockport, N. Y., via Erie railway. . . .	5	300
" 23	Buffalo, N. Y., via New York Central and Hudson River railroad.	17	1,020
" 23	Buffalo, N. Y., via West Shore.	7	420
" 28	Lockport, N. Y., Womens' Christian Temperance Union.	3	180
" 30	Rochester, N. Y., via Erie railway. . . .	3	180
		532	31,920

RECAPITULATION.

		Cars.	Persons.
1887..	Excursions in October.	69	4,140
1887..	Excursions in December.	20	1,200
1888..	Excursions in January.	32	1,920
1888..	Excursions in February.	109	6,300
1888..	Excursions in March.	7	420
1888..	Excursions in May.	15	900
1888..	Excursions in June.	269	16,140
1888..	Excursions in July.	647	38,820
1888..	Excursions in August.	1,163	69,840
1888..	Excursions in September.	532	31,920
		2,863	171,600

APPENDIX.

[Assembly, No. 23.]

7

RESOLUTIONS AND CORRESPONDENCE.

The following resolutions were adopted by the Commissioners June 30, 1888:

The Commissioners of the State Reservation at Niagara deem it fitting to give expression to their concurrence in the views of their predecessors in office, as to the desirability of providing, as early as practicable, a capacious, protected and embellished roadway from the lands of the reservation along the Niagara river to the bend at the Whirlpool, and that at a point just below the whirl of the Rapids a bridge be thrown across the river to the Canadian side, thus affording to the public unrestricted opportunity to witness all the majestic features of the natural scenery of the river, the Falls and the Rapids, the Whirlpool and the cañon; therefore,

Resolved, That the Hon. John Bogart, State Engineer and Surveyor, be respectfully requested, if he feel authorized, to cause the necessary surveys and maps to be made, to indicate the most favorable location of such way and the most advantageous point for such bridge, in order that the subject may be presented to the attention of the municipalities through which the way must pass, and to the general public.

Resolved, That the president of the board be requested to communicate with the commissioners of the Queen Victoria Niagara Falls Park on the subject of these resolutions, to the end that they may take such steps as to them may seem proper for accomplishing, on their side of the river, the scheme of providing for public convenience and pleasure a complete circuit, comprehending all the objects of interest on both sides of the river.

NEW YORK, July 6, 1888.

HON. JOHN BOGART, *State Surveyor and Engineer, Albany* :

DEAR SIR.—At a meeting of the Commissioners of the State Reservation at Niagara, held June thirtieth, the board acquiesced in and unanimously adopted the views as to the desirability of providing as early as practicable a roadway from the reservation along the Niagara

river to the bend at the Whirlpool, and a bridge to the Canada side at a point just below the Whirlpool; and it was resolved that the Hon. John Bogart, State Engineer and Surveyor, be respectfully requested, if he feel authorized to do so, to cause the necessary surveys and maps to be made to indicate the most feasible location of such way and the most advantageous point for such bridge, in order that the subject may be presented to the attention of the municipalities through which the way must pass, and to the general public. Will you not kindly let me know whether it will be convenient and agreeable to you to undertake these surveys?

Very respectfully yours.

ANDREW H. GREEN,
President.

OFFICE OF THE STATE ENGINEER AND SURVEYOR. }
ALBANY, N. Y., July 21, 1888. }

HON. ANDREW H. GREEN, *President Commissioners of State Reservation at Niagara, 214 Broadway, New York, N. Y. :*

DEAR SIR.—Your letter in reference to surveys and maps for the roadway from the reservation along the Niagara river to the bend on the Whirlpool, and the study of the most advantageous point for the bridge to the Canada side, was duly received. I called at your office to have a consultation on the subject on my first visit to New York after the receipt of your letter, but was not fortunate enough to meet you.

I write now to say that I will be glad to aid the commission in any way possible, and that I am quite ready to direct the surveys and study the subject suggested by your letter.

I do not think that there are any funds appropriated by the Legislature which I would be authorized to spend to make these maps and surveys. The expense, to be sure, would probably not be great. May I ask whether your commission can appropriate from the funds at its command the money required to pay for such services? If so, I think I would put it into immediate progress.

At all events, I will be glad to have your views on this matter.

Very respectfully yours.

JOHN BOGART,
State Engineer and Surveyor.

GREEN HILL, *July 31, 1888.*

MY DEAR SIR.—I have received your very kind favor of the twenty-first inst. I regret that I missed your call. Our commission has no funds that can be appropriated to the surveys. We have scarcely sufficient to enable us to meet the most exigent expenses of keeping the reservation in presentable condition. I have no doubt of your disposition to aid us in the needed examinations to present this subject intelligently to the public. The reservation commissioners have no jurisdiction outside the limits of the public possessions, and we could not spend money outside of these limits if we had it. It is quite possible that you may find your own official jurisdiction so limited that you would not feel at liberty to make the maps and surveys. That must be left to your own determination. If you can invent any justifiable plan by which this work can be done, we shall feel much obliged.

Very truly yours.

ANDREW H. GREEN,
President, etc.

Hon. JOHN BOGART, *State Engineer and Surveyor.*

214 BROADWAY, NEW YORK, *July 11, 1888.*

Colonel C. S. GZOWSKI, *Chairman Commissioners of the Queen Victoria
Niagara Falls Park:*

SIR.—The recent opening of your park at Niagara prompts congratulatory expressions from those of us on this side of the river who are interested in the permanent exemption of the scenery of the Falls from the defacement to which it was constantly exposed before it came under government protection.

It may well be desired that the work so auspiciously begun should be continued, and that the portion of the public domain within the jurisdiction of your board should be so enlarged by the addition of lands northwardly along the Niagara river, as to include all the territory along the bank of the river from the Dufferin islands to the Whirlpool, within the Queen Victoria park. And on our side, it is to be hoped that the limits of the property of the State may also be further extended towards the north. The value of improved land in the villages of Niagara Falls and Suspension Bridge is such as to render it difficult to secure marginal territory down to the Whirl-

pool. The construction of a protected roadway, however, from the reservation to the Whirlpool is, I think, quite practicable. Indeed, the State Engineer and Surveyor has recently been requested by our commissioners to make surveys and maps to indicate the most favorable location for such roadway and the most advantageous point for a bridge across the river just below the Whirlpool.

That the proposed roadway, properly embellished, would serve greatly to increase the pleasure of visitors will hardly be denied. It should not, however, come to an abrupt termination at the Whirlpool bluffs. There should, it seems to our board, be some means of communication from the New York reservation to the Ontario park. A bridge thrown across the river at a point not far below the Whirlpool, where the gorge of the river is narrowest, would serve as a continuation of the road proposed, and as such would prove to be of great convenience to visitors and of permanent value both to your park and our reservation.

Visitors driving or walking along the bank of the river, on either side, could then cross in full view of the rapids and the Whirlpool to the other shore, returning by the old suspension bridge near the Falls, and thus in the course of a few hours' drive or walk, effect a complete circuit and obtain satisfactory views of all the objects of interest in the immediate vicinity of the Falls on both sides of the river.

The desirability of these improvements will, it seems to us, become more apparent with each succeeding year. I trust that you will deem these suggestions such as to entitle them to favorable consideration from yourself and your associate commissioners, and that there may be concerted action on the part of both boards in carrying into effect plans for connecting by a bridge, near the Whirlpool, the Canadian and United States banks of the river.

Very respectfully yours.

ANDREW H. GREEN,

President of the Board of Commissioners of the State Reservation at Niagara.

DOVER, 8 WATERLOO CRESCENT, }
 August 18, 1888. }

SIR.—I beg to thank you for your letter of the eleventh ultimo, forwarded to me here, and for the congratulations it contains on the results of the efforts made by my colleagues and myself, towards the restoration of the scenery on the Canadian side of the Niagara Falls.

I am thoroughly in accord with your views in regard to the extension of the Victoria Park, and of the State Reservation at Niagara, as well as the connection of the two by a bridge, if means can be provided to accomplish it.

I may say that the government of the Province of Ontario have transferred to the commissioners a strip of land on the bank of the Niagara river, extending from the present northern boundary of the park to Queenston.

On my return to Canada, during the month of October, I shall be very glad to meet you to discuss the very desirable project.

I beg to remain very truly yours.

C. S. GZOWSKI,

Chairman, etc.

Hon. A. H. GREEN, *President, etc.*

RECESSION OF THE FALLS.

Changes in the outline of both the American and Canadian Falls are continually being made. The regular curve that formerly gave appropriateness to the name Horse-shoe Falls has entirely disappeared. During the last thirteen years a noticeable alteration in the outline and a decided recession have taken place. This recession of the Falls has long been interesting to scientific persons. The following extract is from Professor Tyndall's article on Niagara in *Macmillan's Magazine* (vol. xxviii, p. 49): "The fact that in historic times, even within the memory of man, the Fall has sensibly receded, prompts the question, how far has this recession gone; at what point did the ledge which thus continually creeps backward, begin its retrograde course? To minds disciplined in such researches the answer has been and will be, at the precipitous declivity which crossed the Niagara from Lewiston on the American to Queenston on the Canadian side. Over that transverse barrier the united affluents of all the upper lakes once poured their waters, and here the work of erosion began. The dam, moreover, was demonstrably of sufficient height to cause the river above it to submerge Goat Island; and this would perfectly account for the finding by Mr. Hall, Sir Charles Lyell and others, in the sand and gravel of the island, the same fluviatile shells as are now found in Niagara river higher up. It would also account for those deposits along the sides of the river, the discovery of which enabled Lyell, Hall and Ramsay to reduce to demonstration the popular belief that the Niagara once flowed through a shallow valley.

"The physics of the problem of excavation, which I made clear to my mind before quitting Niagara, are revealed by a close inspection of the present Horse-shoe Fall. Here we see, evidently, that the greatest weight of water bends over the very apex of the Horseshoe. In a passage in his excellent chapter on Niagara Falls, Mr. Hall alludes to this fact. Here we have the most copious and the most violent whirling of the shattered liquid; here the most powerful eddies recoil against the shale. From this portion of the Fall, indeed,

the spray sometimes rises without solution of continuity to the region of clouds, becoming gradually more attenuated, and passing finally through the condition of true cloud into invisible vapor, which is sometimes reprecipitated higher up. All the phenomena point distinctly to the center of the river as the place of greatest mechanical energy, and from the centre the vigor of the Fall gradually dies away towards the sides. The horse-shoe form, with the concavity facing downwards, is an obvious and necessary consequence of this action. Right along the middle of the river the apex of the curve pushes its way backwards, cutting along the centre a deep and comparatively narrow groove and draining the sides as it passes them. Hence the remarkable discrepancy between the widths of the Niagara above and below the Horse-shoe. All along its course, from Leviston Heights to its present position, the form of the Fall was probably that of a horseshoe; for this is merely the expression of the greater depth, and consequently greater excavating power of the centre of the river. The gorge, moreover, varies in width as the depth of the centre of the ancient river varied, being narrowest where that depth was greatest.

“The vast comparative erosive energy of the Horseshoe Fall comes strikingly into view when it and the American Fall are compared together. The American branch of the upper river is cut at a right angle by the gorge of the Niagara. Here the Horse-shoe Fall was the real excavator. It cut the rock and formed the precipice over which the American Fall tumbles. But since its formation the erosive action of the American Fall has been almost nil; while the Horse-shoe has cut its way for 500 yards across the end of Goat Island, and is now doubling back to excavate a channel parallel to the length of the island. This point, I have just learned, has not escaped the acute observation of Professor Ramsay. The river bends; the Horse-shoe immediately accommodates itself to the bending, and will follow implicitly the direction of the deepest water in the upper stream. The flexibility of the gorge, if I may use the term, is determined by the flexibility of the river channel above it. Were the Niagara above the Fall sinuous, the gorge would obediently follow its sinuosities. Once suggested, no doubt geographers will be able to point out many examples of this action.

“The Zambesi is thought to present a great difficulty to the erosion theory, because of the sinuosity of the chasm below Victoria Falls. But, assuming the basalt to be of tolerably uniform texture, had the river been examined before the formation of this sinuous channel, the

present zig-zag course of the gorge below the Fall could, I am persuaded, have been predicted, while the sounding of the present river would enable us to predict the course to be pursued by the erosion in the future."

EXTRACT FROM SIR C. LYELL'S TRAVELS IN NORTH AMERICA.

"It has long been a favorite subject of discussion whether the Falls were once situated seven miles farther north, or at Queenston. * * * The platform, in a depression of which Lake Erie is situated, is more than 330 feet above Lake Ontario, and the descent from a higher to a lower level is sudden and abrupt at the escarpment called the Queenston Heights. The strata throughout this whole region are nearly horizontal, but they have a gentle dip to the south of twenty-five feet in a mile. This inclination is sufficient to cause the different groups of rock to crop out one from beneath the others, or come up to the surface in parallel zones, which may be traced for a great distance east and west through the State of New York and Canada. They all consist of different members of the Silurian series, the uppermost or newest being those nearest to Lake Erie. In the bird's-eye view, the Niagara is seen bounded by low banks where it issues from Lake Erie, and varying in width from one to three miles. It here resembles a prolongation of the tranquil lake, being interspersed with low, wooded islands. This lake-like scenery continues for about fifteen miles, during which the fall of the river scarcely exceeds as many feet, but on reaching the rapids it descends over a limestone bed about fifty feet in less than a mile, and is then thrown down about 165 feet perpendicularly at the Falls. The largest of these, called the Horse-shoe Fall, is 1,800 feet, or more than a third of a mile broad, the island in the midst somewhat less in width and the American Fall about 600 feet wide. The deep, narrow chasm below the great cataract is from 200 to 400 yards wide and 300 feet deep, and here in seven miles the river descends 100 feet, at the end of which it emerges from the gorge into the open and flat country, so nearly on a level with Lake Ontario that there is only a fall of about four feet in the seven additional miles which intervene between Queenston and the lake. The great ravine is winding, and makes a turn nearly at right angles to itself at the whirlpool, where the Niagara sweeps round a large circular basin. * * * At some points the boundary cliffs are undermined on one side by the impetuous stream, but there is usually a talus at the base of the precipice, supporting a very ornamental fringe of trees.

"It has long been the popular belief, from a mere cursory inspection of this district, that the Niagara once flowed in a shallow valley

across the whole platform from the present site of the Falls to the Queenstown Heights, where it is supposed the cataract was first situated, and that the river has been slowly eating its way backwards through the rocks for a distance of seven miles. According to this hypothesis the Falls must have had originally nearly twice their present height, and must have been always diminishing in grandeur from age to age, as they will continue to do in future, so long as the retrograde movement is prolonged. It becomes, therefore, a matter of no small curiosity and interest to inquire at what rate the work of excavation is now going on, and thus to obtain a measure for calculating how many thousands of years or centuries have been required to hollow out the chasm already excavated.

“It is an ascertained fact that the Falls do not remain absolutely stationary at the same point of space, and that they have shifted their position slightly during the last half century. Every observer will also be convinced that the small portion of the great ravine which has been eroded within the memory of man is so precisely identical in character with the whole gorge for seven miles below, that the river supplies an adequate cause for executing the task assigned to it, provided we grant sufficient time for its completion.

“The waters, after cutting through strata of limestone about fifty feet thick in the rapids, descend perpendicularly at the Falls over another mass of limestone about ninety feet thick, beneath which lie soft shales of equal thickness, continually undermined by the action of the spray driven violently by gusts of wind against the base of the precipice. In consequence of this disintegration, portions of the incumbent rock are left unsupported and tumble down from time to time, so that the cataract is made to recede southwards. The sudden descent of huge rocky fragments of the undermined limestone at the Horse-shoe Fall in 1828, and another at the American Fall in 1818, are said to have shaken the adjacent country like an earthquake. According to the statement of our guide in 1841, Samuel Hooker, an indentation of about forty feet has been produced in the middle of the ledge of limestone at the lesser fall since the year 1815, so that it has begun to assume the shape of a crescent, while within the same period the Horse-shoe Fall has been altered so as less to deserve its name. Goat Island has lost several acres in area in the last four years, and I have no doubt that this waste neither is, nor has been, a mere temporary accident, since I found the same recession was in progress in various other water-falls which I visited with Mr. Hall in the State of New York.

* * * Mr. Bakewell calculated that, in the forty years pre-

ceding 1830, the Niagara had been going back at the rate of about a yard annually, but I conceive that one foot per year would be a much more probable conjecture, in which case 35,000 years would have been required for the retreat of the Falls from the escarpment of Queenston to their present site, if we could assume that the retrograde movement had been uniform throughout. This, however, could not have been the case, as at every step in the process of excavation, the height of the precipice, the hardness of the materials at its basé, and the quantity of fallen matter to be removed must have varied. At some points it may have receded much faster than at present, at others much slower, and it would be scarcely possible to decide whether its average progress has been more or less rapid than now."

OTHER CATARACTS.

While other cataracts surpass those of Niagara in height, none exceed them in volume and grandeur.

In the Yosemite Valley, the Ribbon Fall, it is said, "rushes down the face of rocks from two to three thousand feet in height." The Bridal Veil Fall has a descent of nearly a thousand feet. "The stream, before it takes the leap, is about forty feet in width; its waters are broken into spray ere they reach the bottom, and are further shattered into a smoke-like mist by concussion with the rocks below."

The Yosemite Falls are divided into three parts. The first descent is fifteen hundred feet; the second six hundred and twenty-six, and the third about four hundred feet. The Vernal Falls of the Merced are about four hundred feet in height, while the Nevada Fall, in the same river, has a descent of six hundred and forty feet, and is exceedingly beautiful.

The upper cataract of the Yellowstone falls about one hundred and fifty feet, and the lower cataract about three hundred and fifty feet. Tower Falls, in Tower creek, have a descent of one hundred and fifty feet.

The Falls of Montmorency, near Quebec, are about two hundred and thirty feet high.

The Falls of Chaudière have a descent of about one hundred feet.

The cataracts of the Orinoco "result from the presence of an archipelago of islands in the stream, from blocks of granite piled upon one another, and from rocky dykes that form natural dams. Over these the water pours in small cascades that follow each other like the steps of a ladder."

"The Hundred Cataracts, or Victoria Falls, of the Iguassu, near the junction of that river with the Paraná, have only been fully explored

lately; but it would seem, from the description of a recent German exploring party, to be one of the grandest in the world. A few miles above it the river is three miles broad. It gradually narrows, however, until passing through an archipelago of little islands, it pours, by numerous channels, over a horseshoe ledge of rock, into a gorge nearly a hundred and fifty feet in depth, after which it flows for some distance through a narrow channel confined between lofty cliffs."

The great Fall of Kaieteur, in British Guiana, situated in the Potaro river, an affluent of the Essequibo, descends seven hundred and forty feet into a vast basin, and is said to be extremely grand and impressive.

The Fall of Tequendama of the River Bogota, in the Andes of New Granada, is precipitated over a perpendicular rock about five hundred feet in height.

The Staubbach, in the valley of the Lauterbrunnen, "is one of the loftiest falls in Europe, and when swollen by recent rains it is one of the most impressive, leaping down as it does in an almost unbroken sheet to a depth of nine hundred and eighty feet."

The Handeck, near the source of the River Aar, falls perhaps two hundred and fifty feet.

The Reichenbach descends in several parts, and the Giessbach is said to be divided into thirteen falls.

The Falls of the Rhine at Schaffhausen are from eighty to a hundred feet in height, and the Pissevache, in the Rhone valley in southern Switzerland, is about two hundred feet high.

The Keelfoss in Norway, near the Sognefiord, said to be the highest fall in Europe, has an uninterrupted descent of about two thousand feet.

The Fall of the Doubs, near Morteau in France, is about eighty feet in height.

The upper fall of the Clyde is only thirty feet high; the middle fall, that of Cora Linn, about eighty-four feet; the lower fall that of Stonebyres, about seventy feet.

The Foyers in Inverness-shire are divided into two parts. "The upper fall is the smaller, being only about thirty feet high. A quarter of a mile further down occurs the principal fall, where the waters precipitate themselves in a single sheet of dazzling whiteness to a depth of two hundred and twelve feet."

The Fall of Gavarnie, the highest cascade in the Pyrenees, "pours its slender stream from a height of upwards of thirteen hundred feet."

The Falls of the Cavery, in southern India, are said to descend 500 feet in seven magnificent cascades.

The Victoria Falls of the Zambesi are undoubtedly very grand and wonderful. A recent writer says: "Niagara is generally regarded as the king of cataracts; but Charles Livingstone, brother of the famous traveler, and at least two other travelers among the very few who have seen both falls, agree in regarding the Victoria Falls as surpassing those of Niagara in beauty. They are situated about a thousand miles from the mouth of the Zambesi, and the first European to see and describe them was Dr. Livingstone."

The Zambesi is about a mile wide, and the Victoria Falls over one hundred feet in height.

The Gonha Cataract in the same river has a descent of about fifty feet.

Of the falls and cataracts of the Nile, the greatest are the Murchison Falls, named in honor of a president of the Royal Geographical Society. The width of the Falls is about one hundred and fifty feet and their height about one hundred and twenty.

The Fall of Govina in the river Senegal "precipitates its foaming waters in a mass to a depth of sixty yards."

The numerous cataracts and rapids of the Congo are interesting and picturesque, and are described in Stanley's work, "Through the Dark Continent."

Of the Shoshone Falls in Idaho recent travelers speak with admiration. The following extracts from Mr. Edwards Roberts' book, entitled "Shoshone and Other Western Wonders," may not be uninteresting:

"The Snake river is a tributary of the Columbia, joining the latter in eastern Washington. It is born in Wyoming, of the many streams that have their source among the mountains there, and flows westward through a cañon that for length and depth and beauty of a rugged order is one of the marvels of the world. Standing on its brink, or gazing upward from the level of the river, the impression upon one's mind is the same. You are oppressed by a sense of the awfulness of the creation; and watching the river moving along so calmly, as it does just before the Falls are reached, you wish you could give it the green banks of some of the streams you know. There was never a day during our Shoshone visit that, for a moment, the region did not become a hideous reality from which I longed to escape. But all such moments were followed by hours when the very height of the walls that hemmed us in, and the wild noise of the falling river fascinated and exhilarated. You should see the river gather itself together for its leap into the lower depths of the cañon; should listen to the roar it makes; should feel the earth tremble with the shock; should

watch the rising mists, ghost-like in the moonlight; should give days to the isolated place, to know the fascinations of Shoshone Falls. Telling one how high the Falls are, how deep the cañon is, gives no idea of the place itself, of its coloring, of its weirdness. The cañon is a world by itself, full of novelties and strange sights. * * * *

“The actual length of the Shoshone Cañon is seventy miles. Thirty miles below the entrance to the gorge the principal scenic features begin. From near its course to the eastern end of the cañon, the Snake flows above ground through an area that is unparalleled for the height, number and beauty of its mountains. It has nearly forty tributaries, some of them fed by geysers and others by melting glaciers, and its waters are the coldest of any known river.

“The American Fall, forty feet high, is the first cataract of the river as it flows down stream. It is here that the Oregon Short Line crosses the Snake. Far beneath the bridge one sees the boiling waters, their whiteness relieved by uprising ledges of volcanic rock. Were it not for the Shoshone the American Falls would be famous. As it is, they are neglected for the more wonderful cataracts farther westward. * * *

“The first cataracts within the cañon are the Twins, or Upper Shoshone Falls. They have a single leap of one hundred and eighty feet. A huge rock, caught in mid-stream, divides the river into two channels, each seventy feet wide, and through these the water flows. The basin which receives the falls is nearly circular in shape, and is like a boiling caldron, filled with troubled waters and sending forth dense masses of spray.

“Below the Twins is a half-mile of rapids. Farther down, the river grows tranquil again, and then, a few rods from the ferry crossing, contracts to a width of less than six hundred feet, and makes noisy preparation for its greatest fall. At the ferry is heard the loud roar of the water as it strikes the hidden ledges below, while, shrouding the long white line marking the point of actual fall, are the heavy mists which rise high toward the tops of the cliffs and are tossed about by the winds.

“Near the brink the river widens to a quarter of a mile, and is divided by three rocks, corresponding to the islands in the rapids at Niagara. Just below these a smaller island forces the water to the left in a small cataract about fifteen feet high. To the right is Cedar Island, between which and its mate are small falls, or rapids, whose waters uniting, sweep past a crescent-shaped beach to the final plunge. To the right of Cedar Island the river is obstructed by red-tinged rocks, with sturdy little pines clinging to their tops, that

form a most picturesque series of falls: Between two of these islands is the Bridal Veil Fall. Next to it is the Bridal Train. Both have a leap of eighty-two feet, and bear a wonderful resemblance, as the water glistens in the sunlight, to the faultless lace of a royal bridal veil and train. * * *

“At Niagara the river falls two hundred and twenty-five feet in twenty-five miles. At Shoshone the Snake descends five hundred feet in four miles. The great Fall of Shoshone is crescent-shaped, and is two hundred and twenty-five feet high by nine hundred and fifty wide. The plunge is unbroken. Facing it one sees a quivering wall of water that stretches from one side of the cañon to the other. The roar is deafening and its force is so great that the displaced air is as fierce as a tornado. The earth trembles from the blow it receives. You yourself are drenched with spray; and the rising mist is like a fog at sea, blown hither and thither, and so catching the sun’s rays as to form arch upon arch of glorious color.”

