THIRTEENTH ANNUAL REPORT OF THE BOARD OF COMMISSIONERS OF THE CENTRAL PARK

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OF THE

BOARD OF COMMISSIONERS

OF THE

CENTRAL PARK,

FOR THE

YEAR ENDING DECEMBER 31, 1869.

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Board of Commissioners of the Central Park.

Officers and Committees.

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WALDO HUTCHINS,
THOMAS C. FIELDS,
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Statuary, Fountains, and Architectural Structures.—Messrs. Russell, Butterworth, Green.

Roads and Avenues.—Messrs. Blatchford, Fields, Green, Hutchins, Butterworth.

REPORT.

To the Honorable the Common Council
of the City of New York:

The Board of Commissioners of the Central Park respectfully submits this Report of its transactions for the year ending with the thirty-first day of December, 1869, being its Thirteenth Annual Report.

The forces of the Park have been generally engaged in the development on the grounds of plans heretofore adopted, and in maturing the plans for future operations.

The Belvedere at the high ground of a central portion of the Park is advanced so that the form of the tower at its south-easterly angle, and the open shelter at its south-west corner, are well defined and readily observable; this structure is designed to afford a prominent place of look-out over the whole extent of the Park,

and at the same time to present in itself varied, picturesque, and attractive features as viewed from different parts of the grounds.

The massive foundations of the Merchants' gate have been nearly completed, and the drives and walks that lead thereto, have been readjusted to the new lines of the arrangement of the open circular place recently laid out at the intersection of Fifty-ninth street, Eighth avenue, and Broadway. The necessary modifications of the planted grounds at this point have also been completed.

The House, situated just north of the Play-ground south of Transverse road No. 1, is complete, and is much used by the boys for whose convenience it was erected. The Children's Cottage is complete, and is also very much used.

The Dairy, a rural structure of stone, situate on the southerly side of Transverse road No. 1, and south-east of the Marble Arch, is well forwarded. It is arranged for the convenient serving of milk and similar refreshments, and so that all supplies may be taken into it from the Transverse road ; the Children's Play-ground, well protected by plantations, and the Children's Shelter are immediately and conveniently accessible from it, and from all the southerly gates of the Park.

GENERAL VIEW OF THE DAIRY

Olmsted & Vaux, Landscape Architects.

The ceiling of the Terrace has been laid with encaustic tile of varied design, and the decoration of the ornamental ribs of iron has been finished ; all that remains to complete this ceiling, is the introduction of the glass panel that is to admit the light upon the statues designed to occupy the central space immediately under it.

The old house at the Great Hill, which was rapidly falling into decay, has been newly roofed and put in good order for such useful purpose as the exigencies of the Park administration may require.

The laying out, fertilizing, and planting of the Maze or Labyrinth on the east of the Old Reservoir is completed. This comprises within its inclosure thirty-seven hundred lineal feet of gravel-walk, and twenty-two hundred and fifty trees as borders or screens to the walk, and is intended to render an attempt to reach its central point, or to find a place of exit, somewhat amusingly intricate and difficult. The trees used are at present about eighteen inches in height. Gardenesque arrangements of this kind are found in many extensive public and private grounds of the Old World, and are designed to form a pleasant incident in a visit to the Park.

A fountain has been arranged at the Harlem Lake by

which a high jet of water is played whenever the supply in the Reservoir is such as to admit of its use.

A portion of the exterior wall of the Park, from Seventy-second to Seventy-ninth street, on the Fifth avenue, has been completed, with the exception of the entrance openings; the wall on this avenue is complete from Fifty-ninth to Seventy-ninth street, and the foundation and one faced wall and part of the base course is set from this point to One Hundred and Tenth street.

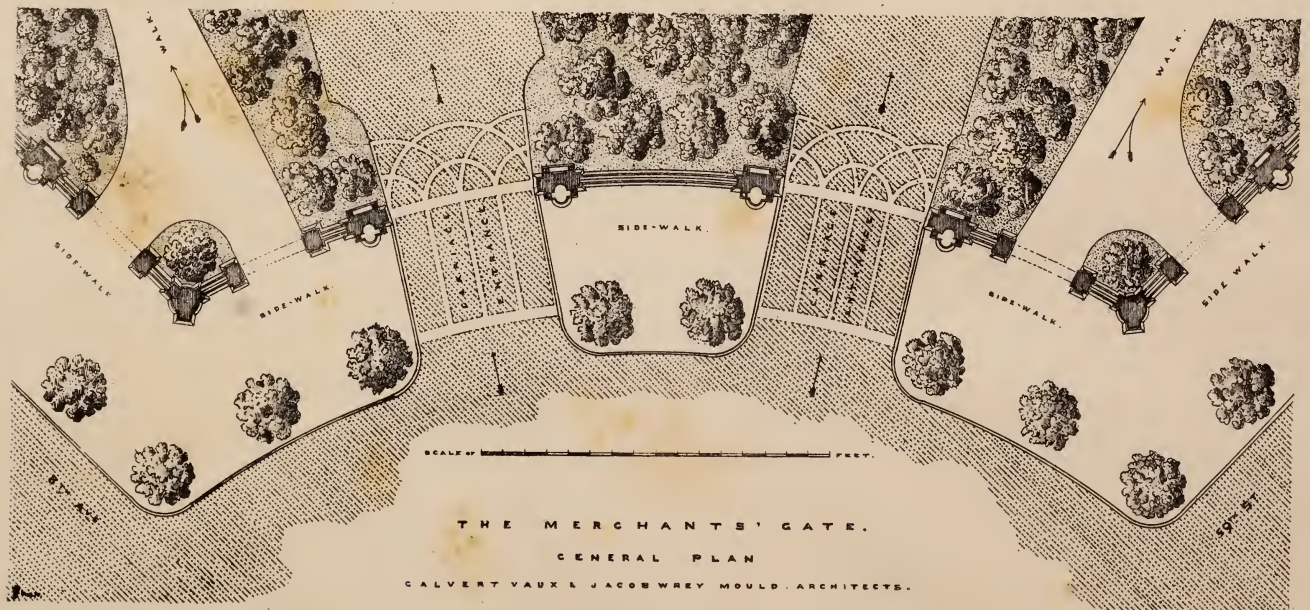
A part of the wall on the Eighth avenue, from the Merchants' gate to Transverse road No. 1, has been removed and rebuilt to meet the change of grade of that avenue.

The large stone, 17 feet square, of polished Westerly granite for the basin of the Terrace fountain has been contracted for, and it is hoped will be in place during the coming season.

The bronze figures for this fountain are now in course of casting at Munich.

The foundation course for the horse drinking-fountain at the circle is set, and a large portion of the ornamental stone work is on the ground ready for setting when the weather permits.

A movable house has been nearly completed for a



THE MERCHANTS' GATE.

GENERAL PLAN

CALVERT VAUX & JACOB WREY MOULD. ARCHITECTS.

cover to prevent damage to the music-pavilion by the storms and snows of winter.

The movable house erected several years since near the south beach of the Lake, having been put up and taken down for eight successive years, has, by reason of use, become so much worn that it was necessary to supply its place with one more commodious and readily movable each season after the time has passed during which it may be required. The building presents on the Lake a front of three stories, the lower one being used for refreshments and cloak and skate rooms, the intermediate story for refreshments and a look-out upon the Lake, and the upper story for a ladies' look-out exclusively. The whole building is of an extent of 123 feet long by an extreme width of 61 feet. A house for the use of the curlers is in course of erection at the Conservatory Lake, designed in sections, to be erected and removed with each winter season.

For the purpose of compacting the bed of new roads, and also the surface of these roads, the Board has imported a steam road-roller weighing about 15 tons. Invitations were sent to prominent mechanics and others interested in this class of machinery, to attend a trial of its propelling and compressing capacity. It was readily propelled from One Hundred and Tenth street up the

Great Hill on a grade of 4.61 feet in a hundred, and returned down the Hill without difficulty or apparent stress on the machinery. The roller has been for some months used on the Drive and Circle in compacting the earth and surface road metal.

The following minor structures and articles have been provided during the past year:

188 feet rustic seats, made.

50 feet rustic arbor.

1 rustic bridge, 13 feet wide and 35 feet long.

2 rustic bridges, each 11 feet wide and 14 feet long.

400 iron settees, 1,800 lineal feet.

9 cages for animals.

3 boxes for gate keepers.

2 temporary houses for animals, 12x38.

1 temporary shed for Belvedere, 12x100.

1 cover for steam roller, 6x8x13.

1 temporary house for steam roller, 20x25.

1 movable house for steam roller, 16x22.

67 windows trimmed, and storm-door at Museum.

40 feet staircase at Museum, 6 feet wide.

13 water-closets in Museum.

400 feet picket fence at Park gates.

10 swings for children.

4 dirt and grass carts.

10 road scrapers.

7 ladders.

11 wooden pedestals for statuary.

2 derrick masts.

8 hand-carts.

13 tool-carts.

101 stone boats.

4 blacksmith shops.

Fittings for the Meteorological department.

1 portable cottage, 20x32.

150 signs.

1 store-house, 18x50.

Bridge to new skate building, 6x60.

100 feet new counters.

188 feet 12-inch drain-pipe laid.

299 feet 8-inch drain-pipe laid.

523 feet 6-inch drain-pipe laid.

270 feet 4-inch drain-pipe laid.

12 feet Croton pipe laid.

784 feet 1-inch lead pipe laid.

276 feet 2-inch lead pipe laid.

600 feet stone-drain.

11 frames and gates ; basins set.

1 service basin.

5 road basins.

5 walk basins.

4 stop-cock basins.

5,954 evergreen trees and shrubs, and 6,568 herbaceous and bulbous plants, have been planted during the year; of these 3,429, mostly good-sized trees, have been taken from the dense plantations of the Park.

THE CASCADE.

The following are tabulations of statistics respecting the working force on the Park, and on other works under the charge of the Board, which will be found of interest:

STATEMENT of the average working force per day employed on the Park, and on other works in charge of the Board, for each month of the year 1869.

MONTHS.	General Foreman.	Foremen.	Laborers.	Rockmen.	Blasters.	Skilled Laborers.	Carts.	Double Teams.	Gardeners.	Carpenters.	Stone-cutters.	Masons.	Painters.	Blacksmiths.	Helpers.	Eight-horse Roller Team.	Track Layers.	Modelers.	Plumbers.	Janitors.	Laborers Zoölogical Department.	Ladies' Maids.	Sculptor.	Messengers.
January	1	19	380	260	9	4	121	30	10	23	30	....	2	8	5	....	....	1	1	3	4	4	1	3
February	1	20	375	255	9	4	130	40	10	22	20	....	2	8	5	....	....	1	....	3	4	3	1	3
March	1	21	390	275	8	4	145	55	10	20	31	....	2	9	5	....	....	1	....	3	4	3	1	3
April	1	21	475	335	10	4	175	65	10	21	36	6	2	10	5	....	....	1	1	3	4	3	1	3
May	1	19	470	340	9	4	190	70	11	20	39	11	2	9	5	....	....	1	1	3	4	4	1	3
June	1	19	472	352	9	5	165	85	11	21	40	15	2	10	5	....	....	1	1	3	4	5	1	3
July	1	20	510	410	10	5	164	83	11	22	41	18	2	11	5	....	....	1	1	3	4	5	1	5
August	1	21	535	402	10	6	160	80	11	23	44	20	2	12	6	....	....	1	1	3	4	5	1	4
September	1	21	540	395	9	6	155	70	11	23	50	31	2	12	6	....	....	1	1	3	4	5	1	5
October	1	22	535	380	9	6	140	100	11	16	60	30	2	12	6	1	....	1	1	3	4	5	1	5
November	1	20	520	360	8	6	120	99	12	12	59	30	2	12	7	....	3	1	1	3	4	5	1	5
December	1	20	450	390	8	6	100	98	11	19	63	16	2	12	7	....	6	1	1	3	4	3	1	5

STATEMENT showing in number of days the force employed on the Park and other works under the charge of the Board during each month of the year 1869.

MONTHS.	General Foremen.	Foremen.	Laborers.	Rockmen.	Blasters.	Skilled Laborers.	Carts.	Double Teams.	Gardeners.	Carpenters.	Stonecutters.	Masons.	Painters.	Blacksmiths.	Helpers.	Eight-horse Roller Team.	Track Layers.	Modelers.	Plumbers.	Janitors.	Laborers Zoölogical Department.	Sculptors.	Uniformed Gatekeepers.	Ununiformed Gatekeepers.	Ladies' Maids.	Messenger Boys.
January.....	26	478	10,127	6,728	225	111	3,141	807	262	574	652	....	50	191	117	..	..	25	12	93	121	26	572	196	118	78
February.....	24	492	8,327	5,604	167	104	2,749	843	235	526	452	....	48	180	105	..	..	24	....	84	112	24	498	170	83	72
March.....	27	572	10,138	7,209	206	115	3,706	1,258	243	552	762	....	54	244	131	..	..	27	2	93	120	27	546	203	93	81
April.....	26	554	12,582	8,500	249	108	4,633	1,554	272	542	853	134	52	256	128	..	..	26	26	90	120	23	557	167	90	78
May.....	26	526	12,534	9,063	240	111	5,209	1,809	278	531	1,005	261	52	251	128	..	..	26	26	93	124	27	571	175	108	78
June.....	27	506	12,573	9,371	254	137	4,360	2,178	289	557	1,003	372	52	257	129	..	..	26	26	90	120	26	523	144	150	78
July.....	26	546	13,594	10,512	267	113	4,475	2,121	303	567	1,038	430	52	266	130	..	..	26	26	93	124	26	522	160	155	124
August.....	26	553	13,800	10,392	260	166	4,221	2,028	306	624	1,157	487	52	312	152	..	..	26	26	93	124	26	541	209	155	110
September.....	26	559	13,993	10,007	230	165	4,058	2,038	290	579	1,254	711	54	311	152	..	..	26	26	90	120	26	525	155	150	120
October.....	26	584	13,815	10,084	217	166	3,320	2,511	289	414	1,457	774	52	312	152	20	..	26	26	93	124	26	529	209	155	130
November.....	26	531	11,241	8,514	176	153	2,527	2,222	255	296	1,373	667	48	281	155	..	50	25	26	90	120	26	557	137	147	130
December.....	27	527	11,315	9,418	189	158	2,485	2,303	264	484	1,439	453	54	291	167	..	81	27	54	93	124	26	595	120	155	130

The rates of wages have in all departments been equal to, and in several have exceeded, those of any year since the commencement of the Park. The total amount expended under the head of construction during the year was $340,265.91.

BERCEAU WALK.

The following table shows the rates of wages paid by the Board on works under its charge for the past thirteen years:

TABLE

SHOWING THE RATE OF PAY PER DAY OF TEN HOURS, FROM THE COMMENCEMENT OF THE WORK TO NOVEMBER 1, 1869.

FORCE.	1857.	1858.		1859.		1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.	
	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.	April 1.	November 1.
	$ cts.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Foremen	1 50	1 50	1 75	1 75	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 20	2 50	3 00	3 00	3 00	3 00	3 00	3 50	3 50	4 00	4 00	4 00
Assistant Foremen	.....	....	1 25	1 25	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 65	1 80	2 25	2 25	2 25	....	....	....	....	....	..	....	....	....
Laborers	1 00	1 00	1 00	1 00	1 00	1 00	1 00	1 00	90	90	1 00	1 25	1 25	1 50	1 80	1 90	1 90	1 90	1 90	2 00	2 00	2 00	2 00	2 00	2 00
Double Teams	3 50	3 50	3 50	3 50	3 50	3 50	3 50	3 50	2 75	2 60	2 70	3 30	3 50	3 90	4 40	4 70	4 70	4 70	5 00	5 50	5 50	5 50	5 50	5 50	5 50
Carts	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	1 80	1 75	1 80	2 20	2 50	2 80	3 15	3 40	3 40	3 40	3 40	3 80	3 80	3 80	3 80	3 80	3 80
Blacksmiths	1 50	1 50	1 50	1 50	1 75	1 87½	1 87½	1 87½	1 60	1 60	1 65	1 90	2 00	2 50	3 00	3 25	3 25	3 25	3 50	3 50	3 50	3 50	3 50	3 50	3 50
Helpers	1 00	1 00	1 00	1 12	...	.....	1 25	1 25	1 00	1 05	1 10	1 25	1 35	1 60	1 90	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00	2 00
Carpenters	1 50	1 50	1 50	1 50	1 75	1 75	1 75	1 75	1 60	1 60	1 75	2 00	2 00	2 50	3 00	3 25	3 35	3 25	3 50	3 50	3 50	3 50	4 00	4 00	4 00
Rockmen	.....	....	....	....	1 10	1 10	1 10	1 10	....	....	....	...		1 60	1 90	2 00	2 00	2 00	...	....	....	....	2 25	2 25	2 25
Blasters	.....	....	.	..	..	....	...	....		....	....	....	....	....	..	....	....	....	....	..	....	....	2 50	2 50	2 50
Hand-drillers	.....	....	....	....	1 10	1 10	1 10	1 10	....	....	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....
Gardeners	.....	..	...	1 40	1 40	1 00	1 30	1 30	1 15	1 10	1 10	1 30	1 40	1 60	1 90	2 00	2 00	2 00	2 00	2 10	2 10	2 10	2 35	2 35	2 35
Masons	.....	....	1 75	2 00	2 00	2 00	2 00	2 00	1 65	....	1 75	....	2 20	2 50	3 00	3 50	3 50	3 50	3 50	4 00	4 00	4 00	4 50	4 50	4 50
Stone-cutters	.....	...	1 75	2 00	2 00	2 00	2 00	2 00	1 65	....	1 75	....	2 25	2 75	3 00	3 50	3 50	3 50	3 50	4 00	4 00	4 00	4 25	4 25	4 50
Bricklayers	.....	....	1 75	1 75	2 00	2 00	2 00	.....	1 65	1 70	..	....	....	....	....	....	....	....	....	....	..	....	....	....	....
Pavers	.....	....	...	....	1 25	.....	1 10	1 10	1 00	1 00	...	..	1 35	1 60	1 90	....	...	....	....	....	....	....	....	....	....
Tile-layers	.....	....	...	...	1 10	1 10	1 10	1 10	1 00	....	....	....	....	....	..	....	..	....	....	....	..	....	....	....	....

There exists in all civilized communities a strong desire to rescue from destruction, and to preserve for future ages, those works of art and skill that justly confer on their authors a fame among men. Growing out of this desire, not only among modern nations but among those of ancient date, great collections have been assembled of statuary, paintings, and other art works that command the admiration of succeeding ages, and compel a respect for the enlightened sentiment that has been instrumental in their preservation. So pervading is this sentiment, and such hold has it upon educated men of all nations, that the conqueror who, even amid the excitements and passions of war, wastes these treasures of time, or suffers them to be pillaged, is justly regarded as an enemy to the best interests of our race, and is characterized as such in the pages of history.

Under a popular government in which the laws, in effect, compel the distribution of individual accumulations of property at brief periods, and in which the transmission of great estates from generation to generation, by entail or other artificial means, is prohibited, the tendency and the disposition is to mass valuable works of art and skill under the management of corporations, or bodies having perpetuity of existence, for the benefit and the use of a wider or more restricted public, as the nature of the collections may demand.

In our country, it is only by giving the whole people an interest in these collections that they can be successfully gathered and preserved through long periods of time. We have, in this country, no dynastic families nor laws of primogeniture, by means of which collections can, as in Europe, be handed over unimpaired to succeeding ages; and many individuals whose wealth and taste, or the necessities of whose studies and business have led them to gather for their own use, or for the enjoyment of their families and friends, galleries of choice and expensive works of art, or valuable collections of books, are, actuated by a high public spirit, in search of some agency through which they can pass over these treasures for the perpetual use and enjoyment of their fellow-men. For these reasons, in no country will collections of this character be so extensive, so valuable, and so rapidly gathered as in this, if the proper means can be discovered for their preservation and transmission. It is becoming apparent, also, that the more valuable and extensive of these collections should be located in large cities, the centres of population and of business, where people naturally tend, and where conveniences of residence and travel admit of their examination and study. It is equally certain that such collections will not be committed to any custodian that is liable to be influenced and changed by the exigencies of the frequent political conflicts that are generated

under our government. That agency only that can give assurance of permanency, of integrity and intelligence, will be entrusted with the guardianship of things that all ages and all cultivated men hold valuable.

The more the mind is turned toward the desirability of securing an agency of this character, the greater the difficulties of accomplishing it will appear; and no movement in the direction of the establishment of these collections likely to succeed can be inaugurated until the intricacies of this problem are understood and a working theory established.

Impressed by these views, the Commissioners of the Park, in their last report, presented a general outline of a plan by which this great desideratum could, at least in some degree, be attained.

Those interested, either from the nature of their occupation or for pleasure, in the respective branches of science and art, are to be addressed, and their means combined in the labor of collecting together the class of works that each has most at heart, with the view of depositing them with a custodian whose general province it will be to administer them in perpetuity in the interest of the special science or art illustrated by the collection and for the general instruction and amusement of the whole people.

The energies and the means of private contributors being thus devoted to the work of collecting, the administering power, by public means, furnishes the necessary buildings and structures for preserving, and such special opportunity for study and examination, to persons interested in each department as may be desirable for its advance and growth.

The Legislature of the State, at its last session, authorized the Board "to erect establish, conduct, and "maintain on the Central Park a Meteorological and "Astronomical Observatory, and a Museum of Natural "History and a Gallery of Art, and the buildings "therefor, and to provide the necessary instruments, "furniture, and equipments for the same." At a previous session, the Commissioners of the Park were authorized to receive "any gifts, devises, or bequests "that may be made to said Board, upon such trusts and "conditions as may be prescribed by the donors or "grantors thereof, and agreed to by said Board."

Thus the necessary legislative sanction has been had to put these ideas in motion and in practical operation by an appropriation of funds upon which a commencement may be made.

In furtherance of this plan a number of public-spirited gentlemen took measures to obtain, by private contribution, sufficient money to purchase a large collection

illustrative of natural history, to be deposited in the Park Museum.

A correspondence respecting this movement is given in an appendix. The undertaking having been favorably received and responded to by considerable subscriptions, the promoters of it organized themselves as the American Museum of Natural History, procured a charter from the Legislature, and, it is understood, have already collected about the sum of $40,000 for the purpose of its organization.

The Museum has purchased—

First—The entire collection of the late Prince Maximillian, known as the Weid Collection, comprising 4,000 Mounted Birds, 600 Mounted Mammals, 2,000 fishes and reptiles.

Second—Selections from the Verreaux collection at Paris, 2,800 Mounted Birds, 230 Mounted Mammals, 400 Skeletons.

Third—The entire collection of American and Foreign Birds, about 2,500 in number, lately belonging to D. F. Elliott, Esq.

Fourth—A series of 250 Birds of Siberia, purchased from Monsieur Vedray, in Paris.

This purchase comprehending in all 12,770 specimens, as follows:

Mounted Birds	9,550
Mounted Mammals	820
Fishes and Reptiles	2,000
Skeletons	400

The details of the conditions upon which these collections are to be deposited with the Park Commissioners have not yet been entirely settled, but it is believed they will be such as to be satisfactory to all the parties concerned, and greatly to the public advantage. It is important that the conditions be carefully devised, to provide for all probable contingencies, to protect the property, to keep alive and extend the interest of the donors, and to serve as a precedent for those interested in other branches of art and science who may be disposed to make like arrangements.

THE CAMEL.

Additions to the Museum of the Park have been made, a detailed statement of which will be found in the appendix ; among these is the complete skeleton of a whale, the donation of Peter Cooper, Esq., which has been carefully set up and is a very interesting feature of the Museum.

The Board has not been advised of any progress by the New York Historical Society toward establishing a Museum of Natural History and Gallery of Art, as authorized several years since by an Act of the Legislature.

Professor B. Waterhouse Hawkins has been engaged in advancing the group of fossil animals more fully alluded to in the last Annual Report. A very wide interest, both in this country and in Europe, has been excited among scientific men by this interesting and novel undertaking. The proceedings of the Commissioners of the Park in this matter have been alluded to, commented upon, and commended by scientific journals both at home and abroad. It would be difficult to insure too great care in the preservation of the wonderful remains of animal organizations of past times that are from time to time discovered in different parts of the country. There are examples of fossil remains lying in public and private collections of the country, that, in the interest of science, should be utilized and placed

where they can readily be got at by those especially interested in this department of inquiry. It is very difficult, except through the offer of a reward in money, to impress upon those who, in excavation, casually come upon fossil remains, the importance of handling them with care: they are often, to them, nothing but old bones, and a stroke of the pick, or a scoop of the shovel may, in an instant, irrecoverably destroy or cast away a fragment that might serve to establish or refute received ideas of the past eras of our globe.

The great group of ancient animals formerly living during the secondary geological epoch on the continent of America, now being modeled and restored to the natural size and appearance of the animal as in life, by Mr. Hawkins, for the Central Park, consists of the gigantic Hadrosaurus of the exact dimensions (one twenty-six feet, the other thirty-nine feet, long), as proved by the fossils described by Dr. Joseph Leidy in the "Smithsonian Contributions to Knowledge, No. 192"; also models of "Laelap's Aquilunguis" fossils, described by Cope, together with the aquatic "*Elasmosaurus and Mosasaraus.*" The second division of the group will illustrate the post-tertiary period, and represents the Mastodon, the Mammoth, Megatherium, Megalonyx, Glyptodon, etc., etc., thus uniting the early periods of animal life with the earliest evidence of

PALAEOZOIC MUSEUM.

SHOWING THE REHABILITATED FORMS OF ANCIENT ANIMAL LIFE IN AMERICA.

NOW BEING CONSTRUCTED IN CENTRAL PARK.

man's existence, and so constituting a complete *visual history of the American* continent from the dawn of creation to the present time.

The excavations for the structure for this department of the Museum are now going on at a point near the Eighth avenue, about one-half way between the Merchants' gate and Transverse road No. 1.

The Board has been exceedingly desirous to proceed with the Zoölogical Gardens, both because public expectation looks for some development in this direction, and because of the much-needed accommodations for the growing collection of animals that are now insufficiently and unsatisfactorily housed. As was stated in the reports of the Board several years since, the chief occasion of delay is the want of a proper outlet for the drainage of the ground, and the regulation of the streets and avenues about it. These are still essential requisites for proceeding with the work. A sewer has been commenced, which will in part accomplish this desideratum, but it will probably be at least a year before it is fully completed. The avenues and streets that surround these grounds are in such a state as to render them almost impossible of approach, and extensive excavation and filling is now going on in the vicinity. With these difficulties to contend with, over which the Commissioners of the Park have no control,

they have done as much work in the last year as seemed practicable. Nearly two-thirds of the foundation wall is, on the west line of the square, complete. The preparatory excavation for the habitations of the large group of northern carnivora represented by the genus *ursus*, or the Bears, with their allied genera, has been made at the southwest angle of the Zoölogical grounds. At this point are also commenced the accommodations for the Polar Bears, the Walrus, Seals, Sea Lions, etc., specimens of cetaceous, and also for the aquatic rodents, such as Capybare, Beaver, etc. In these, as in all other habitations for the animals of the Gardens, every arrangement that will conduce to their healthfulness, and to the facility and convenience of observing them, will be provided, and it is hoped that in the outset the knowledge of the needs of various classes of animals may be so thorough, and the skill in utilizing this knowledge for the purposes required may be so marked and successful, as to avoid much of the expensive alterations and changes in plan, that have characterized during the last half century the experiences of most of the European gardens, and that by the time these habitations are ready for occupancy, some of the ways of approach to the Gardens may be passable. Some progress has also been made in the preparation of designs and models for the houses for tropical carnivora, and each class of

animals, in the order of its relative importance, will be located and properly housed and provided for. A schedule is annexed, showing the animals given during the year. Among the most prominent of these are :

From Professor Joseph Henry, Secretary Smithsonian Institute, two Brazilian Ostriches.

From Dr. D. J. Macgowan, of China, one Black-boned Cock, from the interior of China—a rare bird, the species of which was supposed to be extinct many years since.

From A. J. Dovale, Esq., three Penelopes.

From Capt. William Brown, one Zebu.

From Lt.-Col. H. S. Gansevoort, U. S. A., one Whiteheaded Eagle.

From Col. Philip Figyelmesy, United States Consul, Demerara, W. I., one Puma, two Spider Monkeys, and two Toucans.

From D. W. Maclachlan, Esq., one Mexican Deer.

From Thomas H. Molloy, Esq., United States Consul, St. Johns, N. B., one Hood Seal.

From Hon. John T. Deweese, one Black Bear.

From Capt. N. Collins, U. S. N., five African Plants.

From Maj.-Gen. W. S. Hancock, U. S. A., two Cinnamon Bears.

From Charles M. Rice, Esq., London, one pair of Black Swans.

From B. Valentine, Esq., two Mexican Deer.

From Dr. A. W. Ritter, a Herbarium of 107 specimens of Algæ.

From General William Myers, U. S. A., one Grizzly Bear.

From W. B. Dinsmore, Esq., two Angora Goats.

From Hon. Samuel J. Tilden, 568 Trout.

From Messrs. Williams and Hoadley, one Fat-tailed Sheep, from Syria.

The animals at the Park are temporarily housed, as comfortably as circumstances admit, until the permanent houses of the Gardens are completed.

The collection is already quite extensive, and equals, both in numbers and in manner of exhibition, some of those of Europe.

THE ELEPHANT.

In an appendix will be found a statement of the living birds and animals in captivity at the Park during the year.

The Meteorological Observatory, authorized by the Legislature, has, during the last year, attained a degree of excellence that probably is not surpassed by any institution of the character in the country. The climatic conditions are noted by self-registering instruments invented and constructed by Mr. Daniel Draper. The registrations are those of the thermometer—wet and dry bulb—and barometer, by the photographic process; of the force, velocity, and direction of the wind, and the rain-fall by automatic machinery.

Thus the weather each day leaves, by its own action, an enduring picture of itself, complete and accurate, presenting a marked contrast to the ordinary methods of weather observation. The records of the Observatory are frequently sought for to determine legal controversies, are given weekly to the newspapers for publication, and are forwarded to kindred institutions. Tabulations of the weather are given in an appendix hereto.

The plans of the proposed Astronomical Observatory have been much discussed; and extensive inquiry and examination has been made into the designs adopted for similar institutions. The location of the Observatory has been also the subject of examination, in order that

the use of the instruments may not hereafter be obstructed by the atmospheric and mechanical obstacles that are liable to occur in the vicinity of large cities. A site on the Great Hill seems, all things considered, to be the least objectionable. Before proceeding with any constructions for astronomical observations, it will be essential that the extent and scope of the field to be occupied shall be distinctly determined. Whether these observations are to be of a popular character, or whether they shall be conducted in the direction of physical investigation, such as observations on the spectra of the stars, and on the nature of the sun and planets, etc., or whether the aim shall be, as in the Paris and Pulkova Observatories, by the aid of a sufficient number of assistants, to make the merometrical observations and the mathematical calculations that are essential to determine the movements and position of the heavenly bodies. It seems at present that the operations of the Observatory will, in addition to its popular features, be in the direction of physical research. The Director, Professor Henry Draper, M.D., proposes to mount his new silvered glass reflector of 28 inches aperture under the central dome. This instrument, which is unrivaled in size in America, will give the greatest facilities for spectroscopic and photographic observation, as well as for those examinations which involve large light-collecting power. This telescope is of the Carse-

granian form, and is intended to be mounted as an equatorial.

The Board has, for several years, maintained a part of its offices for the transaction of business in apartments outside the Park. The necessity for more ample accommodations for the forces employed in the various departments has long been apparent. Thus far rooms in old buildings of the Park have been used, although neither comfortable nor convenient; the increase of donated animals and specimens is now such as to leave insufficient room for the offices of the Board and for its working necessities. The accumulation of tools and machinery necessary to carry on its operations in numerous departments, is such as to require extensive shelter to preserve them from damage by exposure to the weather.

After careful reflection on the whole subject, with the view of securing convenient provision of offices for the Board, and of rooms for its professional and other employees, a central point has been selected on the Park upon which to erect offices of Park administration; the site proposed thus to be used is along the northerly end and westerly side of the Old Croton Reservoir, and between that and the New Reservoir. These offices and the bureau operations of the Park, including the engineering, architectural, and gardening apartments, will be

accessible from the Park on the west, and will communicate with the Park-keepers' and mechanical and labor departments, situate on Transverse road No. 3, and north of the Old Reservoir, so that all the operations of the Board under cover will be connected and subject to ready and convenient supervision and control.

The shops for repairs to machinery and tools, for painting, carpentry, blacksmith, and other necessary mechanical work, are immediately on the Transverse road, so that all materials and supplies may be got to them without passing through the Park.

The stables, and the sheds for storing wagons, derricks, carts, sleds, rollers, trucks, barrows, sprinklers, and other machinery and materials, will also be located in the immediate vicinity on the Transverse road, on the north side of the Old Reservoir, to the eastward of the mechanics' rooms.

This position is central, will be easily accessible from all parts of the Park, and, with one minor storage depot at either end of the Park, will constitute an arrangement probably the most economical of time in going to and from the work that is possible ; the space proposed to be occupied is secluded from the rest of the Park, and is the most convenient and least objectionable site for buildings to accommodate the multifarious operations that can be selected.

It is probable that the portion of the Park offices now at the Museum will this year be moved from thence to the buildings at Mount St. Vincent.

No department of town ornamentation or improvement has of late received more attention than that of street pavements, involving both the walks for pedestrians and the carriage-way. In this country and abroad, the ability of inventors, and the genius of speculators has been prolific of methods to insure a satisfactory street surface; some of the schemes have ripened into patents, never to be useful, having developed their worthlessness on trial; others are undergoing probation.

It is unfortunate that large sums of money should be expended to arrive at the conclusion that a given experimental pavement is valueless, when the same fact might have been established at a trifling expense. The ways of the great cities of Europe a century and a half ago were generally without pavements; this state of things yielded to the cobble pavement as in our own city; and wooden pavements, of divers sorts, tar and gravel, and concretes of various mixture, divers forms of stone, asphalt, coal-tar, and bitumen—all are claiming attention to their respective merits. The Board have thought it a duty to test within the Park grounds such of these pavements as seemed likely to prove advantageous, at a

limited expense and on a limited scale, in order that the best method might be selected for the surfacing of the avenues under its charge. The requirements of a satisfactory pavement are much greater than formerly. Comparative noiselessness, freedom from mud and dust, as well as economy of price, are now essential requisites. The best examples of pavement are to be found in the city of Paris. In making experiments on this class of improvements, as adapted to the varying conditions of our climate, it will be the aim of the Board to insure reliable results, and to prevent, as far as in its power, the use of any of its agencies for advertising any scheme or speculation in any department.

It will be remembered that during last summer the water supply in the city was very deficient, and some alarm, probably unnecessary, as to the future supply was occasioned by the annoyances of this state of things. Attention was thus very generally called to the subject of street sprinkling.

The amount of rain that fell in the year 1869 was less than in either of the two previous years. In the month of August, 1869, the quantity that fell was 1.76 inches. In August, 1867, there fell 7.93 inches, in the same month of 1868, 7.58 inches. Owing to the unusually low condition of the supply of Croton water, the Board ceased, at

the request of the Water Board, to use the Croton water for sprinkling, and resorted to the water of the Lakes, filling the sprinkling casks by the use of pumps.

The sprinkling of the Drive of the Park is a work of large expense. Statistics of the number of tons of water hauled and delivered on the roadway were given in the Eleventh Annual Report. The original method of doing this work in this country is the primitive one of filling casks on two-wheeled trucks, and delivering the water from them through a perforated pipe.

Modifications of this method have been made, the principal advantage of which is to enable the driver of the horse attached to the truck, to regulate the quantity of water delivered.

The trucks now chiefly in use on the Park are four-wheeled, but the main part of the expense—that of hauling over the roads the necessary weight of water—is still required, though proportionally somewhat diminished by the measures already adopted. The Board caused to be imported from Paris one of the street-sprinklers in use there: it is a flexible hose, mounted on several pairs of small wheels, so that the hose may be readily moved about, without the wear that would be occasioned by its immediate contact with the ground. It is found that the use of this machine, though advantageous at some points, is not in the present condition

of wages, productive of economy. The work can be done cheaper by the old cart-sprinkling system. As the wetting of streets to keep down the dust is found to be a necessity to prevent the destruction of goods exposed to its influence, the actual damage to property by dust being very considerable, and as modern ideas of comfortable street movement are not satisfied with surroundings of clouds of dust, it is very desirable that some other method of dealing with the difficulty in the Park and throughout the city be found that is less cumbersome, inconvenient, and expensive. It appears that in Liverpool and London, experiments have been made in this direction with some degree of success. A compound, consisting of well-known deliquescent salts, chlorides of calcium and sodium, mixed with water, has been tried on the streets of those cities. It is delivered on the roads in the usual methods of sprinkling. A patent has been taken out for it in England and for its application to the purpose of road-watering. It is said to render one sprinkling more effective and enduring than several of pure water, and that the application of these salts has produced a most important effect upon the surface of macadamized roads, hardening and concreting the material in such a manner that, when it is perfectly dry, no dust whatever arises from the passage of ordinary traffic. The salts are claimed to be harm-

less, inodorous and anti-corrosive, and of service in the quantity of water saved and in their effect on the maintenance of the roads. The Board has imported a few tons of these salts with the view of experimenting therewith when the proper season arrives.

It will be a most important accession to the comforts of city life if an inexpensive method can be secured for preventing dust on the thoroughfares of business or pleasure traffic.

Some documents containing interesting information on the subject of these salts are appended to this report.

The Board has concluded an arrangement for an efficient, comfortable, and economical carriage-service for the Park.

Ten commodious carriages have been built with express reference to the accommodation of visitors to the Park. They are fitted up and kept with great neatness and care, and provide for the comfort of passengers both in sunshine and in rain. The drivers are careful men, in uniform, and all are under the control of the Park Commissioners. The rate of fare for going around the Park is twenty-five cents. During the skating season, when snow is on the ground, the fare from the southerly gates to the Lake is fixed at five cents.

This service was commenced on the first day of June, and has been regularly continued, affording a great public convenience, and an exemption to strangers and others from the annoyances to which they had been subject in carriages hired outside the Park.

The total number of passengers carried from June 1, to and including December 31, was sixty-eight thousand five hundred and fifty-seven. The total receipts for fares were $17,139.25. By the terms of the agreement the Board is to receive a license-fee on each of these carriages annually. It is expected that during the coming year other forms of carriages for one, two, or four persons will be placed on the Park under the same management.

The use of the drives and walks of the Park is so great as to demand constant attention and reparation of their surface. Ten thousand three hundred and ninety-seven cubic yards of gravel were required during the year, being an increase of two thousand nine hundred and ninety-one yards over the previous year. The washing of the steeper portions of the ways by heavy showers is sometimes extensive, requiring a considerable expenditure for repairs. Some method of fixing the surfaces more permanently, will have to be gradually adopted.

The musical entertainments have been conducted as usual, with some occasional, but yet not a sufficient increase of the number of the performers. The attendance and interest of visitors continue undiminished.

The regularity of the recurrence of these out-of-door concerts have given them the character of an established entertainment during the season within which they are limited.

By the liberality of the contractors for the supply of mineral waters for the Park, an excellent band performed weekly for eight weeks at the Springs, at the northerly part of the Green.

The Board hope to be able to provide a still larger band during the next year.

The number and time of occurrence of concerts on the Mall were as follows :

MUSIC.

1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.
July 9	Aug. 25	Aug. 10	June 7	May 30	June 4	Jun 3	June 2	June 8	June 6	May 29
" 23	Sept. 1	" 17	" 14	June 6	" 11	" 10	" 9	" 15	" 13	June 5
" 30	" 8	" 24	" 21	" 13	" 18	" 17	" 16	" 22	" 20	" 12
Aug. 6	" 15	" 31	" 28	" 20	" 25	" 24	" 23	" 29	" 27	" 19
" 20	" 22	Sept. 7	July 5	" 27	July 2	July 1	" 30	July 4	July 4	" 26
" 27	" 29	" 14	" 12	July 4	" 4	" 4	July 4	" 6	" 11	July 3
Sept. 3	Oct. 13	" 21	" 19	" 11	" 9	" 8	" 7	" 13	" 18	" 5
" 10	" 27	" 28	" 26	" 18	" 16	" 15	" 14	" 20	" 25	" 10
Oct. 1	Nov. 18	Oct. 5	Aug. 2	" 25	" 23	" 29	" 21	" 24	Aug. 1	" 17
" 15	.....	" 12	" 9	Aug. 1	" 30	Aug. 5	" 28	" 27	" 15	" 21
.....	.....	.....	" 16	" 8	Aug. 6	" 12	Aug. 4	" 31	" 22	" 28
.....	.....	.....	" 23	" 15	" 13	" 16	" 11	Aug. 7	" 29	" 31
.....	.....	.....	" 30	" 22	" 20	" 19	" 18	" 14	Sept. 5	Aug. 7
.....	.....	.....	Sept. 6	" 29	" 27	" 23	" 25	" 17	" 12	" 11
.....	.....	.....	" 13	Sept. 5	Sept. 3	" 26	Sept. 1	" 21	" 19	" 14
.....	.....	.....	" 20	" 12	" 10	" 30	" 8	" 24	" 26	" 18
.....	.....	.....	" 27	" 26	" 17	Sept. 2	" 15	" 28	Oct. 3	" 21
.....	.....	.....	Oct. 4	Oct. 3	" 24	" 6	" 22	" 31	" 10	" 25
.....	.....	.....	" 18	" 10	Oct. 1	" 9	" 29	Sept. 4	" 17	" 28
.....	.....	.....	" 25	" 17	" 8	" 13	Oct. 6	" 7	" 24	Sept. 1
.....	.....	.....	Nov. 1	.....	" 15	" 16	" 13	" 11	" 31	" 4
.....	.....	.....	.....	.....	" 22	" 20	" 20	" 14	.....	" 11
.....	.....	.....	.....	.....	" 29	" 23	" 27	" 18	.....	" 15
.....	.....	.....	.....	.....	Eveng's	" 27	.....	" 21	.....	" 18
.....	.....	.....	.....	.....	July 6	" 30	.....	" 25	.....	" 25
.....	.....	.....	.....	.....	" 13	Oct. 4	.....	" 28	.....	" 29
.....	.....	.....	.....	.....	" 20	" 7	.....	Oct. 2	.....	Oct. 2
.....	.....	.....	.....	.....	.....	" 14	.....	" 9	.....	" 9
.....	.....	.....	.....	.....	.....	" 21	.....	" 12	.....	" 16
.....	.....	.....	.....	.....	.....	" 28	.....	" 16	.....	" 30
.....	.....	.....	.....	.....	.....	.....	.....	" 19	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	" 23	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	" 26	.....	.....

TOTAL NUMBER OF MUSIC DAYS.

1859	10
1860	9
1861	10
1862	21
1863	20
1864	26
1865	30
1866	23
1867	33
1868	21
1869	30

The number of Boats has been increased by the addition of eight. There are now thirty-five on the waters of the Park.

They are chiefly confined to the Lake, but occasionally one has been put on the Harlem Lake.

The number of passengers carried was 125,980, during the year 1869, being an increase of 33,849 over the year 1868, and the largest number ever carried. The following table shows the number of passengers carried during the year:

BOATS.

	CALL BOATS.	PASSAGE BOATS.
For the week ending April 24	119	271
" " " May 1	355	741
" " " " 8	225	573½
" " " " 15	635½	2,863
" " " " 22	554	1,569½
" " " " 29	918½	4,206
" " " June 5	755	3,200
" " " " 12	935½	5,832
" " " " 19	1,137	5,516
" " " " 26	1,062	4,114
" " " July 3	1,153	4,234½
" " " " 10	2,698	9,808
" " " " 17	1,231	5,007½
" " " " 24	1,735½	5,569½
" " " " 31	1,428½	4,967½
" " " Aug. 7	1,399	5,821
" " " " 14	1,923½	5,502
" " " " 21	654½	3,240½
" " " " 28	1,782½	4,109
" " " Sept. 4	1,420½	4,480
" " " " 11	927	4,252½
" " " " 18	1,085½	4,647
" " " " 25	674	2,654
" " " Oct. 2	446	1,476½
" " " " 9	322	1,482
" " " " 16	138	604½
" " " " 23	229½	1,020
" " " " 30	176	645½
" " " Nov. 6	65	294½
" " " " 13	31	61½
Totals	27,216½	98,763½

The total amount derived from these passengers by the contractor during the year was $14,651. The total expense of conducting these boats was $12,682.95.

A Boat-house for the protection and storage of the boats and boatmen is needed, and it is expected will be provided next year.

The system laid down by the Board for the use of the Play-ground by the children of the public schools continues to work most satisfactorily. It admits of the use of the Play-ground by the children who bring a certificate of good standing and regular attendance, and operates as an incentive to good behavior at the schools; it is so general in its character that no exclusiveness obtains, and results in occupying the grounds of the southerly part of the Park to the full extent that is admissible.

BOYS' PLAY GROUND.

There has been a considerable increase in the attendance of the girls upon their ground for the play of croquet.

The effort has been made to classify the younger portion of the community in their Park sports. The boys have their separate grounds, with the necessary buildings for balls, bats, clothes, &c., and the girls have their separate grounds and building, with an attendant, for their accommodation.

The smaller children have, at still another part of the Park, their shelter and running stretch, their play-ground and swings, and other paraphernalia for amusement.

Visitors have the opportunity of witnessing the play of the children, and discreet Park-keepers are detailed to prevent any improper intrusion upon them.

The Children's Department of the Park has been the subject of constant attention on the part of the Board, and their convenience, amusement, and comfort have been attended to in such wise as to lead to a very general use of the Park by them.

Small carriages for children, drawn by goats, are hereafter to be provided for Park use. One is already

established and running about the walks, and is often laden with a prattling freight.

GOAT CARRIAGE.

A chair of comfortable dimensions and of easy movement, with an attendant, has been kept stationed at the Artists' gate for the purpose of moving invalids about the Park at a reasonable rate, and others will be added as they are found to be used or required.

The Springs, an elegant structure from which mineral waters are dispensed, has been successfully conducted, and is a very inviting and useful institution.

The amount of the sales of mineral waters at these Springs during the past year amounted to $6,251.75.

A small photographic house, where visitors can have portraits and pictures taken, and also for the sale of

photographic pictures of the Park, has been permitted. The revenue derived from the person licensed for the purpose of taking these pictures on the Park was $919, of which a percentage is to be paid to the Board.

GROUP IN STONE—AULD LANG SYNE, by *Robert Thompson.*

TABLE

SHOWING THE NUMBER OF DAYS ON WHICH THERE WAS SKATING AT THE PARK.

1858-9.		1859-60.		1860-1.		1861-2.		1862-3.		1863-4.		1864-5.		1865-6.		1866-7.		1867-8.		1868-9.	
1858.		1859.		1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.	
December	29	December	24	December	14	December	29	December	22	December	11	December	21	January	8	December	15	December	17	December	14
		"	25	"	15	"	30			"	23	"	22	"	9	"	16	"	18	"	15
		"	26	"	16	"	31			"	24	"	23	"	10	"	19	"	19	"	16
1859.		"	27	"	18			1863.		"	25	"	24	"	11	"	20	"	20	"	19
		"	28							"	26	"	25	"	12	"	21	"	21	"	20
January	3	"	29			1862.		January	20	"	27	"	30	"	15	"	22	"	24	"	22
"	22	"	30	1861.				February	5					"	17	"	26	"	25	"	24
"	23	"	31			January	1	"	24					"	18	"	28	"	30	"	25
"	24			January	11	"	2	"	25	1864.		1865.		"	19	"	29	"	31	"	26
"	25			"	12	"	3	"	26					"	21	"	30			"	27
"	26	1860.		"	13	"	4	.....		January	3	January	2	"	22	"	31			"	28
"	27			"	14	"	5	.....		"	4	"	3	"	23			1868.		"	29
"	28	January	1	"	18	"	6	.....		"	6	"	4	"	24					"	30
"	29	"	2	"	19	"	7	.....		"	7	"	5	"	26	1867.		January	3	"	31
"	30	"	3	"	20	"	8	.....		"	8	"	6	"	27			"	5		
February	10	"	4	"	21	"	11	.....		"	9	"	8	"	28	January	1	"	6		
"	11	"	5	"	22	"	14	....		"	10	"	9	"	29	"	2	"	7	1869.	
"	12	"	6	"	23	"	17	.....		"	11	"	11	"	30	"	3	"	9		
"	21	"	7	"	26	"	22	.....		"	12	"	12	"	31	"	4	"	10	January	2
"	22	"	26	"	28	"	23	.....		"	13	"	13	February	1	"	5	"	11	"	3
"	23	"	27	"	29	"	24	.....		"	16	"	15	"	2	"	6	"	12	"	6
March	5	"	28	"	30	"	27	.....		"	17	"	16	"	3	"	7	"	13	"	7
"	6	"	29	"	31	"	28	.....		"	22	"	17	"	4	"	8	"	14	"	11
.....		"	30	February	1	"	29	.....		"	23	"	18	"	5	"	9	"	15	"	13
.....		"	31	"	4	February	1	.....		February	18	"	19	"	6	"	10	"	16	"	14

.....	February 1	" 5	" 2	.....	" 19	" 20	" 7	" 11	" 17	" 16
.....	" 2	" 6	" 3	.....	" 20	" 21	" 17	" 12	" 18	" 17
.....	" 3	" 7	" 4	.....	" 21	" 22	" 18	" 13	" 19	" 18
.....	" 5	" 8	" 5	.....	.....	" 24	.....	" 14	" 20	" 20
.....	" 8	" 9	" 6	.....	.....	" 25	.....	" 15	" 22	" 21
.....	" 9	" 10	" 8	.....	.....	" 26	.....	" 16	" 23	" 22
.....	" 10	.....	" 9	.....	.....	" 27	.....	" 19	" 25	" 23
.....	" 11	.....	" 10	.....	.....	" 28	.....	" 20	" 26	" 24
.....	" 12	.....	" 11	.....	.....	" 29	.....	" 23	" 28	" 26
.....	" 13	.....	" 12	.....	.....	" 30	.....	" 24	" 31	" 27
.....	" 14	.....	" 13	.....	.....	" 31	.....	" 25	February 1	" 28
.....	" 15	.....	" 15	.....	.. ..	February 1	.....	" 26	" 2	February 1
.....	" 16	.....	" 16	.....	.....	" 2	.....	" 27	" 3	" 2
.....	" 17	.....	" 17	.....	.....	" 3	.....	" 28	" 4	" 5
.....	" 20	.....	" 18	.....	.....	" 4	.....	" 29	" 5	" 6
.....	.....	.....	" 19	.....	.....	" 6	.....	" 30	" 6	" 7
.....	.....	.....	" 21	.....	.....	" 7	.....	February 1	" 7	" 8
.....	.....	.....	" 22	.....	.....	" 9	.....	" 2	" 8	.....
.....	.....	.....	" 23	.....	.....	" 10	.....	.....	" 10	.....
.....	.....	.....	" 25	.....	.....	" 11	.....	.....	" 11	.....
.....	.....	.....	" 26	.....	.....	" 13	.....	.....	" 12	.....
.....	.....	.....	" 28	.....	.....	" 14	.....	.....	" 13	.....
.....	.....	.....	March 1	.....	.....	" 15	.....	.....	" 14	.....
.....	.....	.....	" 2	.....	.....	" 18	.....	.....	" 15	.....
.....	.....	.....	" 3	.....	.....	" 19	.....	.....	" 16	.....
.....	.....	.....	" 5	.....	.....	" 20	.....	.....	" 17	.....
.....	.....	.....	" 6	.....	.....	" 21	.....	.....	" 18	.....
.....	.....	.....	" 7	.....	.....	" 22	.....	.....	" 19	.....
.....	.....	.....	" 8	.....	.....	" 24	.....	.....	" 20	.....
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.....	.....	.....	.....	.....	.....	.....	.....	.....	March 29	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	" 1	.. ..
.....	.....	.....	.....	.....	.....	.....	.....	.....	" 4	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	" 5	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	" 6	.....
Days.....19	Days.....36	Days.....27	Days.....50	Days.....6	Days.....24	Days.....50	Days.....28	Days.....39	Days 61	Days... ...38

The game of Curling played on the ice is especially in favor with those of Scotch nativity, and is rapidly becoming more general and popular. It has been played in Scotland for centuries, and there are four hundred and fourteen clubs in connection with the Royal Caledonian Curling Club. There are also many clubs in Canada, and they are rapidly spreading over the Northern States.

The game affords active exercise, and the discipline and order of the clubs are generally excellent.

The number of lives lost throughout the country, and in the small ponds outside, but in the immediate neighborhood of the Park, from persons going upon the ice when it is of insufficient strength, justifies the precautions taken by the Board to insure safety in this respect.

From the commencement of the opening the Lakes for skating not one life has been lost on the Park, nor has one serious accident of this nature occurred.

The number of visitors at the Park continues undiminished. The tables given with this report show the attendance at the Park for the year, and for six years past, at each gate ; the attendance for each month ; also the Sunday attendance.

The increased valuations in each of the three wards surrounding the Park for fourteen years, as well as the increased amount of taxes raised in these wards, are shown in the following tables :

Ward.	1856.	1857.	1858.	1859.	1860.
Twelfth	$8,149,360	$8,134,013	$8,476,890	$10,062,725	$11,857,114
Nineteenth	8,041,183	8,558,624	10,971,775	12,621,894	16,830,472
Twenty-second..	10,239,022	10,489,454	11,563,506	13,261,025	14,775,440
Totals	$26,129,565	$27,182,091	$31,012,171	$35,945,644	$43,463,026

Ward.	1861.	1862.	1863.	1864.	1865.
Twelfth.....	$12,454,375	$13,100,385	$14,134,825	$15,493,575	$18,134,805
Nineteenth.....	16,986,152	17,903,137	19,003,452	20,462,607	23,070,890
Twenty-second..	17,666,866	18,041,857	18,281,222	18,756,276	19,824,265
Totals	$47,107,393	$49,045,379	†$51,419,499	$54,712,458	$61,029,960

Ward.	1866.	1867.	1868.	1869.
Twelfth	$18,381,650	$24,940,737	$28,143,005	$42,648,865
Nineteenth.....	37,636,050	46,249,340	53,608,040	59,912,633
Twenty-second..	24,052,715	30,915,240	36,175,185	47,663,245
Totals	$80,070,415	$102,105,317	$117,926,230	$150,224,743
				26,429,565
Showing a total increased valuation in these three Wards, from 1856 to 1869, of.....				$123,795,178

* The area occupied by the Park on One Hundred and Sixth street was dropped from the assessment books this year, the last tax collected on it being that of 1855.

† The area occupied by the Park from One Hundred and Sixth to One Hundred and Tenth street was dropped from the assessment books this year.

The rate of tax for the year 1869 is 2.27, yielding on the increased valuation above stated an increased tax of $2,810,150.54.

The total expenditure for construction from May 1, 1857, to January 1, 1870, is.....		$5,775,387 14
The cost of the land of the Park to the city is....		5,028,844 10
Total cost of Park to the city up to this time,		$10,804,231 24
Total increased tax in three wards.....		$2,810,150 54
The annual interest on the cost of the land and improvement of the Park up to this time, at six per cent.....	$648,253 87	
Deduct one per cent. on $399,300 of the above stock issued at five per cent	3,993 00	
		652,246 87
Excess of increased tax in three wards over interest on cost of land and improvements.....		$2,157,903 67

Far above and beyond these pecuniary benefits to property in its immediate neighborhood, are the social and sanitary and educational advantages of the Park to the people of the whole country. As the plans of the Board are developed in various departments, larger

numbers become specially interested in the progress, and seek the advantages offered.

COLUMBUS.

A gentleman distinguished alike as a merchant and as an admirer and liberal patron of art, Hon. MARSHALL O. ROBERTS, has presented a colossal statue in marble of CHRISTOPHER COLUMBUS, a most successful and impressive representation of the great discoverer and intrepid navigator, executed at the request of Mr. Roberts, by Miss

Emma Stebbins, at Rome. By this munificent liberality, a public, wider than that of this city, is laid under obligations to the donor, in that he has provided in the place of popular assembling of the metropolis of the continent, an enduring and continual injunction to keep in memory the boundless benefaction that has accrued to humanity through the struggles and the trials of this great captain. The correspondence in relation thereto will be found in the Appendix.

HUMBOLDT.

The occurrence of the day that measured one hundred years from the birth of the distinguished sage Alexander Von Humboldt, inspired in many parts of the civilized world the desire to mark the centennial with appropriate testimonials of regard and veneration for his memory. The population of this city of German origin, with the cordial co-operation of those of other nationalities, responding to the enthusiasm that was awakened in the Fatherland on this subject, deemed it a proper occasion to rear in the Park a statue or bust of the great student of nature. The concurrence of the Park Commissioners was promptly extended, a prominent site was designated for the location of the bust, and the intention of the Commissioners expressed to make appropriate arrangements at the Park to fittingly distinguish the day of the celebration. A procession of civic societies was organized by the gentlemen of the Humboldt Monument Committee to march through the city to the Park, and the imposing ceremony of unveiling a faithful representation of Humboldt in bronze, the work of Professor Blaiser, of Berlin, took place at the Scholars' gate in the presence of thousands of spectators. Vocal music by several of the German Choral societies, instrumental music by the band, and several addresses of felicitation gave an impressive and dignified character to the occasion. The circumstances of the celebration are more fully detailed in the Appendix.

A large number of gentlemen interested in the subject of musical culture and education, organized themselves as the Beethoven Centennial Festival, have asked of the Board permission to use a portion of the Park grounds to be designated by the Board for the erection of a commodious structure in which to celebrate, by appropriate musical exercises, the centennial of the birth of the great musical composer BEETHOVEN, which occurs the next year.

These gentlemen are impressed with the public advantages of a series of musical entertainments of a refined character, contemplating a participation of the highest talent, and that the exercises would occupy and interest the whole musical public of the country. The plans of the structure proposed are to be submitted to the Board for approval.

The Board, desiring to respond to a movement that has so meritorious an object, have these plans now under consideration.

A plan has been submitted, with a communication appended thereto, by the landscape architects of the Board, for a re-arrangement of the Sixth and Seventh Avenue approaches at the Park, at Fifty-ninth street, and a design for structures at the Artists' and Artizans' gateways (Fifty-ninth street and Sixth and Seventh avenues), has also been presented.

At the request of Professor Joseph Henry, Secretary of the Smithsonian Institute, the Board presented to the Government Hospital for the Insane at Washington, a pair of the Park swans, which have been duly acknowledged.

The Secretary of the Smithsonian Institute has kindly directed to the Central Park several valuable animals intended as donations to the Institute, and for which it had no accommodations.

A requisition was made on the Comptroller of the city, on the 16th November last, for the moneys provided by Chapter 350 of the Laws of 1869, to defray the expenses of erecting a monument to commemorate the services of the soldiers and sailors of New York county in the war for the preservation of the Union. These moneys have not yet been received.

The number of arrests for the year is less than for any one of the previous six years. These arrests were for the causes specified in the following schedule:

ARRESTS.

Months.	1863.	1864.	1865.	1866.	1867.	1868.	1869.
January	18	2	8	1	5	8	2
February	5	6	11	4	2	10	1
March	5	10	1	6	5	12	4
April	8	7	3	10	7	11	8
May	13	30	17	17	19	8	9
June	11	8	11	10	14	15	9
July	3	18	16	17	13	11	12
August	1	17	15	17	15	9	12
September	5	13	11	9	20	13	9
October	5	7	6	9	19	2	5
November	7	6	7	7	3	6	4
December	5	6	9	3	5	1	3
Totals	86	130	115	110	127	106	78

CAUSES.

Causes.	1863.	1864.	1865.	1866.	1867.	1868.	1869.
Fast driving	47	63	60	52	57	58	37
Fast riding	1	5	3	1	0	2	0
Breaking shrubs and flowers	9	2	0	2	1	1	1
Assault and battery	1	6	6	1	5	12	0
Thieving	1	6	1	2	2	0	3
Disorderly conduct	23	48	34	31	41	31	31
Interfering with an officer	0	0	0	4	0	1	1
Insane persons	0	0	0	3	2	0	0
Impersonating an officer	0	0	0	1	0	0	0
Other offenses	4	0	11	13	19	1	5
Totals	86	130	115	110	127	106	78

The penalties imposed upon those arrested and taken before the magistrate, during the year, were as follows:

Fined ten dollars and less each	46
Committed for ten days or less each	9
Bound over for trial	4
Sent to the House of Correction or Asylum	2
Discharged with reprimand or otherwise	17
Total	78

Forty-nine children have been returned to their friends, their homes, or sent to the police stations during the year.

The sheep are still very attractive, as an interesting addition to the landscape, and receive a good share of attention from those engaged in breeding these useful

animals. Sales of surplus sheep and their wool have been made during the year to the extent of $255.53.

The amount of grass sold during the year was 1,846 loads, for which $2,766.75 were received; besides this, sufficient grass, and about 75 tons of hay, was reserved to maintain the animals in the Zoological Gardens and those kept for Park works.

3,336 cart loads of manure have been gathered from the drive and put in the way of use for fertilizing purposes. No purchases of fertilizers have been made for the Park this year.

The Board has received as interest on deposit of funds at its control for the past year the sum of $845.64.

The receipts from sales of the products of the Park during the past year were :

From the Pound	$205 75
" sale of grass	2,766 75
" " sheep	976 00
" " wool	255 53
" " trees and plants	1,105 00
" " animals, etc	93 38
" " old material	79 35
" " licenses to hire skates and boats	1,000 00
" " rent of house	37 50
For removing broken vehicles to arsenal	93 50
	$6,612 76

The total cost of maintaining the Park last year was in excess over the previous year, being chiefly in the cost of means taken to prevent the washing of the walks.

The details of the cost of maintenance are given in the Treasurer's accounts.

The subject of providing a parade-ground within the limits of the city for the military of the First Division N. G. S. N. Y. has been again brought to public attention, and his Excellency the Governor of the State has expressed a strong desire to aid in securing such a ground.

In answer to a request from the Governor, a communication has been transmitted to him expressing the views of the Board relative thereto. The communication of the Governor and the response thereto are given in the Appendix.

WORKS OUTSIDE THE PARK.

THE ROAD OR PUBLIC DRIVE FROM FIFTY-NINTH STREET TO ONE HUNDRED AND FIFTY-FIFTH STREET.

The work of regulating and grading this important avenue has been prosecuted during the past year with unabated energy, and great progress has been made.

Since September 21, 1868, when the work of grading commenced, the total expenditure on this account has been $667,926.54.

Towards payment of this amount, $650,000 has been received from the Comptroller of the city, and $20,166.68

has been realized from the sale of buildings, fences, trees, etc., included in and taken for the opening of the road. Though there are some obstacles to be surmounted, hopes are entertained that almost or quite the whole line of the road will be regulated and considerable portion of it open for public travel on or before January 1, 1871, but the great extent of the work, which is almost five miles long and one hundred and fifty feet wide, requiring for its regulation the excavation and removal of more than 350,000 cubic yards of rock and earth, and the finding and filling in of about 300,000 cubic yards of material in addition, necessarily requires much time.

An average force of over 740 men has been engaged on it during all working days of the year 1869.

In addition to the amount of regulating and grading which has been done, curb-stones have been set, foundation road-bed has been prepared, and temporary sidewalks laid in a large portion of the space between Fifty-ninth street and Seventy-ninth street.

A large portion of this avenue lies along an ancient and much-used road, and every reasonable effort has been made to avoid incommoding the occupants along the line with the processes of the work, and constant exertion has been made to insure the progress of the sewers, gas and water pipes, by the authorities having charge of these respective works while the work of excavating and filling was in progress.

To prevent any further disturbance of the carriage-way, and facilitate and cheapen the necessary connections with the houses on this line, arrangements have been made to lay the sewers and the water and the gas pipes under the capacious sidewalks, at a sufficient distance from the house line to make the connections easy, and, at the same time, to avoid any inconvenience to the occupants of houses when occasion requires that these conduits should be repaired.

THE CIRCLE AT BROADWAY, FIFTY-NINTH STREET AND EIGHTH AVENUE.

This capacious area has been so far improved and developed as to show somewhat of the ultimate design of the work which has been continued during a large part of the past year, and it is nearly completed.

It was found, on careful instrumental examination, that the portions of the avenue and streets that formed part of the area of the circle had never been reduced to the proper grade, and that rock, usually required to be taken out two feet below the final surface, had been removed but a few inches below the surface, thus rendering necessary a large amount of an expensive character of blasting.

The centre sidewalks and carriage-way have been graded, and the preparations for the final surface almost completed.

A massive curb has been set around it, and the trees have also been planted.

If there had been no delay in the alteration of the railroad tracks crossing the circle by the companies owning them, the work might have proceeded more rapidly, and the expense and inconvenience of doing work under the disadvantages arising from the tardy action and non-action of the railroad companies would have been avoided. The track of the Belt Road has been removed and replaced in the desired position. The track of the Eighth avenue road still remains an obstacle to the completion of this important area.

THE SEVENTH AVENUE, NORTH OF THE CENTRAL PARK.

The work of regulating and grading this avenue has been continuously prosecuted under contracts; 244,980 cubic yards of rock have been excavated, and 71,400 cubic yards of earth have been removed and filled in.

The total payments on this work up to December 31, 1869, were $330,396.70: this does not include a balance of reserved per centage under the contracts.

It was hoped that during the year 1869 it would be practicable to construct the sewers in the avenue, so that it need not be broken up hereafter for such purpose, but it was found, when the plans for them were received from the Croton Aqueduct Board in May last, that to carry drainage to the rivers no outlet sewers existed, or were

contracted for, and that until after they were built, the construction of sewers in Seventh or Sixth avenues would be much more costly in consequence thereof, while they would be useless until after the outlets were constructed.

The Board has no control in the matter of the sewers in this district, except those in the Sixth and Seventh avenues and the streets between those avenues, and decided to delay the sewerage of the avenue until the necessary outlets were constructed by the Croton Aqueduct Department; taking into consideration, in this conclusion, the fact that, by placing the sewers in the sidewalks, as intended, no inconvenience to the carriage-way will hereafter be experienced.

THE SIXTH AVENUE, NORTH OF THE CENTRAL PARK.

The work of regulating and grading this avenue has progressed steadily during the past year, and is fast approaching completion.

When work was commenced there were but 21,000 cubic yards of material above grade, and 284,000 cubic yards of filling were required. Fears were entertained by many persons that to obtain the required amount of filling would procrastinate the completion for several years, and entail great expense on the property. Fortunately, such arrangements have been made as to secure the material required for the avenue at a moderate cost.

The total amount of work done on it since July 7, 1868, when the grading began, has been 20,500 cubic yards of earth, and 615 cubic yards of rock excavated and removed from above grade and filled into parts below grade, 179,395 cubic yards of material procured outside the avenue and filled in, in addition to the above, and 198 lineal feet of culvert built.

The amount of work now remaining to be completed is about 83,000 cubic yards of filling, to obtain the greater part of which contracts and other arrangements have been made, and it is expected that the grading may be so far completed by June next as that the curb and gutter stones may be then set, the trees planted, the sidewalks flagged, and the road-way completed from One Hundred and Tenth street to the Harlem River.

The expenditure thus far on this account has amounted to $166,226.70, or equal to 83.04 cents per cubic yard for the filling procured, including all expenses.

THE AVENUE ST. NICHOLAS AND MANHATTAN STREET WIDENING AND EXTENDING.

The proceedings for acquiring title to the land required for these improvements having been confirmed by the Supreme Court on the twenty-fourth day of May, 1869, the Board, at the request of the owners of property on the Avenue St. Nicholas, has caused the necessary surveys to be made for regulating and grading the same

from One Hundred and Twenty-fifth street to One Hundred and Fifty-fifth street, and has contracted and commenced the work. It was thought wiser not to begin the regulating the avenue between One Hundred and Tenth street and One Hundred and Twenty-fifth street until after the Sixth avenue and Seventh avenue, from One Hundred and Tenth street to One Hundred and Twenty-fifth street, could be graded and put in fit condition for public travel, on the ground that the needed work would seriously interfere with travel on Harlem Lane, which is embraced in the Avenue St. Nicholas, north of One Hundred and Tenth street, and is now the main thoroughfare to and from the northerly end of Central Park.

ONE HUNDRED AND FORTY-FIFTH STREET, BETWEEN SIXTH AND SEVENTH AVENUES.

A good outlet for travel from the upper end of the Sixth avenue appearing to the Board to be much needed, and opportunity offering to obtain filling at a reasonable cost, a contract was made in May last for regulating and grading One Hundred and Forty-fifth street, from the Sixth avenue to the Seventh avenue, under authority of Chapter 564 of Laws of 1865.

It is to be regretted that no contract has yet been made for regulating and grading the street west of Seventh avenue, as it is deemed very important that a good cross-road should be worked from the Sixth avenue

to the North River at this place. The Board caused proceedings to be taken for opening One Hundred and Forty-fifth street, from the Hudson to the Harlem river, for such purpose, but its power to cause the street to be worked and improved is confined to the portion of it that lies between the Sixth and Seventh avenues.

The amount of 28,000 cubic yards of filling has been put in this street, and about 7,000 cubic yards more are required to complete the work.

ONE HUNDRED AND TWENTY-SEVENTH STREET, BETWEEN SIXTH AND SEVENTH AVENUES.

Deeming it important that streets between the Sixth and Seventh avenues, that had been legally opened, should be regulated and graded as soon as it could be cheaply done, by material already on them, or by the surplus of the Seventh avenue, the Board, in September last, ordered the regulating and grading of One Hundred and Twenty-seventh street, between the points mentioned, as there was material on it sufficient to do the work. About 3,000 cubic yards of material has been excavated and removed, and about 500 yards remain to be done.

NORTH END.

During the early part of the year 1869, the Commissioners of the Central Park laid out several miles of streets and avenues, and established grades for them in


MAP
OF THAT PART OF THE CITY OF NEW YORK
North of 155th Street
Showing the progress made in laying out Streets, Roads, Public Squares and Places, by the Commissioners of the Central Park, under Chap. 565 of Laws of 1865 and of new Pier and Bulkhead lines under Chap. 697 of Laws of 1867
January 1st 1870.
Explanation
RIVER STREET
ROAD OR PUBLIC DRIVE
11th AVENUE
10th AVENUE
New Bulkhead Line
New Pier Line
Fort George
SCALE

pursuance of Chapter 565 of Laws of 1865, in that part of the city between One Hundred and Fifty-fifth street and Inwood street, and in the month of May caused three similar maps, showing the streets and roads so laid out, as well as those laid out in previous years by them, and the grades established for them, to be filed as provided by law; suitable and durable monuments have been erected to designate them where deemed necessary.

Since the filing of the above-mentioned maps, the Board has laid out between thirteen and fourteen miles of streets in the part of the city north of Inwood street, and the continuation thereof to the Harlem river, and the setting of the monuments to designate them is in progress, as also are the maps showing the grades for them.

Probably more than seven-eighths of all the needed laying out of public streets, roads, and places north of One Hundred and Fifty-fifth street have been determined on, and the work necessary for making and filing the final maps is now in progress.

The Eleventh avenue, from the road or public drive, near One Hundred and Fifty-sixth street to the street leading from Inwood street to the Harlem river, has been ordered to be opened, and the Supreme Court appointed James M. Sweeny, Henry A. Smith, and Emanuel B. Hart,

Commissioners for that purpose, on the third day of November, 1869.

The Commissioners appointed by the Supreme Court in the year 1868, to assess the damage and benefit by opening the square or public place around the new Croton Reservoir near High Bridge, have made their report, and it was confirmed by the Supreme Court on the eighteenth day of October last, and the twenty-first day of the same month was appointed for the actual opening thereof to take place. The cost of this land was $483,622, of which $323,463 is to be paid by the city, and $160,159 was assessed on property benefited.

During the last session of the Legislature a bill was passed by the Senate and Assembly discontinuing the part of the road or public drive heretofore laid out by the Board between One Hundred and Fifty-sixth street and the lands of the Institution for the Blind, and substituting another route for it between those points ; the bill, however, failed to become a law, having been vetoed by the Governor, after consideration of the subject by him, at the request of many of the owners of property interested in the lands fronting on the original route, as laid out by the Board.

WEST SIDE.

Under authority of Chapter 697 of Laws of 1867, the Board has, at the request of the owners of property,

ordered proceedings to be taken to acquire title to the following streets laid out and retained under said Chapter:

One Hundred and Fifty-third street, from Tenth avenue to Hudson river; One Hundred and Twenty-fifth street, from Ninth avenue to road or public drive; One Hundred and Fortieth street, from 350 feet east of Tenth avenue to Hudson river; One Hundred and Tenth street, west of the Eighth avenue.

PUBLIC SQUARE, FIFTY-NINTH STREET AND FIFTH AVENUE.

The public place between Fifty-eighth street and Fifty-ninth street, on west side of Fifth avenue, having been acquired for public use by the confirmation by the Supreme Court of the report of the Commissioners of Estimate and Assessment, on the twenty-ninth day of May, 1869, the Board has caused the same to be filled in, preparatory to finally regulating and grading the same. The total valuation of this land was $533,530.50, of which $364,360 was assessed on property benefited, and the remainder on the city.

By Chapter 689 of Laws of 1869, the triangular piece of ground bounded by the road or public drive, Sixty-third street and Ninth avenue, is declared to be a public place, the same as if laid out in pursuance of Chapter 697 of the Laws of 1867; and at the request of owners

interested in surrounding property, the Board, in June last, directed that proceedings should be taken for acquiring title to the land required for the same, but they have not yet been informed of the appointment of the Commissioners of Estimate and Assessment by the Supreme Court.

BROADWAY WIDENING AND STRAIGHTENING, BETWEEN THIRTY-SECOND STREET AND FIFTY-NINTH STREET.

By Chapter 890 of the Laws of 1869, the Legislature devolved upon the Board the duty of laying out, locating, and establishing the easterly and westerly lines of Broadway, between Thirty-fourth and Fifty-ninth streets, so as to make the same the width of one hundred feet, and also to straighten the same wherever practicable; but that "no part of either the easterly or westerly lines, as so located and established, shall be more than one hundred feet from the street as now laid out and established," and also "to make that part of Broadway between Thirty-second street and Thirty-fifth street, and that part between Forty-second street and Forty-seventh street, or any part or parts of either of the said parts of a greater width or widths than one hundred feet," and required that the work assigned to the Board should be performed within four months after the passage of the Act.

The lines for the widening and straightening were determined on by the Board, and maps and descriptions

showing them, were filed as required by law in September last, thus completing the duties of the Board in this matter.

Commissioners of Estimate and Assessment, it is understood, have since then been appointed by the Supreme Court to assess the benefit and damage by such improvement.

WESTCHESTER COUNTY.

By an Act of the Legislature, passed May 11, 1869, the Board was authorized and required to cause all that part of Westchester county lying west of the New York, Harlem, and Albany Railroad, and south of the south line of the village of Yonkers, to be surveyed, and to report to the Legislature plans for laying out streets and roads in that district, and proper grades for the same; and also for its sewerage and drainage, and supply of pure and wholesome water; the improvement of the Harlem river and Spuyten Duyvil creek, and the plan and location of all bridges, tunnels, and other means of transit over and across said river and creek; likewise the consideration of the question of locating a bridge or carriage-way over or across the High Bridge of the Croton Aqueduct.

In fulfillment of the duty thus prescribed, the Board has commenced and is rapidly progressing with surveys over about three-fourths of the territory included in the terms of the law. It is intended that these surveys shall be comprehensive, accurate, and in sufficient detail to serve as a reliable basis for all future work of a material character required within this territory.

A careful examination of the sufficiency of the existing High Bridge to sustain a carrriage-way over it has been made, and also a preliminary examination of the sources of water supply that are to be relied on for the lower part of Westchester county.

Under the provisions of the law the sum of $10,000 was certified by the Board to the Supervisors of the county of New York as necessary to be raised in the city of New York toward defraying the expenses of surveys, etc., in relation to bridges, tunnels, and other improvements across and in the Harlem river and Spuyten Duyvil creek, and such sum has been received by the Board from the Comptroller of this city.

The sum of $20,000 was also, and by the same authority, certified to the Supervisors of Westchester county as necessary to be raised in that county toward defraying the expenses of surveys, etc., in that county,

and has been included in the taxes there, and it is understood to be in course of collection, but nothing has yet been received on account of it.

By Chapter 706 of Laws of 1867, the Spuyten Duyvil and Port Morris Railroad Company were authorized to construct a railroad across the northerly end of the island of New York, "upon a line to be approved by the Board of Commissioners of the Central Park." The Company, after deliberation, decided to confine the location of the line of their road principally to the Westchester side of Spuyten Duyvil creek and the Harlem river; a small portion of it, however, was located in the county of New York, between low-water mark and the bulkhead line on the Westchester side of Spuyten Duyvil creek; and, on application of the Company, this portion of the line of the location was approved by the Board on the seventh day of September last.

An application is now before the Board for the approval of the location of that portion of the line of this road lying within Westchester county, between the Hudson River Railroad at Spuyten Duyvil creek and the New York, Harlem and Albany Railroad, and is now under advisement.

Accompanying this report will be found, in the Treasurer's accounts, a detailed statement of the receipts and

expenditures of the Board for the year 1869, together with a table showing a distribution of these expenditures under appropriate heads.

Dated NEW YORK, December 31, 1869.

HENRY G. STEBBINS,
President of the Board of
Commissioners of the Central Park.

ANDREW H. GREEN,
Comptroller of the Park.

THOMAS C. FIELDS,
Secretary.

CHARLES H. RUSSELL,
J. F. BUTTERWORTH,
M. H. GRINNELL,
W. HUTCHINS,
R. M. BLATCHFORD,
} *Commissioners of the Central Park.*

SUMMARY OF THE TREASURER'S ACCOUNTS.

Construction Account.

Balance on hand December 31, 1868		$3,356 82
The total receipts for the year ending December 13, 1868, are as follows :		
From issue of stock by the City of New York	$325,000 00	
Interest on deposits in Bank of Commerce	845 64	
By balance transferred from "public square," Fifty-ninth street and Fifth Avenue	11,063 45	
		336,909 09
		$340,265 91
The total expenditures for the year ending December 31, 1869, are as follows :		
Salaries and compensation of officers and clerks	$18,846 00	
Surveys, engineers, architects, draughtsmen, etc	21,239 17	
Salaries of gardening department	1,615 88	
Materials of construction and tools	98,615 94	
Stationery, printing, advertising, drawing materials, etc	4,986 18	
Trees and plants	945 42	
Earth-filling	3,757 80	
Labor account, amount paid laborers, mechanics, cartmen, etc.,	182,617 33	
Incidental expenses	7,642 19	
		340,265 91
The total receipts of the Board from the commencement of its organization, May 1, 1857, are as follows :		
From the issue of stock by the city of New York	$5,710,697 48	
Sale of buildings on the Park	6,155 87	
Payment of lost tools	451 23	
Rent of buildings	153 33	
Exhibition of plans	294 85	
Sales of grass to December 31, 1864	2,213 25	
Sales of wool to December 31, 1865	222 40	
Interest on deposits	28,605 41	
Pound receipts to December 31, 1864	1,199 87	
License for the sale of refreshments, skates, etc	7,175 61	
Sale of old materials	2,467 18	
Sale of time books	7 75	
Payment of labor and materials furnished by Park	4,655 94	
Premium on exchange, gold for silver	23 52	
By balance transferred from "public square," Fifty-ninth Street and Fifth Avenue	11,063 45	
		$5,775,387 14
The expenditures thus far are as follows :		
From May 1, 1857, to January 1, 1858	$ 77,881 41	
From January 1, 1858, to January 1, 1859	507,487 86	
From January 1, 1859, to January 1, 1860	1,179,246 47	
From January 1, 1860, to January 1, 1861	878,354 95	
From January 1, 1861, to January 1, 1862	479,163 66	
From January 1, 1862, to January 1, 1863	461,540 32	
From January 1, 1863, to January 1, 1864	331,871 60	
From January 1, 1864, to January 1, 1865	452,590 23	
From January 1, 1865, to January 1, 1866	366,915 38	
From January 1, 1866, to January 1, 1867	250,983 17	
From January 1, 1867, to January 1, 1868	199,264 06	
From January 1, 1868, to January 1, 1869	249,822 12	
From January 1, 1869, to January 1, 1870	340,265 91	
		$5,775,387 14

Maintenance Account for the year 1868.

To balance transferred from "Island above One Hundred and Fifty-fifth Street and Public Drive,"..... $5,442 94

The expenditures on account of maintenance in the year 1868, in addition to that mentioned in the report of last year, is as follows:

Park-keepers' pay-roll for the month ending December 31, 1868..... 4,629 85

By balance carried to maintenance, 1869..... $10,072 79

Maintenance Account for the year 1869.

	LABOR.	MATERIAL.	TOTAL.	
To balance carried from maintenance, 1868....	....	.....	.....	$10,072 79
The expenditures on account of maintenance, 1869, thus far, are as follows:				
Roads, care of	$25,054 53	$591 54	$25,646 07	
Roads, repairs of.....	3,824 91	26,242 80	30,067 71	
Bridle-roads, care of..	931 42	.....	931 42	
Bridle-roads, repairs of.	6 20	.....	6 20	
Walks, care of.....	9,384 91	35 55	9,420 46	
Walks, repairs of.... .	2,326 89	12,253 73	14,580 62	
Plantations....	13,087 31	475 53	13,562 84	
Turf.....	10,597 99	527 95	11,125 94	
Water.....	274 09	....	274 09	
Ice.....	8,857 16	1,997 01	10,854 17	
Irrigation.....	13,579 99	383 15	13,963 14	
Thorough drainage.....	274 09	.. ..	274 09	
Transverse roads.....	76 49	.....	76 49	
Masonry and bridges...	2,618 06	191 47	2,809 53	
Tools.....	1,983 65	1,003 02	2,986 67	
Surface drainage... ..	215 50	.....	215 50	
Buildings.....	3,557 66	1,418 91	5,038 67	
Lighting Park.....	17 00	.. ..	17 00	
Animals....	6,556 88	7,730 85	14,287 73	
Sheep	1,066 80	1,670 07	2,736 87	
Manure.....	552 80	.....	552 80	
Park and gate-keepers' wages, uniforms, etc	68,723 49	711 03	69,434 52	
Special park-keepers' wages....	2,551 33	.....	2,551 33	
Music.....	6,809 00	.....	6,809 00	
Stationery, printing, etc..... .	2,763 42	.....	2,763 42	
Miscellaneous.....	10,140 86	5,050 66	15,191 52	
Proportion of salaries..	15,000 00	.. ...	15,000 00	
				271,177 80
Total	.....	.....	.. ..	$281,250 59

Received from the City of New York for the maintenance of the Park for the year 1869	$250,000 00
Received from sale of grass	2,766 75
" from pound receipts	205 75
" from sale of animals	93 38
" from sale of sheep and wool	1,231 53
" from sale of old iron and steel	79 35
" from sale of trees and plants	1,105 00
" from Shultz & Warker for music	1,870 00
" from licenses to hire skates and boats	1,000 00
" from rent of house on Park	37 50
" for removing broken vehicles	93 50
By balance transferred from Avenue St. Nicholas	22,767 83
	$281,250 59

Museum and Observatory.

Received from the City of New York, for maintenance of a Meteorological and Astronomical Observatory, Museum of Natural History, and Gallery of Art, for the year ending December 31, 1869		$20,000 00
The payments on this account for the year ending December 31, 1869, are as follows :		
Museum	$2,354 54	
Meteorological Observatory	2,849 09	
Gallery of Art	629 47	
Restoring extinct animals	6,985 89	
		12,818 99
Balance on hand December 31, 1869		$7,181 01

Island above One Hundred and Fifty-fifth Street and Public Drive.

(Chap. 565 of the Laws of 1865.)

Balance on hand December 31, 1868		$8,801 10
Re-transferred from maintenance, 1868		5,442 94
The payments on this account for the year ending December 31, 1869, are as follows :		
Surveys, maps, etc	$6,948 15	
Stationery, printing, and drawing materials	581 28	
Incidental expenses	230 00	
		7,759 43
Balance on hand December 31, 1869		$6,484 61

West Side Improvement.

(Chap. 590 of the Laws of 1866, and Chap. 697 of the Laws of 1869.)

Balance on hand December 31, 1868	$3,321 28
The payments on this account for the year ending December 31, 1869, are as follows :	
Surveys and draughting	398 94
Balance on hand December 31, 1869	$2,922 34

Claims against old Commissioners for Laying Out the City north of One Hundred and Fifty-fifth Street.

Balance on hand December 31, 1868	$7,028 32

No payments have been made on this account during the year 1869.

Seventh Avenue.

Balance on hand December 31, 1868	$10,890 57
Received from the City of New York, for regulating and grading Seventh Avenue, during the year ending December 31, 1869	200,000 00
	$210,890 57

The payments on this account during the year ending December 31, 1869, are as follows:

J. H. Sullivan & Co., contractors, regulating and grading	$151,947 00	
Thomas Crimmins, contractor, regulating and grading	25,882 50	
Surveys, maps, etc	1,438 42	
Stationery and printing	268 21	
Tools and materials	48 84	
Incidental expenses	230 00	
		179,814 97
Balance on hand December 31, 1869		$31,075 60

Sixth Avenue.

Balance on hand December 31, 1868	$10,337 86
Received from the City of New York, for regulating and grading Sixth Avenue, during the year ending December 31, 1869	75,000 00
	$85,337 86

The payments on this account during the year ending December 31, 1869, are as follows:

J. H. Sullivan and Co., contractors, regulating and grading	$27,000 00	
Thomas Crimmins, contractor, regulating and grading	4,702 23	
Thomas Fealey, contractor, regulating and grading	3,600 00	
Labor account, amount paid laborers, teams, carts, &c	39,201 22	
Surveys and draughting	1,384 05	
Tools and materials	312 96	
Stationery and printing	134 10	
Incidental expenses	230 00	
		76,564 56
Balance on hand December 31, 1869		$8,773 30

Mount Morris Square.

Balance on hand December 31, 1868	$ 503 43
Received from the City of New York, for improvement of Mount Morris Square, during the year ending December 31, 1869	15,000 00
By balance transferred from "public square," Fifty-ninth Street and Fifth Avenue,	444 31
	$15,947 74

The payments on this account for the year ending December 31, 1869, are as follows :

Labor account, amount paid laborers, carts, etc.	$10,917 76	
Surveys, draughting, etc.	494 02	
Tools and materials	998 84	
Trees and plants	1,105 00	
Manure	31 25	
Fence, and labor in erecting	2,394 67	
Stationery and printing	6 20	
		15,947 74

Circle, Fifty-ninth Street and Eighth Avenue.

Balance on hand December 31, 1868	$2,526 36
Received from the City of New York, for regulating, grading, sewering, etc., the Circle, Fifty-ninth Street and Eighth Avenue, during the year ending December 31, 1869	20,000 00
	$22,526 36

The payments on this account for the year ending December 31, 1869, are as follows :

Labor account, amount paid laborers, carts, etc.	$15,435 25	
Materials of construction and tools	6,239 76	
Surveys, estimates, etc.	724 30	
Stationery	10 22	
Auctioneers' fees	90 00	
		22,499 53
Balance on hand December 31, 1869		$26 83

Road or Public Drive.

Balance on hand December 31, 1868	$1,630 75
Received from the City of New York, for regulating and grading the "Road or Public Drive," during the year ending December 31, 1869	600,000 00
Received from sale of fences on line of public drive	1,380 08
Received from sale of brushwood on line of public drive	62 00
Received from sale of wall on line of public drive	90 95
Received from sale of trees and gate on line of public drive	241 00
Received from sale of church seats on line of public drive	63 00
	$603,467 78

The expenditures on this account for the year ending December 31, 1869, are as follows :

Labor account, amount paid laborers, rockmen, cartmen, teams, etc.	$560,233 86	
Materials of construction and tools	34,487 48	
Surveys, estimates, etc.	5,058 42	
Stationery, printing, and books of account	681 03	
Incidental expenses	766 85	
		601,227 64
Balance on hand December 31, 1869		$2,240 14

St. Nicholas Avenue.

(Chap. 367 of the Laws of 1866.)

Received from the City of New York, for regulating and grading St. Nicholas Avenue, during the year ending December 31, 1869		$25,000 00
The payments on this account for the year ending December 31, 1869, are as follows :		
Surveys and draughting	$804 55	
Tools and materials	51 53	
Stationery and drawing materials	6 40	
		862 48
Balance on hand December 31, 1869		$24,137 52

Ninth Avenue.

Balance on hand December 31, 1868	$10,000 00

No payments have been made on this account during the year 1869.

Public Square, Fifty-ninth Street and Fifth Avenue.

Received from the City of New York, for regulating and grading the "public square," Fifty-ninth street and Fifth Avenue, during the year ending December 31, 1869		$15,000 00
Received from sale of old buildings		173 50
		$15,173 50
The payments on this account for the year ending December 31, 1869, are as follows :		
Labor, amount paid to laborers, carts, etc	$1,145 02	
Surveys and draughting	63 87	
J. J. Yates, contractor, filling	1,200 00	
Tools and materials	203 85	
Stationery and printing	85 00	
Auctioneer's fees	27 50	
		2,725 24
Balance on hand December 31, 1869		$12,448 26

One Hundred and Forty-fifth Street, from Sixth to Seventh Avenue.

Received from the City of New York, for regulating and grading One Hundred and Forty-fifth Street, from Sixth to Seventh Avenue, during the year ending December 31, 1869		$15,000 00
The payments on this account for the year ending December 31, 1869, are as follows :		
J. Sullivan, contractor, regulating and grading	$7,560 00	
Surveys and estimates	175 29	
		7,735 29
Balance on hand December 31, 1869		$7,264 71

Broadway Widening, from Thirty-fourth to Fifty-ninth Street.

Received from the city of New York, for widening Broadway, from Thirty-fourth to Fifty-ninth street, during the year ending December 31, 1869.....	$5,000 00
The payments on this account during the year ending December 31, 1869, are as follows:	
Surveys and draughting.....	189 25
Balance on hand December 31, 1869.....	$4,810 75

Harlem River and Spuyten Duyvil Creek Improvement.

Received from the city of New York, for improvement of Harlem river and Spuyten Duyvil creek, during the year ending December 31, 1869.....	$10,000 00
The payments on this account for the year ending December 31, 1869, are as follows :	
Drawing map.....	34 75
Balance on hand December 31, 1869.....	$9,965 25

Recapitulation.

Balance on hand December 31, 1869, "Island above One Hundred and Fifty-fifth Street and Public Drive".....		$6,484 61
Balance on hand December 31, 1869, "West Side Improvement".....		2,922 34
Balance on hand December 31, 1869, "Museum and Observatory".....		7,181 01
Balance on hand December 31, 1869, "Claims against Old Commissioners for Laying out City north of One Hundred and Fifty-fifth Street,".....		7,038 32
Balance on hand December 31, 1869, "Sixth Avenue,".....		8,773 30
Balance on hand December 31, 1869, "Seventh Avenue,".....		31,075 60
Balance on hand December 31, 1869, "Circle, Fifty-ninth Street and Eigth Avenue,"		26 83
Balance on hand December 31, 1869, "Road or Public Drive,".....		2,240 14
Balance on hand December 31, 1869, "Ninth Avenue".....		10,000 00
Balance on hand December 31, 1869, "Public Square, Fifty-ninth Street and Fifth Avenue".....	$12,448 26	
Less amount transferred to the credit of the following accounts :		
Construction Account.....	$11,063 45	
Mount Morris Square.....	444 31	
	11,507 76	
		940 50
Balance on hand December 31, 1869, "St. Nicholas Avenue,".....	$24,137 52	
Less amount to the credit of maintenance, 1869.....	22,767 83	
		1,369 69
Balance on hand December 31, 1869, "One Hundred and Forty-fifth Street, from Sixth to Seventh Avenue,".....		7,264 71
Balance on hand December 31, 1869, "Broadway Widening,".....		4,810 75
Balance on hand December 31, 1869, "Harlem River and Spuyten Duyvil Creek Improvement,".....		9,965 25
		$100,093 05

Dated New York, December 31, 1869.

ANDREW H. GREEN,

Treasurer of the Board of Commissioners of the Central Park.

Topographical Description of the Central Park, by Areas of Surface, &c., January 1, 1868.

Length of Park, from 59th to 110th streets	13,507 ft. $9\frac{4}{10}$ in.
Breadth " " 5th to 8th avenues	2,718 " $6\frac{9}{10}$ "
Superficial area	843.$\frac{019}{1000}$ acres.
" " Ground known as Manhattan Square	18.$\frac{318}{1000}$ "
	862.$\frac{070}{1000}$ acres.

	Acres.	Elevation of water above tide.	
		Feet.	
Area, exterior to inclosure, 59th street and 110th street, Broad Walks	3.$\frac{098}{1000}$	.....	
Do. occupied by four Transverse Roads.	9.$\frac{474}{1000}$	.....	
Do. " by new Croton Reservoir..	106.$\frac{726}{1000}$	115.20	
Do. " by old Reservoir	35.$\frac{289}{1000}$	115.20	154.$\frac{587}{1000}$ "

Total area of Park within inclosure, exclusive of above areas..	707.$\frac{483}{1000}$ acres.

	Acres.	Elevation of surface when full above tide. Summer lev'l	
		Feet.	
Area of the Pond (near 59th street, between 5th and 6th avenues)	4.$\frac{800}{1000}$	26.00	
Do. " Lake (between 72d and 78th sts).	20.$\frac{167}{1000}$	53.20	
Do. " Conservatory water (east of Lake near 5th ave.)	2.$\frac{570}{1000}$	41.00	
Do. " Pool (near 8th av., between 101st and 102d streets)	2.$\frac{013}{1000}$	45.00	
Do. " the Harlem Lake	12.$\frac{64}{1000}$	11.00	
Do. " the Loch	1.$\frac{046}{1000}$	24.50	
Total area of waters of the Park at this date	43.$\frac{259}{1000}$ acres.		

	Acres.		
Area occupied by Carriage Roads	49.$\frac{580}{1000}$		
Do. occupied by Bridle Roads	15.$\frac{371}{1000}$		
Do. occupied by Walks	38.$\frac{527}{1000}$		
Total	103.$\frac{478}{1000}$ acres.		146.$\frac{737}{1000}$ "

Total area of ground within inclosure, exclusive of Reservoirs, Ponds, Roads and Walks	560.$\frac{746}{1000}$ acres.
Area of rock surface mainly without soil or shrubbery, *estimated*.	24 "
Area of Park ground fertilized, or chiefly fertilized, and in trees and shrubbery, or in open lawns, exclusive of Reservoirs, Roads, Walks, Ponds, rock surface, &c., *estimated*	536.$\frac{746}{1000}$ acres.

REFERENCE TO THE CENTRAL PARK GUIDE.

GATES.

5th	Avenue	and 59th	Street—	The Scholars' Gate.
5th	"	59th	"	The Artists' Gate.
7th	"	59th	"	The Artizans' Gate.
8th	"	59th	"	The Merchants' Gate.
8th	"	72d	"	The Womens' Gate.
8th	"	79th	"	The Hunters' Gate.
8th	"	85th	"	The Mariners' Gate.
8th	"	96th	"	The Gate of All Saints.
8th	"	100th	"	The Boys' Gate.
5th	"	72d	"	The Childrens' Gate.
5th	"	79th	"	The Miners' Gate.
5th	"	90th	"	The Engineers' Gate.
5th	"	96th	"	The Woodman's Gate.
5th	"	102d	"	The Girls' Gate.
5th	"	110th	"	The Pioneers' Gate.
6th	"	110th	"	The Farmers' Gate.
7th	"	110th	"	The Warriors' Gate.
8th	"	110th	"	The Strangers' Gate.

1. Humboldt Monument.
2. The Pond.
3. Museum and Park Office.
4. Dairy.
5. Childrens' Cottage.
6. Childrens' Summer House and Play Ground.
7. Ball Players' House.
8. Play Ground.
9. The Green.
10. Statue of Commerce.
11. Palæontological Museum.
12. The Marble Arch.
13. Site of Shakespeare Monument.
14. The Mall.
15. Oak and Elm, planted by Prince of Wales.
16. Music Pavilion.
17. Vine—Covered Walk.
18. Carriage Concourse.
19. Casino, or Refreshment House.
20. Croquet Players' House.
21. The Terrace.
22. Fountain.
23. Bronze Statue of Tigress.

MAP OF THE CENTRAL PARK

JANUARY 1st 1870

CROTON RESERVOIR

CROTON RESERVOIR

Scale 400 feet to the inch

24. The Circle.
25. Mineral Spring.
26. Site for Refectory.
27. The Lake.
28. The Bow Bridge.
29. Ladies' Cottages.
30. Balcony Bridge.
31. West Carriage Step—entrance to Ramble
32. Schiller's Monument.
33. Gentlemens' Cottage.
34. The Ramble.
35. The Tunnel.
36. Proposed Belvedere.
37. The Cedars.
38. East Carriage Step—entrance to Ramble.
39. Evergreen Walk.
40. Dove Cot.
41. Conservatory Lake.
42. Site for Flower House.
43. Proposed Art Museum and Hall.
44. Site for the Maze.
45. South Gate House.
46. Stable.
47. Croton Board House.
48. Spring.
49. The Knoll.
50. North Gate House.
51. The West Meadow.
52. The East Meadow.
53. The Pool.
54. The Loch.
55. Mount St. Vincent House of Refreshment.
56. The Nursery.
57. Old Fortification.
58. Harlem Lake.
59. The Cliffs.
60. Block House, War of 1812.
61. The Briars.
62. 7th Regiment Monument.
63. The Great Hill.

APPENDIX A.

NEW YORK, December 30, 1868.

Commissioners of the Central Park:

DEAR SIRS,—A number of gentlemen having long desired that a great museum of natural history should be established in the Central Park, and having now the opportunity of securing a large and very valuable collection as a nucleus of such museum, the undersigned wish to inquire if you are disposed to provide for its reception and development.

John David Wolfe,	Robert Colgate,
J. N. Phelps,	Levi P. Morton,
W. A. Haines,	J. Pierpont Morgan,
A. G. Phelps Dodge,	D. Jackson Steward,
Howard Potter,	James Brown,
Alexander T. Stewart,	Benjamin H. Field,
Adrian Iselin,	Robert L. Stuart,
Marshall O. Roberts,	Theodore Roosevelt,
George Bliss,	Morris K. Jessup,

William T. Blodgett.

OFFICE OF THE BOARD OF COMMISSIONERS
OF THE CENTRAL PARK,
BANK OF COMMERCE BUILDING, 31 NASSAU ST.,
NEW YORK, January 13, 1869.

GENTLEMEN,—The Commissioners of the Central Park have received your communication, in which inquiry is made if they are disposed to provide for the reception and development of a large and valuable collection as a nucleus of a museum of natural history.

The Commissioners, appreciating the views you so kindly express, entirely concur in the desirability of the establish-

ment of a museum in the Park that shall become an aid to the great educational system of the city, concentrate and develop scientific efforts in all departments of natural history, and, at the same time, be an instructive and acceptable resort for the people of the city, and for the throngs of strangers that visit it.

The Commissioners of the Park will very gladly receive the collection to which you allude, and will use their best exertions toward the establishment of a museum of natural history of an extent and excellence in all its departments that will be creditable to the city, and in their efforts toward the development of such an institution, the Commissioners of the Park will highly esteem your valuable co-operation.

I am, gentlemen,

With great respect,

ANDREW H. GREEN,

Comptroller Central Park.

To Messrs.

John David Wolfe,	James Brown,
Robert Colgate,	Alexander T. Stewart,
Benjamin H. Field,	J. N. Phelps,
Adrian Iselin,	Levi P. Morton,
Robert L. Stuart,	W. A. Haines,
Marshall O. Roberts,	J. Pierpont Morgan,
Theodore Roosevelt,	A. G. Phelps Dodge,
George Bliss,	D. Jackson Steward,
Morris K. Jessup,	Howard Potter,

William T. Blodgett.

APPENDIX B.

Statement in detail of the gifts, devises and bequests during the past year, for the purpose of embellishing or ornamenting the Park, and of the names of the persons by whom the same are so given, devised or bequeathed.

Miscellaneous.

1869.

Jan. 4. Jourdan, Capt. John,
New York City,
1 piece Coral.

Mar. 10. Cooper, Peter,
New York City,
Skeleton of a Fin-back Whale.

Mar. 21. Kappelhoff, J. H.,
New York City,
2 cases of Prepared Birds.

April 14. Lowery, Mrs. John,
New York City,
1 lot of Syrian and Egyptian Curiosities.

April 16. Raymond, Mrs. Henry J.,
New York City,
Iron Railing and Base.

April 27. Westcott, Com. Bayse N.,
U. S. N.,
Jaws of a Shark.

May 29. Warren, Sylvanus,
New York City,
2 Spears taken from Fort Wagner, S. C.
1 Cartridge Box. 1 Whitworth Rifle Shell.

June 10. Olds, David S.,
New York City,
1 piece of Rebel Currency.

1869.

June 24. Himmelmann, Casper,
New York City,
1 specimen—Singular Formation of Sand.

June 28. Warren, Sylvanus,
New York City,
Backbone of a Shark.

July 6. Funke, Henry,
1 Sun Dial.

July 20. Ryder Jesse,
Sing-Sing, Westchester Co.
2 Cattle Tedders.

Aug. 7. Bread made from the Root of the Succi Tree.

Aug. 13. Van Nort, George M.,
New York City,
Peculiar Formation of the Root of a Spruce Tree.

Sept. 7. Serrano, Juan E.,
New York City,
1 Bird's Nest; one Prepared Specimen—Night-Hawk; 4 Specimens of Minerals.

Sept. 14. Battelle, Lewis F.,
Copy of *Boston Gazette*, 1770.

Sept. 27. Kunze, Dr. R. E.,
New York City,
3 jars Specimens of Snakes.

Oct. 26. Nelson, Capt. H.,
1 Specimen in alcohol—Flying Fish.

Dec. 15. Rader, William R., and John Peterman,
New York City,
1 piece Petrified Wood.

Dec. 27. Hession, Master John,
New York City,
Canine Tooth of a Walrus.

Botanical.

1869.

Jan. 14. Holmes, D.,
New York City,
7 packages Seeds.

March 19. Robinson, H. W.,
New York City,
1 package of Seeds.

April 6. Staples, Cyrus E.,
New York City,
1 Tree—Adam's Needle—*Yucca aloefolia.*

April 14. Capron, Hon. Horace, Commissioner of Agriculture,
Washington, D. C.,
152 varieties Vegetable Seeds; 20 varieties Flower Seeds.

April 23. Capron, Hon. Horace,
Washington, D. C.,
215 packages Seeds of Hardy Trees and Shrubs.

May 15. Green, Dr. Samuel F.,
Ceylon, India,
5 packages Seeds from India.

May 19. Such, George,
South Amboy, N. J.,
90 Cannas—3 varieties.

Sept. 1. Collins, Capt. N.,
U. S. N.,
5 African Plants.

Sept. 29. Bancroft, William S.,
New York City,
1 Oleander—*Mericum oleander.*

Sept. 29. Long, Jacob, M.,
New York City,
1 Bannana Tree—*Muza cavandishi.*

1869.

Oct. 14. Rittler, Dr. A. W.,
Hoboken, N. J.,
1 Plant, foot of the Elephant–*Tamus elephantis*—Herbarium of 107 Specimens of Algæ.

Nov. 22. One collection South American Seeds.

Animals.

Jan. 4. Guiterman, Master Samuel,
New York City,
1 Deer (D).

Jan. 5. Ramson, John,
New York City,
1 Fowl.

Jan. 20. Dexter, N.,
Providence, R. I.,
1 Bald Eagle; one Colored Peccary.

Jan. 21. Trouton, Master Charles,
New York City,
1 pair Rabbits.

Jan. 23. Henry, Professor Joseph,
Washington, D. C.,
2 Rheas (1 D).

Jan. 24. Roome, James H.,
New York City,
1 English Blackbird.

Jan. 26. Cornell, A. B.,
Ithaca, N. Y.,
1 Bald Eagle.

Feb. 6. Norton, Hon. Michael,
New York City,
1 Fowl (D).

Feb. 9. Macgowan, Dr. D. J.,
Shanghai, China,
2 Chinese Fowls.

1869.

Feb. 13. Cornell, Master George W.,
New York City,
5 Ferrets.

Feb. 14. Williams, H. H.,
New York City,
1 Hawk.

Feb. 16. Gorcy, Francis,
New York City,
1 Esquimaux Dog.

Feb. 20. Turner, D. A.,
Williamsburgh, L. I.,
1 Raccoon.

Feb. 25. Brown, C. S.,
New York City,
1 Canadian Porcupine (D).

Feb. 27. Hays, William J.,
New York City,
12 Common Quails.

Mar. 2. Haeger, H. G.,
New York City,
2 pair Rabbits.

March 18. Talcott, Mrs. James,
New York City,
1 Purple Gallinule.

March 25. Ward, Andrew,
New York City,
25 White Mice (D).

March 30. Hays, William J.,
New York City,
12 Common Quails.

April 3. Dovale, Abram J.,
New York City,
3 Bronze Guans.

1869.

April 9. Wood, Peter,
New York City,
1 Loon or Great Northern Diver (D).

April 13. Barter, Miss Johannah,
New York City,
1 Rabbit.

April 13. Hackett, Mrs. John B.,
New York City,
1 Horned Toad.

April 13. Lambert, Master James,
New York City,
1 Indigo Bird; 1 Fowl.

April 17. Arent, Anthony,
New York City,
1 pair Common Quail.

April 19. Savage Robert J.,
New York City,
1 Raccoon.

April 19. Lynes, George,
Catskill, N. Y.,
1 Goshawk (D).

April 23. Brown, Capt. William, R. N. R., Ship City of Sydney,
1 Zebu.

April 23. Pollopolian Association,
New York City,
1 Deer (D).

April 25. Conklin, William A.,
New York City,
1 Mavis.

April 27. Nixon, Miss Annabella,
New York City,
1 West India Parrot.

1869.

April 27. Gansevoort, Bt. Lt.-Col. H. S.,
U. S. A.,
1 Bald Eagle.

April 28. Lambert, Master James,
New York City,
1 Horned Owl.

April 28. Figyelmesy, Col. Philip,
U. S. Consul, Demerara,
1 Puma; 1 Culminated Toucan (D); 1 Toco Toucan; 2 Black Spider Monkeys (D).

April 29. Heinkle, George W.,
New York City,
2 young Alligators.

May 3. Harrison, C. E.,
Carrolton, Ky.,
1 Golden Eagle.

May 6. Maclachlan, D. W.,
New York City,
1 Mexican Deer.

May 7. Pennington, Captain L. W.,
South Bergen, N. J.,
1 Raccoon.

May 9. Ruffini, Frederick A.,
New York City,
1 Gray Fox (D).

May 11. Molloy, Hon. Thomas N., U. S. Consul,
St. Johns, Newfoundland,
1 Common Seal (D).

May 20. Andrews, M. Angelo,
New York City,
1 Coati.

May 24. Reed, Captain R. W.,
Schooner "C. H. Kelly,"
1 Bald Eagle.

1869.

May 24. Thompson, G. W.,
New Brunswick, N. J.,
1 Opossum and young (D).

May 26. Nelson, Capt. Horatio,
S. S. Cortes,
1 Frigate or Man-of-War Bird (D).

May 27. Crane, T. T.,
Hackensack, N. J.,
1 Deer.

May 28. Stuart, William,
New York City,
2 Bald Eagles.

May 31. Luis, A. O.,
New York City,
1 White-faced Monkey.

June 1. Vail, Eden,
Rahway, N. J.,
1 Horned Owl.

June 1. Dinsmore, W. B.,
New York City,
2 Fowls (hybrids).

June 1. Webster, Master Lee,
New York City,
1 Opossum (D).

June 2. O'Brien, John,
New York City,
1 Angora Cat.

June 3. Hawkins, Professor B. Waterhouse,
New York City,
2 King Crabs (D).

June 3. Conklin, William A.,
New York City,
1 Crocodile.

1869.

June 5. Daulte, Frank,
New York City,
1 Young Alligator (D).

June 6. Uhlenhaut, Fritz,
New York City,
1 Speckled Tortoise (D).

June 7. Jackson, E. W.,
New York City,
1 Woodchuck.

June 12. Connier, T. & G.,
New York City,
2 Young Wild-Cats (D).

June 12. Holtje, John,
New York City,
1 Red Fox.

June 12. Dolson & Birdon,
New York City,
1 Young Alligator.

June 13. Keeler, F. A.,
New York City,
1 Gray Squirrel.

June 16. Slattery, Mrs. Margaret,
New York City,
1 Pair Pigeons.

June 16. Girard, J. P., Jr.,
Poughkeepsie, N. Y.,
3 Pea-fowls.

June 17. Adams, Rev. C. C.,
New York City,
1 Shepherd's Dog.

June 17. Beaudouin, Louis,
New York City,
1 Red Fox.

1869.

June 19. Girard, J. P., Jr.,
Poughkeepsie, N. Y.,
1 Peacock.

June 21. Deweese, Hon. John T.,
Raleigh, N. C.,
1 Black Bear.

June 22. Saltzman, A.,
New York City,
1 Deer.

June 22. Benton, Richard H.,
New York City,
1 Horned Owl.

June 24. Day, Professor E. C. H.,
New York City,
1 Garter Snake.

June 28. Foote, Dr. Edward B.,
New York City,
2 Young Alligators.

July 6. Simpson, L. H.,
New York City,
1 Rattle Snake.

July 10. During, Jacob,
New York City,
1 Tortoise.

July 10. Lambert, Master James,
New York City,
1 California Quail (D).

July 10. Conklin, William A.,
New York City,
1 Yellow Bird.

July 12. Turner, Mr.,
New York City,
1 Deer.

1869.

July 12. Price, Col. Walter J.,
New York City,
2 Horned Owls.

July 15. Rejaunier, Edward,
New York City,
1 Red Fox.

July 20. Schifflen, B.,
New York City,
1 Green Snake (D).

July 27. Conklin, William A.,
New York City,
2 King Crabs (D).

Aug. 7. Laforge, Master Henry,
New York City,
1 Turtle.

Aug. 13. Dickens, Henry M.,
New York City,
1 Guinea-Pig.

Aug. 16. Denison, Henry,
New York City,
1 Ring-Dove.

Aug. 24. Kull, William,
New York City,
1 Brown Bat (D).

Aug. 25. Rice, Charles M.,
London, England,
1 Pair Black Swans.

Aug. 26. Gamble, Miss Louise,
New York City,
1 Alligator.

Aug. 27. De Glims, Paul,
S. S. Selicia,
5 Common Foxes (2 D).

1869.

Aug. 27. Munroe, Hon. Allen,
Syracuse, N. Y.,
2 Bald Eagles.

Aug. 30. McFarland, William,
New York City,
1 Fox Squirrel.

Aug. 30. Kunze, Dr. Richard E.,
New York City,
11 Turtles.

Aug. 30. Wilson, James W.,
New York City,
1 Toucan.

Aug. 31. Dixon, Master M.,
New York City,
1 Night-Hawk (D).

Sept. 2. McCormick, A. H.,
Cedar Keys, Fla.,
2 Alligators.

Sept. 2. Hancock, Major-Gen. Winfield S.,
U. S. A.,
2 Cinnamon Bears.

Sept. 7. Wallace, John G.,
New York City,
1 Alligator.

Sept. 8. Barjau, Luis,
New York City,
2 Turtles (D).

Sept. 10. Wolcott, F. H.,
Astoria, L. I.,
2 Peacocks.

Sept. 13. Meadows, H. P.,
New York City,
1 Kestrel.

1869.

Sept. 14. Thebaud, Paul S.,
New York City,
1 Deer.

Sept. 15. Johnson, Col. W. C.,
Newburyport, Mass.,
1 Sea-Gull (D).

Sept. 16. Hormamm, John,
New York City,
1 Raccoon.

Sept. 16. Babœuf, H. T.,
New York City,
2 Hawks (D).

Sept. 18. Folson, Master William H.,
New York City,
1 Muskrat.

Sept. 18. Marsh, Capt. B. F.,
Ship "Rattler,"
2 Kanchils or Pigmy Musk-Deer (1 D);
3 Manilla Pigeons (2 D).

Sept. 19. Waerth, John,
New York City,
1 Box Turtle.

Sept. 20. Manning, John W.,
New York City,
2 Alligator Terrapins (D).

Sept. 20. Farrel, Master Andrew,
New York City,
1 Turtle.

Sept. 21. Caldwell, Milton,
Brooklyn,
1 Newfoundland Dog.

Sept. 24. Kemeys, E.,
New York City,
1 Alligator Terrapin.

1869.

Sept. 25. Dietz, Charles H.,
Stapleton, S. I.,
2 Wood-Ducks.

Sept. 27. Morrison, C. H.,
Sacramento, Cal.,
2 Gray Foxes (1 D).

Sept. 27. Valentine, B.,
Piermont, N. Y.,
2 Deer.

Sept. 30. Sparhawk, E. W.,
S. S. Minnetonka,
1 Rattle Snake.

Oct. 2. Wilson, Master Willie,
New York City,
1 Striped Squirrel (D).

Oct. 2. Kirks, C. H.,
New York City,
1 Opossum (D).

Oct. 6. Mead, T. L.,
New York City,
2 Rattle Snakes.

Oct. 21. Meyers, Major-Gen. William,
U. S. A.,
1 Grizzly Bear.

Oct. 22. Wisder, David,
Springtown, N. J.,
1 Eagle.

Oct. 27. Conklin, William A.,
New York City,
1 English Heron.

Oct. 28. Smith, Mrs. Hugh K.,
Brooklyn,
1 pair Guinea-Pigs.

Nov. 1. Keeler, F. A.,
New York City,
1 Horned Owl.

1869.

Nov. 1. Dinsmore, William B.,
New York City,
2 Angora Goats.

Nov. 4. Savage, John,
New York City,
1 Horned Owl.

Nov. 5. Berringer, John,
New York City,
1 Opossum.

Nov. 6. Sayre, Master Reginald Hall,
New York City,
2 Young Alligators.

Nov. 9. Ehlert, John E.,
New York City,
1 Ferret.

Nov. 9. Blake, Capt.,
1 Deer.

Nov. 9. Agens, Charles H.,
Newark, N. J.,
1 Marsh-Hawk.

Nov. 10. Tilden, Samuel J.,
New York City,
568 Trout.

Nov. 22. Velie, J. W.,
Bath, N. Y.,
1 Canadian Porcupine.

Nov. 22. Nichols & Hoadley,
New York City,
1 Affghan Fat-tailed Sheep.

Nov. 29. Farrell, Frederick A.,
New York City,
1 Moongus.

1869.

Dec. 9. Showler, John W.,
New York City,
1 Horned Owl.

Dec. 14. Velie, J. W.,
Bath, N. Y.,
2 Horned Owls.

Dec. 16. Martin, John,
New York City,
1 Hawk.

Dec. 23. McLieish, Louis,
New York City,
1 Horned Owl.

Dec. 29. Marsh, Professor,
New Haven, Conn.,
2 Opossums.

Dec. 31. Bohan, Cornelius,
New York City,
1 Hawk.

The letter D opposite the donation denotes that it is dead.

The above are in good condition, except otherwise noted.

LIST OF SPECIMENS DEPOSITED FOR EXHIBITION.

1869.

Feb. 25. One Canary Bird.
April 12. One Black Spanish Fowl.
April 24. One Black Bear.
May 15. Two Zebus or Brahmin Cattle.
May 17. One Bald Eagle.
May 17. One Peccary.
May 17. One Hawk.
June 5. One Elephant.
June 12. One Mocking Bird.
June 18. One Macaw.
June 22. One Green Monkey.
June 26. One Canary Bird.
July 9. One Gray Squirrel.
July 10. One Jaguar or American Tiger.
Aug. 2. Three Guinea-Pigs.
Sept. 11. Two Leopards.
Oct. 16. One Mocking Bird.
Oct. 20. Seventeen Anacondas.
Oct. 31. One Indian Elephant.
Oct. 31. One African Elephant.
Oct. 31. One Bactrian Camel.
Oct. 31. Six Lions.
Dec. 20. One Mandrill.

APPENDIX C.

REPORT OF THE METEOROLOGICAL DEPARTMENT.

To the Board of Commissioners of the Central Park:

ANDREW H. GREEN, Esq.,
Comptroller.

SIR,—During the past year the Meteorological Observatory has been furnished with self-registering instruments, to record the various atmospheric conditions, as follows:

1st. Photographic register of the height of the Barometer.
2d. " " " degree of the Dry Bulb Thermometer.
3d. " " " " " Wet " "
4th. Pencil register of the quantity of Rain and Snow.
5th. " " " direction of the Wind.
6th. " " " velocity " "
7th. " " " force " "

For the use of the instruments in which the record is kept by photography, a suitable photographic laboratory has been provided, containing all the arrangements necessary for that purpose.

It having been found that the exposure, heretofore used for the thermometers, gave incorrect indications, arising from the heating of an adjacent roof, both the thermometers, the dry bulb and wet, were removed to an apartment specially constructed for them, in the north-west turret. An enclosure, with suitable blinds, such as has been found in foreign meteorological observatories, best adapted to the purpose, has been provided, and in this, free from disturbing influences, the photographic registration is accomplished.

The Commissioners now possess the most complete meteo-

rological observatory in America, one not inferior in the exactness of its records, to those of any other country.

Of the instruments now to be described, those that register by pencil, that is to say, the 4th, 5th, 6th and 7th, in the above list, are altogether of my own invention. The 1st, 2d and 3rd, though originally European, have been essentially modified by me, and, as I believe, improved.

It may also be appropriate for me to say, that all these instruments have been constructed by my own hand, or under my immediate orders, a lathe, and other necessary implements, for that purpose, having been provided by the Commissioners.

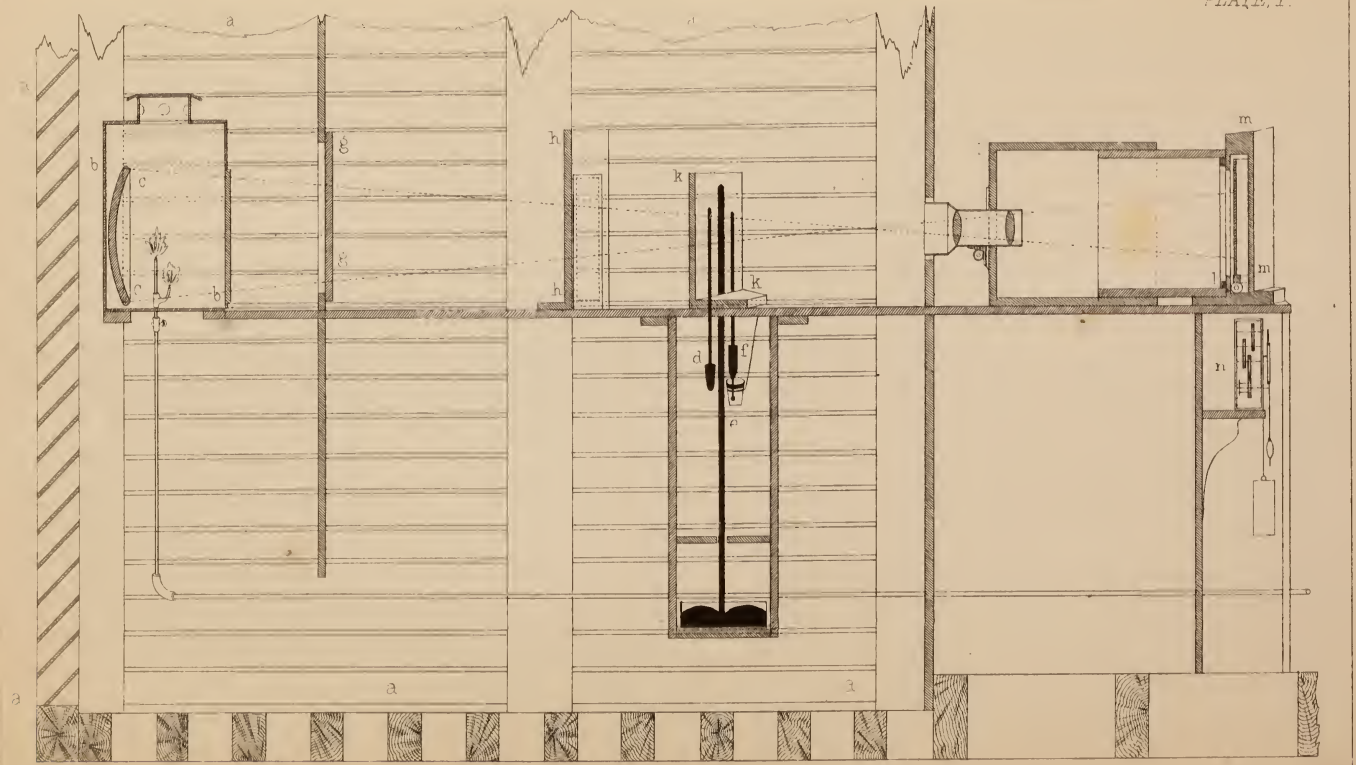
DESCRIPTION OF THE SELF-REGISTERING APPARATUS.

1.—*Photographic Register of the Barometer and the Dry and Wet Bulb Thermometers.*

The principle on which this apparatus is constructed is to throw a strong beam of light on the three instruments above named, suitably arranged side by side. A photographic camera is placed behind them, and pictures of the columns of mercury, formed in the usual manner, upon a sensitive plate. This plate is drawn aside by a clock, with a uniform motion at the rate of half an inch an hour, its movement being completed at the end of twenty-four hours. It, therefore, receives a continuous impression of each of the three instruments, recording not only every movement they have executed, but also the time at which each such movement was made.

Plate 1—represents this apparatus. *a*, *a*, are the Venitian blinds, or Louvres, of a bay-window, constructed in the northwest turret; the object of this open construction being to

PLATE, I.



PHOTOGRAPHIC REGISTERING APPARATUS

Daniel Draper del

The Major & Knapp Engr. Mfg. & Lith. Co. N Bway N.Y.

admit the air freely, and to exclude the sun; *b*, *b*, is a gas lantern, furnished with a concave reflecting mirror, *c*, *c*, which converges the light of the flame, on the three instruments; *d*, the dry bulb thermometer; *f*, the wet bulb thermometer; *e*, the barometer. It has been found expedient in practice to use two gas flames instead of one, partly for the purpose of giving a more uniform and intense beam of light, and partly that, in case one flame should be accidentally extinguished, it may be relighted by the other.

To prevent the heat of the gas flame affecting the instruments, the beam is caused to pass not only through the glass of the lantern itself, but also through a second sheet of plate-glass, *g*, *g*, and again through a third, *h*, *h*, the surface of which is ground. This gives, in addition, a more uniform light. At *k*, *k*, is a screen which serves the purpose of supporting the three instruments. It has three narrow slits in it, through which the position of the mercury may be seen. At *l*, *l*, is the photographic camera, the sensitive plate of which *m*, *m*, is drawn steadily aside, at the rate above mentioned, by the clock, *n*.

In the daily routine of the observatory at nine o'clock each morning, the sensitive plate of the past twenty-four hours is removed, and a new one put in its stead. The former is then developed in the manner customary in photography, and the record it affords is preserved.

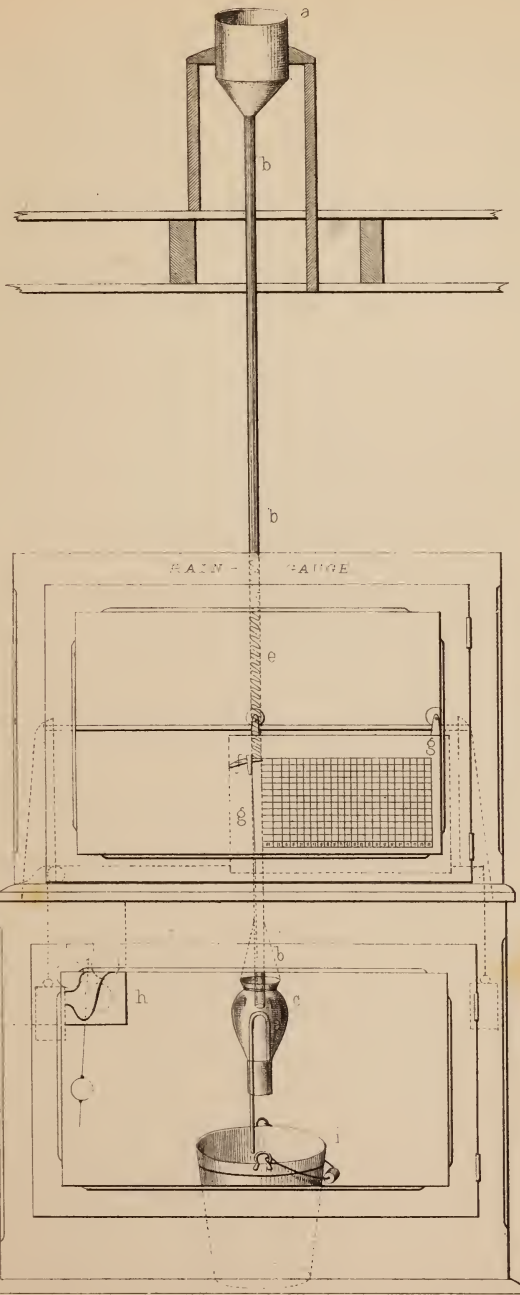
II.—*Pencil Register of the fall of Rain and Snow.*
(Rain Gauge.)

This consists essentially of a cylindrical metal vessel, elevated above the roof of the building, so as to catch the rain or snow. From the bottom of it a tube descends into the observatory, delivering the water thus received into a glass vessel, suspended from a spiral steel spring. To the lower end of the

spring a pencil is attached, the point of which is kept steadily pressing against the sheet of paper, which is to bear the record. Now, when rain falls, the receiving glass vessel becomes heavier, the spring is stretched, and the pencil descends. It would thus make a straight vertical trace on the paper. But the paper is fastened to a board, drawn aside by a clock, at the rate of half an inch an hour. The trace made, therefore, indicates the time at which the glass-receiving vessel becomes heavier, that is, the time of the beginning of the rain. In like manner it also indicates its end, and the amount that has fallen. The glass-receiving vessel has a syphon arrangement, such as that described in the books of Natural Philosophy, under the title of the "Cup of Tantalus." This spontaneously empties it when the water has accumulated to a certain amount and thus permits it to recommence its action.

Plate 2—represents this apparatus: *a*, is the cylindrical vessel, placed above the roof of the building to receive the rain or snow; *b*, *b*, *b*, is the pipe bringing the collected water into the observatory and delivering it into the glass vessel *c*, which has the syphon Tantalus arrangement, *d*, above mentioned. The glass-receiving vessel hangs suspended from a spiral, spring *e*, at the lower end of which is a pencil, *f*, a board, *g*, *g*, on which is fastened a sheet of paper, intended to carry the record, is drawn aside at the above mentioned rate by the clock, *h*. A pail, *i*, receives the water discharged.

This instrument registers not only the duration of rain-falls, but also the rate at which the water descends, thus recording all the peculiarities of each shower. When snow falls, and is collected in the cylindrical vessel, *a*, it is melted by the warm air which ascends through the ceiling of the observatory, the resulting water trickling down through the pipe.



DRAPER'S SELF-REGISTERING
RAIN GAUGE
1869

The Major & Knapp Engr. Mfg & Lith Co. Brooklyn N.Y.

Daniel Draper del.

III.—*Pencil Register of the Direction of the Wind.*

On the lower end of the vertical shaft, to which the wind vane is attached, a brass cylinder is affixed. It turns, therefore, with the movements of the vane. Around this brass cylinder is fastened a sheet of paper. A pencil bearing lightly against the paper descends from the top to the bottom of the cylinder in the course of twenty-four hours, its movement being regulated by a clock. When the wind shifts, the paper register therefore correspondingly turns, and the pencil makes a trace of the movement. On the paper are printed the four cardinal points N. S. E. W., the trace thus showing the direction, and all the variations of the wind.

In Plate 3, *a*, *a*, is the wind-vane, rising several feet above the roof of the building; *b*, *b*, the vertical shaft which turns with the movements of the vane, and gives corresponding movements to the brass cylinder, *c*, *c*, around which the paper register is fastened; at *d* is a pencil attached to the top of a weight, *e*, and bearing lightly against the paper; a clock, *g*, permits the weight to descend to the bottom, *f*, of the cylinder in twenty-four hours.

IV.—*Pencil Register of the Velocity of the Wind.*

On the ends of a cross supported by a vertical shaft several feet above the roof of the building, are four hemispherical copper cups. These, whatever may be the direction of the wind, are caused to turn round with a speed, as has been determined by experiment, of about one-third the velocity of the wind. This position of the contrivance was the invention of Dr. Robinson: it is used in the foreign observatories, and is known as Robinson's cups.

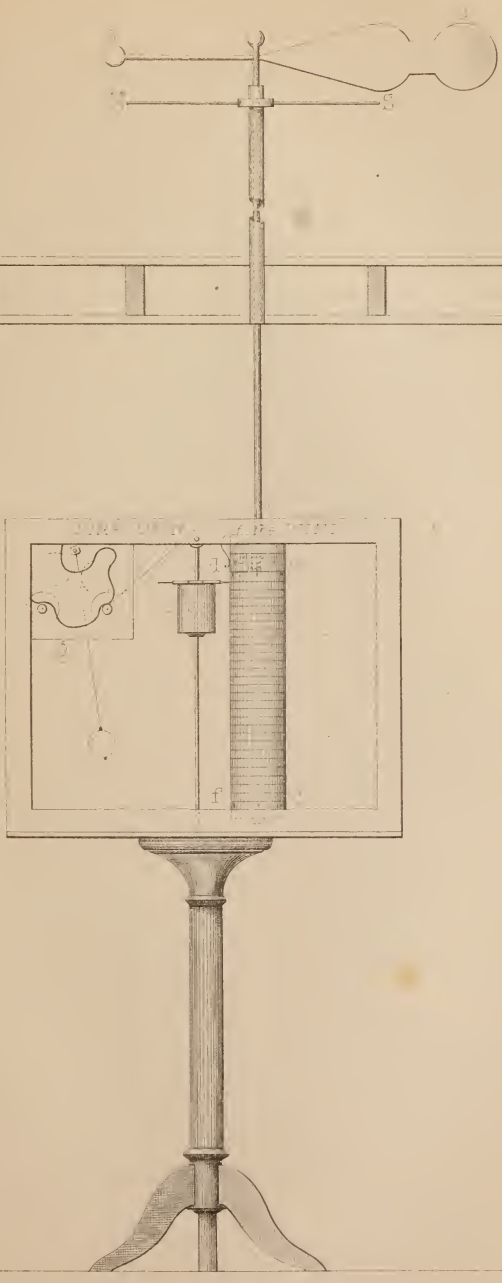
To the lower end of the shaft thus made to revolve by the

cups is attached an endless screw, connected with a train of wheels, which moves a cam. The wheels are so arranged that one turn of the cam answers to fifteen miles in the movement of the wind. A pencil which rests on the edge of the cam, and bears lightly against a surface of paper, is carried from the bottom to the top of the paper by each revolution of the cam. It should be understood, that the paper is attached to a board drawn aside by a clock, at the rate of half an inch an hour. The number of times that the pencil moves from the bottom to the top of the paper, multiplied by fifteen, gives the number of miles that the wind has moved.

In Plate 4, *a*, *a*, *a*, *a*, are the four hemispherical cups, which being turned round by the wind, impart their motion to the vertical shaft, *b*, *b*, at the bottom of which is the endless screw, *c*, connected with the train of wheel-work turning the cam, *d*, *d*. At *e*, is seen the end of the pencil resting on the edge of the cam; *f*, *f*, is the sheet of paper attached to the board, *g*, *g*, which is drawn aside at the above mentioned rate by the clock, *h*.

V.—*Pencil Register of the Force of the Wind.*

This instrument consists essentially of a cylindrical metal drum, suspended by a chain from an unyielding frame or support, and exposed to the action of the wind, the lower end of the drum being connected by another chain and rod with a spiral steel spring, on the top of which a pencil is placed, bearing lightly on a sheet of paper, fastened to a board, which is drawn aside by a clock at the rate of half an inch an hour. When the drum is pressed upon by the wind, it is pushed in the direction toward which the wind is blowing, and pulling upon the spring causes the pencil to make an upward trace upon the paper. The force necessary to draw the pencil up-



ward to any given point is determined by direct experiment, and expressed in pounds weight.

In Plate 5, *a*, *a*, is the metal drum, made of tin plate; it is two feet in height and one foot in diameter, suspended by a chain, *b*, to a strong iron support, *c*, *c*, on the roof of the observatory; its lower end is connected by a chain and rod, *d*, *d*, with a spiral spring, *e*, *e*. On the top of this spring, at *f*, is the pencil; it bears against a sheet of paper, *g*, *g*, fastened to a board drawn aside by a clock, *h*, at the above mentioned rate. When the wind blows, the tin cylinder is forced into some other position, as shown in the dotted figure, *á*, *á*, and the pencil is drawn upwards. The more violent the wind, the further will the tin cylinder be pushed aside, and the higher the pencil be drawn.

DESCRIPTION OF THE REGISTERS PRODUCED.

A specimen of the daily registers of the barometer, and of the dry and wet bulb thermometers, is given on Plate 6. It is reduced to about one-fourth of the original size, to suit the page of this report. The upper figure represents the movements of the barometer for the day (December 18th), the lower one those of the two thermometers. They are tracings by a pantagraph of the photographic register, obtained as previously described.

From this it will be seen, that at nine o'clock on that morning the barometer was falling, and continued so to do till a quarter past four. It remained very low until about half past eleven that night, when it commenced rising, and continued to do so very steadily until nine o'clock on the following morning. Its lowest point was reached at about half past eight.

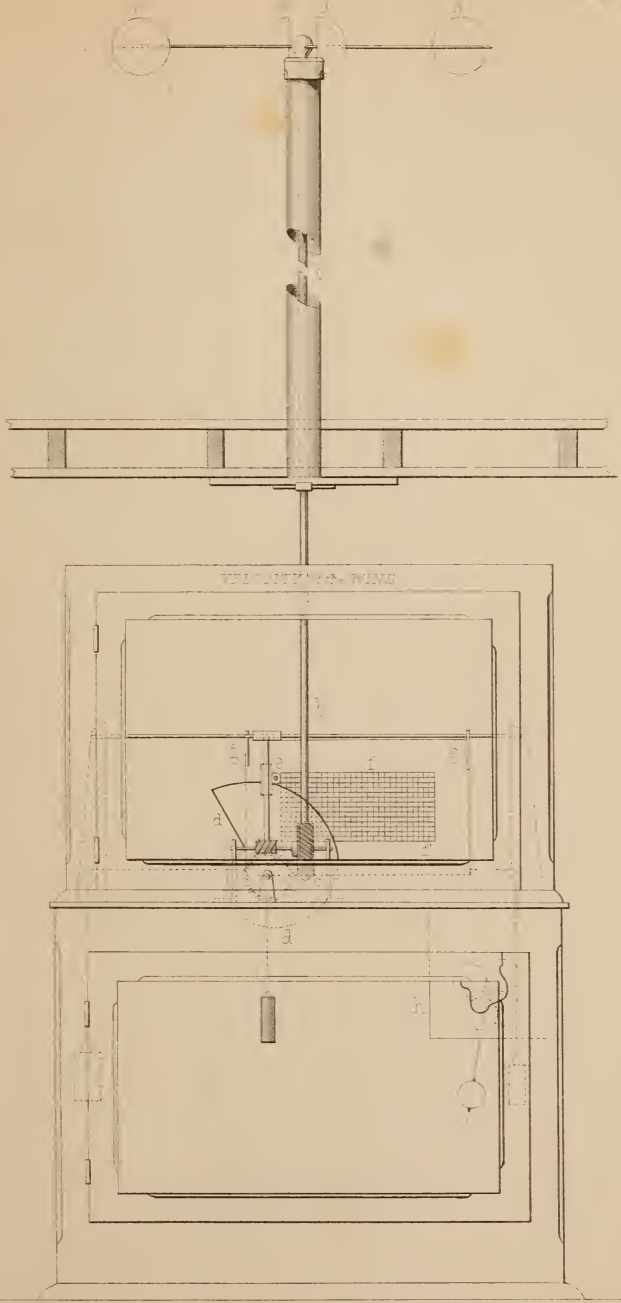
The registers of the thermometers show, that the dry and

wet bulb moved closely together, from nine in the morning to a quarter past four in the afternoon, there being a difference of about a degree between them. At that time, though night was coming on, they both began to rise rapidly, the wet bulb, however, not moving so quickly as the dry bulb. They both reached their maximum at the time, half past eight, when the barometer was at its minimum, then they commenced to fall rapidly, and continued so to do until about half past eleven.

The direction of the wind for the same day is given in the reduced Plate 7. This shows that from nine in the morning until about half past four in the afternoon, the wind was very steadily from the N. E. At that time it began to veer eastwardly, and continued so to do until about five minutes before eight, when it suddenly moved round to the south. Again, a few minutes before ten, it made another sudden movement, veering to the N. W. From six o'clock until eleven, with the exceptions that have been specified, there was very little motion in the air, but after eleven o'clock violent agitations occurred, the vane repeatedly swinging completely round. These tempestuous movements were not ended at nine o'clock on the following morning.

In like manner, the register of the Force of the Wind for the same day is represented in Plate 8. It commenced freshening in the morning, and at one time reached a pressure of twenty-two pounds on the square foot, but at quarter past four it began rapidly to decline. Soon after six there was a perfect lull, which continued until eleven, when the force once more steadily increased, with many violent oscillations, reaching at one time more than eighteen pounds on the square foot, and from that it gradually declined.

In Plate 9 we have a register of the velocity of the wind for



DRAPER'S SELF-REGISTERING ANEMOMETER
for the
VELOCITY of the WIND.

the same day. From nine in the morning until a quarter past four in the afternoon it traveled through one hundred and ninety-five miles. Its speed was then reduced, so that from that time until six o'clock it had traveled only about thirty-seven miles. In the five hours following, that is, from six until eleven o'clock, so slow was its rate of motion, that it had made only thirty additional miles. Then it abruptly and rapidly increased, so that by nine o'clock on the following morning, it had made two hundred and forty miles.

Plate 10 gives a similar register of the time, rate and quantity of rain that fell on the same day. The rain commenced at a little before eleven in the morning, and at a rate sometimes more and sometimes less violent, continued until six that evening, when it suddenly ceased. Its quantity at that time was seven-tenths of an inch. From six until midnight no more rain fell, then for half an hour there was another shower.

SUMMARY OF THE FOREGOING REGISTERS.

This report is already so lengthy, that I must abstain from entering on a minute discussion of the facts which the registers present, and shall restrict myself to pointing out their most prominent feature.

On the day in question, December 18th, 1869, there was a lull in the air from six P. M. to 11 P. M., during which almost imperceptibly the wind which had been previously very violent from the northeast, shifted round by the south to the northwest. The occurrence of this lull might have been foretold from the gradual fall of the Barometer, which reached its lowest point during the above named hours.

At the corresponding time both thermometers, the wet bulb and the dry, exhibited an extraordinary rise, due unquestion-

ably to the shifting of the wind, which leaving the northeast was now coming from the south, and so gradually veering to the northwest. The cessation of the rain which simultaneously occurred, was due to this warm southwest wind.

Now, here we have fall in the barometer, rise in the thermometers, change in the direction of the wind, change in its force, change in its velocity, cessation of the fall of rain, that is to say, many different atmospheric phenomena, which are all evidently interconnected. It is alone by the study of such facts furnished by continuously registering instruments, that correct meteorological views can be obtained, and the science be made exact.

I cannot close this report without expressing my obligations to the Commissioners, and particularly to the Comptroller, Mr. Andrew H. Green, for the enlightened and liberal manner in which they have caused to be furnished, whatever was needed to make the Meteorological Observatory in the Central Park what it now in reality is, the completest and most effective Meteorological Observatory in America.

I add hereto tables containing the monthly and annual reports for the year 1869.

All which is respectfully submitted.

DANIEL DRAPER.

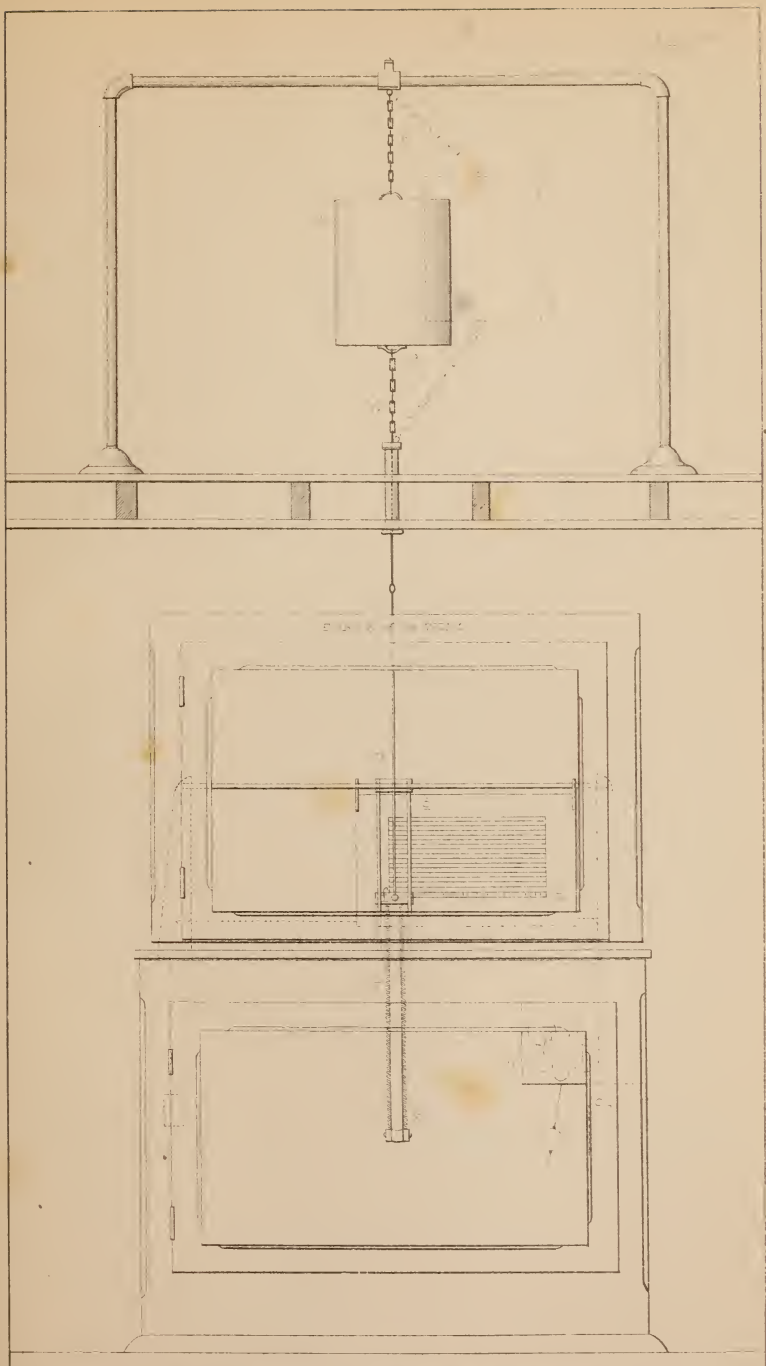


TABLE I.

Table showing the observed heights of the Barometer, monthly, for the year 1869. *Reduced to Freezing point Fahrenheit.*

Months— 1869.	Mean at 7 A. M.	Mean at 2 P. M.	Mean at 9 P. M.	Month Mean.	Maxi-mum.	Mini-mum.	Differ-ence or Range.
January.....	29.920	29.887	29.916	29.941	30.201	29.354	.847
February	29.964	29.811	29.868	29.881	30.382	28.932	1.450
March.....	29.978	29.927	29.964	29.956	30.415	29.458	.957
April.....	29.827	29.791	29.822	29.813	30.219	29.371	.848
May	29.734	29.705	29.731	29.723	30.125	29.029	1.096
June.....	29.908	29.870	29.894	29.890	30.256	29.497	.759
July	29.899	29.877	29.886	29.887	30.216	29.606	.610
August	29.974	29.941	29.950	29.955	30.312	29.703	.619
September ..	30.119	29.979	30.093	30.063	30.308	29.338	.970
October	29.897	29.849	29.878	29.874	30.315	29.207	1.108
November...	29.894	29.868	29.905	29.889	30.285	29.368	.917
December ...	30.093	30.039	30.072	30.068	30.625	29.118	1.507

Year mean at 7 A. M. 29.934
" " 2 P. M. 29.879
" " 9 P. M. 29.915

Mean for the year 29.909

Maximum for the year ..... 30.625 at 11 A. M. December 9th.
Minimum for the year ..... 28.932 at 7 A. M. February 4th.

Difference or range 1.693

TABLE II.

Table showing the state of the Thermometer, monthly, for the year 1869. *Fahrenheit.*

Months—1869.	Mean at 7 A. M.	Mean at 2 P. M.	Mean at 9 P. M.	Month Mean.	Maximum.	Minimum.	Difference. or Range.
January	32.27	38.10	34.80	35.07	54.0	6 0	48.0
February	32.58	38.87	31.62	34.47	61.0	14.0	47.0
March	32.00	41.12	31.19	34.77	60.0	4.0	56.0
April	44.63	54.70	48.44	49.24	76.0	27.0	49.0
May	55.17	63.02	56.31	57.70	85.0	40.0	45.0
June	65.37	73.59	68.68	69.28	90.0	50.0	40.0
July	68.58	77.31	72.75	72.82	92.5	61.0	31.5
August	66.56	77.03	71.70	71.75	94.7	53.0	41.7
September	61.02	70.35	65.69	75.60	86.5	44.5	42.0
October	47.14	55.24	50.33	50.89	75.5	30.2	45.3
November	37.29	43.37	40.46	40.34	61.0	26.0	35.0
December	31.94	37.45	34.89	34.71	62.0	13.7	48.3

Year mean at 7 A. M. 47.87
" " 2 P. M. 55.92
" " 9 P. M. 50.57

Mean for the year 51.45

Maximum for the year ..... 94.7 above zero at 2 P. M., August 21.
Minimum for the year ..... 4.0 above zero at 4 A. M., March 1.

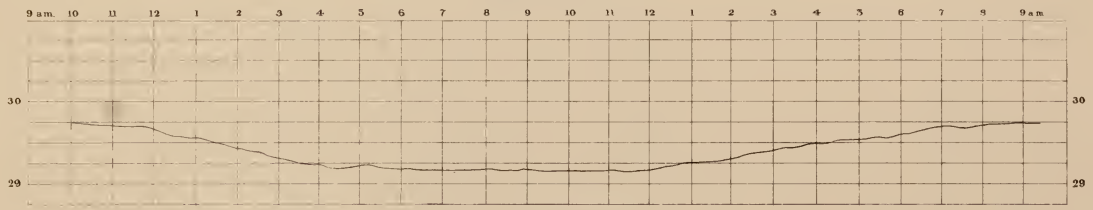
Difference or range 90.7

CENTRAL PARK
METEOROLOGICAL DEPARTMENT.

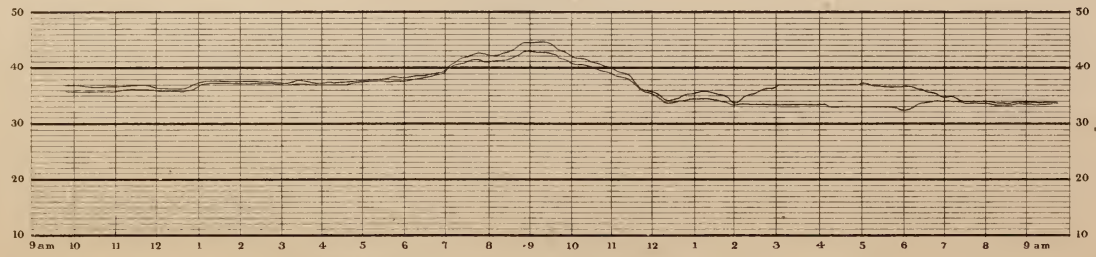
Tracing by the Pantagraph of the Photographic Register of Barometer and Thermometers.

NEW YORK, December 18th 1869.

BAROMETER



THERMOMETERS.



The upper line of the Thermometers is the Dry bulb, the lower line is the Wet bulb.

The Major & Knapp Engr. Mfg. & Lith. Co. 71 Broad N.Y.

Daniel Draper, Asst

TABLE III.

Table showing the State of the Wet-Bulb Thermometer, Monthly, for the year 1869.

Months—1869.	Mean at 7 A. M.	Mean at 2 P. M.	Mean at 9 P. M.	Month Mean.	Remarks. Difference between Dry and Wet Bulbs.	
January	30.16	34.36	32.57	32.36	35.07	2.71
February	30.50	36.15	29.70	32.11	34.47	2.36
March	29.40	37.18	28.87	31.81	34.77	2.96
April	29.10	46.65	43.03	42.92	49.24	6.32
May	48.16	56.24	52.52	52.30	57.70	5.40
June	60.08	66.02	64.25	63.45	69.28	5.83
July	63.70	69.22	66.28	66.40	72.82	6.42
August	61.94	66.58	64.57	64.36	71.75	7.39
September	57.85	61.97	60.25	60.02	65.60	5.58
October	44.24	48.51	46.66	46.47	50.89	4.42
November	34.42	38.80	39.05	37.42	40.34	2.92
December	30.52	35.47	33.50	33.16	34.71	1.55

Year mean at 7 A. M. 44.17
" " 2 P. M. 49.76
" " 9 P. M. 46.76

Mean for the year 46.90

Difference between the wet and dry bulb thermometers for the year at—

	7 A. M.	2 P. M.	9 P. M.
Dry bulb	47.87	55.92	50.57
Wet bulb	44.17	49.76	46.77
	3 70	6.16	3.80

TABLE IV.

Table showing the duration and depth of Rain and Snow, Monthly, during the year 1869.

Rain.

Months—1869.	No. of days on which rain descended.	Duration.			Depth in inches.	Total depth in inches.	Depth of water produced in inches.	Remarks.
		Days.	Hours.	Minutes.				
January	10	2	6	10	1.63	1.63		
February	8	3	1	30	4.06	5.69		
March	10	3	2	30	4.26	9.95		
April	9	....	21	15	1.39	11.34		
May	13	2	2	25	4.15	15.49		
June	15	2	13	15	4.40	19.89		
July	11	1	3	30	3.15	23.04		
August	6	....	19	45	1.76	24.80		
September	8	1	5	50	2.81	27.61		
October	12	3	13	45	6.48	34.09		
November	8	1	23	....	2.30	36.39		
December	10	1	14	15	4.20			
						40.50		
	120	24	7	10	40.50	6.23		
							46.73	Total depth of rain and melted snow.

Snow.

January	5	....	23	20	15.06	15.06	0.90	
February	6	1	17	45	9.62	24.68	2.81	
March	6	....	19	45	0.75	25.43	1.40	} Snow melted
April	2	....	9	30	.....	.....	0.30	} as it fell.
December	5	1	17	...	5.24	30.67	0.82	
	24	5	13	20	.....	.....	6.23	

CENTRAL PARK

METEOROLOGICAL DEPARTMENT.

DIRECTION OF THE WIND.

Recorded by a SELF-REGISTERING ANEMOMETER. NEW YORK. *December 18th 1869.*

The hours are marked in the vertical column; the directions in the horizontal lines.

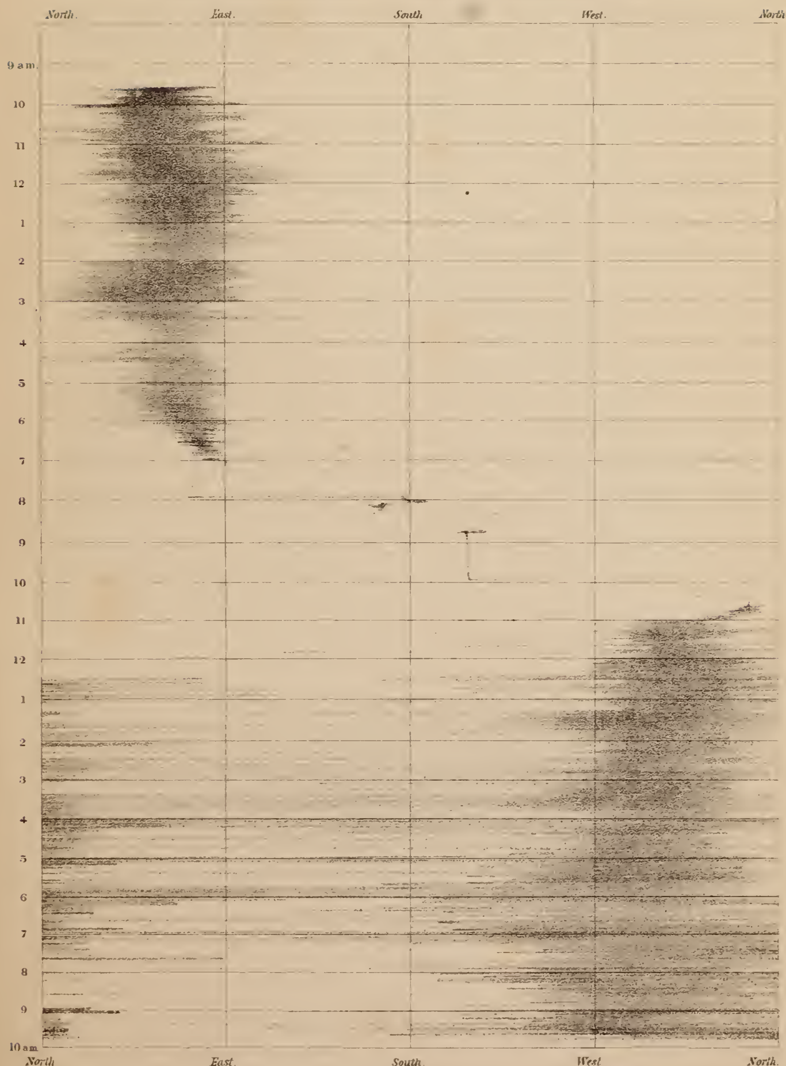


TABLE V.

Table showing the Velocity of the Wind and Prevailing Winds during the year 1869.

Months 1869.	Miles.	Daily Mean.	Hourly Mean.	Prevailing Wind.
January	5,192.0	167.48	6.97	West.
February	5,379.6	192.12	8.00	West.
March	5,869.8	189.34	7.88	North-west.
April	6,245.7	208.19	8.67	West.
May	5,573.8	179.83	7.48	West-north-west.
June	4,005.8	133.52	5.56	West.
July	4,714.6	152.08	6.33	West.
August	4,328.5	139.62	5.81	West.
September	4,810.0	160.33	6.68	West-south-west.
October	5,813.0	187.58	7.81	West.
November	6,671.5	222.38	9.26	West.
December	6,583.0	212.04	8.84	West-north-west.

The total distance travelled by the wind during the year was 65,187.3 miles.

The prevailing winds were west and north-west.

TABLE VI.

TABLE SHOWING THE POINTS FROM WHICH THE WIND CAME DURING THE YEAR 1869.

Points.	Jan.			Feb.			Mar.			Apr.			May.			June.			July.			Aug.			Sept.			Oct.			Nov.			Dec.			Totals.
	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	
N.....	2	1	1	1	2	0	3	1	3	2	4	1	2	2	0	1	0	1	0	2	0	1	0	0	0	1	0	0	0	1	1	1	0	2	0	36
NNE...	1	1	2	2	2	0	1	0	1	0	1	1	1	2	0	1	1	3	1	0	1	1	0	1	1	1	1	0	1	2	0	1	0	2	1	3	38
NE.....	2	1	2	2	1	2	1	0	0	2	0	1	3	0	3	4	2	1	2	2	1	1	0	1	2	0	0	0	0	0	0	0	1	4	1	1	43
ENE...	1	2	0	1	1	0	1	1	0	0	2	1	0	3	1	1	0	0	1	1	1	1	1	1	2	3	1	1	0	0	0	0	1	1	3	2	34
E.....	0	1	1	1	2	2	2	1	0	0	0	0	0	2	2	1	1	1	0	0	1	0	1	0	1	1	2	0	0	0	0	0	1	0	1	0	25
ESE....	1	0	2	1	3	1	2	1	1	1	0	1	1	0	1	0	1	0	0	1	1	0	1	0	0	2	2	2	0	2	1	0	0	1	1	1	32
SE.....	0	2	0	1	0	1	0	4	4	1	2	3	1	4	3	1	4	3	0	1	0	0	3	0	1	5	3	1	2	0	0	1	2	0	1	0	54
SSE....	1	1	2	0	0	1	0	1	1	1	1	0	1	2	5	0	4	3	5	3	2	6	4	5	5	3	4	5	1	2	3	2	0	2	0	1	0	77
S.....	0	0	1	0	0	0	0	1	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	0	0	0	0	13
SSW....	1	1	2	1	0	0	0	1	0	0	1	1	1	2	1	0	0	2	1	0	2	0	0	4	0	0	4	0	2	3	1	0	1	0	0	3	36
SW.....	7	3	2	1	1	1	1	0	1	1	1	1	2	1	1	4	3	1	5	6	3	1	4	1	0	1	3	1	1	1	0	7	1	1	3	2	73
WSW...	5	5	5	1	2	2	1	1	1	5	3	4	3	0	3	2	1	4	4	4	1	5	2	3	7	2	3	11	5	2	7	4	3	3	2	4	120
W.....	4	6	8	7	7	9	7	3	2	8	6	4	6	3	2	6	6	5	6	3	6	7	5	3	6	2	1	6	3	7	9	5	7	4	3	5	187
WSW ..	4	4	0	7	3	5	2	3	4	3	3	1	8	5	6	2	6	1	5	7	6	3	0	2	4	4	3	5	6	8	3	6	8	8	7	4	156
NW....	1	2	3	1	3	4	8	7	7	4	4	7	2	3	3	3	2	2	2	2	2	7	6	6	2	3	2	2	9	3	3	3	1	2	3	3	127
NNW...	1	1	0	1	1	0	2	6	3	2	1	1	1	2	0	0	0	0	1	0	0	0	2	1	1	1	0	1	0	0	2	2	2	4	2	3	44

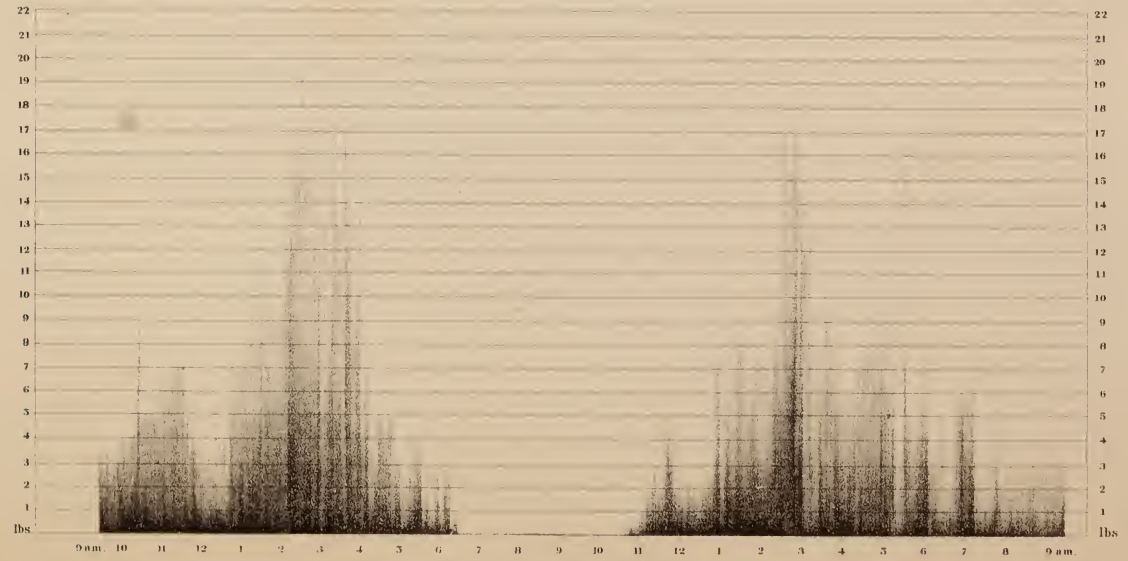
Remark.—The prevailing wind for the year 1869, was West.

CENTRAL PARK

METEOROLOGICAL DEPARTMENT.

FORCE OF THE WIND.

Recorded by DRAPER'S SELF-REGISTERING ANEMOMETER . *NEW YORK, December 18th 1869.*



The hours are marked on the bottom line;
The pounds pressure, per sq. ft. by the horizontal line.

TABLE VII.

COMPARISON OF YEARS 1868, '69.

	1868.	1869.
BAROMETER.		
Highest—inches	30.750	30.625
" " date	Feb. 24, 7 A.M.	Dec. 9, 11 A. M.
Greatest mean monthly pressure	30.165	30.068
" " " " date	February.	December.
Lowest—inches	29.076	28.932
" " date	Dec. 7, 9 P. M.	Feb. 4, 7 A. M.
Least mean monthly pressure	29.958	29.723
" " " " date	December.	May.
Mean for the year	30.054	29.909
THERMOMETER.		
Highest—degrees	95.5	94.7
" " date	July 4, 2.30 P. M.	Aug. 21, 2 P. M.
Mean of the warmest month	76.0	72.8
" " " " date	July.	July.
Lowest—degree	1.40	4.0
" " date	Feb. 23, 4.35 A.M.	March 1, 4 A. M.
Mean for the year	48.9	51.4
RAIN.		
Amount—inches	50.42	40.50
SNOW.		
Amount (as water)—inches	8.05	6.23

JANUARY, 1869.

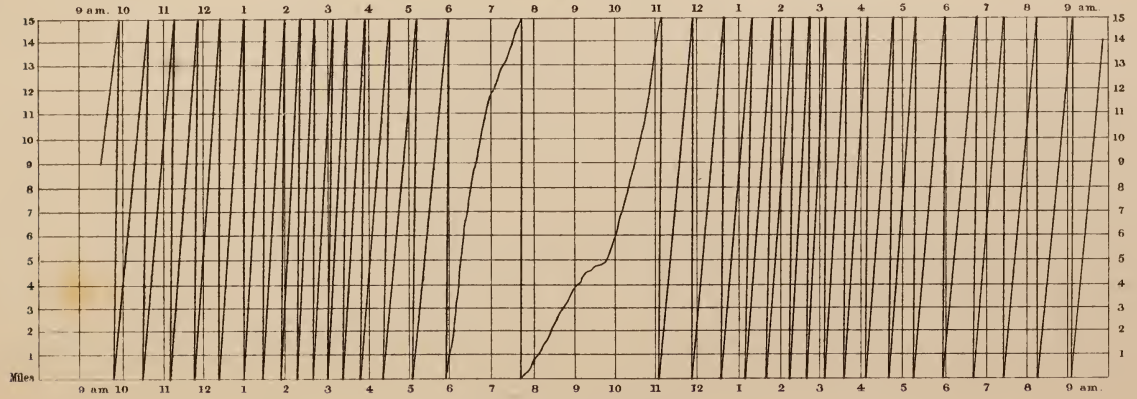
Date.	Barometer (Thermometer attached.) 7 A.M. Observed Height.	7 A.M. Thermometer.	2 P.M. Observed Height.	2 P.M. Thermometer.	9 P.M. Observed Height.	9 P.M. Thermometer.	Thermometer (Shade in open air.) 7 A.M. Dry.	7 A.M. Wet.	2 P.M. Dry.	2 P.M. Wet.	9 P.M. Dry.	9 P.M. Wet.	Wind. 7 A.M. Direction.	2 P.M. Direction.	9 P.M. Direction.	Velocity in miles for 24 hours, ending at 2 P.M.	Clouds 7 A.M.	2 P.M.	9 P.M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.158	43.5	29.940	38.5	30.070	30	28.5	28.5	25	25	18.5	18.2	ENE.	ENE.	NNE.	197.8	10	10	10	12 M.	9 P.M.	.75	9.00
2	30.176	32.5	30 128	40.5	30.064	42	20.5	19	24.7	24.2	27	27	NE.	E.	E.	252.2	8	10	10	5 P.M.	10 P.M.	.03	
3	30.064	38.7	30.114	48	30.176	47	30	29.2	35	32.7	33.5	32.2	WSW.	SW.	SW.	65.0	9	8	10	7.30 P.M.	12 P.M.		
4	30.150	42.5	30.048	48	29.936	49.5	34	32.2	34.7	34	35	34.7	SSW.	SSE.	ESE.	83.3	10	10	10	0h.0m. A.M.	7 A.M.	.18	
5	29.588	47.2	29.548	52.5	29.752	52.5	38	37.2	42.5	41	39.2	34.7	WNW.	W.	W.	45.3	10	8	0	8 A. M.	12 P.M.	.05	
6	29.933	44	30.012	50.5	30.064	49.5	34.2	31	37.7	33.5	37.5	34	W.	WSW.	SSW.	208.6	4	2	0				
7	30.122	46	30.112	55	30.152	57.5	34.7	31.7	47.7	41.2	45	41.5	SW.	SW	WSW.	186.8	2	1	0				
8	30.148	51.5	30.126	60	30.148	58.5	40	37	54	47	41.5	40	SW.	WSW.	S.	146.2	3	4	0				
9	30.040	51	29.914	53	29.803	61	37.5	36	47.7	45	47	46	ESE.	SE.	SSE.	46.0	5	5	8				
10	29.734	57	29.938	53	30.172	50	43.5	42	42.5	36.5	35.5	31	WNW.	NW.	NW.	166.0	8	1	0	3.30 A.M.	6.30 A.M.	.01	
11	30.258	48	30.032	48	29.628	44.5	30	27.5	32.7	31	33.7	33.7	NE.	ENE.	NE.	195.5	8	10	10	10.40 A.M.	12 P M.		
12	29.398	45	29.740	50	29.972	46	37	35.5	35.7	31.7	29	28.5	WSW.	WNW.	NW.	356.0	10	9	9	0h.0m. A.M.	6.30 A.M.	.85	
13	30.218	43.5	30.264	52	30.256	52.5	28	25.2	38	33.5	35.2	31.7	WNW.	WNW.	WSW.	249.2	1	3	0				
14	30.152	45.5	30.096	56.5	30.092	58	32	30	42	36	40	29.2	SW.	W.	SW.	141.5	0	2	0				
15	29.932	54	29.756	54	29.702	53.5	40.5	37.2	41.5	39.2	39	38	SW.	W.	W.	93.2	9	10	10	11.30 A. M.	4 P.M.	.04	
16	29.828	45	30.028	50.5	30.182	49.5	32	30	37.7	32.5	33	29.7	N.	NW.	NW.	131.0	9	0	0				
17	30.196	49	30.128	50.5	30.162	56	29	26	35	31.2	32.5	31.7	W.	NE.	NE.	76.4	1	8	10	3.30 P.M.	9 P.M.		.06
18	30.162	42	30.116	43	30.080	43	29	28.7	28.7	27.7	26	26	NNE.	NNE.	NNE.	170.9	10	10	10	9.30 A.M.	12 P.M.		
19	30.072	42	30.022	50	30.018	50	26.5	26	33.5	30.2	34.2	31	N.	W.	W.	149.2	8	4	8	0h.0m. A.M.	6 A.M.	.15	6.00
20	29.776	47	29.678	52	29.812	48.2	30.2	28.5	36.5	34	37	36	W.	WSW.	W.	124.8	10	8	9	9.30 P.M.	9.50 P.M.		Very slight.
21	29.860	46	29.766	55	29.716	55	30	28.7	41.5	36	36.5	34	SW.	SSW.	WSW.	285.5	5	2	1				
22	29.858	46	30.034	51	30.100	44	27	23.5	17.5	16	17	17	NNW.	N.	N.	233.0	7	7	0				
23	29.932	49	29.794	51.5	29.742	53	20	19	38.5	36	38.5	35	SW.	SW.	WSW.	173.0	0	0	0				
24	29.892	47	29.690	61	29.572	54	34.5	33	48	40.5	59	37	WSW.	WSW.	SSE.	251.7	0	0	7				
25	29.626	51	29.894	55.5	29.986	50	38	33	31	25.5	21.5	19.5	WNW.	WNW.	W.	172.7	5	2	0				
26	30.088	37	30.134	48	30.208	51	18	15.5	26.7	23	27.7	23.5	WSW.	WNW.	W.	278.6	0	7	0				
27	30.182	33	30.082	57.5	29.972	55	23	21	40	35	39	36	W.	WSW.	SSW.	139.3	8	5	10				
28	29.856	49	29.942	62	30.122	61	35	32	47	41	42	37	SW.	W	W.	80.0	2	5	0				
29	30.132	52	30.012	60.5	29.912	60.5	36	33	47.5	44.5	44.5	41	WSW.	SE.	ESE.	42.4	0	2	9	11.40 P.M.	12 P.M.		
30	29.633	53	29.598	61	29.712	59	47	46	54	50	44	39	SSE.	W.	WSW.	59.4	10	0	1	0h.0m. A.M.	6 A.M.	.47	
31	29.798	56	29.884	52	29.996	50.2	37	31	36.7	30	30	26	NW.	NNW.	W.	301.5	8	5	2				

CENTRAL PARK

METEOROLOGICAL DEPARTMENT.

VELOCITY OF THE WIND

Recorded by DRAPER'S SELF-REGISTERING ANEMOMETER. NEW YORK, *December 18th 1869.*



The hours are marked by the vertical lines.
The distance travelled in miles by the horizontal lines.

The Major & Knapp Engr. Mfg. & Lith. Co. 21 Broad N.Y.

Dewitt Draper del.

FEBRUARY, 1869.

Date.	Barometer (Thermometer attached.)						Thermometers (Shade in open air.)						Wind.				Clouds			Rain and Snow.			
	7 A. M.		2 P. M		9 P. M.		7 A. M.		2 P. M.		9 P. M.		7 A. M.	2 P. M.	9 P. M.								
	Observed Height.	Thermometer.	Observed Height.	Thermometer.	Observed Height.	Thermometer.	Dry.	Wet.	Dry.	Wet.	Dry.	Wet.	Direction.	Direction.	Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	7 A. M.	2 P. M.	9 P. M.	Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.236	41	30.336	52	30.402	50	25	23.5	33	31.5	26	24	WNW.	ESE.	W.	268.2	0	0	2				
2	30.440	43	30.442	51	30.361	42	22	20.5	34	30.5	28	27	N.	NE.	NE.	24.0	10	10	10				
3	29.904	43	29.466	44	29.184	41	35	34.5	35	35	36	35.5	ESE.	ENE.	NE.	89.0	10	10	10	1 A. M.	12 P. M.		1⅛
4	28.982	47	29.132	49.5	29.316	40	38.2	37	38.2	27	21	19	W.	NW.	NW.	117.5	10	7	10	A. M.	7 A. M.	1.55	Slight.
5	29.500	36	29.622	41.5	29.864	35.5	22	20	22	23	24	22	WNW.	NNW.	NW.	403.9	10	8	0	6 A. M.	6.30 A. M.		
6	30.086	34.5	30.026	45.2	30.117	46	26.5	22.5	40.2	39.5	34	29	WNW.	NW.	WNW.	237.6	1	8	0				
7	30.206	40	30.286	45	30.409	43.5	33	29	36	31	23	21	WNW.	N.	NW.	121.0	4	0	0				
8	30.399	39	30.290	51	30.332	38	25	22.5	40	35	34	32	NNW.	SW.	W.	64.5	0	7	10				
9	30.172	49	30.092	49.5	30.021	47	37.5	35	38.2	36.2	33.5	33.5	W.	ESE.	E.	16.1	9	10	10	11.15 A. M.	12 P. M.		
10	29.898	45	29.914	44	30.169	43	36	36	38.5	38	36.5	36	NE.	NNE.	W.	143.3	10	10	10	8 P. M.	3.15 P. M.	.85	
11	30.048	48	29.966	54	30.093	51	39	38.5	46	41	37.5	36.5	WSW.	NW.	WNW.	94.3	10	2	0	A. M.	4 A. M.	.05	
12	30.268	52	30.200	56	30.117	55	36	33.5	47	44	40	38	WNW.	W.	W.	210.5	2	0	0				
13	30.062	54.2	29.980	63.5	29.996	58	40	37	61	51	48	44.2	W.	WSW.	W.	221.6	2	0	0				
14	30.032	55	30.062	55.5	30.044	51	42	38.5	41	38.2	35	35	NNE.	E.	E.	200.0	7	9	10	8 P. M.	12 P. M.		
15	29.606	44	29.468	57	29.426	55	35	35	42.5	42	32	30	ENE.	N.	W.	358.4	10	10	0	A. M.	10 A. M.	2.60	
16	29.546	51	29.538	55	29.577	48	37.5	31	44	37.5	35.5	28	WNW.	WNW.	W.	184.6	2	9	10				
17	29.668	49	29.586	56.5	29.387	53.5	34	29	45.5	39	33.5	30	W.	W.	WSW.	312.5	6	10	0				
18	29.244	50	29.334	56	29.385	52	36	34.5	41	36	30	28	SW.	W.	WSW.	197.8	10	8	0	A. M.	8.30 A. M.	.54	2
19	29.478	46	29.528	58	29.963	50	35	32	41.5	39	30	26	SSW.	W.	SW.	190.3	9	7	0	7.30 A. M.	11 A. M.	.06	½
20	30.048	44	30.107	58	30.052	43	32	29	38.7	35	35	32	SE.	ESE.	SE.	129.1	8	8	10				
21	30.022	46	30.008	53	29.951	51	33	30	40.2	40	34.5	34	NNE.	E.	ESE.	93.1	1	10	10	2 P. M.	12 P. M.	.02	
22	29.836	49	29.820	60	29.792	58	42.5	42.2	49.5	49.5	38	38	W.	WNW.	W.	62.5	10	10	10	A. M.	12 P. M.	.32	
23	29.408	51	29.146	51	29.538	49	35.5	35.5	43.5	43.5	32.5	29.5	NE.	W.	WNW.	168.0	10	10	9	A. M.	2.30 P. M.	.22	
24	30.026	39	30.070	52	30.138	47	29.2	26	38	32	27	24	W.	W.	WNW.	443.4	0	0	0				
25	30.434	39	30.414	52	30.356	49	26	23	38.2	32.2	32	31.2	WNW.	WSW.	SSE.	237.1	0	2	9				
26	30.068	43	29.742	46	29.608	48	34	34	33	33	31	30	E.	NNE.	NW.	150.5	10	10	8	6.30 A. M.	5.45 P. M.	.66	6
27	29.656	41	29.704	50	29.958	43	28	28	31.2	29.7	21.5	21.2	W.	W.	W.	312.0	3	4	0				
28	30.064	32	30.130	42	30.152	33	17.5	17	25.2	23	16.5	16.5	NW.	WNW.	WNW.	328.8	0	0	0				

MARCH, 1869

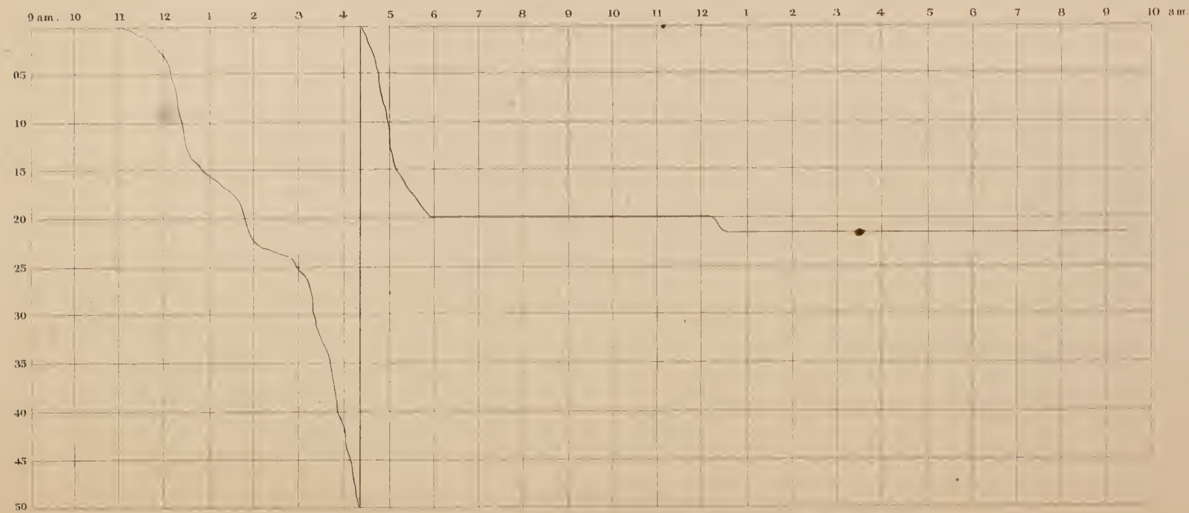
Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	Barometer 7 A. M. Thermometer.	Barometer 2 P. M. Observed Height.	Barometer 2 P. M. Thermometer.	Barometer 9 P. M. Observed Height.	Barometer 9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.150	33	30.066	52	30 041	44	14	14	26.2	24	18	17.7	NW.	NNW.	NW.	100.4	0	0	2				
2	29.848	38	29.752	54	29.822	40	20	18.5	36	35.5	19	18.7	W.	E.	NW.	72.0	4	10	0	8.45 A. M.	3.30 P. M.	.02	Very slight.
3	29.942	44	30.084	61	30.149	54	34.5	32	43	36.5	28	24.5	W.	NW.	S.	77.6	7	4	2				
4	29.972	48	29.856	55	29.928	37	37	35.5	44	43	19	18.7	SW.	W.	NW.	77.0	10	10	0	7.15 A. M.	3 P. M.	.10	With snow.
5	30.074	28	30.062	51	29.997	38	10.5	9.7	25	23	12	12	NW.	NW.	S.	392.7	0	0	0				
6	29.742	37	29.689	55	29.914	39	23	23	36	32	20	18	NW.	WNW.	WNW.	60.3	10	8	0	5.30 A. M.	10 A. M.	.03	
7	30.292	31	30.364	41	30.437	38	20	18	26	24	21	20	WNW.	WNW.	WNW.	355.6	0	0	0				
8	30.196	37	30.190	52	30.214	43	27	24.5	37.5	35.7	24	22	W.	NW.	W.	206.7	9	5	0				
9	30.222	41	30.286	62	30.164	52	33	30	46	39	32	30	W.	ESE.	ESE.	51.6	0	0	0				
10	30.016	45	29.708	54	29.503	52	38	38	46.5	46 5	47	46.5	E.	SSE.	S.	184.9	10	10	5	1 A. M.	8.45 P. M.	1.06	
11	29.982	49	30.000	47	30.045	45	33	28.5	37	32	28	26	NW.	NNW.	NNW.	330.1	0	3	6				
12	28.942	40	29.912	51	29.892	52	26.5	23.5	38	35	31	29.5	NNW.	W.	WSW.	156.7	10	2	10				
13	29.854	54	29.800	59	29.862	54	38.5	33	52	44	33	30	WSW.	W.	W.	164.2	0	1	0				
14	29.912	48.5	29.822	60	29.867	48	37	35	48	43	40	35	N.	S.	NNW.	160.3	2	0	0	3 A. M.	3.45 A. M.	.02	With snow.
15	29.882	40	29.990	43	30.183	36	30	30	29	28.7	25	23	NE.	N.	N.	238.4	10	10	0	4.15 A. M.	2 P. M.	.18	With snow.
16	30.348	39	30.298	53.5	30.258	50	27	23.5	38.5	35.5	25.5	24	NW.	NNW.	SW.	196.4	0	0	10				
17	30.186	44	30.084	57	30.146	52	33	29	42.2	7.2	31	27	W.	SW.	N.	112.3	0	2	0				
18	30.206	42	30.214	50	30.242	47	28	24	36.2	31	24	20	NW.	NW.	NW.	230.6	0	2	0				
19	30.254	42	30.196	60	29.952	50	34	28	42	37	33.5	33.5	NW.	SE.	SSE.	122.2	0	10	10	7 P. M.	12 P. M.		
20	29.500	44	29.504	58	29.758	53	37	36.5	48	43	36	33	E.	NW.	NW.	137.2	10	3	0	A. M.	8 A. M.	.28	
21	30.002	42	30.142	43.5	30.332	38	26.5	23.5	29.2	26	21	18	NNW.	NNW.	NNW.	288.3	0	0	0				
22	30.458	35	30.462	46.5	30.082	41	21	18	35	32	30	27	N.	SE.	SE.	175.3	0	2	10	11.30 P. M.	12 P. M.		
23	29.862	45	29.900	54	30.045	51	40	40	39	37	32	26	ESE.	NNE.	NW.	273.1	10	10	0	A. M.	M.30	.95	
24	30.162	50	30.142	56	30.312	50	35	30	50	43	36	31	W.	NW.	NW.	238.5	0	4	0				
25	30.406	49	30.426	60	30.430	50	33	29	46	38	35	33	NNE.	S.	SE.	97.9	0	0	4				
26	30.298	49	30.152	58	30.068	60	38.5	38.5	47	47	47	47	ESE.	SE.	SE.	130.1	10	10	10	5 A. M.	12 P. M.		
27	29.952	64	29.962	69.5	30.062	61	53	46	60	51	48	42	WNW.	WNW.	N.	247.3	0	4	0	A. M.	2 A. M.	.78	
28	30.152	59	30.126	69	30.042	57	41.2	36	55	50	47	45	N.	SE.	SE.	138.1	0	10	10	7.30 A. M	12 P. M.		
29	29.862	50	29.608	43	29.462	44	39	39	38.5	38.5	40	40	ENE.	ENE.	NNE.	204.0	10	10	10	A. M.	8.30 A. M.	1.15	
30	29.422	50	29.416	60	29.466	56	40	40	52.5	45.5	46	43	W.	NW.	WNW.	277.0	10	9	10	3.30 P. M.	8.15 P. M.	.04	
31	29.546	54	29.650	59	29.786	57	44	38	45.5	39	38	34	NW.	NW.	WNW.	373.0	9	9	0				

CENTRAL PARK

METEOROLOGICAL DEPARTMENT.

TIME, RATE, AND QUANTITY OF RAIN.

Recorded by a SELF-REGISTERING PLUVIOMETER. NEW YORK, December 18th 1869.



The hours are marked on the horizontal line, the depth of the rain in decimals of an inch on the vertical line.
Height of the instrument above the ground, 60 feet

APRIL, 1869.

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	29.821	52	29.800	57	29.806	56	34	30	47.5	40.2	42	37	NNW.	N.	N.	377.0	0	5	10	8.30 P.M.	10.30 P.M.	.01	
2	29.816	55	29.728	50	29.668	50	38	35	43	37	41	40	N.	ENE.	NNW.	108.4	8	9	10	4.15 P.M.	11 P.M.	.43	
3	29.772	54	29.798	63	29.892	49	38	32	40.2	34	41	38	W.	NW.	NW.	267.8	8	8	10				
4	29.842	44	29.746	55	29.772	52	29.5	26	31.5	27	30	27	WSW.	WSW.	W.	256.6	0	6	0	11.30 A.M.	4 P.M.		Slight.
5	29.756	48	29.676	57	29.638	54	36	30	50	43	45	40	WSW.	WSW.	SW.	374.0	0	8	4				
6	29.628	56.5	29.622	61	29.782	58	44	40	53	45	42	37	WSW.	W.	WSW.	349.2	0	2	0	11.30 A.M.	2 P.M.	Very slight.	
7	29.786	59	29.752	56	29.812	54	36.5	31	43.5	41	39	34	SW.	WNW.	W.	93.5	4	10	0	0.30 P.M.	5.30 P.M.	.30	With hail and snow.
8	29.876	54	29.800	65	29.892	57	36	33	51.5	43	41	36	W.	W.	NW.	154.2	0	8	0				
9	29.940	54	29.932	69	29.986	54	33	27	47	39	36	30	W.	NW.	NW.	189.3	0	3	0				
10	30.016	53	29.982	59	30.008	54	34	29	47	38	41.5	37	W.	NW.	NW.	295.7	0	8	0				
11	29.992	56	29.922	59	29.930	56	35	32	40.2	35	38	32	NW.	ENE.	NW.	118.0	8	0	0				
12	29.908	52.5	29.842	62.5	29.928	58	38	32	48	42	42	38	NW.	NNW.	NNE.	62.1	0	8	0				
13	29.886	50	29.882	58.5	29.942	55	32	28	44.5	39	40	34	NW.	N.	W.	27.2	0	8	0				
14	30.028	55	30.038	57	30.144	54	35	30	45.5	37.5	41	35	WNW.	N.	NW.	131.2	0	6	0				
15	30.282	52	30.250	66	30.198	58	38	31	53.5	45	49	44	WNW.	W.	WSW.	129.9	0	0	0				
16	30.232	63	30.158	68.5	30.062	63	49.7	40	67	53	55	45	WSW.	S.	SSW.	135.6	0	0	0				
17	29.832	61	29.846	71	29.982	66	50	44	56.7	50	53	48	SSE.	W.	WSW.	222.1	8	4	0	10.45 A.M.	1 P. M.	.04	
18	30.042	66	30.052	72	29.916	64	51.5	43.5	70.5	62	56	46	WSW.	SW.	SE.	249.8	0	0	3				
19	29.832	62	29.750	76	29.826	70	56	54	76	68	66	57	NE.	WSW.	S.	119.9	9	7	3				
20	29.814	68.5	29.744	72	29.564	61	57	53	67.5	61	56	54	SE.	SE.	SE.	151.0	8	5	10	9.15 P.M.	10.30 P.M.	.12	
21	29.464	63	29.616	64	29.756	62	57	54	60.2	50	57	50	ESE.	W.	W.	355.5	10	4	2	5 A.M.	8 A.M.	.08	
22	29 958	60	30.096	65	30.176	60	47	40	57	47	53	48	W.	WNW.	NW.	444.0	6	0	0				
23	30.274	60	30.270	71	30.158	61	50	45	61	51	50	46	N.	SSE.	SE.	155.0	0	0	7				
24	30.016	62	29.916	73	29.848	70	59	52	73	62	63	58	WNW.	SSW.	SSW.	124.8	2	9	0				
25	29.908	63	29.936	65	30.008	61	53.7	45	56	48	53.7	47	NW.	NW.	WNW.	285.2	4	6	0				
26	29.968	60	29.946	74	29.956	68	53	45	71	60	65	57	W.	W.	WSW.	382.0	0	0	6				
27	29.962	67	29.974	74	29.839	65	62	52	71	59	60	55	W.	SE.	ENE.	184.5	6	9	9				
28	29.842	67.5	29.822	72	29.756	68	60.5	51	68	55	63.5	55	W.	WNW.	ESE.	196.9	4	4	10	10.45 P.M.	12 P.M.	.03	
29	29.624	58	29.698	58	29.866	54	53.5	52.7	44.7	43	44	40	NE.	NNE.	NE.	169.0	10	10	0	0h.0m. A.M.	2.15 P.M.	.36	
30	29.978	55	29.988	59	29.936	56	42	36	55	45	49.5	46	NNW.	N.	SSW.	136.3	7	2	0				

MAY, 1869.

DATE.	Barometer (Thermometer attached). 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	Clouds 2 P. M.	Clouds 9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	29.938	57	29.746	54	29.540	48	45.7	45	43	48	42	41	ESE.	ENE.	NE.	163.3	10	10	10	8.30 A.M.	12 P.M.	.58	
2	29.296	45	29.072	45	29.292	46	41	40	41	40	42	40	NE.	NNE.	WNW.	579.8	10	10	6	6.15 A.M. 0.15 P.M.	9.45 A.M. 3.45 P.M.	.22 .48	
3	29.364	50	29.462	59	29.584	53	43.2	38	48	40	43.7	40.7	WNW.	WNW.	WNW.	432.5	5	9	10	7.50 P.M.	9.15 P.M.	.02	
4	29.602	51	29.626	62	29.724	58	44.2	37	49	40	47.5	41.5	WNW.	WNW.	WNW.	366.0	9	5	3				
5	29.818	55	29.862	59.5	29.934	55	46.5	40	54.2	48	50	45	WNW.	N.	WSW.	265.9	4	7	0				
6	29.980	56	29.998	70	29.978	62	50.5	46	61	53	47	44	W.	E.	SE.	81.1	0	6	9				
7	30.000	59	29.984	67.5	29.992	59	47.5	43	56	51	47.5	44	NE.	SSE.	ENE.	116.1	10	10	8				
8	29.974	57	29.958	62	29.950	58	50	46	61	51	50	46	NNE.	ENE.	SSE.	97.0	4	3	2				
9	29.836	58	29.814	65	29.826	60	52.5	44	64.5	59	61	53	NW.	NW.	NW.	163.9	2	3	5				
10	29.896	62	29.898	70	29.936	62	52	46	65.5	55	58	51	WNW.	NNW.	SSE.	136.1	0	0	0				
11	29.958	67	29.912	74	29.896	73	56.5	50	74.5	64	72	65	SW.	SE.	SW.	133.6	8	0	0				
12	29.874	73	29.856	80	29.900	72	65	56	79.5	68	68.2	61	WSW.	SE.	SSW.	191.6	0	0	0				
13	29.830	70	29.758	70	29.578	66	60	55	63	59.5	60.5	60	SE.	SSE.	SE.	204.2	8	10	10	2.30 P.M. 9.45 P.M.	3.45 P.M. 10.45 P.M.	.06 .06	
14	29.504	68.5	29.464	74	29.384	64	58	49	70.5	60.5	59.5	56	W.	SE.	ESE.	215.4	0	5	10				
15	29.428	67	29.500	72	29.518	68	57.5	52	69	64	61.5	57.5	W.	N.	WNW.	51.4	5	5	8	2.30 P.M.	5.30 P.M.	.15	
16	29.588	66	29.558	60	29.546	59	62	57	57.5	54.5	55.5	52	SW.	W.	W.	266.6	5	5	8	0.30 P.M.	6.30 P.M.	.50	
17	29.618	62	29.658	65	29.664	58	53	44	60.5	50.5	53	50	W.	W.	WNW.	201.3	7	2	0				
18	29.792	60	29.822	67	29.854	60	53	46	62	54	56	50	WNW.	WNW.	NW.	236.3	0	7	5				
19	29.762	58	29.682	59	29.664	55	52.5	49	50	49.5	48.5	47	NW.	NW.	WNW.	187.6	10	10	9	9.30 A.M.	12 P.M.	.87	
20	29.782	60	29.866	65	29.962	59	55	50	63	53	55.5	50.5	WNW.	WNW.	W.	160.8	4	5	0				
21	30.012	62	29.958	67.5	29.892	56	53	46	60.5	54	50.5	49	W.	WNW.	E.	181.8	0	10	10	2.30 P.M.	12 P.M.	.27	
22	29.718	54	29.742	60	29.800	60	48	46	58.5	52	56	50	N.	NNW.	NW.	132.4	10	4	6	0 A.M.	8.30 A.M.	.19	
23	29.822	56	29.868	68	29.882	61	50	44	55	60	58	54	WNW.	NNE.	SSE.	98.0	0	5	2				
24	29.924	66	29.942	75	29.934	64	57	49	74	64	60	55	WNW.	NW.	SSE.	88.8	0	0	0				
25	29.968	70	29.934	81	29.896	74	63	56	80	69	72	66	WSW.	SSW.	WSW.	54.7	0	0	6				
26	29.844	70	29.792	84	29.952	72	67.5	57	84	74	69	65	WSW.	SSW.	WSW.	163.5	2	2	8	5.25 P.M.	7.25 P.M.	.40	
27	30.026	59	30.122	67	30.142	63	49.7	45	61	56	58	54	N.	E.	SSE.	184.6	9	2	9				
28	30.212	61	30.156	62	30.056	58	56.5	50	57.5	52	51.5	48	SSE.	SE.	E.	105.0	9	9	10	11 P.M.	11.45 P.M.	.07	
29	30.016	61	29.974	70	30.050	70	54	50	74	67	64	62	W.	W.	NE.	137.4	10	2	8				
30	30.102	65	30.118	70	30.050	64	60	58	66.5	64	60	57	NE.	ENE.	NE.	129.1	10	10	10	7 A.M.	9 A.M.	.14	
31	29.980	68	29.974	80.5	30.004	70	62	58	80	70	69	67	NNW.	SW.	SE.	48.0	10	3	10	10 P.M.	12 P.M.	.14	

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.038	76	30.018	80	30.028	78	70	64	79	70	73	70	SW.	WNW.	WSW.	193.3	7	5	10				
2	30.172	72	30.176	73	30.194	70	68	63.5	69.5	63	64	62	NNE.	NNE.	N.	91.2	9	10	10	11.40 A. M.	8.45 P.M.	.08	
3	30.236	75	30.222	80	30.172	76	66	59	82.5	70	71	66	N.	E.	SSE.	22.8	7	2	10				
4	30.146	70	30.048	75	29.926	71	63	59.5	73	69	68	67	SSE.	SE.	SE.	80.2	10	10	10				
5	29.750	71	29.675	80	29.880	73	67	63	81.5	75	66	63	SSE.	SE.	WNW.	145.2	10	7	8	4 P. M.	6.15 P.M.	.08	
6	30.074	64	30.146	69	30.204	65	60	53.5	65	61	61.5	53.5	NW.	NW.	NW.	200.0	2	4	0				
7	30.296	52	30.246	63	30.224	65	55	49	65	55	61.5	58	NE.	WNW.	SSE.	96.5	5	7	2				
8	30.120	52	30.078	62	30.208	60	56	53	57	53	55	51	WSW.	NE.	NNE.	97.0	10	8	3	{7.30 A. M. {12.30 P.M.	{8.30 A.M. {2.10 P.M.	{.03 {.30	
9	30.340	52	30.342	66	30.292	63	55.5	50.5	64	57	59	55	NW.	SSE.	SSW.	168.7	2	4	2				
10	30.144	50	30.088	62	29.976	60	54	50	55	54	58	56	SSE.	SW.	S.	159.3	7	10	4	{12.30 P.M. {6.30 P. M.	{3.30 P.M. {8.30 P.M.	{.13 {.06	
11	29.884	65	29.786	69	29.856	62	53	52	67.5	56	56.5	50	W.	W.	W.	134.8	7	8	0	4.15 P. M.	5.20 P.M.	.01	
12	29.906	63	29.898	69	29.952	68	59	52	68.5	57	65	58	W.	W.	WSW.	200.3	8	3	0	7 A. M.	7.45 A.M.	.01	
13	29.936	37	29.866	75	29.774	74	65	60	73.5	67.5	73	71	SSE.	SE.	SSE.	194.2	7	5	10				
14	29.686	73	29.622	76	28.724	75	67	66	75.5	70	74	72	WSW.	SW.	SSW.	160.2	10	7	10	3.45 A. M.	1.10 P.M.	.93	
15	29.696	72	28.680	72	29.794	70	67	65	68.5	63	66	60	SW.	WSW.	W.	203.4	10	9	0	3.45 A. M.	8.45 A.M.	.66	
16	29.938	67	29.976	70.5	30.056	69	61	54	68	59	67	60	W.	W.	WSW.	197.8	0	2	0				
17	30.158	65.5	30.212	76	30.142	74	62	54	74	62	70.5	64	WNW.	W.	SE.	144.8	0	2	0				
18	30.174	71	30.116	82	30.146	80	69	64	78	68	77	68	SW.	SE.	SE.	150.2	2	5	4				
19	30.020	78	30.024	82.5	30.054	74	76	68	82	70	72	65	W.	WNW.	NE.	109.7	7	1	0				
20	30.022	73	29.932	82	29.836	79	68	62	78	71	76	71	E.	SSE.	WSW.	121.7	3	5	9				
21	29.842	78	29.850	33.5	29.838	77	72	70	82	74.5	70.2	70	W.	NW.	NE.	126.8	5	9	10	{0h 15m A.M. {3.15 P. M.	{ 3 A.M. { 12 P.M.	{ .03 {1.50	
22	29.802	54	29.888	33	29.956	63	61.7	60	61	60.5	62.5	61	NE.	NE.	NE.	188.2	10	10	10	2 P. M.	3 P.M.	.02	
23	30.024	56	30.034	72	30.046	71	65	64.5	72	68	70.5	67	ENE.	SSE.	SSE.	92.4	10	10	3				
24	30.114	70	30.138	79	30.116	76	68.5	65	76.5	66	74	67	NE.	W.	SW.	82.2	0	2	4	3.15 A. M.	4.30 A.M.	01	
25	30.164	72	30.198	79	30.176	76	68.5	63.5	78.5	68	74	63	W.	WNW.	SSE.	100.1	4	2	10				
26	30.118	73	30.066	79	30.042	76	72.5	69.5	80	76	73	71.5	SE.	ESE.	E.	81.7	10	10	10	8 P. M.	12 P.M.	.02	
27	30.000	75	29.952	81	29.940	75	71.5	70	81	75.5	74	72	NE.	W.	W.	60.0	10	8	10	{0h 0m A.M. {4 P. M.	{ 2.30 A.M. { 11.30 P. M.	{ .42 {.25	
28	29.908	73	29.864	88	29.816	79	68	66	87	77	77	71	NW.	SW.	W.	76.0	10	5	4	5.15 P. M.	6.30 P.M.	.20	
29	29.954	77	29.932	82	29.974	81	71	65	81.7	71.7	80.7	71.5	WNW.	WNW.	W.	305.8	2	2	0				
30	29.862	78	29.700	79	29.806	65	75	69	78	73	70.5	65	SW.	WNW.	NW.	21.3	10	7	0	7.15 A. M.	8.30 A.M.	.26	

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7. A. M. Dry.	7. A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.050	65	30.048	71	30.056	68	61.5	54.	68.	58	66	59	W.	WNW.	W.	139.8	2	9	10				
2	30.038	70	29.972	78	29.924	76	63.5	58.	76.	68	71	64	W.	WNW.	W.	131.9	7	4	5				
3	29.862	72	29.786	84	29.774	82	70.	65.	84.	76	80	72	WSW.	SW.	W.	116.1	7	4	2	5.45 P. M.	6.10 P. M.	.42	
4	29.752	83	29.780	84	29.882	78	78.	71.	82.7	69	72	59.5	W.	WNW.	WNW.	298.4	1	4	5				
5	30.056	73	30.102	74	30.206	70	64.5	57.	73.	66.5	68.5	63.5	NNW.	N.	NNE.	95.2	3	2	0				
6	30.274	70	30.276	77	30.268	71	65.5	58.5	74.	66	68.5	62	NNE.	N.	SSE.	123.8	0	2	0				
7	30.262	72	30.218	79	30.148	76	63.	58.	75.	66	70.2	59	W.	SW.	SSW.	112.0	0	2	0				
8	30.126	74	30.074	81	30.032	78	65.5	60.	80.	72.5	73.2	70.5	SW.	SSE.	SSE.	217.2	0	0	0				
9	29.930	76	29.828	73	29.910	75	72.	70.	65.5	65	69.5	63	SSE.	NW.	W.	228.0	10	10	0	0.50 P. M.	2.30 P. M.	.52	
10	29.980	77	30.024	83	29.976	81	69.5	62.5	81.5	72	78	69	W.	SW.	SSW.	94.2	0	0	0				
11	29.872	78	29.856	89	29.882	81	73.	68.	88.2	76	80.5	71	SSW.	W.	NW.	242.5	2	4	3				
12	30.014	70	30.038	80	30.056	79	66.2	60.	76.	68	75	67.5	WNW.	WNW.	WNW.	191.8	0	1	0				
13	30.102	75	30.096	80	30.024	73	70.	65.	79.5	71.5	70	67	NW.	ESE.	E.	141.9	0	8	10	10.30 P. M.	12 P. M.	.10	
14	30.076	70	30.084	69	30.094	68	65.	64.	66.	64	66	64.2	ENE.	ENE.	ENE.	64.1	10	10	10	0h 0m A. M. 10.30 P. M.	2.30 A. M. 12 P. M.	.14 .04	
15	30.028	75	29.972	82	29.942	78	71.	70.	82.	76	75	72	SSE.	SW.	SSE.	85.3	10	8	10				
16	29.904	81	29.850	91	29.822	80	79.	74.	91.7	82	77.5	72	WSW.	W.	SW.	179.6	6	5	6	1 A. M. 5.50 P. M.	2.30 A. M. 7 P. M.	.01 .37	
17	29.900	79	29.940	85	29.922	80	76.5	68.	84.2	73	80.5	71	WSW.	WSW.	NW.	205.0	4	3	2				
18	29.932	77	29.922	80	29.898	78	72.	68.	76.	69	73	68.5	NW.	NW.	WNW.	79.4	8	6	4				
19	29.906	73	29.940	74	29.974	73	69.5	66.	72.	67	70.5	66.5	WNW.	NE.	NE.	107.0	9	9	5				
20	29.996	73	29.972	68	29.924	70	66.7	64.	67.	66	68	66	NE.	NE.	ESE.	114.9	7	10	9	12.40 P. M. 4.10 P. M.	2 P. M. 5.30 P. M.	.03 .01	
21	29.846	68	29.844	81	29.928	72	66.5	65.	80.	73	69	60.5	NE.	WSW.	WNW.	57.0	10	4	3	4.30 A. M.	7.15 A. M.	.64	
22	30.024	70	30.054	73	30.076	71	62.2	56.	71.	65	70.2	65	WSW.	WNW.	WNW.	288.3	2	9	0				
23	30.118	71	30.148	78	30.150	70	65.5	61.	75.2	66	69	62.5	WNW.	W	WSW.	107.7	4	2	0				
24	30.152	72	30.132	81	30.116	78	63.	58.	79.5	69	77	67.5	SW.	WSW.	SW.	167.0	2	3	0				
25	30.128	75	30.116	82	30.064	78	71.5	66.	81.2	72	75	68	SW.	SE.	SSE.	155.5	0	4	6				
26	30.108	77	30.038	77	29.984	79	73.	67.	75.2	73.5	75.5	72.5	SSE.	SSE.	SSE.	129.5	10	10	7	11.20 A. M.	4.10 P. M.	.55	
27	29.976	79	29.932	85	29.940	79	75.	72.2	83.5	75	76.5	71.5	SW.	SW.	W.	148.7	9	5	6	2.30 P. M.	3.15 P. M.	.23	
28	29.984	76	30.034	85	29.972	78	71.	68.	82.	70	75.2	69	W.	SW.	SW.	202.2	4	5	4				
29	29.864	76	29.886	79	29.912	75	71.	67.	78.	68	72.5	67	SW.	WSW.	W.	177.9	10	5	4	6.30 A. M.	8 A. M.	.09	
30	30.014	68	30.080	75	30.150	73	61.5	55.5	74.	61	70.5	60.5	WNW.	WNW.	WNW.	214.8	2	0	0				
31	30.312	70	30.348	77	30.346	72	64.	58.	75.2	62	71	63.5	WNW.	WNW.	SSE.	97.9	0	0	0				

AUGUST, 1869.

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.432	70	30.452	80	30.406	68	66.5	62	78	67	67	63	WNW.	SSE.	SSE.	59.8	0	3	0				
2	30.300	71	30.188	80	30.132	79	64.5	61	76	65	75	69	WSW.	WSW.	SSW.	79.2	0	4	5				
3	29.916	77	29.876	84	29 888	80	73.7	70	84	73.2	76.2	65	WSW.	W.	NW.	239.8	8	6	0				
4	29.906	74	29.872	80	29.858	78	69	61	77.5	62	74.7	65.7	W.	W.	W.	177.1	4	7	8	1.30 A. M.	6.30 A. M.	.36	
5	29.810	69	29.812	75	29.920	70	67.2	62.2	72	67	67.5	60.5	SSE.	NW.	NW.	74.9	10	10	0	10 A. M.	11.30 A.M.	.01	
6	30.038	60	30.072	69	30.268	68	55.5	51	66.5	55	64	53.5	NW.	NNW.	NNW.	192.1	3	4	6				
7	30.152	63	30.166	69	30.158	68	58	51.5	67	55	64	54	NW.	NW.	WNW.	150.5	0	8	0				
8	30.232	60	30.222	78	30 194	69	56.5	51 5	75.2	62	66	60	NW.	W.	SW.	126.6	0	2	0				
9	30.196	70	30.182	78	30.132	74	63.5	56	77	62	72	61	W.	SW.	WSW.	117.8	0	0	0				
10	30.086	70	30.102	80	30.064	77	65	59	80	65.5	75	65	W.	SW.	S.	194.8	0	0	0				
11	30.048	74	30.022	83	30.046	81	66.7	61	83	69	80.2	69	W.	WSW.	W.	185.5	0	4	0				
12	30.138	72	30.158	81	30 128	75	70	64	80.5	64.5	71	64	NW.	SE.	SSE.	111.7	2	3	0				
13	30.152	72	30.092	78	30.068	74	69.7	62.5	77.2	71	73.7	68	SSE.	SSE.	WSW.	106.2	4	6	0	4.15 P. M.	5.20 P. M.	.63	
14	30.112	71	30.128	79	30.106	74	68	62.5	78.7	65	73.5	66.5	NW.	NNW.	SSE.	128.3	3	5	0				
15	30.014	73	29.964	82	29.894	81	70.5	69.5	81	73	80	73	SSE.	SSE.	S.	88.0	9	7	9	5 A. M.	6.10 A. M.	.02	
																				9.45 P. M.	11.50 P.M.	.47	
16	29.898	76	29.974	78	30.038	72	74	70.5	76.2	67.2	69	63	W.	NW.	NW.	99.9	7	7	2				
																				5.45 A. M.	6.10 A. M.	.05	
17	30.076	66	30.112	69	30.114	66	62	60	67	64	62	61	NE.	ESE.	NE.	125.9	9	9	10	9.30 A. M.	12.15 P.M.	.03	
18	30.166	66	30.148	73	30.116	72	63.2	62	72	67.5	70.5	66	ENE.	SW.	SSW.	44.1	10	8	0				
19	30.104	69	30.094	82	30.046	80	67	65.5	82	74	79	72.5	W.	S.	SSW.	149.5	5	4	0				
20	30.010	75	29.982	91	29.986	85	72.2	70.5	92.5	78.5	84.5	79	SW.	W.	WSW.	190.9	8	3	0	6.45 P. M.	10.15 P.M.		
21	29.970	88	29.948	95	29.952	78	83	74	94.7	79	75.5	73	W.	SW.	NNE.	156.0	2	4	10				
22	30.032	70	30.094	74	30.132	73	67.5	65.2	72	67	71	66	N.	ENE	ENE.	141.7	0	3	0				
23	30.238	68	30.252	75	30.280	71	65.7	61	73.5	64.5	69.5	62	NNE.	E.	SSE.	73.0	3	4	0				
24	30.318	69	30.286	77	30.234	72	65.5	60	77.2	67.5	70.5	64	SSE.	SE.	SSE.	66.2	3	1	0				
25	30.194	69	30.064	78	29.940	77	67	63.5	78	69.5	76.5	68	WSW.	SSE.	SSW.	152.5	5	4	4				
26	29.988	72	30.038	79	30.062	71	68	60.5	79	66.5	69.7	60	NW.	NW.	NW.	200.4	0	0	0				
27	30.160	66	30.138	75	30.068	71	64.2	57	75	64	70.5	65	NW.	SSE.	S.	106.4	0	0	2	9.30 P. M.	12 P. M.	.05	
28	30.070	71	29.986	82	29.932	79	69	65	81.5	76	77.5	72	WSW.	SE.	W.	152.5	7	1	8				
29	29.902	75	29.914	80	29.946	76	71.5	70	78	70	74	66	WSW.	W.	NW.	224.2	8	6	5				
30	29.956	66	29.960	72	29.984	68	62	59	69	59	65.5	56	WNW,	NW.	WNW.	176.0	7	8	0			.14	
31	30.026	60	30.008	77	30.068	61	57.5	52	67	54	58	51	WNW.	NW.	NW.	237.0	0	3	5				

SEPTEMBER, 1869.

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.122	56	30.126	59	30.178	56	51	47	59	48.5	56.5	49	NW.	N.	NW.	218.0	8	9	7				
2	30.238	55	30.252	62	30.232	60	55	50	62	52	60.5	53	NNW.	NNW.	NNE.	221.5	9	9	5				
3	30.258	56	30.232	70	30.282	66	56.7	51	70.5	59	66.5	60.5	NW.	W.	SSW.	103.0	2	4	0				
4	30.270	62	30.228	77	30.220	67	61.7	56	77.5	63.2	67.5	59	WSW.	SW.	SSW.	173.3	0	0	0				
5	30.216	63	30.226	78	30.196	68	63	57	78	65	68.2	62.5	WSW.	SE.	SSW.	161.2	5	7	6				
6	30.214	65	30.212	76	30.180	73	65	63.5	76.2	70.5	73	70	WSW.	SE.	SE.	156.0	8	8	10	10.45 P.M.	12 P.M.	.04	
7	30.110	72	30 100	79	29.966	75	71.7	70	79.2	74.5	75	72	SSE.	ESE.	SE.	206.0	6	6	10	10.10 P.M.	11.30 P.M.	.09	
8	29.784	75	29.466	75	29.590	74	75	72.5	75.5	73.5	74	71.5	SE.	NNE.	SW.	258.0	10	10	8	3.30 A.M.	4 A.M.	.04	
9	29.844	64	29.906	67	29.956	65	64	60	67.5	58	65	57	WSW.	WNW.	WNW.	295.0	5	7	3	11.00 A.M.	1.30 P.M.	.18	
10	29.996	57	30.034	67	30.042	60	57	52	67.5	58	60.5	55.7	WNW.	WNW.	WNW.	114.0	5	8	2	8.30 P.M.	9 P.M.	.02	
11	30.122	58	30.128	70	30.182	69	58.2	54	75	59.7	69	61	WNW.	NW.	SW.	159.5	0	5	0				
12	30.232	59	30.284	73	30.304	67	59	56	73	60	67.7	61	W.	ENE.	SSE.	48.5	0	0	0				
13	30.360	63.5	30.400	77	30.378	69	63.5	60.5	77	63.5	69	62	W.	SSE.	SSE.	61.3	0	0	0				
14	30.422	64	30.380	73	30.306	65	63.7	60.2	73.2	64	65	58	S.S.E.	SE.	ESE.	75.2	3	0	0				
15	30.276	61	30.222	72	30.180	66	61	57	72	63	66	62	E.N.E.	SE.	SSE.	78.0	7	0	0				
16	30.124	63	30.134	76	30.138	70	63	62.5	76	67.5	70	65	W.	SSE.	SSW.	74.5	8	7	0				
17	30.218	66	30.274	65	30.302	64	66	64.5	65.2	64	64.5	62.5	W.	ENE.	E.	110.5	10	10	10	6.30 A.M.	3.30 P.M.	.73	
18	30.384	62	30.392	66	30.410	65	62	60	66.2	62	65	61	E.N.E.	ENE.	ESE.	138.0	10	10	10				
19	30.332	63.2	30.354	75.2	30.300	72	63.2	61	75.2	70	72	69	WNW.	W.	WSW.	81.2	10	0	0				
20	30.192	67	30.132	85.5	30.112	77.7	67	64.7	85.5	72.2	77.7	69	W.	WNW.	W.	185.8	0	3	9				
21	30.188	65	30.202	73	30.238	65.2	65	60.5	73	64.5	65.2	60	NE.	ESE.	E.	155.2	8	7	10	6.30 A.M.	7.15 A.M.	.01	
22	30.282	60.7	30.268	73.2	30.278	61	60.7	59	63.2	60.5	61	59.5	E.	E.	ENE.	160.8	10	10	10	12.30 A.M.	7.30 P.M.	.30	
23	30.322	61.5	30.336	68	30.380	66.2	61.5	61	68	64.7	66.2	63.5	N.N.E.	NW.	SE.	95.0	10	8	10				
24	30.422	60.5	30.424	71.2	30.388	67	60.5	60.5	71.2	64	67	62	NE.	SE.	SSE.	73.5	7	2	10				
25	30.370	62.5	30.236	71	30.210	70	62.5	61	71	66	70	66	WSW.	SSE.	SSE.	117.0	8	7	10	4.15 A.M.	5 A.M.	.05	
26	30.090	70.2	29.832	71.2	29.764	59	70.2	69	71.2	68	59	56.5	SSE.	SSE.	NW.	370.0	10	10	10	11.45 A.M.	12 P.M.		
27	29.798	52	29.930	56.2	30.066	49.5	52	48	56.2	47	49.5	42	WNW.	NW.	WNW.	392.0	8	4	0	0h.0m. A.M.	6 A.M.	1.35	
28	30.222	46.2	30.272	55.5	30.302	53	46.2	41	55.5	46	55	47	W.	WNW.	WSW.	238.0	0	6	0				
29	30.404	51	30.376	65	30.378	61.7	51	45	65	54	61.7	54.5	WSW.	WSW.	WSW.	135.0	0	0	0				
30	30.374	54.5	30.326	69.5	30.284	63.5	54.5	51	69.5	56.5	63.5	56	WSW.	WSW.	SW.	155.0	0	0	0				

OCTOBER, 1869.

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.264	54.5	30.224	74	30 208	63.2	54.5	51	74	63	63.2	59.5	WSW.	SW.	SSW.	140.0	0	0	0				
2	30.204	54.5	30.164	70	30.106	67.5	54.5	54	70	65.5	67.5	63.5	WSW.	SE.	ESE.	106.0	10	10	0	11.30 P. M.	12 P. M.	.01	
3	29.958	68.2	29.934	64.5	29.848	62.2	68.2	68	64.5	63	62.2	61.5	SSE.	NNE.	NNE.	154.0	10	6	10	0h. 0m.A.M.	12 P. M.	1.84	
4	29.430	69.5	29.316	65	29.530	56	69.5	68.5	65	61	56	54	SE.	NW.	W.	202.0	10	10	8	0h. 0m.A.M.	1 P. M.	2.06	
5	29.716	53.7	29.834	59	29.952	52	53.7	50.5	59	50.5	52	46 5	W.	NW.	NW.	299.0	7	6	0				
6	30.058	46.7	30.056	68.2	30.080	54	46.7	41	58.2	47.2	54	47.5	WNW.	NW.	WNW.	215.0	2	6	0				
7	30.188	50	30.200	60.5	30.214	57	50	47	60.5	50 2	57	52	NNW.	NW.	SSE.	89.0	0	0	0				
8	30.259	53.5	30.264	66.5	30.282	60.5	53.5	49	66.5	58	60.5	56.7	WSW.	WNW.	SSW.	63.5	0	0	0				
9	30.232	54.2	30.250	64.5	30.204	59	54.2	52.5	64.5	58.2	59	55.5	WSW.	SSE.	ESE.	58.0	0	0	10				
10	30.064	61.2	29.926	68	29.784	58.5	61.2	61	68	65	58.5	57	ESE.	W.	NNE.	173.5	10	10	10				
11	29.768	52.7	29.764	60.7	29.846	56.2	52.7	49	60.7	52.5	56.2	51.2	W.	WSW.	WSW.	166.0	2	0	3	2 A. M.	11.30 P. M.	1.27	
12	29.858	53	29.774	63	29.732	63.5	53	50	63	59.2	63.5	60	ESE.	SSE.	SSE.	183.0	8	10	10				
13	29.556	51.2	29.542	52	29.696	47	51.2	50	52	46.5	47	43	WNW.	NW.	WNW.	312.0	10	9	0	1.30 A. M	10.30 A. M.	.44	
14	29.850	42.7	29.822	55.5	29.846	57.2	42.7	40.5	55.5	47.5	57.2	52.2	WSW.	SSW.	SSW.	265.0	0	8	10				
15	29.836	51.5	29.828	61	29.832	53.5	51.5	48.7	61	52	53.5	49.5	WSW.	W.	WNW.	138.0	0	9	10	3 P. M.	12 P. M	.30	
16	29.780	48	29.764	53	29.788	46.2	48.5	43	53	45	46.2	42	WSW.	NW.	NW.	195.0	9	5	0	0h. 0m.A.M.	7 A. M.	.01	
17	29.784	40.2	29.744	57	29.826	52.2	40.2	37.5	57	49	52.2	46	WSW.	WSW.	W.	185.0	0	4	0				
18	29.940	44.7	29.950	52	30.040	45	44.7	39.7	52	43	45	40.7	W.	WNW.	W.	185.0	0	8	2				
19	30.052	44.5	29.944	48	29.940	42	44.5	41.5	48	42.5	42	38	WSW.	WSW.	WNW.	187.0	5	10	7				
20	29.982	37.7	29.966	47.5	29.996	44	37.7	34.5	47.5	39	44	37.2	WSW.	WNW.	WSW.	214.0	3	6	0				
21	30.008	38.5	29.944	51.2	29.888	47.2	38.5	34.5	51.2	45	47.2	45.7	WSW.	SSW.	W.	162.0	0	9	9				
22	29.964	45.5	30 014	56.5	30.030	50.2	45.5	42.2	56.5	49.5	50.2	46.5	W.	NW.	SSE.	118.0	2	0	2				
23	29.900	49.5	29.656	58.2	29.594	60.2	49.5	46	58.2	58	60.2	60	ENE.	SE.	SW.	117.0	10	10	7	10.15 A. M.	7.30 P. M.	.51	
24	29.790	48.5	29.932	50.7	30.092	43.7	48.5	44	50.7	44.5	43.7	39.7	NW.	WNW.	WNW.	314.0	2	4	5				
25	30.302	36	30.336	44.5	30.366	36	36	32	44.5	37	36	34	W.	WNW.	W.	181.0	0	3	4				
26	30.282	34.2	30.108	45	30.020	40.5	34.2	33	45	37.2	40 5	36.5	W.	WSW.	W.	94.0	0	2	3				
27	29.984	31.5	30.038	38	30.028	35	31.5	30	38	32.2	35	34.7	WNW.	NW.	WNW.	344.0	0	4	5				
28	29.868	36.2	29.652	43.5	29.634	42.5	36.2	36	43.5	37	42.5	37.5	SW.	WSW.	WNW.	221.0	10	10	10	4.15 P. M.	6 P. M.	.01	
29	29.634	43.2	29.642	44.5	29.650	41.5	43.2	40	44.5	40.5	41.5	39.5	WNW.	WNW.	W.	66.0	10	10	4	2.30 P. M.	5.15 P. M.	.03	
30	29.794	33.7	29.864	40	29.871	34.5	33.7	30	40	34	34.5	29.5	WNW.	NW.	NW.	286.0	2	8	2				
31	30.056	32	30.070	40.5	30.102	32.5	32	28	40.5	31.5	32.5	29.5	NW.	NW.	WNW.	380.0	0	0	0				

NOVEMBER, 1869.

Date.	Barometer (Thermometer attached.) 7 A. M. Observed Height.	7 A. M. Thermometer.	2 P. M. Observed Height.	2 P. M. Thermometer.	9 P. M. Observed Height.	9 P. M. Thermometer.	Thermometers (Shade in open air.) 7 A. M. Dry.	7 A. M. Wet.	2 P. M. Dry.	2 P. M. Wet.	9 P. M. Dry.	9 P. M. Wet.	Wind. 7 A. M. Direction.	2 P. M. Direction.	9 P. M. Direction.	Velocity in miles for 24 hours, ending at 2 P. M.	Clouds 7 A. M.	2 P. M.	9 P. M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	30.040	31	29.952	39.7	30.056	41.2	31	28	39.7	33	41.2	36.2	WNW.	WSW.	WSW.	212.0	0	7	2				
2	30.186	39	30.234	49	30.290	46	39	35.2	49	41.5	46	40.5	WNW.	NNE.	N.	143.0	0	0	1				
3	30.312	41.5	30.272	50.5	30.214	47.5	41.5	38.5	50.5	44.5	47.5	44	N.	SW.	SW.	72.0	0	8	3				
4	30.118	42.2	30.040	60	29.960	52.7	42.2	40	60	50.5	52.7	48.2	WSW.	WSW.	SSW.	200.0	0	0	8				
5	29.776	49.5	29.696	50.5	29.744	49	49.5	46	50.5	48.2	49	45.2	S.	SW.	W.	147.0	10	9	0	10 A. M.	2.15 P. M.	.02	
6	29.750	42	29.670	47.5	29.606	43.5	42	37	47.5	41	43.5	39.2	WSW.	WSW.	NW.	124.0	5	8	7				
7	29.472	32	29.421	36.5	29.528	31.5	32	29	36.5	36.2	31.5	31	W.	W.	WNW.	257.0	7	9	8				
8	29.572	30.7	29.586	37	29.700	36.2	30.7	30.2	37	36	36.2	35	W.	W.	W.	412.0	8	9	9				
9	29.782	36	29.750	42.2	29.748	38.5	36	35	42.2	35	38.5	33.2	WSW.	WNW.	W.	357.0	8	1	0				
10	29.796	31.5	29.808	41.2	29.856	38.5	31.5	29.5	41.2	35.5	38.5	33.5	WSW.	W.	W.	193.0	6	9	3				
11	29.830	33.7	29.842	43	29.888	37	33.7	30	43	35.5	37	32.2	W.	WNW.	W.	172.0	2	8	7				
12	29.966	35	29.960	42.5	30.022	40	36	30.5	42.5	35.5	40	34.7	W.	WNW.	WNW.	208.0	6	8	2				
13	30.046	36.7	30.014	42	29.952	37.5	36.7	32.5	42	40	37.5	34	WSW.	NW.	NE.	172.5	5	10	10				
14	29.864	35.2	29.838	39	29.892	34.7	35.2	33	39	34.2	34.7	32	NW.	NNW.	NNW.	163.0	10	10	10				
15	29.942	34	29.986	37	30.082	33.5	34	30	37	32	33.5	31.2	WNW.	W.	W.	179.0	5	9	6				
16	30.174	33	30.182	39.2	30.118	39	33	28.5	39.2	34.5	39	32.5	W.	WNW.	SE.	193.0	7	6	10				
17	29.552	47.5	29.400	56	29.494	42.5	47.5	46	56	54	42.5	38.5	ESE.	SW.	WSW.	327.0	10	8	0	2.30 A. M.	1 P. M.	.90	
18	29.666	36.7	29.820	41.2	29.970	37.5	36.7	32	41.2	34	37.5	33.5	W.	W.	WSW.	343.0	4	8	2				
19	30.052	33.7	30.034	48.2	29.924	48.2	33.7	29.7	48.2	44	48.2	47	NW.	SE.	E.	216.0	5	8	10	10 P. M.	12 P. M.		
20	29.392	54.2	29.564	49.2	29.700	45.5	54.2	52	49.2	44.2	45.5	43.7	SSE.	SW.	WNW.	576.0	10	8	0	0h.0m. A.M.	6.15 A. M.	.19	
21	29.854	36.5	29.906	43	30.040	38	36.5	34	43	38	38	32.7	W.	WNW.	WNW	190.0	0	7	0				
22	30.174	31.5	30.160	38	30.146	42.7	31.5	28	38	33	42.7	38	WNW.	NW.	SE.	237.0	0	3	10				
23	30.046	42	30.004	44	30.016	44.2	42	40	44	41.5	44.2	40.7	SSW.	SW.	WNW.	166.0	10	10	10	5 A. M.	10.45 A. M.	.68	
24	29.954	42.5	30.040	36.7	30.178	31.2	42.5	41	36 7	34	31.2	29	NNW.	NNW.	NNW.	192.0	10	3	0	0h.0m. A.M.	11.45 A. M.	.68	
25	30.278	26	30.262	34.5	30.268	29.2	26	25	34.5	33.5	29.2	28.2	NNW.	N.	NNW.	358 0	2	0	4				
26	30.248	27.7	30.174	39	30.126	38	27.7	27.5	39	37.2	38	35	NW.	WSW.	W.	92.0	3	8	9				
27	29.942	40.5	29.770	42	29.822	36.7	40.5	37.2	42	41	36.7	33.5	WSW.	WNW.	WNW.	117.0	9	9	3	12 M.	5.15 P. M.	.14	
28	29.956	35	30.000	39	30.052	37	35	32	39	32	37	31	W.	NW.	WNW.	349.0	3	7	0				
29	30.08	35.5	30.052	40	30.020	43	35.5	31.5	40	35 5	43	40.5	W.	SW.	SSE.	140.0	6	9	10				
30	29.890	45.5	29.800	53.5	29.668	54	45.5	44	53.5	51.5	54	52.7	SSE.	SW.	SSE.	164.0	10	8	10	6.45 A. M.	8 A. M.	.02	

DECEMBER, 1869.

Date.	Barometer (Thermometer attached.) 7 A.M. Observed Height.	7 A.M. Thermometer.	2 P.M. Observed Height.	2 P.M. Thermometer.	9 P.M. Observed Height.	9 P.M. Thermometer.	Thermometers (Shade in open air.) 7 A.M. Dry.	7 A.M. Wet.	2 P.M. Dry.	2 P.M. Wet.	9 P.M. Dry.	9 P.M. Wet.	Wind. 7 A.M. Direction.	2 P.M. Direction.	9 P.M. Direction.	Velocity in miles for 24 hours ending at 2 P.M.	Clouds 7 A.M.	2 P.M.	9 P.M.	Rain and Snow. Time of Beginning.	Time of Ending.	Amount of Water. Inches.	Depth of Snow. Inches.
1	29.798	55.7	29.936	44	30.020	35.2	55.7	43.5	44	36.5	35.2	30.5	WNW.	NW.	NW.	349.0	7	8	10	0h.0m. A.M.	1.30 A.M.	.07	
2	30.040	26	29.936	29.7	29.930	26	26	25	29.7	29.5	26	26	NNE.	N.	NNE.	231.0	7	7	10	2.45 P.M.	12 P.M.		
3	30.000	21.5	30.056	28.5	30.230	18	21.5	21.5	28.5	28.2	18	18	NNE.	NW.	NW.	150.0	10	7	0	0h.0m. A.M.	8.45 A.M.	.03	.25
4	30.234	20	30.160	29.5	29 992	36	20	20	29.5	29.2	36	35.5	NNW.	SW.	SSW.	250.0	0	10	10				
5	29.964	35	29.956	37	29.996	35	35	34.5	37	36.2	35	34.2	WSW.	W.	NE.	204.0	10	10	10				
6	29.944	29.7	29.796	27.7	29.788	20.7	29.7	29.7	27.7	27.2	20.7	20.7	NE.	NNE.	NNW.	238.0	10	10	10	6 A.M.	12 P.M.	.08	5.09
7	29.944	15	30.076	25	30.188	22	15	15	25	25	22	22	NW.	NW.	WNW.	463.0	0	0	8	0h.0m. A.M.	12 P.M.	.71	
8	30.300	25.5	30.332	32	30.442	33.7	25.5	25.5	32	30	33.7	32 2	W	W.	WNW.	154.0	8	3	2				
9	30.556	26	30.596	33.5	30.606	31	26	25.7	33.5	33	31	31	NNW.	WNW	WNW.	110.0	0	0	0				
10	30.542	17	30.388	33.5	30.274	29	17	17	33.5	33	29	28.7	WNW.	W.	W.	43.0	0	0	0				
11	30.198	34	3 19	43.5	30.184	40.5	34	33.5	43.5	37.2	40.5	36 5	W.	WNW.	WSW.	77.0	0	0	0				
12	30.092	32.5	30.026	41	30.104	38.5	32.5	32	41	38.5	38.5	36.2	WNW	SW.	WSW.	40.0	8	5	0	.10 A.M.	3 P.M.		Very slight.
13	30.194	39	30.260	39.7	30.332	31	39	35.7	39.7	35	31	29	WNW.	N.	NNW.	172.0	1	0	3				
14	30.332	26.7	30.374	39.7	30.360	32	26.7	26.7	29.7	29.7	32	31	NNW.	NNW.	NNE.	271.0	4	10	0				
15	30.312	23.4	30.258	33.2	30.190	35.7	23.5	23.5	33.2	32.5	35.7	34.5	NNE.	ENE.	ENE.	117.0	5	8	8				
16	29.940	39.2	29.760	46.5	29.884	42.2	39.2	37.7	46 5	46	42.2	42	ENE.	ESE.	W.	366.0	10	10	6	10 A.M.	3.30 P.M.	.60	
17	30.060	36.7	30.064	42	30.034	36.7	36.7	35.5	42	38.5	36.7	33.7	NW.	NNE.	NNE.	124.0	4	4	5				
18	29.818	35.2	29.304	37.2	29.148	43	35.2	33	37.2	37.2	43	41.5	NE.	ENE.	SSW.	238.0	10	10	8	11 A.M.	6 P.M.	.76	
19	29.606	34	29.718	34.7	29.894	33.2	34	33.2	34.7	34.5	33.2	33.2	WNW.	WNW.	W.	460.0	9	8	9	0h.0m. A.M.	0h30m.A.M.	.02	
20	30.094	28.7	30.128	32.7	30.264	29.7	28.7	28.7	32.7	32.5	29.7	29.7	WNW.	S W.	W.	220.0	7	10	8				
21	30.458	26.2	30.536	36.5	30.444	31.2	26.2	26.2	36.5	36	31.2	31.2	WNW.	E.	ESE.	142.0	9	8	10	9.15 P.M.	12 P M.	.01	
22	30.140	37.5	29.724	49.5	29.674	56	37.5	37.5	49.5	49	6	54.5	S ..	SSE.	SSW.	269.0	10	10	10	0h.0m. A.M.	2.15 P.M.	1.00	
23	29.953	34	30.126	36	30.284	30	34	28.5	36	30	30	30	WNW.	WNW.	WSW.	298.0	2	3	0				
24	30.460	26.5	30.494	34	30.542	31.5	26.5	26.5	34	33	31.5	31	W.	WSW.	SW.	202.0	0	0	2				
25	30.520	29	30.474	35	30.428	34	29	28.2	35	33.2	34	33	WSW.	WSW.	NW.	124.0	3	10	10	8 P.M.	12 P.M.	.04	
26	30.226	41.5	30.012	47.2	30.004	44.7	41 5	41.2	47.2	46.7	44.7	43.5	NE	NE.	NNW.	207.0	10	10	5	0h.0m. A.M.	5 P.M.	1.14	
27	30.064	43.2	29.996	45	29.916	41.2	43.2	42.2	45	42	41.2	41	NNW.	ENE.	NE.	141.0	10	10	10	5.45 P.M.	12 P.M.	.38	
28	29.712	41.7	29.588	49	29.686	40.7	41.7	41.2	49	48.5	40.7	39.7	N .	NNW	WNW.	223.0	10	9	10	0h.0m. A.M.	3.30 P.M.	.23	
29	29.816	37.5	29.852	39.5	29.900	39.7	37.5	33.7	39.5	35.5	39.7	35.5	W.	WNW.	W	249.0	8	9	10				
30	29.798	35.5	29.760	43	29.870	41	35.5	32.2	43	33.5		35.5	SW.	WSW.	WSW.	211.0	10	3	0				
31	29.992	36.7	30.058	45	30.112	42.7	36.7	32.5	46	38	42.7	37.7	WSW.	WNW.	SW.	240.0	0	0	6				

APPENDIX D.

WATERING OF ROADS.*

The subject of the watering of roads is an important one as regards the comforts of communities; it is an operation which has only been performed of late years, and the appliances have been improved upon, and are still capable of further improvement. At one time, about thirty years ago, the streets were watered by damming the gutters, and spreading the water by means of shovels; then a barrel on wheels was used, with a wooden box filled with holes, which dribbled the water the width of the cart.

Since then we have arrived at square, ugly-looking boxes, generally painted black, with iron distributors, constantly in the way, interfering with traffic, and drenching the streets, which are always in one extreme or the other of mud or dust.

That without water-carts we should be in a very great predicament, the state of the streets of the metropolis on many Sundays during the past season has made painfully evident; for on the Sabbath there are only one or two parishes in London who allow watering to be done, and the consequence is that the plague of dust is rampant.

Walking or driving through clouds of dust is very detrimental to personal comfort; and when it is stated by Dr. Letheby, in a recent report, that a very large percentage of London dust consists of organic matter of deleterious nature, so that we are liable to be poisoned, in addition to the minor inconveniences

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* Paper read before the British Association at Norwich.

of being half blinded and smothered, more importance will perhaps be attached to the object of allaying this evil, than, at a first glance, the subject may seem to deserve.

The actual damage to property caused by dust is very considerable; tradespeople's goods, which are necessarily exposed, suffer a depreciation in value to a very great extent, and are often rendered completely unsalable; and people who have been at a considerable expense in getting their houses, fronts, and doors newly painted, are often annoyed by seeing their work spoiled before it is dry.

Recreation on Sundays, when the leading metropolitan thoroughfares are not watered, is rendered unwholesome by the presence in the air of this most unsavory compound of pulverized road, detrital, and organic matter, a modicum of which is deposited in the eyes, nose, throat, and lungs, as well as over the habiliments of the wayfarers.

During the late extraordinary dry season the attention of local authorities has been particularly called to the necessity of improving this condition of affairs.

The heavy, lumbering vehicles used for spreading water in the streets and obstructing the thoroughfares have been increased in number, but their efforts have been futile, for they scarcely reach the end of a street of any length before the dust would be blowing at the part they began, so scorching was the sun, and so arid the atmosphere.

At an expense of about £100,000 the various parishes of London have been watered this season, but, notwithstanding this enormous outlay, the dust could not be laid, and it is quite evident that the time has arrived when the assistance of deliquescent salts is absolutely necessary to aid in this operation,

and from the results obtained by the use of the chlorides of calcium and sodium mixed with the water, in certain localities, there can be little doubt that they will soon be generally adopted.

A patent was taken out in September last for a compound of these well-known deliquescent salts, and for its application to the purposes of road-watering.

The proportions used are 1 lb. or ½ lb. of the mixed salts to one gallon of water; the salts are put into the cart before it is filled. The water is then laid on, and by the time the cart is full the salts are in solution.

The extraordinary dryness of the atmosphere during the past season has been exceedingly unfavorable to the development of the vital principle of the invention. The benefit the roads were expected to receive from the well-known affinity of these salts for moisture has been withheld; but, notwithstanding that drawback, the application of the salts has produced a most important effect upon the surface of a macadamized road, hardening and concreting the material in such a manner, that, when it is perfectly dry, no dust whatever arises from the passage of ordinary traffic. The light dust always found upon a dry road surface, which is usually watered with plain water, is not to be seen, the surface remaining smooth, firmly bound down, with no detritus whatever upon the surface.

In considering the economy of road-making, this state of the road is very important. There is scarcely anything for the scavenger to sweep up and take away; and what has usually been carted away by wagon-loads, as waste, remains an integral part of the road; consequently, the repairs to the

road would be much less frequent, and a considerable saving would be effected. The chlorides employed, being antiputrescent, tend to alleviate the evils arising from organic matter deposited on road surfaces. A sanitary advantage is, therefore, gained, and the economy in the water is also a favorable feature of this method of watering roads.

The water consumed in watering roads in London is about one-sixth of the daily supply for all purposes; and as by the introduction of the chlorides so much less water is required, a saving of at least seventy-five per cent. would be effected, which is really an important consideration, as this water is required at the hottest period of the season, when the demands, for other purposes are more urgent than usual, and the necessity of an increased water supply is being seriously discussed.

Thus the effect produced by the use of deliquescent salts mixed with the water is not only the effectual and complete laying of the dust, but the collateral advantage of economy in labor in road-making and in consumption of water. It also obviates the necessity of Sunday labor in road-watering.

Nearly all the shopkeepers in Baker street, Portman square, have given their testimony with regard to the favorable results of the application of the chemicals in their street, which was chosen as one having a constant traffic.

They state that instead of having their shops filled with dust that they scarcely see a particle, and that, on Sundays, when other streets are smothered in dust, that they rejoice in their immunity from this nuisance.

There were certain essential conditions necessary to be attained to render the application of deliquescents universally practicable.

It was important that the chlorides used should be harmless, inodorous, and anticorrosive, and that they should be procurable in such quantities, and at such prices as to enable them to be used with a proper regard to economy, considering the large quantity which would be necessary to meet the demand likely to arise, should the method be generally adopted.

The chloride of sodium is plentiful enough, and easily obtainable in any quantity, nor is it probable that the price would ever become so enhanced as to prevent its use for this purpose.

The chloride of calcium is a peculiar article which has never been in great demand, but which can be manufactured to any extent, and at very reasonable prices.

There is, therefore, no practical difficulty in the way; the application has been tested under the most unfavorable circumstances for an entire season, and has been completely successful in this country. There was some doubt as to the effect likely to be produced in tropical climates, but as we have had the opportunity of experiencing a tropical heat this season, it may be considered that the same result will be attained in India. The municipality of Calcutta are about to test the method in their city where the plague of dust is also intolerable, and where the damaging consequences of dust (there it is brick dust, the road being made with brick) are sometimes seriously felt.

Copy of Report to the Health Committee of the Borough of Liverpool, by the Superintendent of the Scavenging Department.

The Superintendent begs to report upon the results of the experiment made during the past watering season of the effects of Cooper's Patent Watering Salts.

The trial was made on the main line of thoroughfare through the centre of the town, viz., from St. George's to St. Luke's Church, along Lord street, Church street, and Bold street.

This line of streets may be considered as the chief line of carriage traffic for omnibusses, cars, and private vehicles, and is almost entirely macadamized road, with a small portion of paved roadway; and it may be considered to afford as extreme a test as it is possible to supply.

The result may be briefly stated under two heads, viz., in point of view, firstly of watering, and secondly of financial results.

Firstly, then, regarded as a means of laying the dust, the use of the salts has been entirely successful, and the beneficial and useful effect of water containing the salts in weak solution is beyond comparison superior to that of plain water.

The practical result may be stated to be, approximately, that two water-carts were found equal to seven water-carts under the old system, on a macadam road subject to heavy and incessant traffic. But upon paved streets one cart may be expected to do the work of five, where the traffic is only ordinary and not excessive.

Secondly, in a financial point of view, notwithstanding the saving in the labor of horses and carts, and leaving entirely out of consideration the economy of water, it appears that the salts cannot be used economically at the price at present charged, viz., £3 per ton, and this is the objection which I have made from the outset to the patentee.

I consider that, in order that the salts may be used not only with advantage, but also with economy, *i. e.*, showing a reduced expenditure on watering, the patentee should be able to supply the salts at less than £2 per ton.

This applies to Liverpool only, because the Health Committee pay nothing for the water used in watering the streets.

It is true that a reduction of seventy per cent. would be effected in the quantity of water wasted on the streets during the summer season, but of this the Water Committee would reap the benefit by having so many thousands of gallons the more available for the town supply.

There are some collateral advantages derived from the use of the salts, viz., that the road surface is kept in superior order, and a saving is thereby effected in the cleansing of the surface to the extent of about twenty per cent.

Finally, no complaints have been received of any injurious or deleterious effects produced by the salts, as to which, however, Mr. Odling, Chemist at St. Bartholomew's, has certified that they are perfectly harmless.

APPENDIX E.

STATEMENT SHOWING SUNDAY ATTENDANCE AT THE

MONTHS.	1864.				1865.				1866.			
	Pedestrians.	Equestrians.	Vehicles.	Sleighs.	Pedestrians.	Equestrians.	Vehicles.	Sleighs.	Pedestrians.	Equestrians.	Vehicles.	Sleighs.
January. ...	134,738	757	9,881	11,097	133,477	201	6,569	4,404	129,200	323	8,363	6,45
February...	68,355	1,231	14,972	.....	21,755	319	7,293	.....	71,533	486	9,403	.....
March.....	59,458	1,755	16,911	.....	38,279	1,152	16,840	.....	30,657	782	12,332	.....
April	50,245	2,631	15,552	.....	107,543	2,232	27,346	.....	73,064	1,432	32,702	.....
May	115,493	1,880	30,001	.....	58,988	1,186	17,122	.....	149,846	1,960	28,482	.....
June	74,707	1,997	16,561	.....	118,982	1,663	26,509	.....	121,849	1,025	20,297	.....
July.....	135,673	1,416	29,486	.....	171,738	1,626	31,097	.....	125,517	1,289	25,655	.....
August	55,293	549	11,400	.....	105,430	1,595	27,476	.....	127,784	954	24,184	.....
September..	51,287	576	12,962	.....	107,416	2,153	34,205	.....	153,624	1,496	37,637	.....
October	46,698	1,196	16,749	.....	90,522	1,832	32,736	.....	104,022	1,312	22,117	.....
November..	32,634	1,478	15,728	.....	40,630	1,386	24,450	.....	47,440	1,144	20,364	.....
December..	57,542	403	7,793	9,624	26,113	810	10,748	4,989	101,536	886	13,684	2
Totals....	882,123	15,860	198,590	20,721	1,021,873	16,155	262,373	9,393	1,226,072	13,080	255,220	6,47

PARK, BY MONTHS, DURING THE PAST SIX YEARS.

1867.				1868.				1869.				
Pedestrians.	Equestrians.	Vehicles.	Sleighs.	Pedestrians.	Equestrians.	Vehicles.	Sleighs.	Pedestrians.	Equestrians.	Vehicles.	Sleighs.	Velocipedes.
116,570	226	5,488	17,279	193,167	421	8,245	.....	113,090	625	14,813	6,347	.....
24,666	525	7,296	969	81,094	183	3,170	6,544	54,495	671	12,500	1,247	.....
43,639	1,305	19,822	2,746	65,473	715	12,245	.....	56,217	675	18,683	.....	.....
161,768	2,460	30,759	.....	57,082	1,254	17,441	.....	101,426	1,215	24,006	.....	400
117,252	1,666	23,982	.....	136,790	1,599	28,302	.....	106,866	904	28,720	.....	245
129,725	1,234	23,821	.....	161,734	939	30,336	.....	144,797	635	15,626	.....	.....
123,578	984	27,589	.....	105,315	875	20,462	.....	162,572	577	23,297	.....	.....
130,676	812	24,402	.....	179,695	949	23,253	.....	219,684	819	31,005	.....	.....
161,115	1,365	32,09	.....	69,369	849	20,751	.....	104,901	776	23,149	.....	5
104,791	1,285	33,094	.....	105,524	1,281	29,748	.....	89,629	807	20,272	.....	.....
30,657	929	16,966	.....	57,287	1,223	30,527	.....	52,847	668	21,188	.....	.....
25,807	749	11,791	8,322	25,374	203	4 193	2,059	18,855	216	5,554	76	.....
1,176,898	13,540	257,066	29,316	1,237,844	10,494	233,673	8,603	1,225,379	8,588	248,893	7,670	650

Table of the Number of Visitors at the Park during each month for the past seven years.

Months.	1863.			1864.			1865.			1866.		
	Pedestrians.	Equestrians.	Vehicles.	Pedestrians.	Equestrians.	Vehicles.	Pedestrians.	Equestrians.	Vehicles.	Pedestrians.	Equestrians.	Vehicles.
January.....	51,462	3,952	38,069	555,663	3,953	83,246	658,741	1,641	77,364	240,964	2,755	99,917
February.....	49,080	3,489	49,344	134,322	6,244	55,038	163,383	4,472	70,768	290,191	3,897	63,329
March.....	41,064	4,490	44,520	90,630	7,635	67,757	77,743	6,191	86,548	64,200	5,943	73,754
April.....	115,764	10,094	79,095	95,386	14,192	87,575	188,019	11,344	125,864	77,141	3,882	53,028
May.....	137,999	449	3,618	151,678	13,533	147,344	191,527	10,386	126,789	269,604	12,394	165,363
June.....	159,779	12,630	110,792	121,574	14,802	111,253	299,974	11,874	153,279	375,160	13,300	163,563
July	89,160	9,378	92,363	380,165	8,085	242,511	467,729	8,750	146,023	313,851	6,372	130,924
August.....	189,366	12,250	115,970	186,016	4,778	82,924	467,665	9,705	157,756	330,011	5,321	115,691
September	181,850	9,211	163,600	225,256	5,288	92,159	340,355	9,985	180,526	356,881	7,331	154,127
October.....	150,418	10,035	108,531	148,488	9,395	98,112	205,444	10,429	104,709	242,641	12,135	363,135
November.....	75,231	9,195	50,990	87,291	9,308	92,361	94,578	8,097	124,431	125,049	8,582	134,618
December.....	227,163	5,551	65,558	118,725	3,184	81,281	63,898	5,486	71,184	327,199	4,755	62,459
Totals.....	1,469,335	90,724	922,450	2,295,199	100,397	1,148,161	3,219,056	98,360	1,425,241	3,412,892	86,757	1,579,808

Table of the Number of Visitors at the Park, etc. (Continued.)

Months.	1867.			1868.			1869.			
	Pedestrians.	Equestrians.	Vehicles.	Pedestrians.	Equestrians.	Vehicles.	Pedestrians.	Equestrians.	Vehicles.	Velocipedes.
January	481,135	2,485	169,368	415,181	2,503	72,228	247,511	2,692	84,381	.....
February	70,501	3,956	59,065	223,403	1,717	84,293	125,121	3,204	55,869	.....
March	76,144	5,205	59,988	116,110	4,567	69,266	101,182	4,149	71,301	....
April	292,252	14,188	126,853	117,340	7,786	90,437	211,886	4,544	140,594	1,709
May	224,847	12,047	126,079	225,844	9,896	108,694	280,143	8,811	148,316	2,786
June	336,751	9,831	135,669	451,367	8,574	189,405	441,154	5,811	133,431	2,169
July	337,597	7,180	126,964	338,792	7,198	139,752	510,927	3,284	148,019	855
August	309,151	4,588	100,125	409,261	4,964	109,098	561,963	3,768	137,470	544
September	361,863	6,687	132,695	233,942	6,014	118,749	336,696	4,792	129,727	411
October	260,430	7,066	158,821	235,204	7,769	156,122	229,242	5,892	126,046	141
November	91,205	6,804	92,635	123,345	7,722	106,647	141,403	4,646	94,204	70
December	156,894	3,957	94,035	225,378	2,354	54,498	78,313	3,017	71,351	29
Totals	2,998,770	84,994	1,381,697	3,121,167	71,064	1,299,189	3,265,541	54,611	1,349,697	8,714

The largest number of Pedestrians entering the Park in any one month was, in August 561,963
The largest number of Equestrians entering the Park in any one month was, in May 8,811
The largest number of Vehicles entering the Park in any one month was, in May 148,310
The largest number of Velocipedes entering the Park in any one month was, in May 2,786
Allowing two extra for each Vehicle, the number of Visitors in 1869 was 7,350,957

Table of the Number of Visitors at each entrance of the Park for each month during the year.

PEDESTRIANS.

Months.	59th st. and 5th ave.	72d st. and 5th ave.	79th st. and 5th ave.	90th st. and 5th ave.	64th st. and 5th ave.	59th st. and 6th ave.	59th st. and 7th ave.	59th st. and 8th ave.	72d st and 8th ave.	85th st. and 8th ave.	96th st. and 8th ave.	106th st. and 8th ave.	110th st. and 6th ave.
January.....	49,352	6,480	20,006	13,424	1,190	51,406	28,3 5	54,102	13,132	518	358	421	8,869
February.....	33,661	3 401	8,827	6,431	1,153	27,261	16,459	17,302	5,515	390	346	424	3,951
March.....	23,637	4,273	6,291	5,733	1,44	18,102	15,614	18,684	2,884	792	408	491	2,831
April.....	65,093	10,763	8,682	2,457	11,197	35,615	31,795	34,315	4,947	1,156	529	730	4,607
May.....	54,271	19,679	14,379	3,668	11,700	42,502	54,559	60,438	10,522	1,011	593	869	5,952
June.....	93.951	21,563	12,979	3,034	56,131	73.563	78,676	86.09	6,692	752	619	925	6,178
July.....	116,306	22,605	17,598	5,161	62,659	71,839	100,622	92,943	11.421	533	790	1,190	7.160
August.....	76,719	34,254	15.464	5,680	49,664	88,324	103 543	145.614	11,372	1,256	768	1,429	7,873
September.....	68,248	17,959	13 380	4,773	26,329	59,989	63,190	65.149	9.406	1,054	725	1,078	5,416
October.....	67,708	10,012	7,818	3,898	19,410	37.124	32,162	40.143	4,531	725	561	756	4,3 94
November.....	43,142	7,388	5,154	2,571	20,960	16,838	19.2 3	17,199	4,13	690	436	563	3,123
December.....	22,409	4,374	3,657	1,486	17,316	8,199	7,578	8,101	2,00	522	254	407	2,007
Totals....	714,497	162,679	134,235	58,316	279,151	530,762	551,726	640,081	86,564	9,399	6,387	9,285	62,361

EQUESTRIANS.

Months.	59th st. and 5th ave.	72d st. and 5th ave.	79th st. and 5th ave.	90th st. and 5th ave.	59th st. and 8th ave.	72d st. and 8th ave.	85th st and 8th ave.	96th st. and 8th ave.	110th st. and 8th ave.	110th st. and 6th ave.
January	881	61	45	102	966	81	19	14	13	512
February	1,509	92	93	110	799	113	10	16	18	444
March	2,043	139	134	13[illegible]	1,[illegible]20	35	17	49	22	560
April	7,257	207	163	234	2,106	128	46	121	38	774
May	4,696	265	198	197	2,181	119	35	102	50	968
June	2,913	167	160	147	1,220	47	5	74	17	1,061
July	921	177	32	170	1,009	61	5	31	14	864
August	1,088	285	85	185	9[illegible]6	121	18	53	15	992
September	2,130	150	125	171	1 091	71	21	82	13	934
October	3,353	183	74	287	1.099	73	26	73	19	705
November	2,608	159	156	366	[illegible]	72	18	7	30	617
December	1,728	126	82	163	589	27	16	23	11	352
Totals	31,127	2,011	1,347	2,264	13,549	948	234	715	263	8,783

VEHICLES.

January	22,993	787	1,279	1,450	9,927	543	171	404	635	14,977
February	20,895	1,032	1,440	1,204	8,367	738	202	454	691	17,864
March	27,778	1,003	2,731	1,316	11,391	416	398	467	836	24,512
April	68,113	3,205	2,425	2,760	18,969	468	41	680	877	42,687
May	46,583	2,678	3.405	2,854	38,193	461	320	623	8[illegible]2	52,391
June	51,486	2,163	3.536	2,704	18.474	405	327	586	758	52,992
July	52.979	2,144	2,159	3,404	26,248	964	275	7[illegible]9	890	58,217
August	41,520	3,439	2,318	3,499	25,453	951	611	701	947	58,[illegible]31
September	32,642	2,12[illegible]	2,473	4,327	27,389	573	743	695	1,010	57,755
October	48,523	2,689	2,108	7,238	12,539	678	718	734	1,[illegible]54	49,7[illegible]9
November	33,187	2,448	2,590	4,793	4,627	731	444	569	8[illegible]7	44,[illegible]08
December	23,160	1,456	1,487	1,615	4,528	284	349	336	636	14 273
Totals	469,859	25,164	27,951	37,164	206,105	7,212	4,968	6,988	9,943	487,466

SLEIGHS.

Months.	59th st. and 5th ave.	72d st. and 5th ave.	79th st. and 5th ave.	90th st. and 5th ave.	59th st. and 8th ave.	72d st. and 8th ave.	85th st. and 8th ave.	96th st. and 8th ave.	100th st. and 8th ave.	110th st. and 6th ave.
January	12,909	360	468	621	5,365	210	74	202	332	10,674
February	533	80	52	88	548	13	31	29	43	1,560
March	48	19	75	25	112	36	.....	19	17	102
April	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
July	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
November	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December	8,309	332	487	380	1,407	76	104	144	144	1,844
Totals	21,799	791	1,082	1,114	7,432	335	209	394	536	24,180

VELOCIPEDES.

Months.	59th st. and 5th ave.	72d st. and 5th ave.	79th st. and 5th ave.	90th st. and 5th ave.	64th st. and 5th ave.	59th st. and 6th ave.	59th st. and 7th ave.	59th st. and 8th ave.	72d st. and 8th ave.	110th st. and 6th ave.
January										
February										
March										
April	998	16	31	16	120	218	148	129	32	1
May	1,554	306	205	8	54	367	144	112	36	
June	1,271	31	32		8	336	412	77	2	
July	556	83	59		4	83	34	35	1	
August	260	7	24			80	153	18	2	
September	200	3	25			133	17	33		
October	62	1	11			47	7	14	6	
November	54	5				10	1			
December	29									
Totals	4,984	452	387	24	186	1,274	916	418	79	1

APPENDIX F.

Hon. Andrew H. Green,

Comptroller of the Central Park:

My Dear Sir,—I have the pleasure through you to present to the Central Park Commissioners the colossal statue of "Columbus," the work of our gifted countrywoman Emma Stebbins. Columbus is represented as standing upon the deck of a ship alone and at midnight, just before the land of the Western Continent burst upon his view. His mutinous crew have all deserted him and are feasting below, while he—the intrepid discoverer, with a firm grasp upon the rudder-post, looks eagerly, anxiously forward, piercing the darkness with his eye of faith, and, with earnest prayers to Heaven for success, waits for the dawning of the day—that day which, coming at last, brings with it victory and repose.

This statue is truly grand in its conception and beautiful in its execution—worthy, indeed, to occupy a prominent place in our Central Park. It will add one more attraction to that charming spot, which the Commissioners and *yourself* have done so much to adorn for the pleasure and delight of the people.

The statue and pedestal are both at the Academy of Design subject to your order as soon as a suitable glass house has been provided to protect the marble from the weather. With

the hope that the Commissioners will be able to provide this during the present season and receive the proffered gift,

I remain,

Your obedient servant,

MARSHALL O. ROBERTS.

FIFTH AVENUE, COR. EIGHTEENTH STREET,
NEW YORK, February 20, 1869.

OFFICE OF THE BOARD OF COMMISSIONERS
OF CENTRAL PARK,
BANK OF COMMERCE BUILDING, 31 NASSAU ST.,
NEW YORK, March 23, 1869.

MY DEAR SIR,—I am much gratified to be the medium of communicating to the Commissioners of the Central Park the munificent donation that is the subject of your expressive letter of the 20th ultimo.

It has often seemed very remarkable that more than three centuries should have passed away without any commemoration in our city of the discovery of the vast continent, of whose cities it is the chief; and it is especially agreeable to recognize the fact that one of her most eminent commercial men, appreciating the exalted character of the achiever of this discovery, has suggested and accomplished a memorial that appropriately illustrates an event that holds no second place in historical importance.

As was fit, the American merchant and promoter of maritime enterprise, has called upon the genius of the American sculptress to create and clothe, with all the finer expressions of art, a symbolical representation of a revelation that should have stamped ineffaceably upon the continent the name of Christopher Columbus.

The Commissioners of the Park, concurring fully in your encomiums upon the distinguished artist who has so admirably rendered her subject, and valuing highly your kind expressions relative to the work with which they have been so long connected, accept the proffered statue with especial pleasure, and will immediately proceed with the arrangements necessary for its protection and preservation, that it may long stand, the subject of popular admiration and of public appreciation of the large liberality of its donor.

With great esteem and regard,
I am, dear sir,
Very sincerely yours,
ANDREW H. GREEN,
Comptroller Central Park.

Hon. Marshall O. Roberts.

APPENDIX G.

New York, January 22, 1869.

Andrew H. Green, Esq.:

Dear Sir,—About ten years ago my German countrymen and myself were very much indebted to your kindness for procuring us the permission to erect a bust in the Central Park in memory of the poet Schiller.

In the course of this year the centenary birthday of Alexander Von Humboldt (born September 14, 1769), will be celebrated, and there is a disposition in many circles to erect a monument in his honor. Could we again rely upon the permission of your Board, and would you be kind enough to speak in favor of our intention?

The monument proposed is a pedestal of about ten feet high, with a bronze bust in life size, to be placed where you would indicate.

By giving a favorable answer you will oblige,

Yours truly,

W. AUFERMANN.

Office of the Board of Commissioners
of the Central Park,
Bank of Commerce Building, 31 Nassau st.,
New York, January 27, 1869.

My Dear Mr. Aufermann,—Your kind note of the 22d instant is received.

The Commissioners of the Park cordially sympathize with those who cherish the name and fame of the illustrious Alex-

ander Von Humboldt. I do not doubt that the Commissioners will cheerfully assign a location in the Park for a statue or bust that shall pass down in appropriate form, to successive generations in this land, the memory of one of whom his native land is justly proud, and whose long life was dedicated to the interpretation of the grandest phenomenon of nature for the benefit of all nations and for all time.

I am, with great respect,
Very sincerely yours,
ANDREW H. GREEN,
Comptroller Central Park.

W. AUFERMAN, Esq.

APPENDIX H.

New York, March 29, 1869.

To the President of the Board of
Commissioners of the Central Park:

Sir,—We send herewith a study that is intended to serve as a further illustration of our plan for the re-arrangement of the Sixth and Seventh avenue approaches to the Park at Fifty-ninth street.

Since this plan was laid before you, in 1866, extensions of territory on a liberal scale have been secured, in accordance with our recommendation, on the city side of the Fifth and Eighth avenue gateways, and the question of a corresponding enlargement at the two intermediate points will doubtless, therefore, at some time engage the attention of your Commission.

The relative positions of the Sixth and Seventh avenue entrances coincide with each other so precisely that the accompanying study is applicable to both localities. The design for the building, however, and even the details of the plan may be somewhat varied, without interfering with the general idea.

The main fact we have to deal with is a gateway situated at the point where a broad city avenue is abruptly terminated by the wall of a great park, evidently a salient conjunction of circumstances, and a conspicuous architectural opportunity.

It is to be borne in mind in this connection, that a shaded walk forty feet in width, adjoins the Central Park wall along the line of Fifty-ninth street, and that the entrance under consideration is for visitors on foot only; also, that a horse railroad is laid down in the centre of the avenue, which is a main

artery for metropolitan travel, and that the cars now stop short of the Park, on the down-town side of Fifty-ninth street, while a belt railroad of secondary importance occupies the whole line of curb in front of the broad walk, and hinders visitors arriving in carriages from being set down comfortably at the Park gate.

Fifty-ninth street must, in time, become a crowded thoroughfare, because it will have to accommodate half the cross-town travel which will be stopped by the Park between the south line and the traffic road at Sixty-fifth street. Consequently the point will be a critical one where the railroad avenue meets this busy street, and ample provision should be made for an accumulation of vehicles in the immediate vicinity of the Park entrance.

Architecturally considered, the position is one that seems to warrant almost any degree of liberality in its conception, for a time must come when the whole neighborhood will be filled up with handsome houses, and it will be easy then to raise funds for large structures of this specific character.

Under these circumstances our suggestion is that the avenue between Fifty-eighth and Fifty-ninth streets be sufficiently widened to form a public place of liberal dimensions, that the railroad be re-arranged as shown on the plan, and that the gateway be designed in the form of an arcade or shelter erected for the convenience of the public, over the wide sidewalk, in front of the Park entrance.

Hoping that the general idea thus embodied may meet with a favorable consideration,

We remain, sir,

Yours respectfully,

OLMSTEAD, VAUX & CO.,

Landscape Architects.

APPENDIX I.

STATE OF NEW YORK—EXECUTIVE CHAMBER,
ALBANY, October 11, 1869.

ANDREW H. GREEN, Esq.,
Comptroller of Central Park, New York:

DEAR SIR,—During the last week I reviewed the First and Second Divisions of the New York State National Guard.

The review of the Second Division was upon the very spacious and beautiful parade-ground connected with, and forming, I believe, a part of the Park in Brooklyn, and which is under the charge of the Park Commissioners.

I was more than ever impressed with the idea that New York City should have a grand parade-ground for the First Division, numbering probably more than eight thousand of volunteer soldiers, equal to any in the world, and, in a few remarks made, I promised to urge upon the Central Park Commissioners the necessity of making provision for division and brigade reviews, and I said that, if they would not or could not do it, I would invoke the aid of the Legislature, (not, as reported, "to interfere with the Commission," but to secure a parade-ground.)

I feel a deep interest in this matter, and beg to ask the following questions:

1st. Cannot provision be made within the limits of the present Park for division and brigade reviews? If not, what are the reasons?

2d. Could additional ground be taken and added to the Park for this purpose? Is there any ground which could be made available?

You have, doubtless, already given this subject much consideration, and wish, as I do, to secure the place for reviews, and I invite your views and suggestions.

Very truly yours,

JOHN T. HOFFMAN.

OFFICE OF THE BOARD OF
COMMISSIONERS OF THE CENTRAL PARK,
NEW YORK, November 27, 1869.

HON. JOHN T. HOFFMANN,
Governor of the State of New York:

DEAR SIR,—In compliance with the request contained in your letter of the 11th ultimo, I offer a few suggestions relative to the establishment of a parade-ground in this city, trusting that, in some degree, they may be useful in securing such action in the premises as to subserve the best interests of all classes of the community.

I am reluctant to trespass upon your attention to the extent required in a full examination of all the considerations involved in a subject that has more intimate relations to other questions than is usually supposed, and which I think cannot, with propriety, be finally acted upon without an appreciation of the importance of these relations, nor without some acquaintance with the military history of the State and City, and at least a general conception of the objects for which, under our form of constitutional government, a military force ought to be formed and fostered.

While an examination of the military legislation of the State shows that some form of military organization has been continuously maintained, it as clearly shows that while this organization has often been active and efficient it has sometimes been neglected and fallen into disuse.

You are doubtless familiar with these considerations, and will give them their proper weight, but it may be worth while to allude briefly to some of the legislation of the State and City that more immediately concerns the subject.

Under the Act of April 3, 1807, a parade lying between Twenty-third and Thirty-fourth Streets and the Third and Seventh Avenues was laid out, embracing about two hundred and fifty acres.

The Commissioners who laid it out, in their report dated in 1811, when the war with Great Britain seemed inevitable, say, "the question, therefore, was not, and could not be, whether "there should be a *grand parade*, but where it should be "placed, and what should be its size. And here, again, it is "to be lamented that at this late day the parade could not be "brought further south and made larger than it is, without "incurring a frightful expense.

"The spot nearest to the part of the City already built "which could be selected with any regard to economy is at the "foot of those heights called Inklangberk, in the vicinity of "Kips Bay. That it is too remote and too small shall not be "denied; but it is presumed that those who may be inclined "to criticism on that score, may be somewhat mollified when "the collector shall call for their proportion of the large and "immediate tax which even this small and remote parade will "require."

In 1814, during the excitement of the war, the third year after the parade of two hundred and fifty acres was laid out, and which was thought too small, the Mayor, Aldermen and Commonalty represented to the Legislature that this parade was much larger than was requisite, that the expenses of it would be enormous, and prayed that it might be reduced. It was by the Legislature accordingly reduced so as to contain about eighty acres.

Fifteen years afterwards, in 1829, the remainder of it was abolished.

The Battery at the lower end of the City, containing about ten acres, was, until about the year 1839, used as one of the principal parade-grounds.

Washington square, containing about ten acres, was laid out in about the year 1828 by the City authorities as a parade-ground, and when it was first prepared for the purpose, about the year 1836, was surrounded by trees, most of the area being left open for military evolutions, but in that condition it was found unfit for the surrounding neighborhood, and was re-arranged by the City with trees and walks as a square or park.

From this time down to a late date no effective measures appear to have been taken by the State or City or by the military to secure a parade-ground, and such parades as were had were generally held, as they often now are, in the smaller Squares, Streets and Avenues of the City. Occasionally, for several years, the division parades have been held at East New York, in Kings County.

In the year 1864 a movement was made among the military for a parade-ground on the Central Park; after much discussion that portion of Hamilton Square lying east of the Fourth

Avenue, containing about fifteen acres, and in the immediate vicinity of the Park, was set apart by the Common Council for a parade-ground, and in the year 1865 was by the Legislature also "set apart as a parade-ground for the First Division of "the N. Y. S. National Guard and the various companies, "regiments, and battalions thereof."

By the same act the Street Commissioner of the City of New York was required to cause the said portion of said square "to be properly graded and prepared for a parade-"ground by contract or agreement, as in his opinion will best "preserve the interests of the city," and it was expressly provided that "no such contract or agreement shall require, in-"volve, or authorize an expenditure of more than the sum of "twenty thousand dollars, and any contract or agreement re-"quiring or involving or authorizing the expenditure of more "than" that sum was declared void.

Notwithstanding this imperative limitation of expenditure, in the year 1867, the further sum of $30,000 was appropriated by the Legislature "for the grading and regulating Hamilton Square in the City of New York." In the year 1868 (chapter 885 of Laws of 1868) this Square was discontinued and closed, and its sale directed by the Legislature, and in 1869 the further sum of $40,000 was appropriated "for damages to the "contractor for grading Hamilton Square."

Thus it will be seen that, at a period while the military spirit was fanned by a momentous struggle in which the country was involved, land belonging to the City, that would have afforded at least tolerable accommodation for the military, was directed by the Legislature to be sold.

The Commissioners of the Park have had no jurisdiction over this land, and no hand in paying out of the money intended to be applied to its improvement for the military.

Further, by Chapter 593 of the Laws of 1866, Tompkins Square, of about ten acres, is declared "a public parade-"ground for the use of the National Guard of the First Division "State of New York, at such times as commandants of regi-"ments in said division shall designate, by orders," and it is thereby made "the duty of the Street Commissioner of the "City of New York, before the first day of July, 1866, to re-"move all trees and other obstructions" from said Square, and to "level and grade the surface of said Square in such manner "as to render it available as such parade-ground," the expense of which is to be taken from the usual appropriation for public parks.

In the year 1868 the Legislature appropriated "for paving "Tompkins Square, set apart for a military parade-ground, "with the Fisk concrete or other suitable pavement, so as to "make the same available for parade purposes, the sum of "sixty thousand dollars, to be expended under the direction of "the Street Department." (Chap. 853, Laws of 1868.)

Thus another of the squares of this city, which is surrounded by a dense population, has been transformed.

It will be seen by this abstract of legislation that it has never been made the duty of the Commissioners of the Park to provide a parade for the military, the responsibility resting elsewhere; and although they have given the subject much attention, any interposition of theirs in the premises has been informal, and with the simple desire to have done what ought to be done. And it will further be observed that, in the cases of Washington and Tompkins squares, wherever it is intended to use a ground for military purposes permanently, the other use as a park gives way, and legislation directs accordingly, showing a recognition of the impracticability of the two uses in common.

As you allude to a review of the Second Division on the parade-ground in Brooklyn, it is proper to notice the legislation in relation to that ground, to see how different it has been from that for this city. It would be incorrect to say that the parade-ground for Kings County is a part of the Brooklyn Park. It is a separate piece of ground, laid out under a special act (Chapter 852 of Laws of 1866), "to provide for a parade-ground for the county of Kings." The expense of it, and of its care and maintenance, is, I am informed, provided for from a separate fund from that of the Park.

It is laid out at a remote part of the city, where land is comparatively cheap, and contains 40 acres. Its chief merit is that it is nearly level, and that it is separate from the Park, and, therefore, in no respect interferes with Park enjoyments.

It is placed under the charge of the Commissioners of Prospect Park, and doubtless merits the encomium you pass upon it.

The pleasure and satisfaction you found in it were very natural, being such as one always experiences on observing ample, adequate, and convenient provision for the uses intended, and are perhaps the best possible illustration of the correctness of the views of the Central Park Commissioners on this subject, held and expressed years before this ground was laid out. They hoped that such a ground would have been provided in this county, instead of which, the ground the city actually owned has been taken away without remonstrance, so far as I am aware.

After this brief review, and as it appears that the Commissioners of the Park have not been required by any Act to lay out or provide a parade for the military, either in or

out of the Park, the next thing to consider is whether they should without any legislative requirements have provided such a ground within the limits of the Central Park. And this brings up your first question, to wit: "Cannot provi- "sion be made within the limits of the present Park for "division and brigade reviews? If not, what are the "reasons?"

The views of military men differ widely as to the extent of ground essential for a parade.

Some are of the opinion that ten to fifteen acres would suffice; others think sixty acres or more essential in this city. An intelligent reply to your inquiry can only be given after a satisfactory ascertainment, by competent military opinion, of the extent of ground required for a parade and its accessories under our existing and probable future military system.

A parade of ten acres might be provided in a park, while it would be difficult to provide one of sixty acres.

I am not informed of the area that you think necessary for the purpose.

The appropriation from the grounds of the Central Park of an area that would be generally deemed by intelligent military men sufficiently extensive for the review of one or more brigades or divisions, and the proper arrangement of these grounds for the accommodation of such parades, would, as the Park is shaped, seriously diminish its capacity for civic enjoyment.

Indeed, the objects sought to be secured in a ground for popular enjoyment or park uses, and in one for military dis-

plays are so different, and the arrangement of the grounds so incompatible, that it would be better not to attempt to combine them. It would hardly be possible to make a parade-ground of sufficient extent within the Park without the destruction of features which are among its chief attractions. One unapproachable characteristic of the Central Park is its varied surface, including its fine exposure of massive rocks; as year by year the area about the Park is leveled for building, this incomparable feature will be more marked and distinctive. It is, of course, entirely within the limits of possibility to level the picturesque surface to any extent for military use. The levelling could be done for a moderate sum of money, but no expenditure of money could ever restore or repair the results of the destruction, or give back again to the grounds features which are peculiar and are not found in any other city park in the world.

A very brief observation will disclose the impracticability of keeping the sward of a park in a condition that is inviting and attractive to the visitor when it is frequently used as a parade-ground. It is not alone the military that are to be provided for in such grounds, but it is the heterogeneous crowd that follow upon military displays, intent only upon them, the results of whose visits, if not provided with large space beyond the limits of the parade, would be destructive to all natural embellishment. It has seemed to the Park Commissioners reasonable that, if citizens are required in the interest of the whole community to do duty as soldiers, and that duty requires drills and parades, that a satisfactory place should be provided, and that they have had repeated interviews and discussions on this subject with the military authorities of the city, and have expressed a readiness to aid and co-operate in steps to provide the necessary grounds, and they have rarely failed, when the

subject has been considered, to find a concurrence on the part of the military in the propriety of their views.

The Park is a ground appropriated and arranged for the enjoyment of all the classes that inhabit a great city, and the design has been so to plan and arrange it that the visitor may immediately on entering be led, by the aid of what at once meets the eye, and by the continual discovery of fresh objects of interest, to divest himself of the thoughts and reflections that attend upon city business life, and to give himself up to an hour of undisturbed recreation.

Whatever in such a scheme properly aids in the transition of the mental operations from business to pleasure or recreation is valuable.

The Park is visited by millions—citizens and strangers—the natural beauties of the landscape, of tree, shrub, and flower, of brook, meadow, and beetling cliff, as they appear, changing with the varying seasons, afford more satisfaction to a larger number of people than any other use to which the acres could be devoted, and it is not too much to say that experience has fully shown that ideas of this nature that underlie the whole design have been generally comprehended and accepted.

Few estimate correctly the number of aged persons, of invalids and children, that in these grounds find a quiet enjoyment that would be impossible if any element of interest that is attended with danger or disorder were introduced.

The charm that every man of feeling finds in the well-kept lawns, and in the walks, and in the pure air are greater and higher than any other class of attractions that can be offered.

These are consistent with certain other uses, but not with all other uses, and no one ought to desire to impair the attractions of the Park by introducing others that are inconsistent and impracticable. It is erroneous to suppose that lawns can be kept in good condition with horses and men constantly walking over them. A sward is composed of numberless tenderly organized plants easily worn, and, when overworn, the result in dry weather is dust, and in wet, mud.

The lawn of a private country place may be preserved without disfigurement even if the proprietor and his few visitors walk over it, but the Park is visited by almost as many people as there are blades of grass in its lawn. Even the enduring marble is worn out by the frequent footsteps of its visitors. The carpet on the floor scarcely endures the use of one's own family. What, then, would be the condition of a lawn with the steps of thousands constantly wearing it.

Thoughtful military men are not unmindful of these popular advantages. They will understand that neither they nor their families are excluded from the Park, and we have generally found that when they come to examine the subject in all its bearings they are, like other citizens, unwilling to forego them for any opportunity of military display that would exclude them.

There are often as large a number as 8,000 to 10,000 vehicles entering the Park in one day, because it is a place where a drive is comparatively free from danger, and because it is an agreeable resort.

It has been said that the introduction of military bands and banners, and the movements of uniformed columns, are no more dangerous in the Park than in the streets. This I

believe to be erroneous. If a military display approaches in the avenues of the city, there are crossing streets every few yards of the way for those who desire to escape meeting it. Not so in the Park—laid out not as a city but as a pleasure-ground. On approaching a military band, one must turn around and go from it, often difficult to do where large numbers of vehicles are on the road, or take the risks and dangers of accident that might attend the meeting it. People have become accustomed to resort to the Park with a feeling of assurance that they are free from the annoyances and dangers to which they are subject in the streets, and the introduction of any uses that would disturb this feeling of security would be the means of expelling from the Park, numbers who now find it their only opportunity for out-door exercise and enjoyment.

The larger areas of grass are now occupied by the children of the schools. Tens of thousands come there to play, and but a short time will elapse before all the lawn surfaces of the Park, which, owing to the conformation of the ground, are of very moderate extent, will all be filled with these children, of whom there are now attending schools in the city more than one hundred and fifty thousand. This occupancy is open to all children attending schools, is greatly needed and much sought for, and is, as now regulated, a most gratifying sight to the visitor ; it harms no one, and is consistent with the pleasure of all. Would it be well to interfere with or expel it ?

As showing the public sentiment on the question of the propriety of introducing military parades into the Park, it may not be amiss to quote a statute on the subject, passed in 1865, during the war, which is in the following words :

" No military encampment, parade, drill, review, or other

"military evolution or exercise shall be held or performed on "said Park, or any part thereof, except with the previous "consent of the said Board, nor shall any military company, "regiment, or other military body enter or move in military "order within said Park. No military officer shall have "authority to order, direct, or hold any such parade or drill, "review, or other evolution or exercise or encampment within "said Park, except in case of riot, insurrection, rebellion, or "war."

To this recital of the statute may be added the opinions of competent military gentlemen on this subject. Brigadier-General Josiah T. Miller, then Inspector-General of the State—during the last war a devoted and intelligent observing officer—examined into the subject of parade-grounds in this city. In his official report of the year 1864 is this passage :

"Parade-grounds are also essential, and the State should "provide one for each division, and particularly for the First "Division. This parade-ground in the First Division ought "not to be in the Central Park. Military occupancy and "exercise are inconsistent with the rules adopted for the gov-"ernment of the Park, as well as with the objects for which "the Park itself was originally designed.

"Grounds equally convenient for military purposes might "be obtained in the immediate vicinity of the Park, the occu-"pancy of which by the military would accommodate officers "and privates, and at the same time increase the enjoyment "of the general public, always fond of military spectacles."

It was after this that the action of the Common Council of the city and the Legislature above mentioned, setting apart Hamilton square for a parade, was taken. It is not singular that the military should, in common with many other appli-

cants for reviews, and displays, and amusements, seek the Central Park. They desire to go where order and beauty prevail; where the people go for their enjoyment, forgetting that, except with the necessary preparation, they will destroy the very thing that they desire to enjoy.

The point, therefore, to which I desire attention is, not that a level place cannot be made on the Park for military, but that it cannot be done and at the same time preserve existing features. You cannot keep lawns frequently trampled by men, horses, and by artillery in a proper condition for others to enjoy.

If they are not kept in such a condition, you deprive tenfold more people of enjoyment than you gratify by a military use of the grounds.

The keeping of a parade-ground for the numerous military of this city in grass should not be attempted; one use is not consistent with the other, and it is better to make adequate provision for both.

The part of a parade to be used by the military should be composed of a noiseless, dustless material, agreeable to the foot, and which cannot be injured by the passage of cavalry and artillery, and should have adequate shelter for men and their arms and accoutrements. It should be capacious, and regard should be had in it to the convenience of those who are to use it.

Last year Major-General Alexander Shaler, commanding the First Division of the State National Guard, courteously invited the co-operation of the Commissioners of the Central Park in a communication, of which the following is a copy:

"HEADQUARTERS FIRST DIVISION N.Y.S.N.G.,
"NEW YORK, March 24, 1869.

"*Board of Commissioners of the Central Park:*

"GENTLEMEN,—The question of providing a suitable parade-
"ground for the use of the First Division National Guard
"State of New York (which embraces all the State troops in
"the City of New York), upon which they can all be assembled
"for exercise, has agitated the minds of a goodly portion of our
"community for years past, and does at the present time to
"such an extent as to suggest the importance of meeting the
"question without further delay.

"As you are aware, efforts have repeatedly been made to
"obtain such a parade-ground within Central Park.

"After a careful examination of the portions of the Park,
"at all available, I have come to the conclusion, however, that
"sufficient grounds within the Park cannot be appropriated
"without diverting them from the use for which they were
"intended and are now applied.

"In view of this fact, and of the importance of settling for all
"time a question which, until it is settled, will be a constantly-
"recurring one, I have the honor to solicit the co-operation of
"your honorable body with me, with a view of providing the
"First Division N.Y.S.N.G. with a suitable parade-ground.

"Very respectfully yours,
"ALEXANDER SHALER,
"*Maj.-Gen. Commanding 1st Div. N.Y.S.N.G.*"

The Commissioners of the Park, being thus officially invited, and having, as it were, for the first time any right to speak on the subject, recognizing in the First Division of the N.Y.S.N.G.,

a most efficient and well-disciplined military body, and appreciating fully the services, sometimes arduous and dangerous, that they are required to hold themselves ready to perform, at once responded by the appointment of a committee to co-operate with General Shaler and such of his staff as he had associated with him in the matter.

The General had examined the Park and other localities in the city, and the result of repeated interviews between him and the representative of the Park Commissioners, was the preparation by the Commissioners of a plan for a ground to lay before the last Legislature. No action was had, as is understood, because it was too late in the session.

The only ground of hesitation on the part of the Commissioners of the Park to recommend to the Legislature the purchase of the ground shown on the plan, arose from the large outlay of money that would be required.

It is one thing to take land in a rural part of Kings County at five hundred dollars per acre, and another to take it in New York at an average of one or two thousand dollars per lot. It is for the authorities of the State to judge whether an expenditure of the extent required should be made to obtain a satisfactory parade-ground in this city.

In establishing a parade-ground, certain questions immediately arise which are not easily answered, for want of precedent and experience, and because the subject is, in its nature, indefinite, changing with the popular sentiment, and with the varying interests of the military in their own discipline and efficiency.

If a parade-ground is required in this city, is it to be for work, for actual drill, and for those exercises that are neces-

sary to secure discipline and efficiency, or for holiday parades and mere display, or shall it combine both of these characteristics? What is the greatest number to be accommodated at any one time? Shall the ground be for occasional brigade and division reviews only, or shall it at the same time comprehend arrangements for the more frequent regimental and company parades and exercises now so much needed in this city? Shall it be for the New York State National Guard alone, or shall it afford opportunities for displays of volunteer companies and for the numerous civic companies that throng the city at certain periods?

Again, are all the arms of the regular service—cavalry, artillery and infantry—to be accommodated? Is provision to be made for target practice of these various arms? Is convenient, spacious and comfortable opportunity to be afforded to spectators to observe these displays, so that the discomfort of crowds may be avoided?

Shall there be one extensive parade-ground adequate for division and brigade reviews, situated as conveniently as practicable, and other smaller grounds immediately in the city for the lesser parades and exercises?

The element of accessibility is very essential for the convenience of the military—an element difficult of attainment on this island to the extent that would be desirable.

All these questions must be answered before the selection of a site for a ground equal to the needs of the military of this city can be properly effected, and are involved in your second inquiries: "Could additional ground be taken and added to "the Park for this purpose? Is there any ground which could "be made available?"

Grounds immediately north of the Park could be taken and added to the Park for this purpose, and could be made available.

By an extension of the original limits of the Park northwardly, accomplished several years since, its northern boundary now includes the bluffs that overlook, from an elevation varying from twenty-five to a hundred and thirty feet, the Harlem commons that lie between these bluffs and the Harlem river, a distance of nearly two miles. These lands are very nearly level, and are separated from the Park by the street that is its northerly boundary.

The buildings that are rapidly covering them have radiated southerly from Harlem, so that the portion of the common lands adjacent to the north line of the Park has not yet been much built upon.

Within the area that would be required for a parade there are few, if any, buildings of any considerable value.

It would be difficult to suggest on this island a location that affords a finer or more appropriate site for a parade-ground than would be furnished by a sufficient extent of these lands.

They could be added to and form a part of the Central Park, and remain under the same care and government, without being so actually in it as that the uses of either would be interfered with by the other. They are separated from it by the width of a single street; are readily and cheaply accessible by various lines of City horse and steam cars, and by boats upon the river; from their level character could be easily regulated and arranged for a parade-ground, and by which evolutions of cavalry, infantry and artillery could be satisfactorily observed, and the plan of the ground is susceptible of an arrangement that would interfere but little with the public travel.

I think I am quite safe in saying that the military authorities would readily concur in the appropriateness of this site as the most convenient and accessible or practicable on this island.

While the Commissioners of the Park have had the power to lay out squares in other parts of the island, this especially-adapted site has never been within such power.

They are and have long been of the opinion that such a ground should be provided, and have, when called upon, not been backward in responding to the request of the military in the premises, and while they have been restrained by considerations of expense from recommending the acquisition of more ground for this purpose, they are now, as they always have been, ready to lend their aid to any reasonable movement to secure a capacious and satisfactory ground for the military, when their co-operation can be offered without seeming to be intrusive.

Sympathizing in your high estimate of the military of this city, it will give me great pleasure to submit to you, at any time you may suggest, the plan of the grounds above referred to, prepared with the view of answering, in a large and comprehensive way, all the purposes that such a ground should be made to serve, in the present and for the future, and at the same time to enter, if you desire, more at length upon the details of the subject than I have been able to do in this communication. I am, with great respect,

Yours, very truly,

ANDREW H. GREEN,

Comptroller of the Park.

Appendix J.

A DETAILED STATEMENT

Of the Living Birds and Animals in captivity on the Central Park, during the year 1869.

For the identification of the birds living in captivity the Board is indebted to George N. Lawrence, Esq., and for that of the animals to William J. Hays, Esq., of this City.

MAMMALIA.

Order: Quadrumana.

Family: *Simiadæ.*

Genus: *Cercophithecus.* *Cercophithecus callitrichus* (Is. Geoff.), Green Monkey; 2 specimens, West Africa.

Genus: *Cynocephalus.* *Cynocephalus maimon* (Desm.), Mandrill; 1 specimen, West Africa.

Order: Carnivora.

Family: *Felidæ.*

Genus: *Felis.* *Felis leo* (Linn.); Lion, 6 specimens, Africa and Southwestern Asia. *Felis leopardus* (Linn.), Indian Leopard; 1 specimen, Asia. *Felis varius* (Gray), African Leopard; 1 specimen, Africa. *Felis concolor* (Linn.), Cougar Puma, or American Panther; 2 specimens, North and South America. *Felis pardalis* (Linn.), Ocelot; 1 specimen, Texas and South America. *Felis domesticus* (Linn.), Angora Cat; 1 specimen, Asiatic Turkey.

Genus: *Lynx.* *Lynx rufus* (Raf.), Wild-Cat; 1 specimen, North America.

Family: *Canidæ.*

Genus: *Canis.* *Canis latrans* (Say.), Prairie Wolf; 2 specimens, Western United States. *Canis familiaris* (Linn.), Domestic Dog; 3 specimens, 3 varieties: 1 Newfoundland Dog, Newfoundland; 1 Shepherd's Dog, British Islands; 1 Greyhound, British Islands.

Genus: *Vulpes.* *Vulpes fulvus* (Desm.), Red Fox; 3 specimens North America. *Vulpes vulgaris*, (Briss.) Red Fox; 1 specimen, Europe. *Vulpes virginianus* (Rich.), Gray Fox; 1 specimen, United States.

Family: *Viverridæ.*

Genus: *Viverra.* *Viverra rasse* (Horsf.), Rasse; 1 specimen, Java.

Genus: *Herpestes.* *Herpestes griseus* (Geoff.), Moongus or Gray Ichneumon; 1 specimen, India.

Family: *Mustelidæ.*

Genus: *Putorius.* *Putorius furo* (Linn.), Ferret; 4 specimens, Africa.

Family: *Ursidæ.*

Genus: *Ursus.* *Ursus horribilis* (Ord.), Grizzly Bear; 2 specimens, Western United States. *Ursus americanus* (Pall.), Black Bear; 8 specimens, North America. *Ursus americanus* var. *cinnamoneus* (Aud. and Bach.), Cinnamon Bear; 2 specimens, Western United States. *Ursus malayanus* (Raffe.), Malayan Bear; 1 specimen, India.

Genus: *Procyon.* *Procyon lotor* (Storr.), Raccoon; 7 specimens, United States.

Genus: *Nasua.* *Nasua nasica* (Linn.), Coati; 3 specimens, South America.

Order : Rodentia.

Family : *Sciuridæ.*

Genus : *Sciurus.* *Sciurus vulpinus* (Gm.), Southern Fox Squirrel; 1 specimen, Southern United States. *Sciurus carolinensis* (Gm.), Gray Squirrel; 3 specimens, United States. *Sciurus carolinensis,* var. *niger* (Aud. and Bach.), Black Squirrel; 1 specimen, United States.

Genus : *Tamias.* *Tamias striatus* (Linn.), Striped Squirrel; 1 specimen, United States.

Genus : *Cynomys.* *Cynomys ludovicianus* (Bd.), Prairie Dog; 2 specimens, Western United States.

Genus : *Arctomys.* *Arctomys monax* (Gm.), Woodchuck; 1 specimen, North America.

Family : *Castoridæ.*

Genus : *Castor.* *Castor Canadensis* (Kuhl.), American Beaver; 1 specimen, North America.

Family : *Muridæ.*

Genus : *Fiber.* *Fiber zibethicus* (Cuv.), Muskrat; 1 specimen, North America.

Family : *Hystricidæ.*

Genus : *Erethizon.* *Erethizon dorsatum* (Cuv.), Canada Porcupine; 1 specimen, Northern United States and Canada.

Genus : *Dasyprocta.* *Dasyprocta agouti* (Ill.), Agouti; 2 specimens, South America.

Genus : *Cœlogenys.* *Cœlogenys paca* (Rengg.), Sooty Paca or Spotted Cavy; 1 specimen, Tropical America.

Genus : *Cavia.* *Cavia Cobaya* (Linn.), Guinea-Pig; 11 specimens, Brazil.

Family : *Leporidæ.*

Genus : *Lepus.* *Lepus curriculus* (Linn.), Common Rabbit ; 2 specimens, Europe.

Order : PROBOSCIDEA.

Family : *Elephantidæ.*

Genus : *Elephas.* *Elephas indicus* (Linn.), Indian Elephant ; 1 specimen, South India. *Elephas africanus* (Blum.), African Elephant ; 1 specimen, Africa.

Order : ARTIODACTYLA.

Sub-order : RUMINANTIA.

Family : *Bovidæ.*

Genus : *Bos.* *Bos Indicus* (Linn.), Zebu ; 3 specimens, India. *Bos taurus* (Linn.), Domestic Cattle ; 8 specimens, 2 varieties : 2 Kerry Cattle, Ireland ; 6 Flores Cattle, Flores Island.

Genus : *Bison.* *Bison americanus* (Gm.), American Bison ; 1 specimen, Western United States.

Genus : *Bubalus.* *Bubalus caffer* (Spann.), Cape Buffalo ; 4 specimens, South Africa.

Genus : *Ovis.* *Ovis aries* (Linn.), Domestic Sheep ; 139 specimens, 2 varieties : 138 Southdown Sheep, England ; 1 Affghan Fat-tailed Sheep, Syria.

Genus : *Capra.* *Capra hircus* (Linn.), Domestic Goat ; 12 specimens, 3 varieties : 2 Angora Goats, Syria ; 2 Chinese Goats, China ; 8 Common Goats, Europe.

Family : *Cervidæ.*

Genus : *Cervus.* *Cervus canadensis* (Erxl.), American Elk or Wapiti ; 4 specimens, North and West United States. *Cervus virginianus* (Bodd.),

Virginia Deer; 21 specimens, United States. *Cervus mexicanus* (Gm.), Mexican Deer; 1 specimen, Mexico.

Genus: *Axis.* *Axis maculata* (Gray), Axis Deer; 1 specimen, India.

Family: *Tragulidæ.*

Genus: *Tragulus.* *Tragulus pygmæus* (Briss.), Kanchil, or Pigmy Musk Deer; 1 specimen, Asiatic Islands.

Family: *Camelidæ.*

Genus: *Camelus.* *Camelus dromedarius* (Linn.), Common Camel; 2 specimens, Arabia. *Camelus bactrianus* (Linn.), Bactrian Camel; 1 specimen, Central Asia.

Sub-order: New Ruminantia.

Family: *Suidæ.*

Genus: *Dicotyles.* *Dicotyles tajacu* (Linn.), Collared Peccary; 2 specimens, South America. *Dicotyles labiatus* (Cuv.), White-lipped Peccary; 1 specimen, Texas and South America.

Genus: *Sus.* *Sus scrofa* (Linn.), Domestic Hog; 2 specimens, 2 varieties: 1 Japanese Hog, Japan; 1 Chinese Hog, China.

Order: Marsupialia.

Family: *Didelphidæ.*

Genus: *Didelphys.* *Didelphys virginianus* (Shaw), Common Opossum; 2 specimens, United States.

AVES.

Order : Passeres.

Family : *Turdidæ.*

Genus : *Turdus.* *Turdus musicus* (Linn.), Song Thrush ; 1 specimen, British Islands. *Turdus migratorius* (Linn.), American Robin ; 1 specimen, North America. *Tardus merula* (Linn), Blackbird ; 1 specimen, British Islands.

Genus : *Harporhynchus.* *Harporhynchus rufus* (Linn.), Brown Thrush ; 1 specimen, North America.

Genus : *Mimus.* *Mimus polyglottus* (Linn.), Mocking Bird ; 1 specimen, Southern United States.

Family : *Saxicolidæ.*

Genus : *Sialia.* *Sialia sialis* (Linn.), Bluebird, North America ; 1 specimen.

Family : *Fringillidæ.*

Genus : *Serinus.* *Serinus canaria* (Linn.), Canary Birds; 2 specimens, Canary Islands.

Genus : *Spizella.* *Spizella socialis* (Wils.), Chipping Sparrow ; 1 specimen, North America.

Genus : *Passer.* *Passer domesticus* (Linn.), European Sparrow ; 1 specimen, Europe.

Order : Zygodactyli.

Family : *Ramphastidæ.*

Genus : *Ramphastos.* *Ramphastos toco* (Gm.), Toco Toucan ; 1 specimen, Brazil and West Indies. *Ramphastos ariel* (Vig.), Ariel Toucan ; 1 specimen, Brazil.

Family : *Psittacidæ.*

Genus : *Sittace.* *Sittace macao* (Linn.), Red and Blue Macaw ; 1 specimen, Central America.

Genus : *Conurus*. *Conurus pertinax* (Lin.), *xantholœmus* (Scl.), St. Thomas Conure ; 2 specimens, West Indies.

Genus : *Chrysotis*. *Chrysotis leucocephala* (Linn.), White-headed Parrot ; 1 specimen, Cuba.

Genus : *Plictolophus*. *Plictolophus sulphureus* (Gm.), Greater Sulphur-crested Cockatoo ; 2 specimens, Australia.

Order : ACCIPITRES.

Family : *Vulturidæ*.

Genus : *Gypœtus*. *Gypœtus barbatus* (Linn.), Bearded Vulture ; 1 specimen, Europe.

Family : *Falconidæ*.

Genus : *Buteo*. *Buteo borealis* (Gm.), Red-tailed Hawk ; 2 specimens, North America.

Genus : *Aquila*. *Aquila canadensis* (Linn.), Golden Eagle ; 2 specimens, North America.

Genus : *Haliœtus*. *Haliœtus leucocephalus* (Linn.), Bald Eagle ; 19 specimens, North America.

Genus : *Tinnunculus*. *Tinnunculus alaudarius* (Gm.), Kestrel ; 1 specimen, British Islands.

Genus : *Circus*. *Circus hudsonius* (Linn.), Marsh Hawk ; 1 specimen, North America.

Family : *Strigidæ*.

Genus : *Bubo*. *Bubo virginianus* (Gm.), Great Horned Owl ; 14 specimens, North America.

Order : PULLASTRÆ.

Family : *Columbidæ*.

Genus : *Streptopelia*. *Streptopelia risoria* (Linn.), Ring-Dove ; 6 specimens, Africa.

Genus : *Phlogœnas.* *Phlogœnas cruentata* (Lath.), Red-breasted Pigeon : 1 specimen, Philippine Islands.

Family : *Penelopidæ.*

Genus : *Ortalida.* *Ortalida bronzina* (Gray), Bronzed Guan ; 3 specimens, Venezuela.

Family : *Cracidæ.*

Genus : *Crax.* *Crax alector* (Linn.), Crested Curassow ; 1 specimen, Tropical America.

Genus : *Pauxi.* *Pauxi mitu* (Linn.), Razor-billed Curassow ; 1 specimen, Tropical America.

Order : GALLINÆ.

Family : *Perdicidæ.*

Genus : *Lophortyx.* *Lophortyx californicus* (Shaw), California Quail ; 1 specimen, California.

Family : *Phasianidæ.*

Genus : *Phasianus.* *Phasianus colchicus* (Linn.), English Pheasant ; 2 specimens, British Islands.

Genus : *Euplocamus.* *Euplocamus nycthemerus* (Linn.), Silver Pheasant ; 1 specimen, China.

Genus : *Gallus.* *Gallus domesticus* (Linn.), Domestic Fowl ; 5 specimens, 4 varieties : 1 Silky Fowl, China ; 1 Cochin Fowl, China ; 1 Silver Poland Fowl, Europe ; 2 Bantams, India. *Gallus* (—— ?), (Fowl hybrid), 2 specimens.

Family : *Pavonidæ.*

Genus : *Pavo.* *Pavo cristatus* (Linn.), Peafowl ; 32 specimens, India.

Family : *Numididæ.*

Genus : *Numida.* *Numida meleagris* (Linn.), Guinea Fowl ; 38 specimens, Africa.

Order : Brevipennes.

Family : *Struthionidæ.*

Genus : *Rhea.* *Rhea americana* (Lath.), Common Rhea ; 4 specimens, South America.

Order : Grallæ.

Family : *Ciconiidæ.*

Genus : *Ciconia.* *Ciconia alba* (Linn.), White Stork ; 1 specimen, Africa.

Family : *Ardeidæ.*

Genus : *Ardea.* *Ardea cinerea* (Linn.), English Heron ; 1 specimen, Europe.

Genus : *Tigrisoma.* *Tigrisoma cabanisi* (Heine), Tiger Bittern ; 2 specimens, Central America.

Family : *Rallidæ.*

Genus : *Gallinula.* *Gallinula martinica* (Linn.), Purple Gallinule ; 2 specimens, United States.

Order : Lamellirostres.

Family : *Anatidæ.*

Genus : *Cygnus.* *Cygnus olor* (Gm.), European Swan ; 44 specimens, Europe. *Cygnus buccinator* (Rich.), Trumpeter Swan ; 1 specimen, North America. *Cygnus atratus* (Lath.), Black Swan ; 2 specimens, Australia.

Genus : *Anser.* *Anser ferus*, (var. Linn.), Bremen Goose ; 6 specimens, Europe. *Anser cygnoides* (Linn.), Chinese Goose ; 2 specimens, China.

Genus : *Aix.* *Aix sponsa* (Linn.), Summer Duck ; 2 specimens, North America.

Genus : *Anas.* *Anas boschas* (Linn.), Mallard Duck ; 2 specimens, North America. *Anas boschas* (var. *domesticus*), White Duck ; 17 specimens. North America. *Anas* (——— ?), Duck (hybrid), 1 specimen. *Anas* (——— ?), Duck, (hybrid), 11 specimens.

REPTILIA.

Order: Testudinata.

Family: *Emydoidæ.*

Genus: *Chrysemys.* *Chrysemys picta* (Gray), Painted Turtle; 10 specimens, United States.

Genus: *Cistudo.* *Cistudo virginea* (Ag.), Common Box Turtle; 7 specimens, United States.

Family: *Chelydroidæ.*

Genus: *Chelydra.* *Chelydra serpentina* (Schw.), Alligator Turtle; 1 specimen, United States and Canada.

Order: Crocodilia.

Family: *Crocodilidæ.*

Genus: *Alligator.* *Alligator mississippiensis* (Gray), Alligator; 7 specimens, Tropical America.

Genus: *Crocodilus.* *Crocodilus* (—— ?), Crocodile; 1 specimen, Africa (?).

Order: Sauria.

Family: *Iguanidæ.*

Genus: *Doliosaurus.* *Doliosaurus McCalli* (Girard), Horned Toad, California and Mexico.

Order: Ophidia.

Family: *Boidæ.*

Genus: *Boa.* *Boa constrictor* (Linn.), Common Boa; 1 specimen, Tropical America.

Genus: *Eunectes.* *Eunectes murinus* (Linn.), Anaconda; 16 specimens, Tropical America.

Genus: *Chilobothrus.* *Chilobothrus inornatus* (Dunv.), Yellow Snake; 2 specimens, Jamaica, W. I.

Family : *Colubridæ.*

Genus : *Eutænia.* *Eutænia sirtalis* (B. & G.), Garter Snake ; 2 specimens, United States.

Family : *Crotalidæ.*

Genus : *Crotalus.* *Crotalus durissus* (Linn.), Common Rattle-snake ; 2 specimens, North America. *Crotalus adamanteus* (Beaur.), Diamond Rattle-snake ; 1 specimen, Southern United States. *Crotalus confluentus* (Say), Rattle-snake ; 2 specimens.

BATRACHIA.

Order : ANOURA.

Family : *Hylcidæ.*

Genus : *Hyla.* *Hyla versicolor* (LeC.), Tree-Toad ; 3 specimens, Northern United States.

ARTICULATA.

Order : HYMENOPTERA.

Family : *Apiariæ.*

Genus : *Apis.* *Apis mellifica* (Linn.), Hive Bee ; 3 colonies, Europe.

SUMMARY.

Mammalia.		*Aves.*		*Reptilia.*	
Quadrumana..	3	Passeres.....	10	Testudinata...	18
Carnivora	52	Zygodactyli...	8	Crocodilidæ...	8
Rodentia.....	28	Accipitres	40	Sauria	1
Proboscidea ...	2	Pullastræ	7	Ophidia.....	26
Artiodactyla...203		Gallinæ.....	86		
Marsupialia ...	2	Brevipennes...	4	Total.....	53
		Grallæ.....	6		
Total.....290		Lamellirostres.	88		
		Total.....249			

Batrachia.

Anoura..... 3.

GRAND TOTAL.

Mammalia.....	290
Aves.....	249
Reptilia.....	53
Batrachia.....	3
Living collection.....	595

NUMBER OF ORDERS, GENERA, AND VARIETIES.

	Orders.	*Genera.*	*Varieties.*
Mammalia	6	36	62
Aves.....	10	39	52
Reptilia.....	4	11	13
Batrachia.....	1	1	1
	21	87	128

LIST OF SPECIES

Exhibited for the first time on the Central Park during the year 1869.

MAMMALIA.

QUADRUMANA :

Mandril. *Cynocephalus mounou.* West Africa.
Black Spider Monkey. *Ateles niger.* South America.

CHEIROPTERA :

Brown Bat. *Vespertilio subulatus.* North America.

CARNIVORA :

Lion. *Felis leo.* Africa and Asia.
Leopard. *Felis varius.* Africa.
Jaguar. *Felis onca.* South America.
Angora Cat. *Felis domesticus.* Asiatic Turkey.
Newfoundland Dog. *Canis familiaris.* Newfoundland.
Red Fox. *Vulpes vulgaris.* Europe.
Ferret. *Putorius furo.* Africa.

PINNEPEDIA :

Common Seal. *Phœa vitulina.* Coast of Labrador.

PROBOSCIDEA :

Indian Elephant. *Elephas indicus.* South India.
African Elephant. *Elephas africanus.* Africa.

ARTIODACTYLA :

Bactrian Camel. *Camelus bactrianus.* Central Asia.
Affghan Fat-tailed Sheep. *Ovis aries.* Syria.
Angora Goat. *Cafra hircus.* Syria.
Zebu. *Bus indicus.* India.

AVES.

PASSERES :

Thrush. *Tardus musicus.* British Islands.
Chipping Sparrow. *Spizella socialis.* North America.

Yellow Bird. *Chrysomitris tristis.* North America.

ZYGODACTYLI :

Toco Toucan. *Ramphastos toco.* Brazil.

Culminated Toucan. *Ramphastos culminatus.* Tropical America.

White-headed Parrot. *Chrysotis leucocephala.* Cuba.

ACCIPITRES :

Kestrel. *Tinnunculus alaudarius.* British Islands.

PULLASTRÆ :

Red-breasted Pigeon. *Phlogœnas cruentata.* Philippine Islands.

GALLINÆ :

Silky Fowl. *Gallus domesticus.* China.

Cochin Fowl. *Gallus domesticus.* China.

Fowls (hybrid).

Bronze Guan. *Ortalida bronzina.* Venezuela.

GRALLÆ :

English Heron. *Ardea cinerea.* Europe.

STEGANOPODES :

Frigate Pelican. *Tachypetes aquila.* Southern United States.

PYGOPODES :

Loon. *Colymbus torquatus.* North America.

REPTILIA.

TESTUDINATA :

Speckled Tortoise. *Nanemys guttata.* North America.

CROCODILIA :

Crocodile. *Crocodilus* (——?). Africa.

SAURIA :

Horned Toad. *Doliosaurus McCalli.* California and Mexico.

OPHIDIA :

Garter Snake. *Eutœnie sirtalis.* United States.

Green Snake. *Chlorosoma vernalis.* United States.

BATRACHIA.

ANOURA :

Tree-Toad. *Hyla versicolor.* United States.

CRUSTACEA.

ENTOMOSTRACA :

Horse-shoe Crab. *Simulus polyphemus.* Atlantic Coast.

LIST OF SPECIES

That have bred in the Central Park for the year 1869.

MAMMALIA.

No. Bred.		
4	Prairie Wolves.	*C. latrans.*
2	Dogs (hybrid), { Greyhound.* / Esquimaux.* }	*C. familiaris.*
3	Scotch Terriers.	*C. familiaris.*
3	Red Foxes.	*V. fulrus.*
2	Ferrets.	*P. furo.*
20	Guinea-Pigs.	*C. cobaya.*
16	Rabbits.	*L. caniculus.*
1	Wapiti Deer.*	*C. canadensis.*
5	Red Deer.	*C. virginianus.*
3	Flores Cattle.	*B. taurus.*
124	Southdown Sheep.	*O. aries.*
2	Chinese Goats.	*C. hircus.*

AVES.

15	Ring-Doves.	*S. risoria.*
12	Peafowls.	*P. cristatus.*
60	Guinea-Fowls.	*N. meleagris.*
14	White Swans.	*C. olor.*
10	White Ducks.	*A. domesticus.*
15	Ducks (hybrid).	{ *A. domesticus.* / *C. moschata.* }

CONTINUED LIST OF BIRDS INHABITING THE PARK.

Family : *Fringillidæ*.

130 *Padda oryzivora* (Linn.), Java Sparrow. Several pair set loose on the Park by Mr. J. Jones.

131 *Fringilla cœlebs* (Linn.), Chaffinch. Several pair set loose on the Park.

132 *Loxia leucoptera* (Gm.), White-winged Crossbill. Very rare.

133 *Chroicocephalus philadelphia* (Ord.), Bonaparte's Gull. Very rare. Specimen shot after leaving Harlem Lake.