No. 1.

To the Board of Commissioners of the Central Park, New York.

GENTLEMEN:—In commencing to make a plan for the Central Park, in New York, I had before me the "circular," issued by the Board; the first "detail" of which is, the "expenditure" allowed by the State.

1. I assume, that at least one-third of the said appropriation, that is, five hundred thousand dollars ($500,000), ought to be devoted to the principal object of that expenditure; the formation of a Public Park, that shall be the ornament of the metropolis of the country, the pride of the State; a trophy of the present to future generations, of the patriotism and liberality of the people, and the embodiment of the refined taste and natural science of the age.

With these subjects in view, I submit the annexed plan, for the carrying of those objects into execution.

In this outlay would be included,—making

avenues, drives, walks, terraces, flower-gardens, play, parade, and skating-grounds, trees, and shrubbery, and planting the same. Leaving two-thirds, or one million of dollars, for buildings, fencing, arches, fountains, and grading the lawns.

2. I have made the four crossings, as per "circular," and to make another crossing between 59th street and the Reservoir, would mar the effect of the landscape; its beauty consists, in *magnitude*, and the crossings, as designated, are sufficient for the purposes intended.

3. The principal and most sublime object of the Park, would be the parade-ground, surrounded nearly on three of its sides, by natural terraces for the spectators. The terrace at 10 A. 10 A., would be subdivided into smaller terraces of ten or twelve feet each, and would require a flight of steps from the foot to the top of the bank, giving in the landscape a splendid amphitheatre of about forty acres, with avenues, towers, and heights, arches, exhibition hall, gardens, play-grounds, and all the scenery of the south half of the Park.

4. I have designated three play-grounds; one at the south, of eight acres; one in the middle, of six acres; and one at the north, of four acres.

5. The site for the exhibition hall would be on rising ground, forming a prominent object in the landscape. The approach road to it of fifty feet

wide, with roads in every direction for easy access and departure, and to prevent crowding.

The site for the observatory, is designated to suit the object in view.

6. Shrubbery, fountains, and statuary, always harmonize in the landscape. The centre avenue is only proper for arches.

7. The flower-garden in front of the exhibition hall, is made with a grass belt, twenty-five feet wide, to keep the dust from the flower beds. The beds being large, should have an edging of turf or grass three feet wide all round them.

The walks are ten feet wide in every direction.

The same remarks apply to the flower-garden at the north end of the Park.

The gardens are constructed with the view of having a light fence placed round them, when deer, &c., are put in the Park.

8. I have made a lake or ornamental water in connection with the Reservoir, without infringing on its capacity. The curved line which runs across the lake, is the boundary of the "lands taken for the Croton Reservoir," and the north part of the lake would be shallow water for fish, fowl, and aquatic plants, it would, also, make a skating-ground at the north end of the Park, while the plats marked 15. 15. would be flooded for a skating-ground for the south end.

Should the lake be made independent of the Reservoir, there would still be left about one hundred acres of water for the reservoirs, and the lake ground could be taken when needed. And should the disposition of the "lands" be IRREVOCABLE, the plat is still complete in all its parts, and would be carried on as marked on the north side of the curved line, only leaving out the centre avenue which projects into the skating-ground.

A greenhouse and nursery will be requisite to keep up the Park when finished, and to furnish the flower-gardens.

Many natural objects, such as Vista Rock, Summit Rock, Bellevue Rock, Mount Vernon, &c., would be altered as little as possible from their present state, to give variety and interest to the Park.

MEMORANDUM TO THE PLAT.

The grassplats for lawns, &c., are washed with Sepia, light.
The flower beds are washed with Sepia, dark.
The avenues, roads, &c., are shaded with Sepia.
The trees are shaded with Sepia, dark.
The water is shaded with Indian Ink.
The sites for buildings are Paper, White.

A *Duplicate* "*in Colors*," is not needed to my plat, I *complied with the requirements of the* "*Circular of the Board.*"

The plat explains itself,—For, as the *Topographical plan* of the "lands" by the *Engineer*, is to the GROUND in its *present condition:* so is the *plat* of the *garden architect*, to the PARK, *when finished.*

THE ESTIMATES.

As nearly every foot of the soil in the grounds, will be either turned over, or removed, it should not have to be *moved twice.*

I have made the estimates, on the same principle, that I do in my practice when making contracts, namely, *that one part of the work helps to do another part.* I have *braced* the items that work in this way. See Est.

MODE OF LAYING OUT, AND STAKING OFF.

The south centre avenue is the *first work.* Fix its grade on Fifty-Ninth street, and proceed on its whole length, to, and around the parade-ground. Stake, so that it would have a fall both to the east and west from about its centre, so as to give the roads to, and from it, as easy and natural grade as possible. The same remarks apply when staking off the centre avenue. The approach road to the exhibition hall will rise, while the road on the west side will fall, so as to allow for the levelling of the flower-gardens. Indeed, in all cases it will require

great care, so as to make no abrupt and short curves. Having fixed the Centre avenue, proceed to the East avenue; fix its entrance as before. Trace it along to the *Arsenal*, making a sufficient detour in the curve to clear that building. Work on to the first crossing on Fifth avenue, then proceed to the second crossing, and stop.

Then take the West avenue, in like manner, to the second crossing, west of the Reservoir.

Now these *three avenues* are the points to lay off, work and grade to, both for crossings and roads.

The north part of the ground should be worked off in the same manner.

The South Centre avenue would have a side-walk on each side, ten feet wide. The other avenues would have a walk on only one side.

The width of the avenues, &c., are given in their proper place, and every one by the SCALE on the plat.

All the principal Avenues and Crossings should be Macadamized. The Walks would only require *gravel.*

N. B.—*All roads must be dry.*

Twelve inches of broken rock for Avenues, 6 inches for Roads.

ESTIMATES FOR THE CENTRAL PARK, NEW YORK.

	Dollars.	Dollars.
Trees, Shrubs, and Planting . . .	75,000	
Fountains and Statuary . . .	15,000	
GRADING.		
Avenues, Roads, Parade-gound, Play and Skating-grounds, and Flower-Gardens .	225,000	
Furnishing and Finishing Flower-Gardens	15,000	
Macadamizing Roads, &c., and making Walks	150,000	
Making Terraces, &c., for Spectators .	20,000	500,000
Iron Fencing, Seats, &c., and Arches .	150,000	
Lighting Avenues and Crossings . .	15,000	
Irrigating Pipes and Hydrants . .	15,000	
Draining, Extra	15,000	
Draining, Grubbing, Frenching, Filling-in, and Excavating for Lawns . .	150,000	345,000
		$845,000
The Exhibition Hall, say . . .	200,000	
The Observatory, " . . .	50,000	
The 5 Towers, " . . .	50,000	300,000
		$1,145,000
Balance for Clearing Ground and Sundries		$355,000
Total . . .		$1,500,000

N. B.—As this is not a Contract, I have left an *ample margin* to allow for *accidents*.

REFERENCES TO THE PLAT, FOR THE CENTRAL PARK.

1. Entrances to Avenues.
2. Site for Lodge, Gate and Archway.
3. Sites for Flower-Gardens.
4. Sites for Towers.
5. Play-grounds.
6. Shrubbery.
7. Fountains.
8. Statuary.
9. Parade-ground.
10. Spaces for Spectators.
11. Site for Observatory.
12. Site for Skating-ground, North.
13. Sites for Arches.
14. Reservoirs.
15. Skating-ground, South.
16. Entrances to Crossings, 50 feet wide, Gutters 3 feet wide.
17. East Avenue, 50 feet wide, Sidewalk, 10 feet wide.
18. West Avenue, 50 feet wide, do. do.
19. South Centre Avenue, 80 feet wide, 2 Sidewalks, 10 ft. wide.
19. North Centre Avenue, 50 feet wide, 1 do. do.
20. Roads, &c., 40 feet wide, 1 Sidewalk, 10 feet wide.
21. Site for Exhibition Hall, Approach Road, 50 feet wide.
22. Site for Greenhouse and Nursery.

Should my plan for the Central Park be adopted, any further information on the subject will be at the order of the Board of Commissioners, and have immediate attention.

I am, Gentlemen,

Your very obedient servant,

RICHARD DOLBEN,

Garden Architect and Horticulturist.

ALLEGHANY CITY, PA., *February* 10th, 1858.

No. 6.

EXPLANATION AND SPECIFICATION OF THE PLAN BY JOHN B. DEUTSCH.

To the Board of Commissioners of the Central Park.

GENTLEMEN: I embrace the present opportunity of addressing a few lines to you by way of preface. It has been my intention in my Design to combine Nature with Art. In order to do this, I had to go back in my mind to the time when that parcel of land, now chosen for the Central Park, was in its natural state, which, I am glad to say, has been my privilege, at the time with heart-felt joy; for it was a feast for me to resort there, to be surrounded with objects congenial to my mind. It is needless here to describe the scene before the rude hand had stripped it of its former beauty and left it in a state of desolation; but it has been ever present to me, in my design now before you, and given me great facility in carrying out my ideas.

My idea is: to leave the shape of the ground, with its slopes, valleys, and rocks, as near as possible in its present state, with the exception of im-

provements. In order to do so I would cover some of those rocks which are bare, here and there with good soil, and embellish them with shrubs, mosses, trees, &c. Some of those rocks I would have blasted to get depth of soil, to make grass and trees grow. The walks I would wind around those rocks which are to remain, and through and over some which cannot be made ornamental. The walks as you see, are partly serpentine shape on my plan. Those places which are very steep, where walks or lawns are to come, I would fill in, and make them easy of access, and grade off corresponding with the adjoining natural ground. The sides which are lower than the side-walks of the streets I would have built up with blue stone, front dressed, and very closely laid, and those where rock is, if not ornamental, I would have smoothed off and covered with vines, &c. You will perceive in my placing the groves of trees in my plan, will give a variety of scenery, so that at every little distance the eye will be attracted by something new. Some groves of trees I would plant of one species, others I would mix to create a contrast; some I would scatter in and around the lawns, at irregular distance apart; some I would plant to create perspective views, to different objects. The trees around the parade and play-grounds and crossings, are in straight rows, but I would choose for each crossing a different species of tree; also the

same with parade and play-grounds—say, choose maple of variety, horse-chestnut, linden, elm, ash, etc., etc. For the forest back of the parade-ground I would choose a variety of oaks, tulip-trees, maple var., elm, ash, birch, pepperidge, pine var., hemlock, spruce var. For groves I would choose all above-mentioned kinds for the middle of them, and taper off to the four sides with smaller trees and shrubs, and I would make use of all the shrubs and trees which are at present on the ground.

The walks are, with exception of the garden walks, all sufficiently wide to drive with carriages, for convenience of the public (although I would suggest to the Board not to allow any riding, except to the Hall of Exhibition and through the crossings, which will make beautiful drives). My idea is to bring the public here on a common level; let visitors enjoy themselves on foot. It will also prove less expensive and easier to keep in order. The crossings will be on an easy grade, corresponding with the fall and rise of the grounds, as all the other large serpentine walks, which will make a great variety, and add to the beauty of scenery. The parade and play-grounds, and garden-plots and parterres, will be all made level or nearly so, and properly shaded with trees. The flower beds will be of different shapes and sizes, surrounded by grass. Seats, statues, vases, and fountains will be

put in their proper places, and great attention will be taken in planting not to intercept the views to different objects. The whole Park to be enclosed with an iron fence with twenty-two entrances. You will notice on my Plan a part in front of the Hall of Exhibition in paint. I did it to show how it will appear in nature.

EXPLANATION.

A Entrances,	22
B Hall for exhibition,	1
C Carriage porch,	4
D Bosquet, with fountains, statues, and flower beds,	3
E Flower gardens,	7
F Play grounds,	3
G Small lake,	1
H Terrace, with vases and flower beds,	1
I Parterre, with fountains, statues and flower beds,	1
K Cascades, with statues of Neptune and Apollo over head,	2
L Reservoir,	1
M Ground reserved for Reservoir,	
N Parade ground, surrounded with three terraces,	1
O Forest, with fountains, and statue of Diana in centre,	1
P Towers,	2
R Observatory,	1
S Skating ground, with islands and swan houses,	1
T Stone bridges,	2
U Statue of god Pan,	1
X Shady recesses for seats,	11
Y Crossings from east to west,	4
Z Triumphal arches,	5

Specification and Cost of Work.

Large walks to be 15 feet wide, made of 2 feet coarse broken stone, and 6 inches fine broken stone on top, finished with gravel, and well rolled, at $30 the running rod,	$133,500
Small walks to be 8 feet wide, 1 foot coarse brown stone, and 6 inches fine brown stone on top, finished with gravel and rolled, at $15 the running rod,	12,000
Crossings, with sidewalks, 50 feet wide, made of 3 feet coarse broken stone, 6 inches fine broken stone on the top, finished with gravel and well rolled, at $70 the running rod,	47,040
The play grounds, made in a similar way as the walks, at $17,280 each,	51,840
Parade ground in similar way, including 3 terraces,	60,000
Grubbing and trenching, $100 per acre,	40,000
Draining and irrigating, $4 a rod,	3,600
Filling in with stones and good ground,	100,000
Excavating,	10,000
Building dams, &c., for skating and small lake,	15,000
Two stone bridges, at $500 each,	10,000
Twenty-two thousand trees of variety and shrubbery and flower roots,	16,000
Grass seed, and sowing and rolling,	1,000
Planting the ground,	4,000
Plumbing work,	10,000
Gas, every 200 feet a post, along the walks,	113,000
Manure,	20,000
Fountains, statuaries, vases and seats,	40,000
Hall for exhibition,	150,000
Observatory,	30,000
Two towers, at $10,000 each,	20,000
Inclosure of iron, 5 feet high, set in a blue stone base, 12 inches wide, and 12 inches above the sidewalks of the street, at $5 a ft.	106,000
Twenty-two entrances, of brown stone piers, with vases on top, with iron gates, at $800,	17,600
Five triumphal arches, at $10,000 each,	50,000
	$1,060,580

If the Board should wish any further particulars concerning my ability in laying out grounds, they will please inquire of Anson G. Phelps, No. 20 Cliff street, New York, or Henry Sheldon, Tarrytown.

Yours respectfully,

JOHN B. DEUTSCH.

No. 11.

To the Board of Commissioners of the Central Park.

GENTLEMEN :—In accordance to a resolution of the Board of Commissioners of the Central Park, offering Premiums for the four best designs for the laying out of the same, the accompanying plan has been prepared, and is herewith respectfully submitted :

Before entering into a description of the same, we would beg leave to state, that we find the accurate length of the plan to be 10 feet 4 $\frac{24}{100}$ inches by 2 feet 3 $\frac{20}{100}$ inches width.

Since public opinion has been awakened to the necessity and importance of a park, extensive enough to afford enjoyment to the hundreds of thousands, to all who seek the fresh air with a view of exercising or strengthening their physical or mental efficiencies or deficiencies; so many statistical remarks have been advanced by the press, by professional and scientific men, that it appears to us to be superfluous to add any thing that has no actual bearing upon the subject under consideration. Frequently quotations from the works of illustrious

authors form a prominent portion of manuscripts of similar character, often very interesting to read or study, but not always available for practical purposes under any other auspices. We have on this account omitted a lengthy introduction, and propose to conduct those inclined to follow us on an imaginary tour through the Central Park, as laid down on our plan.

Entering the ground at the junction of Fifth Avenue and Fifty-Ninth street, we find ourself in that portion of the Park, distinguished by the engineers, as the first Division, extending from Fifty-Ninth street, to midways of Sixty-Ninth street, and from Fifth to Eighth avenue. Although very picturesque in its details, the entire area presents such an extremely diversified surface, that without removing some of the rocks and elevations encumbering now the valley, running from Fifty-Ninth street, in a northwesterly direction towards Sixty-Sixth and Sixty-Seventh street, on Eighth Avenue, any attempt of producing a desirable broad effect will prove unsuccessful. We have been endeavoring to adapt our plan of improvements to the natural formation of the ground, as far as it seems to us practicable, without taking too limited a view of the object to be aimed at. Those elevations being mostly separated from each other by intervening valleys, the presence of so many within such a small

compass undoubtedly tends to depress the appearance of those of a more favorable position and outline. The rule which many entertain in regard to the laying out of grounds, that every thing which nature might have happened to put there, should remain in its original state, does not hold good in most instances; it does not in this. We cannot expect to see or display on an area of $1\frac{1}{9}$ square miles, surrounded by princely mansions, what seemed to us lovely and charming, as long as such area of ground were in its original state, surrounded with woods, meadows, rivers, etc., as far as our eyes from our more or less elevated point of view could reach, all had a relative bearing upon it. The rule which nature applies in her manifold and ever pleasing distribution of hills and dales, woods and meadows, springs, rivulets, rivers and lakes, should govern our imitation of her, otherwise all attempts at laying out grounds will fail to produce the desired effect. Besides, sanitary considerations growing more urging as the upper part of the great metropolis increases in inhabitants, require some of the lower ground of this division to be raised more or less, and in removing some of those knolls and rocks, now occupying more of an area than is desirable, there would be material enough to do all the filling actually necessary, and, in fact, the only chance to do it right is now. By this we gain also material for building roads of the best kind.

We proceed now through the gateway, on Fifth Avenue and Fifty-Ninth street, on a roadway drive, 50 feet wide, dividing into two, about 500 feet north of the entrance gate, the one leading along Fifth Avenue towards the upper part of the park, the other along Fifty-Ninth street, towards Eighth Avenue; both being part of the circuit, the latter having $5\frac{3}{4}$ miles in length. In regard to the width of the road, we consider the same ample to accommodate all the vehicles that may probably avail themselves of it at one and the same time. Pedestrians entering the ground by the same entrance, find a walk 10 feet wide on the right, and proceeding somewhat further, a retired road 32 feet wide, on their left, to escape the dust and dangers incident to roads in general. Besides the sufficiency of room, there are two more reasons why a 50 feet road would be preferable to one wider; both together not equally important as sufficiency of room, but, notwithstanding, worthy of consideration.

The difference of cost for building one wider, would, by a length of 46,645 feet, or $8\frac{3}{4}$ miles (50 feet road), tell heavily in favor of 50 feet, and furthermore a wider road would certainly deduct considerably from the retired appearance, so much sought after. It is of the greatest importance to keep meadows, groups of trees, roads in particular, in a due proportion, that is, not in a strict mathe-

matical sense, without interfering, in point of practicability, with the wants of the public. With long and gentle curves, ascending and descending the hills and dales gradually, there is, on a 50 feet road, ample space for ordinary size vehicles to driving or passing 6 abreast. To attach side-walks to the drives, as suggested in a former plan, is unusual in this style of laying out grounds, and seems to us impracticable. Without lining such roads on both sides with a row of shade-trees, which would certainly not be in good keeping with the rest of planting, those frequenting them would be almost incessantly exposed to the sun and dust. Where they might be adopted is along the principal transverse roads, but even there they are out of keeping and liable to be abandoned.

The secondary road, 32 feet wide, leads off, on our left, gradually, ascending the plateau now occupied as Nursery-ground, which we have chosen as a site for the Hall of Exhibitions and Concerts. The ground-plan on this side is indicative of the removal of the Crystal Palace to that spot. This plateau is very appropriate, if not on account of its one-sided position, the more in an artistical point of view. The second and third Divisions are well provided with points of attraction; to add any thing to them, particularly by building such an edifice in this neighborhood, would be crowding them. The

first Division being somewhat behind the others in point of natural beauty, might be considerably relieved by building on this site. To build an edifice of such dimensions, half-ways or nearly so, between Fifth and Eighth avenues, would seriously disturb the general appearance of that portion of the Park, actually dividing it into two. In the symmetrical style of gardening there is no such objection; but, imitating Nature, we should avoid every thing requiring the aid of figures, with a view of ascertaining equal distances. On this site the Crystal Palace would be much more likely to attract the attention of strangers to its beautiful outlines and choice contents than alongside that solid stone-wall. In regard to convenience, this site does not seem to be surpassed by any, being easily accessible from three sides. In the neighborhood of the Crystal Palace we might, with propriety, expect to find the Statues of Apollo and Minerva. Leaving this spot, and proceeding a few hundred feet north, we come to the first crossing, leading from Fifth Avenue to Eighth, and right opposite Sixty-Seventh street, on either side; following this transverse road, we come to one of the three play-grounds, S.S.S. The one before us contains about 9 acres, and is apparently well adapted for that purpose, on account of its dry and airy location and even ground; besides this, being in a situation where the presence of many tall

trees would be rather objectionable than any thing else. Another object of attraction in this Division is an irregular-shaped pond or basin of the depth of 4 or 5 feet, with a large fountain in a nearly central point of it, the jet surrounded with rocks, and the ejected water rising to the height of about 90 feet from the surface. This pond also receives the rivulet running down from Eighth towards Fifth avenue. We have altered its course. Returning to the principal drive along Fifth Avenue, we enter the second Division, much more capable of successful improvements than the first Division. Proceeding as far as Seventy-Second street, we come to another entrance-gate and 50 feet road-way, leading in a westerly direction, and being a branch of Sixty-Seventh and Seventy-Ninth street crossings. Passing onward, we come to an artificial lake, of nearly 12 acres' surface, and used as a skating-ground in winter. Laying out this lake, it is proposed to follow the sixty feet horizontal curve; cutting down on some places from 1 to 9 feet, forming a gentle slope towards the water's edge, and filling on two places from 1 to 7 feet, bringing the water-level to about 49 feet above tide-water mark; with an outlet near Fifth Avenue, and between Seventy-Third and Seventy-Fourth streets.

The rivulets and beautiful undulations of the ground in this vicinity, suggest the propriety of a

lake in this particular spot. The principal streamlet, traversing the park from Seventy-Fourth street and Eighth Avenue, through the central valley towards Fifth Avenue, forms a very pretty feature as long as the ground remains in its present state, but will become entirely inadequate, in its present course and extent, if improvements of a desirable character are contemplated. It would, in our opinion, under most favorable circumstances, not suffice to supply a lake of from 10 to 12 acres, by an average depth of 4 and 5 feet, without growing stagnant in mid-summer.

We have in view of this designed an ancient aqueduct, supplied by the Croton Reservoir, (see sketch,) the water conducted under ground as far as to the aqueduct on it, that is, above the arches, running in an open channel, expanding in width on decreasing in depth as it approaches the mouth, precipitating down to a depth of about 33 feet, forming a beautiful cataract, with comparatively little waste of water. A pond-like reservoir connected with the principal lake by a stream, receives the water from the aqueduct, and also from that portion of the above-mentioned streamlet lying west of the aqueduct. It would have to be somewhat altered or corrected, so as to form the principal outlet of water coming down from Eighth avenue, and such gathering in this vicinity. Although suggesting its

availability when corrected, we entertain some doubt as to its continuance or adaptability as a stream, should the lots west of Eighth avenue become covered with buildings, or the streets be graded, as is contemplated before long, we expect. Considerable experience in such matters has led us to mention this as we pass by. To form, however, a more definite opinion of it, it requires more information than we succeeded in our efforts, to receive Returning towards the lake, looking from the bridge, in a southern direction, we see a temple of the class of monapteros, standing on the lake's shore. It might be devoted to Neptune, and contain a statue of the same. Proceeding now on the main road leading towards Seventy-Ninth street, on Eighth avenue, for a distance of 1,300 feet, we ascend the hill on the south-west corner of the Croton Reservoir, known as Vista Rock. On it we would propose to build a column of ample dimensions, to contain a winding-stair in its interior leading up to the height of about 75 or 80 feet from the base, with a platform at the head of the stairs, surrounded by a railing, and the whole surmounted by a cast figure of Liberty. Here a beautiful panorama would lay before us not easily surpassed by a similar attempt on another site. Descending this hill on its eastern slope towards Fifth avenue, on a footpath ten feet wide, we approach the parade-ground, covering

$34\frac{222}{100}$ acres, exclusive of road, &c., the terrace on the west side, (B on the plan.) The proposed grade of this area is 90 feet above tide-water along Fifth avenue, corresponding nearly with the grade of Fifth avenue, between Seventy-Ninth and Eighty-Sixth streets, ascending about three feet towards the eastern wall of the Croton Reservoir, until within about 120 feet east of the latter, a stone wall 14 feet high is built up of the shape indicated on the plan, (see sketch.) All surplus soil or materials, (except such fit for other use,) lying in front of this wall and towards Fifth avenue, to be used either for filling in behind this wall, so as to form an inclining plane from the eastern wall of the Reservoir towards the former, with descent of about 4 feet. On both ends space might be excavated for apartment arched over (marked by dotted lines), for the accommodation of the public or military whenever occasion should require such. Midways of this terrace wall is a porticus about 20 feet square, containing the stairs to the terrace above; also two semicircular basins, with fountains; we enter the porticus on two sides. Having ascended the main stairs leading to the top of the wall, a few steps on our right and left lead to the platform above the porticus, being 4 feet higher than the terrace. This is for the accommodation of the military inspectors and those especially selected by them. On this wall, at appropriate

distances, four or more statues of the principal heroes of '76 might surmount an appropriate pedestal. Deducting 111 feet, the height of the proposed grade of the terrace along the wall of the Croton Reservoir, there remain 8 feet of the latter above ground, the Reservoir wall being 119 feet. On those 8 feet we would suggest to add about 7 feet of brick or stone wall, with a view of building an arcade 15 to 20 feet wide, with columns in front supporting the roof, niches in the wall behind to receive the busts of distinguished heroes, statesmen, and public benefactors.

In our humble opinion, there is not a more appropriate opportunity to preserve in the public mind the merits of those civil or military patriots, and the gratefulness which we all, and coming generations, owe them. Near Ratisbonne, in Bavaria, King Ludwig I. has set a worthy example, by building a splendid edifice, called Walhalla, for a similar purpose, and since then the neighborhood is resorted to by strangers of all nations. Similar attempts, if carried out on a liberal scale, undoubtedly tend to inspire our mind with gratefulness, and a desire to follow the footsteps of those whom the entire nation may well be proud to consider their own.

Besides this, in a practical sense, the proposed covered arcade would afford shelter to thousands happening to be in the vicinity on certain occasions, should a storm set in without fair notice.

By planting out with trees, shrubs and running vines, the greater portion of the three remaining sides of the present Croton reservoir wall, those not quite familiar in this locality would hardly imagine to be near a rectangular reservoir covering thirty-three acres of ground.

Before leaving the parade-ground, on our tour northward, we take a look at the hill, south of the south-eastern corner of the reservoir, with a small grove of cedars on its summit. It seems to us to be suggestive of a monument in honor of the brave who have fallen or participated in the battles for independence.

Similar occurrences should not be permitted to slip our gratitude without an appropriate memento. We have, in view of this, chosen the site of such monument.

Proceeding, now, towards the entrance on Eighty-Sixth street and Fifth avenue, leaving the same on our right-hand side, we perceive a straight road, the continuation of the circuit. Being between two parallel running enclosures, too small a distance apart to adopt a curvilinear line, there was no alternative. That side next Fifth avenue might be planted with an irregular belt of trees and shrubs, to break the monotonous appearance; the side next the reservoir should be principally planted with shrubs and half-trees, just high enough to cover the

wall of the reservoir, with a few trees at irregular intervals.

Approaching Ninety-Sixth street crossing, we leave the circuit on a ten feet wide walk, leading to Bellevue Rock, nearly as high as the wall of the Croton lake (119 feet). On this spot, a square temple devoted to Mercurius, the protector of peace and commerce, would be quite in good keeping. This temple might be built in a manner, as though unsuccessful bygone centuries had been trying the usual mode of demolition.

Moving onward, we approach, now, the upper end of the park, leaving Mount St. Vincent on our right. The main building there (brick building) might be advantageously preserved for purposes of public interest. Looking at it from a distance east of it, it presents a very picturesque feature, and will be more so should the other building be taken down. A roadway, fifty feet wide, branches off in an easterly direction, leading to the entrance on corner of Fifth avenue and One Hundred and Sixth street.

We proceed westerly, and reach the northern boundary line of the Park, between Sixth and Seventh avenues on One Hundred and Sixth street. Under the roadway, south of this entrance, a vault would have to be built to convey the water from the rivulet, traversing this division, into the sewer

of One Hundred and Sixth street and Sixth avenue. Leaving, now, the eastern side of the park, keeping on the circuit until we come to a branch road on our right-hand side, thirty-two feet wide, leading down to the junction of Eighth avenue and One Hundred and Sixth street. This road would have to be blasted out of the rock, and would not only be an additional convenience, but add to the general good appearance of this spot, bringing the perpendicular precipice of rock, arising from the much lower grade of One Hundred and Sixth street, to a more gradual descent; otherwise, this corner would have a crowded appearance. By another thirty-two feet road we ascend Mount Prospect, crowned by an astronomical observatory (see sketch) in the rear, *i. e.* we designed to build a substantial arbor for those who may feel inclined to take a rest. Without availing ourselves of the building on this site, we have a view from here that bids fair to become the favorite spot of the multitude. The annexed sketches were not prepared to annex to this report, but merely to illustrate the subject for our own use afterwards, however, we concluded to annex them, hoping that the merit of the subject will not be judged by the workmanship in which they are done.

On our way down we enjoy a constant changing scenery, produced by large masses of trees and shrubs. Any attempt on our part to convey to the

mind of others the impression which a well-arranged park scenery is likely to produce, would be a failure, a task for the pen of the much lamented J. A. Downing; in point of conception and execution we are more successful. We omit saying more on the different modes of planting, referring simply to our plan; the only remark that we might make here is, that the principal masses of trees seem to be more separated than is desirable. This appears to be the case on the plan, because we preferred to preserve, to the greatest possible extent, the outlines of roads and walks passing through such masses; in reality, those groups of trees and shrubs lying on either side of the roads, will appear as more compact masses, with deep recesses and projections in their outline.

Having passed Eighty-Sixth street, crossing near Eighth avenue, we ascend Summit Rock, 138 feet above tide-water, the highest but not most favorable located spot within Central Park. The circular ground plan on its summit is that of a Reservoir, 15 feet diameter, with an exterior stone wall, 160 feet diameter around the former, and 20 feet high, forming a promenade around the tower-like tank, 20 feet above the base, ascended by a winding-stairs on two sides, leaning against the exterior wall; a 12 feet wide viaduct, extending in a southern direction, leads into the second floor of a square building connected with it, containing the steam-engine

for raising the water in the tank above to a level of about 203 feet above tide-water, or 104 feet above the grade of Eighth avenue near Eighty-Third street. This tank is to supply the principal fountains and other artificial water-works requiring more pressure than can be produced by the Croton Reservoirs. If this establishment would be built somewhat stronger and higher than we suggested here, it might answer in cases of fire in the vicinity of the Park. This system has been adopted in many of the principal cities of Europe, and proved much superior and cheaper than any other. The noise and danger incident to running fire-engines and hose-carts in the usual mode, is certainly a serious objection to a place like this, but particularly to those who contemplate building on those really beautiful sites all around the Park, nothing could be more desirable. We take leave of this subject, and proceed down along Eighth avenue; having passed Seventy-Ninth street gate for a distance of about 900 feet, we turn to the right and enter the flower-garden. The entire ground taken up by this, would have to be raised sufficient to permit the water to run under ground in hard rains, without the latter coming too near the surface of the soil. Near Eighth avenue, a stone wall, 8 feet high, with 3 semi-circular recesses, is built up against the embankment. The largest of those

recesses containing the statue of Flora; the smaller, two of her most devoted pages. On the wall a substantial arbor-like framework of iron is set up, covered with flowering vines and creepers; at *c* a basin of marble or iron, with a fountain and vases at the ends; *a a a*, are the flower-beds; *b b b*, a grass-plot between the flower-beds, with single specimens of standard roses and other favorites of a similar character in appropriate places. The entire garden to be reared with a thickly-planted belt of shrubs and trees, not exposing it to the sight or dust from Eighth avenue.

There is hardly a spot equally retired and qualified to receive the tender protegées of Flora. This mode of laying out flower-gardens, interspersed with grass-plots, as described above, is far more pleasing and effective than the usual mode of displaying flowers, bed on bed. Returning to the circuit we approach the lower end of the Park, and arrive at a branch road leading to the gate, on corner of Fifty-Ninth street and Eighth avenue. Having passed over the entire circuit, $5\frac{3}{4}$ miles long, and noted every thing of interest, we close our tour with a few remarks of the probable cost of the different items. Working plans have been prepared to facilitate the calculation, but are not ready to be brought before the public. A few profiles are annexed, showing the grade of the principal

crossing, namely, on 67th, 79th, 86th, and 96th streets. Working plans can be furnished if desired, at 2 days' notice.

AUGUSTUS HEPP & CH. VOGEL,
Landscape Gardeners, &c.

NEW YORK, March 30th, 1858.

No 23

REPORT,

Accompanying Design,

FOR LAYING OUT

"CENTRAL PARK,"

MARKED "ARCADIA."

REPORT,
ACCOMPANYING DESIGN,

FOR LAYING OUT

"CENTRAL PARK,"

MARKED "ARCADIA."

Before proceeding to explain my plan, it is necessary to make a few remarks on Parks in general. Parks are either appendages of royalty, a wealthy landed aristocracy, or for the recreation of the people. With the last only have we any concern.

Parks for the people have been laid out, of late years, in many places. At Birmingham, Manchester, Leeds, Sheffield, Liverpool, London, and vicinity, Sydenham, for instance, and many other towns of England. In France, the most recent is the "Bois de Boulogne." In Germany, the parks of Nymphenburg and Cassel are perhaps the most celebrated, the attempts of Prince Puckler Muskau not being so successful. Of these, the English examples seem best adapted for the Central Park of New York. The English, or natural style of landscape gardening, is acknowledged by the most eminent professors of the art to be founded on more correct principles than any other, being an adaptation of natural features to local requirements. Every one knows that beautiful sites for buildings, pleasure grounds, etc., etc., are to be met with in abundance, in any picturesque locality. Every one does not know, that by the aid of certain fixed principles of composition, such sites may be produced any where. The

interior of a large wood is monotonous, and the reverse of picturesque. The trunks of the trees are straight and smooth; the branches having no room to spread, and being shaded by the surrounding trees, are stunted and deficient in foliage, excepting very near the top, which is exposed to the sun. By making glades and open lawns, the sun's rays reach to their roots, causing new branches to sprout down to the very ground, on that side which is exposed to their influence, while the other side will remain almost as bare as before. The ground which was covered with rotten sticks, fallen trees, weedy grass, and unwholesome fungi, will be carpeted with a green sward, and instead of the apparently endless gloom of the primeval forest, we have a cheerful spot, which at once naturally receives the name "Fairy Dell," "Wood Nymphs' Haunt," or the like. If this thinning out of the forest be carried to such an extent as to cause the breadth of lawn to preponderate over the mass of wood, so that the latter shall appear only in groups, patches, and single trees, backed in the distance by larger masses in the form of belts, copses, thickets or the like, we shall have a spot which will be unhesitatingly pronounced Park-like.

The science of landscape gardening consists in knowing how to produce the woodland dell in the one case, or the Park-like expanse in the other. On the forest, the axe must be used unsparingly; on new grounds, the spade. In neither case must nurseryman or woodman "spare that tree." The gardenesque style, though more artificial, is only a refinement on the natural. The individual trees are placed sufficiently apart to enable them to develope themselves in their fullest beauty, while picturesque effect is produced by grouping them in a natural manner.

The treatment of water has only recently been reduced to correct rules, the principal of which are—concealment of the limits, the proper position for islands, and a harmonious proportion to the other objects in the scene.

I do not think it advisable, in this report, to enter into a disquisition on the merits of the different styles of landscape gardening. The French style is well enough at Versailles, but is eminently unsuited to a rugged piece of ground like Central Park. It is a style which requires a geometrical arrangement of long straight avenues on level or graded ground. The topography of Central Park condemns it, *in toto*, and much as I admire it for its grandeur, I unhesitatingly pronounce it unworthy of the serious attention of the Board. In fact, the topography of Central Park admits only of treatment which allows the roads and paths to follow the undulations of the ground, or sweep in curves round eminences, thus obtaining easy grades and varied prospects, which allows the trees to be planted as a painter would place them in a picture, and the water to assume the appearance of sylvan lakes, instead of the canal-like form of the French and Dutch schools. To all this, the natural style, and no other, will adapt itself.

Trusting that I have sufficiently explained my reasons for adopting the natural style, I shall at once proceed to state the requirements of Central Park.

1st. Space.
2d. A leading feature, such as a main avenue or tour, one or other to be subordinate.
3d. Wood, for shade and ornament.
4th. Water.
5th. Roads and paths.
6th. An original and characteristic design.
7th. A parade ground for the military.
8th. Ample means of entrance and exit.
9th. Police supervision.
10th. Play grounds, gymnasiums, &c.
11th. Buildings for the accommodation of visiters.
12th. Sites for gardens, more or less ornamental, to contain fountains, statues, vases, and the like.

I shall proceed to explain my plan, by taking these requirements in order.

First—Space.

The limits of Central Park are fixed by law. Every one must be aware that the Park grounds are very long and rather narrow, and though containing 776 acres, the reservoir grounds, besides reducing the area to about 600 acres, virtually cut the Park into two pieces, separated from each other by 17 blocks, or about three-fourths of a mile. Whilst the landscape gardener can not alter the boundaries, in fact, he can do much to increase the apparent size of the Park, by concealing its limits, by judicious planting, and other treatment, by conducting the circuit roads near the edge of the Park, but not so close to the Fifth and Eighth avenues as to have their proximity obtruded on the visiter, by placing the lakes, main avenue, principal views, and objects of interest generally, towards the centre of the Park. By careful treatment of the planting, forming a number of independent and complete scenes, changing at every hundred yards, so as not to be recognizable, the skillful artist will conceal deficiency in breadth.

Second—A leading feature.

The main avenue, being wider than the other roads, and more important in every respect, will, from the convenience which it affords for display, be the favorite promenade of our citizens, and will also be adapted for military and civil processions. The important entrances from Sixth and Seventh avenues, the geometrical treatment of this portion and continuation in one road, the terrace and bridge, the circular opening and scenic treatment where it terminates at the semi-circle or theatre, are sufficient to give it a character superior to that of any of the other roads.

Third—Wood for shade, &c.

My plan shows abundance of trees, in planting which, I have adopted the principles of the best living professors of the art, disposing them in groups, belts, single trees,

&c., and while I am aware that some may think it shows too much wood, I do not think that any great curtailment could be made, without injuring the effect. It is true that great breadth of lawn would be obtained, but what we want in our hot summers is abundance of shade, for which reason no European park, however good in other respects, will serve as a model. The system of planting which my plan shows, has been tried, with the best effect, in many places, and is no new experiment.

Fourth—Water.

Those who are capable of judging of the merits of the system of planting which I have adopted, will perceive that in my treatment of water, I have also availed myself of the experience of others, not by copying any sheet of water now in existence, but by applying to its treatment those principles which reason and experience have shown to be best. The limits of the lakes, are for the most part concealed, and from no one point can the whole sheet of water be seen. This, and the proper position of the islands, are all I have aimed at; the result would be natural and pleasing.

Fifth—Good roads and paths.

The principal avenue is shown forty feet between the kerb, with sidewalks each sixteen feet wide. The circuit and cross-roads are twenty-four feet between the kerb, with sidewalks ten feet wide. The paths which intersect the Park are ten feet wide.

In my dimensions I have adopted the number eight with its multiples and sub-multiples. As this number was used in the Crystal Palace in Hyde Park, in its successor at Sydenham, and in the grounds of the latter under the superintendence of Sir Joseph Paxton, for its known advantages and aids to producing harmony of proportion, it being a binary number, I conceive no apology is required for its use.

The roads are all of easy grade, as reference to the topography of the Park will show. They are so designed as to develope the natural advantages of the Park, as much as possible, and with the paths, are laid down on a complete system of circuit and sub-division, seldom running parallel, and always conducting the visiter to some point of interest. The curves which the paths make are necessary to produce variety, a new scene being presented at every turn. This treatment of the paths would be the most desirable, even if the ground were perfectly level. I need hardly say that such a disposition is most convenient for ascending inclines. The paths have abundance of shade, and afford many excellent situations for seats.

A road, exclusively for equestrians, will be found on the west side of the central avenue.

Sixth—An original and characteristic design.

This design being for a Park of form and requirements altogether different from any other, must be more or less original; and if it meets those requirements satisfactorily, can not be other than characteristic.

Seventh—A parade ground for the military.

On the east side, of the lower reservoir, will be found a parade ground of about thirty acres. This is the most level spot of the size within the limits of the Park, and for that reason seems especially adapted to the purposes of a parade. The ground south of the parade ground proper, can be used for the manœuvres of light infantry and cavalry. The entrances are sufficient in number, and conveniently situated, allowing the military to enter and leave, without interfering with any other portion of the Park.

Eighth—Ample means of entrance and exit.

The lodge entrances at 59th street, opposite 6th and 7th avenues, those on 5th and 8th avenues respectively, at

66th, 76th, 86th, and 96th streets, and on 106th street, opposite the continuance of 6th and 7th avenues, offer sufficient facilities for entrance and exit.

The gates should not be too numerous, as each will require the attention of a resident gate-keeper, who should be a member of the police; besides the expense which many gates entail, it would be unadvisable, to afford facilities for disorderly persons to slip in from the avenues, commit depredations on the Park property, or offences of a graver nature, and slip out again without hindrance. The check which the fact of having to pass an official at the gate entails, will be found of great value in keeping good order within the Park enclosure; a point to which I need hardly draw the attention of the Board. It depends on the facilities for escaping detection, furnished by ill-placed and unguarded gates, no less than an effective police, whether Central Park, shall become the resort of well-conducted people, the play ground of children, the promenade of the invalid, or the haunt of vice and ruffianism.

Ninth—Police supervision.

The details of police supervision hardly fall within the province of the landscape gardener, but I wish to make two suggestions. 1st. That mounted policemen should be employed to patrol the Park, making the entire circuit more or less frequently. The services of one mounted policeman would prevent racing or reckless driving, which, of course, could not be permitted to the few at the expense of the many. 2d. Telegraphic communication, by means of wires laid under the ground between each of the lodges, and communicating with the station-houses of the city. A breach of law or propriety could thus at once be notified, and the offenders most probably arrested, before leaving the limits of the Park. The entrance of a gang of rowdies would be known at every gate, and a look-out could be conveniently kept on their movements. I do not apprehend any ultimate trouble in the Park from improper

characters, but if prudent restrictive measures are not exercised at the very opening of the Park to the public, it will get a bad name. People will be unwilling to trust themselves in any but the most frequented parts, and the beautiful and sequestered walks and nooks will present few temptations to persons of prudence, especially women and children. If, on the contrary, disorderly people find at the outset that the Park is no place for them, that they are marked, followed, watched, and annoyed in every way by the authorities, so long as the disorderly element manifests itself, they will be overawed by the moral influence and example of the well-conducted, and will soon find that the Central Park is a greater boon to them than to their more fortunate fellow-citizens. I can conceive nothing better calculated to humanize the brutal and refine the coarse, than the page of the book of nature, which the calm lawns, woods, and lakes of Central Park will present to them; such, at least, has always been the effect of similar undertakings. My remarks on this subject may seem trite and impertinent, if not harsh and uncharitable, but I have seen the strong so often thrust the weak to the wall, that my sympathies are honestly with the latter, and not morbidly with the former. I wish to keep no class out of the Park, but I desire all to behave themselves when in it; and this, I am sure, strict police supervision, and nothing else, will effect.

Tenth—Play-grounds, gymnasiums, &c.

These I have placed where they seemed to come naturally on the plan. The cricket grounds on the only level places of sufficient extent, besides the parade ground. That on the east side, near 5th avenue, contains $5\frac{1}{2}$ acres, and is easily accessible from the 66th street entrance. That on the west side contains $7\frac{1}{2}$ acres, and is near the 8th avenue entrance from 66th street.

The play-grounds on the upper division, near 96th street, are placed on the only pieces of ground sufficiently level for the purpose. The gymnasiums for young ladies

and children, the archery grounds and gymnasiums for men, containing quoiting grounds, bowling green, &c., if required, are situated along the sides of the avenues, completely screened from them, but easily accessible from the 66th and 76th street entrances. The gymnasium for young ladies is entered, in both cases, from the lodge enclosure, so as to be under the protection of the gate-keeper. The archery grounds, which will be quiet, and probably frequented by the wealthier classes, who have most leisure, will adjoin, followed by the gymnasium for men and boys. This has been found a great advantage wherever it has been tried; no public Park is now laid out in England which does not provide one, with effects so obvious as to require no comment.

Eleventh—Buildings for the accommodation of visiters.

The lodges will afford some necessary accommodation for visiters, besides which, buildings are scattered about the Park in various situations. The terrace, and building above, situated on 59th street, between 6th and 7th avenues, may contain any accommodation that may be required, the details of which, however, do not properly come within the scope of this report. It would be impossible to furnish well digested plans for buildings to a recognizable scale, before the closing of the competition. The experience which years of the study and practice of architecture has given me, is at the service of the Board, when required; the practical advantages of such experience and study remain with me until that time.

The lodges on 59th street are of more imposing character than those on the avenues. As the plan can not show them in elevation, I should state, that there will be an archway over the sidewalks, connected by iron gates, stopped in the centre by a pier, either square in form, or of a decorated character; a column, for instance, with a lamp on the top, similar to the rostral columns in the Place de la Concorde, at Paris. This pier or column is necessary ,as the gates must, on account of the width of

the road, be in four parts; one to fold back against the archway, the other against the pier in the centre. This pier is also very useful in forcing drivers to take the right side of the way, before getting fairly into the Park, or out on the avenue. The lodges themselves are sufficiently large for any reasonable purpose. Those on the 5th and 8th avenues, and at 106th street, are alike, though varying somewhat from those on 59th street.

The lodges are less important, but the carriage way is spanned by an arch of a triumphal character, with gates within itself, and gates and piers at the sides for the sidewalks. These arches may be plain as to style and decoration, but if of good proportions and ample dimensions, would form fine objects at the end of 66th, 76th, 86th, and 96th streets.

The arch itself is set back some distance, while the lodges are placed on the line of the avenue; this will give a very good perspective effect.

The terrace separating the lakes, in the lower part of the Park, will be arched underneath, and will permit persons to cross the water, under the sidewalks of the main avenue, or from lake to lake, beneath the carriage way. The water will be conveyed by concealed culverts, from the west to the east lake, and from the higher to the lower levels, over a dam or cascade, which by a skillful arrangement of rocks and natural features, may be made very effective, without wasting the water. It is impossible to get any considerable body of water, in the form of cascades, except when the fountains are playing, whose waste may be conveyed to the lakes; but the drainage of the land and waste of the reservoir, is sufficient to keep a perpetual and changing supply. The bottom of the lakes should be puddled with clay, which will prevent any loss, except by evaporation. The buildings in the Park are chiefly covered resting-places, in the form of sylvan temples. These need not be very costly. Seats, protected from the sun and rain, may also be placed wherever de-

sirable; the scale of the plan scarcely permits any but the principal ones being shown. The Belvedere Tower, south-east of the lower reservoir, will be a very good place for viewing the parades and the Park generally. It should be in the Italian style, and have floors at various altitudes, which arrangement would suffice for the accommodation of many spectators. The terrace, east of the lower reservoir, does not properly come under the head of "buildings." It will, however, have at its base a retaining wall, the parapet of which will be about 9 feet above the level of the parade ground, which is taken at the altitude of 100 feet above high water mark, stopping 15 feet between the terrace and 5th avenue. The upper terrace will be raised about 6 feet above the lower, so as to accommodate two tiers of spectators, who will thence enjoy a fine view of the military evolutions. Seats are provided on the upper and lower terraces.

Without special instruction relative to the requirements of the observatory, it is difficult to locate it definitely. Much will depend upon the scale and style in which it is proposed to be built. There is a good site for a public exhibition room, opposite the 66th street entrance on 5th avenue. I have there reserved a site, though there are many others which would serve the purpose. There is a good site for an observatory in the upper division, near the 6th avenue, on 103rd street. This may be too far up the island; without knowing the views of the Board, more fully, I have not thought it advisable to provide any other site, though the Park contains many which would, perhaps, be found more desirable.

Twelfth—Sites for gardens, &c.

The theatre, at the termination of the central avenue, has a fine site for a basin, containing jets of any description. This is also a good situation for statues, which might also be placed in the circle where the 66th street crossing intersects the principal avenue. The reservoir terrace can be made as ornamental as may be required. The garden sites are numerous and carefully located. I propose to place the

botanic gardens in the S. W. corner of the Park, on 59th street, which location would be more convenient for the present, and perhaps next generation, than any other. There is an ample arboretum, or shrub garden, which may also contain flower beds, near the 66th street entrance, on 5th avenue.

These grounds are susceptible of as much ornament as can be desired. Gardens in the English, French, Dutch, and Italian styles, are provided on the narrow strip of ground, between the upper reservoir and 5th avenue. These are the proper places for statuary, vases, fountains, and the like. The expensive style of decoration should be concentrated in choice spots like these, rather than scattered about the rest of the Park. The bridges may also be decorated with balustrades, pedestals, statuary, vases, &c., if required. The buildings in the Park should be of substantial appearance, not liable to decay. I have seen some fine specimens of stone from the neighborhood of Kingston, Hudson river; the color is good, and the stone very durable. Brown stone, I can not recommend, either for its color or its durability. Whatever is built in the Park, must be as nearly imperishable as possible; for pedestals, large granite blocks should be employed. The copings of the bridges and terraces should be of Nova Scotia stone, or the Kingston, before mentioned. Many of the temple seats may be of wood, but the principal should be of stone. Boat houses, which are necessary for the protection of the boats, are provided.

GENERAL REMARKS.

The gardens, in the semi-circular space, on 59th street, enclosed within the quadrant approaches, are laid out with great care. The central portion, in the geometrical style, the side gardens, in the natural style. A few steps lead from the main avenue into the central garden, between two obelisks or rostral columns. This arrangement of twin obelisks is the only correct one, as has recently been satisfactorily de-

monstrated by high authority. Obelisks always stood in pairs before the Egyptian temples, and were never intended to be placed as single objects. The single obelisk in the Place de la Concorde, in Paris, interrupts and mars the vista from the Tuilleries gardens to the Arc de Triomphe. This geometrical arrangement of garden, with basin and jet in centre, and flower beds at sides, separated by single choice evergreen shrubs, the whole enclosed by an impenetrable hedge of juniper or Irish yew, admits of considerable statuesque decoration; as also does the terrace above, where a very fine coup d'œil will be obtained not only of the gardens, but of much of the lakes and lower part of the Park.

In the construction of the roads in Central Park, the same system should be adopted as is usual in making railways; the cutting, filling, draining, road and embankment making, should be done by the aid of the appliances which experience in railroad work suggests.

T he Park should first be fenced in by the permanent fence, which should be an iron railing of plain inch and-a-half wrought iron bars, set on a wall and coping of granite or Kingston stone, at least three feet above the level of the outside avenues and streets. Temporary lodges should be placed in the situations hereafter to be occupied by the permanent ones. The main avenue should be commenced immediately, the lakes dug out, which will furnish soil for planting, the parade ground leveled, and the more important planting commenced. The work should be finished first on the central avenue and vicinity and the parade ground.

The bulk of the expenditure will be incurred in improving the lower division, the upper being of a cheaper character than the rest, will cost comparatively little, and being removed from the thickly-settled portion of the city, does not demand immediate improvement. The drainage of the ground generally should be one of the first things done; without good drains, the lawns will not be dry, nor the trees thrifty. That the roads and paths should also be well drained, is also of the greatest importance. The circuit roads, and the four

crossings required by the Board, should be completed as soon as possible, the minor connecting roads and paths may wait their turn.

If properly undertaken, the whole work may be completed in a reasonable time, and for the amount at the disposal of the Commissioners; but much will depend on the way in which it is commenced, and more on the efficiency of the supervision.

For economical reasons, I have left the rocks nearly as they at present exist, removing only some of the smaller, blasting the larger here and there, to get rid of the boulder-like appearance they now have, and in suitable spots, placing soil to receive hardy trees, which take off the naked appearance they would otherwise present. A constant reference to the topography of the Park is necessary to an estimate of the value of my design. By its adaptibility to the ground, I am willing to stand or fall; and I do not think a more effective plan could be *executed* for a less sum. The Board can not fail to be aware of the difference between an engineer's estimate and a contractor's tender. I have endeavored to obtain the greatest effect for the least money, and though a finer plan, if not better effect, might undoubtedly be produced, it could not be *carried out* without increased expenditure.

"What need the bridge much broader than the flood?
* * * * * *
Look, what will serve, is fit."

NEW YORK, MARCH 18th, 1858.

J. W. BELL, PRINTER, 38 ANN STREET.

No. 24.

DESCRIPTION OF DESIGN

FOR

CENTRAL PARK,

By Leander.

The details of my design may be arranged, for the sake of clearness and brevity, under the following heads:

Public Buildings.

1. Music Hall.
2. Gallery of Art.
3. Cabinet of Geology.
4. Observatory.

Flower Gardens.

1. Architectural.
2. Irregular.

Groves.

1. Grove of History.
2. Grove of Authors.

PLAY-GROUNDS.

1. Gymnasium and Stadium.
2. Ball-ground.
3. General play-ground.

PARADE-GROUND.

THE PARK COLUMN.

TOWERS.

COTTAGE SITES.

PAVILIONS AND TEMPLES.

FOUNTAINS, STREAMS, AND LAKES.

ENTRANCES AND ARCHES.

ROADS AND WALKS.

ESTIMATES.

MUSIC HALL.

This Hall I suppose to be intended for a variety of purposes. I have applied to it, for convenience, an appellation referring to one of its probable uses. In locating it, (near the line of Sixty-Ffth street,) I have had two principal objects in view.

First, *Elevation;* to improve the architectural effect by making it prominent above the foliage of the Park, and visible from the adjoining streets and avenues; and also to afford from the portico a commanding view of the southern portion of the Park.

Second, *convenience of access;* which for half a

century to come will require it to be near the south end of the Park. Public convenience is also consulted by the approach, which reaches it from each of the four south entrances by a drive as nearly direct as can be made in conforming to the ground, and avoiding straight lines.

Gallery of Art.

This building is not called for in your circular, but the *arsenal* can be altered and adapted to this purpose at so trifling an expense, that I think you will not hesitate to grace the Park with such an Institution. I would submit a plan, if acceptable to your Board, for supplying it with unexceptionable *Works of Art*, which would not draw upon your present funds.

Cabinet of Geology.

I propose to alter the brick edifice on Mount St. Vincent, so as to adapt it to this purpose. Such an Institution, though not contemplated in your circular, is by no means inconsistent with the legitimate objects of a public park. The expense of alteration would be inconsiderable, and with the facilities that exist at the present day for enriching such a hall with the treasures of science, the cost would be too trifling to form an objection.

Astronomical Observatory.

The site I have selected for this Institution (on the north-west border of Croton Lake) appears to be in every way adapted for the purpose. The building, by its elevated position, will not only be an object of interest and beauty from nearly every prominent point in the park, and from the adjacent avenues, but will command a wide and unobstructed horizon for the sweep of its instruments, and will lack nothing that situation can impart to make it equal to the most celebrated observatories of Europe.

Flower Gardens.

I have designated in my plan, two flower-gardens; an *irregular* one, between Ninety-Sixth and Ninety-Ninth streets, and an *architectural* garden, with conservatory attached, between Sixty-Ninth and Seventy-Second streets. In the latter I propose to place at the grand centre a Classic Temple, to be embellished with *statuary*, and at each centre of the four minor compartments a *fountain*, of tasteful and ornamental construction. Of this garden I have submitted a separate design. There is a principal entrance at the middle of each end, and also at the middle of each side. These entrances lead by broad avenues (intended to be broader than they appear on the plan) to the temple at the main centre.

There are other entrances in the curved recesses of the outline which lead, by avenues less wide, to the centres of the different compartments. Each compartment of this garden is bounded on every side by a bank of flowering shrubs. These shrubs are arranged between the outermost walk and the enclosure, rising as they recede from the walk, so as to resemble a sloping bank. At every point within the garden the effect of this floral boundary must be imposing. From the various centres this fine effect will be still enhanced, and from the temple in the grand centre, (which will be somewhat elevated,) the effect in the flowering season will be truly magnificent. But the highest result achieved in this garden, gentlemen, consists in the distribution of the flowers. The intention is, that *corresponding figures in the design shall be planted with flowers of similar colors.* My design exhibits the patterns of the flower-beds on one side of the main avenue, which are to be duplicated in the corresponding beds of the opposite side. The effect of distributing the flowers in this garden on the principle I have stated, can be better imagined than described. Some very brilliant results have been obtained on this plan in European gardens, but none that has ever come to my knowledge would rival the full and final effect of which my plan is capable, if properly developed.

Grove of History.

This grove I have placed at the north-west corner of the park. It is to consist of trees and shrubs, transplanted from historic localities.

From innumerable scenes, made memorable in our *History* and in our *Literature*, might be brought together a Botanical collection, of deep and permanent interest to our people. The power of association, and the degree in which it affects our enjoyment, and ministers to our improvement, cannot fail, I think, to commend this feature to your approval. To illustrate the facility with which this idea could be carried out, I take leave to suggest, that I could myself contribute, and would take pride in contributing from my own estate several fine varieties of trees growing on *classic ground.*

Grove of Authors.

This grove would be composed of plants and trees, from the *homes of distinguished persons.* I have called it "Grove of Authors," for brevity, but it is intended to apply to all whose fame is interesting to mankind.

You would thus comprise within a small area of the park all the associations that cluster round the best names of both sexes, and the splendid reputa-

tions of two hemispheres. On that spot the citizens of opposite extremes of our country, would find some memorial of their own favorite celebrities; and the visitor from abroad would find transatlantic reputations sprinkled among those of American growth. *Roslyn and Idle-wild* would shake hands across the gravel-walks; a forest-born Winfield Scott would nod its graceful plume, responsive to the swaying motion of Florence Nightingale; and a Botanical Humboldt would bow in graceful homage to the evergreen memorial of a Catharine Sedgwick. Men would even begin to conclude that our Union might last a little longer, when they should see the representatives of a Whittier and a Simms interlocking their arms, and casting a blended shadow on the same turf.

Play-Grounds.

Of these, I have provided three, which are distributed, as nearly as may be, at equal distances. The central one, between the Reservoir and Fifth avenue, is intended chiefly as a gymnasium and a stadium for foot races, though the space between these is available for other athletic purposes.

Parade-Ground.

This feature I have found more difficulty in locating than any other in my design. The diffi-

culty arises chiefly from three conditions, which I deem it important to keep in view. First. To avoid expensive grading and blasting. Second. To keep it (for convenience) as near as practicable to the lower end of the park, (without, at the same time, crowding too many prominent features into that section;) and third, to place it as far as possible within a natural basin. The latter condition is very important for the accommodation of spectators. A natural amphitheatre is not only better adated to that purpose, but is incomparably more picturesque and beautiful, and far less expensive than any artificial terrace would be, if raised around the outside. In placing the parade-ground where I have, I found it necessary to divert a small stream from its natural course, which entered it on the north. By raising this stream, so as to form a small lake, the water is easily disposed of from that level, by turning it to the east. There is no basin in the park in which a similar necessity would not have been encountered. The grading required to adapt my parade-ground to its purpose is by no means formidable; much less, in fact, than at first sight would be supposed. I am advised by military men that an *uneven* surface is to be preferred. They all refer me to the Boston Common, with uniform approval. Taking that as a criterion, it will be found that the surface of the ground I

have selected will not require very expensive alteration.

Park Column.

Immediately west of the parade-ground, and overlooking it, I have designated a monument to be erected to commemorate the founding of the Park. As the Central Park, when finished, will be not only the largest and most elaborate on this Continent, but, doubtless, one of the finest in the world; there is no reason why its inauguration should not be signalized by the erection of a column or shaft, containing a brief record of the date and circumstances of its origin, and including the names of the Commissioners, and of some other public officers.

Villas and Cottages.

I have reserved sites for dwellings, to be occupied by persons whose duties connect them with the park. The advantage of this arrangement is sufficiently obvious. It commends itself to your notice, by considerations of both utility and ornament. They are located on or near the lines of the following streets:—Sixty-Eighth, Seventy-Ninth, Eighty-Fifth and One Hundred and Fourth.

Towers.

On various prominent points I have located towers, which, though intended to be of simple and inexpensive constructions, will form exceedingly picturesque objects, and will furnish to the visitor views of vast extent and of great beauty. There are seven of these laid down on my plan, on the line of the following streets;—Sixty-First, Sixty-Third, Seventy-First, Seventy-Ninth, Eighty-Third, Ninety-Second and One Hundred and Fifth.

Pavilions and Temples.

These are interesting features of rural scenery, and are scattered at various points through the park. There are two of them that would probably be more frequented than the rest, viz., the one in the *grove of authors*, and the one at the centre of the architectural flower-garden. These should, therefore, be constructed on a larger scale and more elaborately than the rest, and might very properly be embellished with *statuary*.

Fountains.

In addition to the fountains in the flower-garden, I have distributed others through the park at points where they would appear the most effective, and harmonize with the surrounding scenery.

Streams and Lakes.

The streams that are laid down in the surveys of the park are not, probably, all of them perennial. To what extent they may be made so by skilful under-draining remains to be seen. I have not varied their course materially from their natural channels, but at suitable places have indicated lakes to be supplied from them, *in case they prove to be permanent streams.* But the constructing of these lakes should be deferred (at least in the case of doubtful streams) until that question is determined. There is, however, one alternative, viz., to depend on the Croton in case of the failure of any of the natural streams. Whether it would be deemed expedient to tax the Croton for that purpose your Board can judge better than I.

Entrances and Arches.

I have indicated entrances to the park at suitable intervals along the entire boundary, and have provided crossings to meet the requirements of your circular.

Three of the entrances I propose to construct on a more expensive scale than the rest; viz., the entrance at the S. W. corner, the one at the S. E. corner, and the approach to the parade-ground on

the Fifth avenue. The latter to be the most elaborate of all, and to constitute the *grand entrance.* Here I would construct a magnificent arch. Instead of multiplying arches in or around the park, my own opinion would be in favor of putting the entire expense upon one. In general, I am an advocate for simplicity in whatever relates to natural scenery. The public taste, however, demands a certain amount of splendor. This demand cannot, I think, be better consulted than in two leading features of the park, viz., the architectural flower-garden, and the grand archway of the main entrance. It is my intention to submit, hereafter, (if permitted by the Board,) among other designs and illustrations, not yet finished, an original design for this entrance and arch.

Roads and Walks.

These are made to conform, as far as needful, to the state of the ground, allowing for such alteration of the surface occasionally as will be found expedient in carrying out the plan. The principles that have guided me in laying down the drives and footwalks are simple and obvious. Every walk and avenue, whether narrow or wide, should present an easy and graceful contour, avoiding sharp angles, straight lines, and long dead-levels, and should lead through interesting portions of the ground, and give

convenient approach to interesting objects. In fact, at every point of each drive and walk the visitor should *feel* that it is just right, that it is placed where it ought to be, and that any change would mar the effect. Much, however, of the picturesque effects along the avenues must depend upon the natural formation of the ground, upon the skill of the artist in taking advantage of this, and upon his judgment and taste in the distribution of trees and shrubbery. To give you, gentlemen, an adequate idea of the artistic results contemplated in my plan, could only be effectually done by taking you upon the ground with the plan in my hand, and explaining the particular effect of each particular arrangement. The plan which I have this day submitted, though exhibiting the general arrangement, and presenting the leading features that I wish to impress upon your minds, does not fully illustrate the details of my design.

I hope soon, *by your permission*, to submit a DUPLICATE fully conforming to the prescribed requirements, and doing justice to the subject and to my own ideas.

SUPPLEMENTARY DESIGNS.

In addition to the above *duplicate*, it is my intention to submit to the Board (if permitted to do so) the following designs not yet finished, viz.:

1. An original design for temple of flower-garden.
2. " " " towers.
3. " " " pavilions.
4. " " " fountains.
5. " pattern for iron fence.
6. " design for grand entrance.
7. Illustration of mode of terracing to cover the walls of the reservoir.

Estimates.

To do justice to the accuracy demanded on this subject, gentlemen, and to render my estimates, when submitted, fully reliable and worthy of your attention, I must ask the grace of a little more time to get through the necessary investigations.

One result I can confidently state: that the entire cost of carrying out my plan will fall inside of your limit, if I am correct in inferring that the "public buildings" are not to be paid for out of the fund specified in your circular.

All which is respectfully submitted,

By your obedient servant,

Leander.

John F. Trow, Printer, 377 & 379 Broadway, N. Y.

No. 25.

The proposition of the Board of Commissioners of the Central Park, for a design for laying out the grounds under their control, seems to call for a practical development of taste and treatment, rather than an illustrated ideality, or general plan of procedure.

I will therefore, without any preliminary remark, introduce the landscape design, and accompany the several stages of the work, only by such concise illustrations as the various subjects demand. [*See Appendix A, Section 1st.*]

First. The present character and topography of the grounds.

We find the southern boundary line of the park (59th street) brought nearly to its permanent grade; its northern limit (106th street) not yet graded; Fifth avenue, the eastern extent, partially worked, and but temporarily brought to an extemporaneous grade; and the Eighth avenue, forming the western boundary, is to a great extent excavated and filled to the permanent line of the city grade.

These grades, known by the designation or "permanent grade lines," were "established" in 1853, previous to the opening of Central Park. They therefore had reference to draining all the lands now under consideration, by the ordinary means of passing the water over a paved surface of the several avenues and streets.

It will here be perceived, that a territory of over ½ a mile, by more than 2½ miles, taken out of a system of grades, and initially set apart, must necessarily modify and change the proper gradients of drainage, and if such grade lines at *first* were the most economical and suitable, this cannot therefore be predicated of them *now*.

The southern front just rises to the permanent grade of Fifty-Ninth street for a few hundred feet, rendering necessary an embankment of 23 feet near Fifth avenue, and thus extending about 800 lineal feet easterly, and still further easterly developing a short stretch (of some 10 feet filling) near the Eighth avenue.

The northern front on One Hundred and Sixth street, runs at a very uneasy grade, from a filling of 5 feet at the Fifth avenue, to 29 feet at the Sixth avenue, with rock cutting of from 18 feet to 35 feet between the Seventh and Eighth avenues. See remarks hereinafter in relation to an extension of the park grounds northerly.

The eastern front (Fifth avenue) commences with an unsightly filling of 15 feet across a low swampy area near Fifty-Ninth street, to 27 feet 6 inches at Sixty-Fourth street; thence rising to grade at Sixty-Sixth street; thence from Sixty-Sixth street to Sixty-Ninth street we have from 4 to 15 feet of rock cutting; thence to Seventy-Second street the contour follows very nearly the grade; thence, except rock excavation of from 2 to 10 feet at Seventy-Second street, filling of 2, 5, 8, 10 feet, and for a short distance 20 feet is required, till near Seventy-Ninth street; thence till near Eightieth street, a rocky spur of from 4 to 12 feet exhibits rock cutting; thence again to Eighty-Sixth street (save a slight excavation near Eighty-Second street) from 2 to 6 feet filling is required; thence to Ninety-Sixth street the land undulates at about grade; thence a slight surface cutting intervenes to near Ninety-Eighth street; thence from a filling of 10 feet at Ninety-Ninth street we meet the grade at One Hundredth street; at One Hundred and Second street 9 feet of rock cutting is indicated; thence a slight filling occurs till we arrive at the northern boundary, at One Hundred and Sixth street.

The western front (Eighth avenue), taking into view the difference between the natural surface and grade, and the quality and drainage of the ground, is fearful to contemplate. At Fifty-Ninth street

(at a very prominent point of approach), at the intersection of Broadway, we commence with an almost inaccessible entrance to the park. The filling from Fifty-Ninth to Sixty-Second street averages ten feet across a cold, swampy mire, without a natural drainage; thence we continue northerly with a slight rock cut to a point north of Sixty-Fourth street; thence across Sixty-Fifth street at a "fill" of eighteen feet, striking grade again at Sixty-Seventh street, with slight excavation as far as Seventy-Second street. Here an expensive rock excavation commences, and continues at from nine to 17 feet cutting, as far as Seventy-Third street. At Seventy-Fourth street we meet twenty-five feet filling. The drainage from hence is all inward, and across the park. From Seventy-Fifth to Seventy-Ninth street the filling continues at sixteen, twenty-four, twenty-six, twenty-two, and twenty-six feet. From Eightieth to Eighty-Fifth street rock excavation again supervenes, of sixteen, eight, ten, twenty-two, six, and four feet, running out to grade at Eighty-Sixth street. At this point we reach the narrow strip opposite the new reservoir, where is found a level swamp just eastward of the line of Eighth avenue, but intersecting it at Eighty-Eighth street, continuously to Ninetieth street. Thence the filling from thirteen feet emerges to a hard rock, cutting off a few feet, as far as Ninety-Third street.

Again we have slight cutting and filling to Ninety-Ninth street; thence, to near One Hundred and Third street, embankment occurs of six, twenty-one, and fifteen feet. From One Hundred and Third street to the end, is met a hard rock excavation, from six feet to ten, twenty-eight, thirty-five, and thirty-four feet.

Having thus sketched the exterior, we are prepared somewhat more understandingly to examine the area within. Beginning at Fifty-Ninth street, the eye ranges over an uneven and almost inaccessible interval, with broken spurs uneasily cropping out from point to point, until you have surmounted the crowning summit, where the most beautiful and commanding portion of the whole park is bestrode by an unsightly quadrangular wall and picket fence. From hence our subject is crowded by the Croton reservoir reservation against the Fifth avenue on the east, and well nigh driven into a narrow swamp on the west—this swamp abutting against the bare wall on the Eighth avenue on the one hand, and overshadowed by the proposed wall of the new reservoir on the other. From this elevation we can command the general view of the greater portion of the grounds.

Looking south, a desert of bare rocks and hills, denuded of foliage, stretches continuously to the extreme boundary at Fifty-Ninth street—too deso-

late and circumscribed to admit of the picturesque.

At the north, beyond the present reservoir, and still beyond the larger "Croton Lake," the land is more diversified and accessible. The eye catches now at the first pleasing feature not already appropriated for material city use—the grassy hill on the north-west, skirted by lines so broken, deep, and unseen, that the imagination reaches toward it, over the intervening space of graceful undulations, and instinctively looks for a half-hidden sheet of water, somewhere in the winding valley at its southern base. This portion of the grounds, together with all that lying north of One Hundred and Sixth street to Harlem Creek, still undedicated to the municipal purposes of reservoirs, arsenals, City-Halls, or court houses, should be seized and secured without delay.

The great expense necessarily required to approach the grounds from Fifty-Ninth street, the large amount required to grade the present front on One Hundred and Sixth street, added to what a few blocks taken off the southerly end of the park would bring in market, beside improving the capabilities, would leave a surplus in the Central Park fund.

The soil from north to south is of a clayey, hard pan, degenerating in certain localities into a micaceous quicksand.

The frequent cropping out of ledge rock, and the uniform angle of its dip, necessarily imposes upon us a constant provision for drainage. Not only our calculations in regard to the drainage of the park itself, but in reference to that of the surrounding country, is hereby essentially modified.

Without pursuing further the multiform details suggested by the cursory survey we have just taken, let us pass from the "present character and topography of the grounds" to—

Secondly. The several items of improvement contemplated in the proposition of the Board of Commissioners (and illustrated by the map, plans, and designs), I have the honor herewith to submit, and to which I respectfully refer, as follows:—

Drainage.—Draining and drains; trenching; space for flowing water, lakes, cascades; skating ground; irrigating.

Roads and Laying out of Grounds.—Kinds of roads, and their construction; laying out, locating; crossings; play-grounds; parade; labyrinth; flower gardens; entrances or gateways; excavation and filling.

Architecture, domestic.—Gateways and lodges; hall for exhibition, concerts, &c.; observatory; chapel at Mt. St. Vincent; arsenal.

Architecture, Engineering.—Fountain; alcoves, arches, &c.; bridges; fencing.

Lighting.—Gas lamps; gasometer.

Planting the Ground.—Trees; shrubs; vines.

First, *Drainage.*—The natural drainage of the Central Park is uniformly from west to east, with a single unimportant exception. Occupying the centre of a future city population, our only permanent basis of operation necessarily depends upon the system of city sewerage. First, because a sewer at due cost can be so adjusted as to relieve the grounds. Secondly, because the land under consideration, *being dedicated in advance to Park purposes*, and having now *all necessary outlet by natural watercourses*, these cannot, nor ought to be shut up, at the convenience of others, unless other and equally accessible outlets are substituted. (See appendix C, first paragraph.) This important preliminary being disposed of, the next consideration in order, is a suitable provision for internal drainage. The dip of the rock, and its uniformity of outward seam, the absence of sand or gravelly substrata, and the constant occurrence of hard pan, imposes the necessity of a thorough and connected system of main, lateral, and porous sewerage, by means of artificial drains from upper to nether level. Trenching, hand laid spalls, Knight & Crawford's large and small frost-proof culverts, and porous drains, open streams and lakes, constitute the material. (For particulars, see appendix C, second paragraph.)

In reserving space "for flowing water," I have introduced four lakes, at such points as the practical necessities of the case, and the adornment of the ground, seemed to indicate.

The waste water from the Croton reservoir, at an elevation far above the proposed lakes, will afford (by proper storage) a valuable and healthful supply.

At the south-east corner, where the city permanent grade rises 20 feet (above a wet, clay soil, resting upon hard pan) across the axis of natural drainage, I have made provision for terracing down the slope, and overflowing about nine acres of inaccessible land. Across this it is proposed to throw a wide causeway, on a descending grade, from the entrance gate, corner of Fifth avenue and Fifty-Ninth street. To bring this corner to a grade would require a mass of filling, covering some twenty-five acres, besides incurring an expense of from $45,000 to $50,000, if indeed earth and rock sufficient could be spared or obtained to grade it. This sheet of water will economically accommodate a wide field of drainage, extending westerly as far north as the ridge between Sixty-Ninth and Seventieth streets. When the rocky islands rising out this lake, from 6 to 30 feet in height, are properly furnished with foliage, and the roads and intervale beyond are in furniture, no more beautiful and

enticing entrance will be found than the approach from Fifth avenue across this lake.

Between the Seventh and Eighth avenues, and irregularly extending from Seventy-First to Seventy-Sixth street, lies a large basin, resting upon a substratum of hard pan and quick. These materials would, when mixed with a fine clay, (to be obtained near by,) form a puddle well adapted for a clean and tight bottom.

The character of the surrounding hills, and the approach from the eastward, demand our best deliberation.

The lake at Fifty-Ninth street and Fifth avenue is, in every respect, a material and physical accessory to the drainage; but at Seventy-Fourth street and Eighth avenue a beautiful sheet of water is introduced, only necessary, however, so far as it enables us to overcome an expensive drainage of thirteen acres of land, difficult to treat, and of restricted use when reclaimed. Connected with this lake by a running stream, (supplied by the same, and an extensive district of drainage,) is a subordinate lake, lying between the Fifth and Sixth avenues, at Seventy-Fourth street. This sheet of water, like the first described, is a necessity. The area of drainage which it commands, and the economical arrangement of the lines of sewerage and drainage controlled by it, are artificially exact. Be-

side acting as an overflow or waste flume to the Eighth avenue and Seventy-Fourth street lake, it drains, without expense of cross-cuts, all the land from the ridge at Seventieth street, southerly, to Eightieth street, northerly. When its borders are heavily wooded, (as they should be,) it will sparkle one of the finest gems in Central Park.

At One Hundred and Sixth street, three hundred feet westerly from the Sixth avenue, we find the most constant stream that occurs within several miles, passing a large volume of water north-easterly across the limits of the park. Its elevation at this point, is nineteen feet above high water, while the established grade of One Hundred and Sixth street, is fifty-three feet—difference of level, thirty-one feet. This stream flows through a steep and narrow valley, which, at the latter elevation, is less than four hundred feet across. One Hundred and Sixth street, when brought to a grade, will give a depth of water, at this point, of thirty-one feet, and thus overflow the valley gorge westerly, (to a point three hundred feet west of the Seventh avenue, at One Hundred and Second street,) at an average width of over three hundred feet. By throwing, at this point, an artificial Cyclopean wall across a gorge two hundred feet wide, and fifteen feet high, another overflow is obtained five hundred feet by three hundred and sixty feet. In this manner, a magnificent lake of

ten acres occupies the base of an inaccessible gorge, and a cascade of fifteen feet is produced, pouring from a basin of four acres, the contents of an adjoining lake.

For the present, the supply stream of the lower lake must be carried underneath the upper sheet of water. This fourth lake completes the spaces for "flowing water," before mentioned.

Irrigating.—Although irrigating is included among the items for consideration, any mention thereon is rendered unnecessary here, from the fact, that by the system before alluded to of blind, or spall, and porous draining, any desired amount of irrigation may be commanded by outlets, when and where required.

Secondly. *Roads, and Laying out of Grounds.* (See plans.)—In no matter of mechanical or scientific construction, is so much vacillation of purpose, and such waste of money, and disappointment of result exhibited, as in the planning and making of roads. From observation of many years, I cannot attribute the fact so much to ignorance, as to heedlessness, parsimony, or lack of experience in local climatology and treatment of soil.

Making roads is so inviting a work, and on its face appears so simple, that almost every one feels confidence in his own ability to "dig down and fill up" *ad libitum*. The good road, and the imperfect

road, do indeed *look* just alike on the day they are finished.

Permanency and accommodation to the far future, are contemplated by my plan in the construction of roads. There are but two kinds proposed—the composite, and the gravel.

1st. The composite or principal road of one hundred feet in width, (see profile,) having its roadway sixty feet, and its sidewalks of twenty feet. The bed is elevated above well drained and porous ditches, with cross drains at proper intervals, (according to the ground:) on this bed is laid an honest layer of coarse gravel, six inches deep, under a centre width of Belgian blocks, well rammed, and twenty feet wide; on either side a clean mass of macadamizing, (not less than one inch, nor over two inches in size,) ten inches deep, and twenty feet in width; next to the broken stone, (on a bed of one foot of coarse gravel,) is laid a cobble stone gutter one yard wide. The sidewalks on a side grade, (of two and a half inches on ten feet,) well channelled, and covered with a coarse gravel, (or fine beaten stone, if procurable,) ten inches deep. Under the gutters are lateral blind drains, where necessary.

The 80 feet composite road—same construction; dimensions as follows: Belgian pavement 20 feet wide; macadamizing 12 feet wide; gutters each 1 yard wide; sidewalks each 18 feet wide.

The 60 feet composite roads—same construction; dimensions as follows: Belgian pavement 16 feet wide; macadamizing 7 feet wide on east side; sidewalks 15 feet wide.

Forty feet macadamized road; sidewalk 10 feet; road bed 20 feet macadamized.

Bridle road: 20 feet wide; no sidewalks; well ditched and drained; bed elevated with 10 inches of coarse gravel, or small broken stone. [*See Appendix* D.]

On all the cross roads, provision is made for flagging the sidewalks.

The Laying out of Roads.—Under this head is included: First, the selection of the main points, (mental and material,) of the landscape designer. Secondly, the choice of a scientific basis of the "high art," which in elaboration is all of taste, soul, originality of conception, and experience, resident in the designer. Poets and painters see these *points.* The seeing, fills their souls with beauty and admiration or sublimity; thus they are satisfied to revel upon the sight. Feeling no further necessity, they seldom go (beyond that of selection) into the region of *creating* and *combining.*

Actual grouping of real landscapes, must be done by real land, water, foliage, and colors. The sculptor, by striking his chisel into air, could with such experience, never fill his mind with a fully de-

veloped figure. The points he might *conceive*, but not *combine*.

In locating the roads, you will perceive, upon a critical inspection of the map of Central Park, that from being surrounded by avenues, instead of abutting on open land or wooded ground, we are denied the privilege of approaching quite near the streets, and thus taking advantage of our too circumscribed limits on the east and west: again, having no control over the grades of adjoining avenues, we find ourselves thrown back upon this incongruity of surface, blank walls, and thronging streets.

The grade of all the roads conform very nearly to the contour of the present ground. Their profile seldom exhibits a grade of over 3 feet to the 100 feet—generally 2 feet to the 100 feet, and in no case over 4 feet to the 100 feet. In the latter case, the distances are quite short, and the occurrence in very few instances.

The price at which my estimates range may seem too low, when the width and permanent character of the roads are taken into the account. I can only say, that I am prepared to furnish responsible parties, to do the work at the prices estimated. The quantities have been taken from levels made by myself, (taken within a few years,) and I can answer for their correctness.

In my opinion, the character and majesty of the

park would be compromised by cutting up the spaces (interiors) by any more roads than those shown. A few miles of bridle paths, without great regard to their grades, may hereafter be introduced, when the trees are well grown, and the foliage more dense. *See Appendix* B, § 1.

By introduction of water, and stealing away from unsightly objects, close contact with rumbling carts and street cries, we suddenly find ourselves intercepted by an elevated right line of Reservoir wall; its exact distance and prominent position, forming a *scale on which every one can measure*, all our otherwise art hidden curves, and deception turns. (It is embarrassing enough to know one's poverty—wretched indeed thus to expose it.) These water tanks cannot (on account of falling leaves) be covered by stately foliage; the sides indeed may be disguised by low shrubs, but the bold brow remains shorn, and shining above. Passing on as best we may, the next succeeding object is that huge tank of water, the "Croton Lake," rising from 5 to 35 feet above us. Thence leaving these obstructions, a most beautiful and picturesque scene lies before us. The roads here are few, grand, skirting every elevation and passing along every observable vale. The cascade, the lake, the elevation at the north-west, the least objectionable features of the large croton Reservoir, the elevation at the side, and

the views from McGowan's pass; are all in several points, variedly seen, and still neither avenue nor street has been more nearly approached than was absolutely required.

In determining the width and grade of the roads, I have had reference to that simple grandeur, and stately character, which dimensions and easy grades alone can illustrate. The smooth Belgian centre, the quiet and compact macadamized floor, the hard and wide sidewalks, with the further consideration of a road through foliage of 100 feet, (and appearing as wide as an enclosed street of 130 or 150 feet,) I feel assured that these advantages, and the profusely wide intersections at all road crossings, will imperceptibly impose upon the mind of both the unthinking, as well as the appreciating, an elevated character of the park.

The bridle-paths are near three miles in extent, and command views entirely at variance with those observed from the carriage roads.

But few foot-paths are laid down, because I prefer first accommodating the interiors to the proper support of grouping and growth of trees, and leaving the route for the foot-paths a secondary matter. They cannot be chosen, and permanently gravelled, &c., until the trees are planted, and cared for, at the best;—therefore, we lose nothing by deferring their exact location for the present.

The road gradients are generally two feet on the hundred feet, and in no case over four feet, and that very seldom, and for short distances.

By reference to the plans, it will be seen that it is proposed to add twenty-five feet to the width of the Fifth avenue, and fifty feet to that of Fifty-Ninth street—both additional widths to be taken from the park. This will enable us to make a boulevard on the two practicable sides of the park. In reality, it will be adding to its width, by using part of each avenue and street; and it will, moreover, very probably encourage and ensure a better class of improvements thereon.

The four or more crossings desired by the Commissioners, I have laid down, with reference to the convenience of residents on either side of the park, as well as to suiting the concurrent grades of the avenues and park. (See plan.)

The three play-grounds called for, I have located, with reference to facility of access, congruity of location, and economical adaptedness of surface. (See plan.)

The parade-ground contains thirty-eight acres. The site chosen had reference to a locality where we could consistently and economically accommodate them on the borders, and where the soldiers would be free from interruption. The arrangements for convenience of spectators is commodious, well adapt-

ed for view, and easy of access, either by carriage or on foot. (See plan.)

Labyrinth.—(See map.)—At Eightieth and Eighty-First streets, between the Eighth avenue and the Reservoir, I have laid out a maze, that covers a space of ground, about two hundred by three hundred feet. It contains one mile of walks, eight feet wide.

It is proposed to surround the paths with a hedge of privet and thorn, and multiflora Rose, interspersed with the soft conical cedar, with alcoves, and resting-places at intervals.

On a plateau of seventy-six feet elevation, the labyrinth is just so far removed from the surrounding heights as to be beyond speaking distance, and yet commanded in view by them.

These heights are elevated from twenty-four to fifty feet above the level of the labyrinth, and distant therefrom from two hundred to six hundred feet.

In the grounds attached to the Hampton Court Palace, near London, is a maze of buck hedge that forms one of the most attractive features of the place. The children and females keep up a constant chatter and excitement, as they joyously recognize each other from path to path. In this way hours are spent in delightful perplexity and fun. Those of their friends indisposed to undertake the

fatigue of an exploration, can sit upon the adjoining elevations, and enjoy the contretemps, and excitement of their companions below.

Reservations for Flower Gardens.—Near the main entrance, upon an island in the lake at Seventh street, and adjoining the buildings at Mount St. Vincent, plots have been designated for flower-gardens. Foliage, distance, and space, being rather the characterestics of my design, than minute ornamentation, I have esteemed the flora a subordinate and expensive element.

Entrances.—(See plan of entrances.) I have given this subject much thought. From a careful estimate of a present and a probable future travel, from due considerations of economical adjustment of grades, and from examination of surfaces and distances, with reference to the character of the design as a whole; entrances and gateways have been made a striking and imposing feature in my plan. This idea of indulging in large expenditure upon a principal approach, is a universal sentiment.

The savage, as soon as he rises in the scale of humanity so far as to erect a hut, or pitch his tent for a season, exhibits his chief ornament at its opening folds. All civilized nations, present and remote, have employed their most elevated art in doorways and palace entrances. Milton, Homer, and others, invest their heroes with this ennobling sentiment of

hospitality, and regard for the good opinion of others.

The impression made upon the mind on first entering the park, will be permanent and controlling.

From detailed description already hastily sketched, and from the location already made by the Croton Board, it will be seen that our principal approach is confined to the southern end of the grounds. Every land has its own distinctive characteristics. Tuckerman has graphically described American scenery, in the casual remark of "immensity is the peculiarity."

The Ionic column, an emblem of bold dignity, when severely varied and repeated in a spacious circumference, and beautiful area, completes the idea of vastness—of bold dignity, set off by beauty. The coldness of sublimity constitutes the greatness of all Europe's great works. "Imperial" is the climax of the European traveller's expression; but when his feet explore our cities, prairies, rivers, mountains, (high and rounded with foliage to the very tops,) with inspiration he exclaims, "vast," "deep," "mighty." This general sentiment is a true one.

The expensive colonnade for the principal entrance, where Fifty-Ninth street, Seventh avenue, Broadway and Eighth avenue meet, (in almost identical proximity,) is arranged, and designed, to produce the effect above described.

The lodge and gateway (No. 5) for the entrance at Fifty-Ninth street and Fifth avenue, is simple, and, for picturesque effect, just at this point when necessity seemed to require it.

The lodge and gateway (No. 6) for Fifth avenue and Seventy-Eighth street, is in unfortunate proximity to those fearfully imposing "Croton accommodations." It is designed to attract and hold the eye until within the grounds. It is also in favorable contrast with the laying out, as you emerge upon the Fifth avenue.

The other gateways are designed for the localities respectively named thereon.

For grubbing, excavations and filling, see Appendix.

Architecture.—On this head remarks have been made before, upon the several entrance structures.

The Observatory and Tower (see Plan) is proposed for the most prominent elevation upon the grounds, in the north-west corner of the park.

The solid nature of the rock at this point, its isolation from the streets, in addition to the reduced grades of the surrounding land, seemed a very proper place for an observatory. By isolating its foundation in sand, it may hereafter afford a favorable position for a mural transit.

I am informed that the Crystal Palace is now in the legal ownership of the city. A site has been

reserved therefor. I would recommend its occupancy for a winter garden and concert room.

It is needless to say the Palace would form a refined and beautiful feature, and prove a very attractive resort at all seasons.

The buildings now occupying the elevation at McGowan's pass, I recommend should be left for present economical use.

The Chapel, as a concert-room, when required. Its present occupancy is, at this moment, a protection to the grounds; the sound of the bell being by no means an objection to the scenery.

Arsenal.—Fortunately for the military reputation of our city, one hundred men have at no one time desired any material stored therein. Had this been the case, an ordinary nine-pounder, on the adjacent hills, could have stormed the depot in a very short space of time.

Let us, however, gratefully accept our inheritance.

We can, by filling up the ground to its lower water table, make a feasible approach from the established grade of the Fifth avenue. Ornament and carry up its towers in bas-norman style, and thus make it a roomy and useful museum—scientific and curious.

Fountains, alcoves, seats, Japanese shades, and statuary, are adjuncts and details that properly

should (and in general must) await the planting and grading.

One grand fountain within the lake at Seventy-fourth street I have made provision for.

Rustic arches can be formed as the work progresses. They are most graceful and appropriate when extemporized to fill up a present lack of foliage. Allowance has been made for the cost of these accessories. The designs therefor are but a momentary effort of the landscape designer, when made upon the ground.

Iron Railing.—There is proposed an entire fence with iron railing, on granite coping, around the entire exterior of the park. (See Appendix G.)

Bridges.—Across the lake at Seventy-Fourth street, near Eighth avenue, a rustic bridge is introduced for the purpose of accommodating the bridle-path, and for effect. It is of scientific structure, but is outwardly given a rustic appearance.

Many designs of smaller bridges may be introduced hereafter. The smaller one is suitable for the bridle-path over the stream near Seventy-Third street and Fifth avenue.

The brown stone bridge, proposed for erection across the road near the cascade, is intended for a permanent work; and although somewhat imposing, in its elements it is severely simple, and appropriate to its position. (For particulars, see Appendix E.)

Lighting.—In speaking upon this point, I shall take for granted that your commission has by law the entire control of lighting (so far as the Central Park is concerned), without regard to the acts and ordinances passed with reference to gas-light companies, controlling their boundaries, etc. (See Central Park Act.)

There are two feasible modes of lighting the grounds:

1st. By arrangement with the Harlem Gas-light Company. 2d. By manufacture.

The first is a simple matter of bargain, which can be made as follows: (See Appendix F.)

If, in the second place, by manufacture is deemed preferable, I would recommend an invention called "Peter Wakefield's Generator." It is simple in construction and unobjectionable, and innoxious in manufacturing.

The building required would be 75×45, and 20 feet high. It could be erected on four lots of ground, costing $1,000 each (on One-Hundred and Seventh street east of the Fifth avenue), if deemed preferable to placing it in the park.

The mains and cost of laying down (exclusive of rock blasting) is referred to in Appendix F.

Trees and Planting.—The oak attains a larger size, and grows admirably along our whole coast, especially on this island. For permanence and char-

acter it excels every other tree. For many prominent points of approach I recommend this grand and noble monarch. Of other deciduous varieties, the maples, beech (common and purple), birch, elm, ash, horse chestnut, locust, Kentucky coffee, willow, tulip, magnolia, pawlonia, dogwood, sassafras, and Lombardy poplar, are each provided for in my estimate. Each has its appropriate locality and position in the plan under consideration.

Of Evergreens.—Our own Arbor Vitæ and Balsam are the most healthy and sure. Others may be introduced for variety, change and beauty, according as circumstances may determine.

There are also various varieties of hardy shrubs, a list of which is ever at hand, and easily procured at any respectable nursery.

Varieties of vines and climbing plants are also provided for in my estimate of cost.

To give their history and uses in detail, in landscape gardening, would require a volume by itself. I have therefore, above, given a few names, and have further made an estimate of their cost in an appendix.

As to the mode of Planting.—I have ever found far less difference of opinion in the practical operation than in the theory. Surface manuring will strengthen the roots. Strong and healthy roots will pierce soils almost inaccessible to the pick-axe. This is all of my theory.

A thorough-bred Dublin or American gardener seldom disappoints the expectations of an employer in setting out and caring for trees and shrubs.

Much good judgment is exhibited in treating Parks, by seeking rather for young and thrifty trees, than in doctoring old ones. In the *Bois de Boulogne* there are but few trees above 30 feet high.

Appendix A.

§ 1. According to Specification 8 of the first printed circular, I have "conformed" my map to the scale of 100 feet to the inch. The further general direction there given (as a conclusive consequent), to make the plan "10 feet 2 inches by 2 feet 3 inches," would have made an error in the length of the park of 227 feet 6 inches, and in its breadth of 20 feet. The limited time given to prepare designs, and the extension of time for one month, in order to afford competitors opportunity to comply with the greatly extended demands of the circular of February 3d, has doubtless been a serious embarrassment to every one not previously prepared therefor. It certainly prevents me from exhibiting a mass of detail, which has been laid half finished on one side, in order to comply with the specific requirements of the last circular.

§ 2. Each Road, Lake, and prominent point of sight, will undoubtedly demand a distinguishing name. These names remaining for future generations, should be characteristic, appropriate, refined in sentiment, and euphonious. I have a list chosen with much thought for another locality, but find them unsatisfactory for present use, and I have preferred to leave the subject to the Commissioners' own taste, unless called upon hereafter to identify each road and spot by specific names.

Appendix B.

§ 1. The following unwritten history vitally affects the present interests of the city and the park:

When the Central Park act of 1857 (under operation of which the park is now governed) passed the Committee of Conference of the Senate and House, and was by them handed to their chairman for its final passage, there was included in the act at the end of section 7, the following clause:

§ 2. "The Commissioners, in conjunction with the Street Department of the city, are hereby authorized *to make and adjust permanent grades*, and determine the permanent width of the avenues

and streets, and the sidewalks and roadways thereof, bounding the said park, and adjust the grades of all streets affected thereby. And no house or obstruction shall hereafter be erected beyond the front lines of the avenues and streets thus widened."

I took a copy of this clause from the act, then in possession of the Chairman, within five minutes after the Conference Committee adjourned. By some strange conjuration the bill was reported to the Senate *with the clause above quoted stricken out*—passed that body, and also the House before the discovery was made. The Session (next day, I think) adjourned sine die.

§ 3. In regulating the gradients of the park roads, the present grades (of 1853) have been taken as a basis. At the same time, provision for the future adjustment of the exterior grades has been made.

APPENDIX C.—*Drainage.*

§ 1. The floor of the present sewer on Fifth avenue and Sixty-Fourth street is 26 1-5 feet above high water level, and the sewer is thirty inches in diameter. The lowest level of our proposed water is twenty-seven feet. The grade of Fifth avenue at this point is fifty-four feet (above high water), but the present surface of Sixty-Fourth street, east of the park, admits of continuing the same.

§ 2. The cement drains of Knight and Crawford are frost-proof. They are cheaper and more durable than other drains. I have used many miles of different kinds, and, except the brick culvert (which is generally too expensive), I prefer these. Their porous drains, like all other porous drains, are not frost-proof; for this reason I have preferred Spall's in their stead. There are several hundred feet of Spall drains, in the Cemetery of the Evergreens, that were laid by me in 1850 and 1851, apparently as active as when first put down. By carefully commencing with an opening well, introducing intersecting wells at proper points, and having a proper floor, Spall drainage is a simple, permanent, and reliable accessory.

§ 3. Any engineer practically informed will at once perceive that, until the main roads are first built (or until a thorough system of profiles and borings are made), it is impossible to elaborate a complete system of drains in detail. The lack of uniformity, and consequent thereon the uncertainty experienced in estimating the depth of earth, or extent of rock cutting upon any given line, is an insuperable obstacle, until, by grading and regulating the principal roads and working the main features of interiors, it is definitely ascertained what extent of drainage is required, and what points can be controlled. Circumstances, as they are thus devel-

oped, determine the line of drainage. A general plan can indeed be laid down, but it is subject continually, and at uniform points, to modifications in most of its details. After such general plan is adopted, the progress of road making will open up new facts in relation to depths and position of ledges, character and extent of soil, and hard pan, leakage, &c. The drains of such roads (and adjacent grounds) will thus determine, in the most practical and economical way, not only the extent of need, but also the better mode of treatment. The character of the topography and soil of Central Park, so far as a relative knowledge of depth and extent is in question, sets at defiance geological uniformity and comparison in proportionate detail.

§ 4. In the matter of regulating and grading city streets on the upper part of this island, I have often made four lines of profile through the width of one avenue, beside cross levels, and yet, with all the care and experience I could command in giving an estimate of relative quantities, the street where it was worked exhibited ledges and soil as eccentric as the driving snow-drift.* On the map the general

* The Board have laid before the competitors an unconnected and unfinished series of levels and contours. I have, however, in my office, a far more complete set of levels and notes of observation, taken when acting as landscape designer to your predecessors. These valuable data are sufficient for designing the roads, but not for properly working out the details of a system of drainage—of absolute lines and depths; unless the laying out and beautifying is made subservient thereto without regard to expense.

plan of drainage is indicated by the site of lakes and the grade of roads. This plan has been elaborated, and an estimate of quantities and extent has been calculated. The cost, also, and items are submitted, but with less confidence in the uniformity of my data, than in making such calculations I ought to have.

Appendix D.—*Construction of Roads.*

After the profiles and grades are determined the mode of construction will be seen by reference to the specification herewith attached.

The total length of roads contemplated in my plan is as follows:—

4,200 feet of road, 100 feet wide.
28,060 feet of road, 80 feet wide.
13,800 feet of road, 60 feet wide.
1,300 feet of road, 40 feet wide.
13,940 feet of road, 20 feet wide. Making a total length of 71,300 feet of roads.

Specification.—The entire width of the road and slopes that may be necessary on either or both sides, to be regulated and graded in conformity to the profile.

Excavation.—All rock to be taken off sixteen inches below grade of the road bed, and two feet below the gutters, and ten inches below the grade of sidewalks; also, such cross drains or channels

as may be directed during the progress of the work, to be excavated of such depths as directed.

Embankment.—Rock and earth excavation to be placed in embankment in such proportion and position as shall be directed. Allowance, where necessary, to be made for close drainage and culverts.

Retaining Walls.—Blind walls of rough work, to be placed in such relief as shall be necessary in case the quality of filling may require to be sustained.

Gravel.—Gravel to be of the best quality—coarse, sharp, and clean.

Culverts and Drains.—Culverts and drains of such size, dimensions, and form, as may be directed to be placed in position.

Paving.—The paving to be of the following materials: Belgian stone, and hard cobble, earth, or water stone.

The Belgian stone to be either the best quality blue granite, or selected Palisade rock. The size not less than three, nor more than five inches across the face, nor less than eight inches deep. All stone of uniform size to be laid together on a bed of coarse gravel, not less than ten inches deep. The courses to run uniform, and diagonally to the line of the road. Paving to be sanded and well rammed.

The cobble-stone gutters to be laid fair with the edge of the sidewalks, and the gutter formed as

directed, with stones not less than five, nor more than seven inches—flat face for the water way—and the sides with stones not less than two and a half, nor more than four inches face. To be closely paved on a bed of ten inches of coarse gravel. Stones placed perpendicularly on the smaller ends (not laid on the sides or edges). To be sanded and well rammed, and afterwards covered with three inches of gravel.

Broken Stone or Macadamizing.—The concrete to be reduced to a size that will pass through a two and a half inch ring, and spread evenly ten inches deep next the gutter, and one foot deep next the Belgian pavement, when thoroughly rolled. After rolling, to be covered with two inches of gravel.

Flagging.—Flagging will be laid on one side of the cross roads, and at such other places as may be directed. The flagging to be of the best North River stone, even on its face. To measure not less than two feet wide, nor contain less than eight superficial feet, and in no place less than two inches thick. To be bedded in sand or gravel six inches deep, and brought to an even surface at such grade as directed.

Sidewalks to be formed as directed, well rolled, with fine broken stone and gravel ten inches deep.

Appendix E.—*Bridges.*

Rustic bridge, 2 spans of 60 feet each, with stone piers and abutments, 20 feet roadway.

Timber Bill:

10 arch timbers, - -	12 in.	by 14 in.	by 92 feet	long
10 girders, - - -	8 "	12 "	62 "	
Stays or Vertical braces, -	6 "	8 "	33 feet, 264 "	
Diagonal braces, -	4 "	4 "	783 "	
92 trusses, - - -	4 "	3 "	6 "	
Hand rail, -	4 "	6 "	290 "	
2 arches, - - -	4 "	6 "	30 "	
2 stays, - - -	4 "	6 "	20 "	

Lumber in superstructure, - - 22,482

Masonry:

2 abutments, - - - -	6 feet	by 20 feet	by 14 feet,
Pier, - - - -	5 "	13 "	23 "
Do. - - - - - - -	7 "	3 "	20 "

5,275 cub. ft.

Estimate of total cost:

200 cubic yards of masonry, - - - -	$600
23,000 feet (board measure) pine lumber - -	690
130 feet superstructure, - - - - -	260
10,500 feet B. M. hemlock plank flooring, - -	126
100 cubic yards dry wall (wings), - - -	100
Excavation, &c., foundations, - - - - -	100
Total cost, - - -	$1,876

Stone bridge near the Cascade, 8 spans of 20 feet each; roading, 30 feet:

Details of estimate:

Abutments, - -	8 feet	by 7 feet,	35 feet	by 2 feet,
Piers and starlings,	16 "	6 "	35 "	8 "
Arches, voussoirs, and sheeting, -	30 "	2 "	30 "	8 "

Spandrels, - - -	3	feet by	3	feet,	24	feet by	16 feet.
Spandrel backing,	3	"	3	"	24	"	40 "
Parapets, - - -	3	"	$2\frac{1}{2}$	"	254	"	2 "
Wings, - - -	5	"	2	"	25	"	4 "

Cubic feet of masonry, - - -	61,906

Total estimate of cost:	
2,293 cubic yards of bridge masonry, - - -	$6,879
218 cubic yards of dry rubble backing, - - -	109
Roadway formation, &c., - - - - -	180
Foundations, - - - - - - - -	200
	$7,368

Appendix F.—*Lighting—Gas.*

§ 1. By manufacture the supply and cost of gas-light would be as follows:

Four lots on One Hundred and Seventh street, - -	$4,000
House and apparatus, to wit:	
Two benches of three retorts each, purifiers, condensers, gas tank, gasholder, containing 20,000 cubic feet, with building, masonry and iron work complete,	35,000
Four miles of 4, 5, and 6-inch pipes, with syphons, bends, branches laid complete (21,120 feet), - -	20,500
Six miles of 1, $\frac{3}{4}$, and 1-inch pipes, laying included (31,680 feet), - - - - - - - -	19,000
600 lamp columns, with lanterns, stand-pipes, cocks, burners, painting, &c., complete, - - - -	14,000
	$92,500

With the above outlay gas will cost one dollar per 1,000 feet less than charged for lighting.

§ 2. The Harlem Gas-Light Company will supply the park on the following terms:

600 lamp columns, at $10 50 each, -	$6,300	
Setting ditto, inclusive of service-pipe, &c., complete, - - - - - -	6,000	
600 lamp frames, at $2 50 each, -	1,500	
600 lanterns, at $3 25 each, - - -	1,950	
Painting, - - - - - - -	200	
		$15,950

Main service-pipe, &c., laid complete at the company's expense.

The comparative cost of supply will be as follows, viz.:

§ 3. By manufacture—

600 six-feet burners, at 3,500 hours each per year, equal to 12,600,000 feet at $1, -	$12,600	
Lighting, extinguishing, cleaning, &c., -	1,600	
Interest on outlay, - - - - -	5,550	
Contingent, - - - - - -	5,000	
		$24,750

§ 4. By contract with the Harlem Company—

600 6-feet burners, at $50 each per year, including lighting, extinguishing, cleaning, &c., - - - - - - - -	$30,000	
Interest on lamp columns, &c.,($15,950,) is	907	
		$30,957

The Commissioners make no risk nor incur responsibility by contract with the Harlem Company.

By neither plan is an allowance for rock blasting taken into account.

§ 5. Lamp columns, cast iron.

Pattern No. 3 accompanying this is graceful and practical. In all the other posts in use, a projecting ornament from 2 ft. 6 in. to 3 ft. 3 in. from the base, offers facility of access to the lantern. An opportunity the single column pattern (recommended above) completely deprives all mischievous persons from abusing.

§ 6. The columns have been estimated at distances of 100 feet apart with 6 feet burners. Ordinarily they are placed 80 feet apart with 3 feet burners. The first give more light at a comparatively less cost. The expense attending each is the same. The difference is as follows:

Difference between 80 and 100 feet is 20.
Cost of lighting 3 ft. burners, $30 per annum.
" " 6 ft. 50 "

Difference in favor of 6 feet burners, is—
20 per cent. on first cost.
40 per cent. on yearly expense.

This proportion, however, could not well be carried further in favor of increasing the size of burners.

Appendix G.—*Cost.*

Grading Principal Roads.

120,000 cubic yards,	rock excavation,	at 50 cts.	$60,000		
60,000 "	earth "	13 "	7,800		
70,000 "	filling,	18 "	12,600		
Bridle Roads:					
6,000 cubic yards of	rock excavation,	-	3,000		
8,000 "	earth "	- -	1,040		
6,000 "	filling, - - -		1,080		
					$85,520
Paving and Macadamizing 4,200 lineal feet of road, 100 feet wide:					
Belgian pavement,	20 feet wide,	- -	23,520		
Broken stone,	34 "	- -	3,570		
Cobble-stone gutter,	6 "	- - -	2,016		
Sidewalks,	40 "	- -	6,720		
					35,826
28,060 lineal feet of roads, 80 feet wide:					
Belgian pavement,	20 feet wide,	- -	157,136		
Broken stone,	18 "	- -	6,312		
Cobble-stone gutter,	6 "	- - -	13,460		
Sidewalks,	36 "	- -	40,404		
					217,312
13,800 lineal feet of roads, 60 feet wide:					
Belgian pavement,	16 feet wide,	- -	61,824		
Broken stone,	8 "	- -	2,760		
Cobble-stone gutter,	6 "	- - -	6,624		
Sidewalks,	30 "	-	16,560		
					87,768
	Carried forward,	- -			$426,426

	Brought forward, -		$426,426
1,300 lineal feet of 40 feet road:			
Belgian pavement, 40 feet wide, - -		$5,106	
Broken stone, 8 " - -		260	
Cobble gutters, 6 " - - -		624	
Sidewalks, 12 " - -		624	
			6,614
13,940 feet of bridle road, 20 feet wide:			
Broken stone, 14 feet wide, - -		1,742	
Cobble-stone gutter, 6 " - - -		6,601	
			8,433
Flagging:			
Sidewalks of cross roads, - - -		10,080	
At buildings and crossings - -		1,400	
			11,480
Extra:			
Grading at Fifty-Ninth street, - - -		26,000	
Belgian pavement at entrances, - -		8,000	
Retaining wall slopes on Eighth avenue, -		40,000	
Do do Fifth avenue, -		5,000	
			79,000
Principal gateway, - - - - -			80,000
Two of No. 5.			
Gateway at Fifth avenue and Fifty-Ninth street,		2,500	
Do near Ninety-Seventh street and Fifth avenue, - - - - - - -		2,500	
			5,000
Three of No. 2.			
Gateway at Fifth av. and Seventy-Second st.,		5,000	
" Eighth av. and Seventy-Eighth st.,		5,000	
" " and One Hundred and Third street, - - - - - -		5,000	
			15,000
Carried forward, - -			$631,953

Brought forward, - - -		$631,953
Five of No. 3.		
Gateway at Fifth av. and Sixty-Seventh st.,	1,800	
" " Eightieth st. -	1,800	
" " Eighty Fifth st., -	1,800	
" " Ninety-Fourth st.,	1,800	
" " One Hundred and Third street, - - - - - -	1,800	
		9,000
Eight of No. 4.		
Gateway at Fifth av. and Sixty-Seventh st.,	1,800	
" Eighth av. and Sixty-Seventh st.,	1,800	
" " Seventy-First st.,	1,800	
" " Eighty-Second st.,	1,800	
" " Eighty-Sixth st.,	1,800	
" " Ninety-Third st.,	1,800	
" " Ninety-Sixth street,	1,800	
" on One Hundred and Sixth street,	1,800	
		14,400
Fountain at Seventy-Fourth street lake, -	2,500	
Observatory, - - - - -	12,000	
Removal of Crystal Palace, - - -	80,000	
Alteration of Arsenal, - - -	10,000	
		104,500
Iron railing:		
28,500 feet of iron railing, at $6 per foot,	171,000	
2,800 iron posts, at $10 each, - -	28,000	
300 " " " - -	3,000	
28,500 lineal feet of granite coping, 16×18 in. at $4, - - - - - - -	114,000	
4,222 cubic yards masonry, - -	8,444	
		324,444
Carried forward, - -		$1,084,297

Brought forward, - - -	$1,084,297
Gas:	
Posts, mains, &c., including the introduction and furnishing gas, - - - - - - - -	15,950
Bridges, - - - - - - - - -	10,000
Rustic seats, chalet roofs, benches, &c., - - -	5,000
Drainage and drains, - - - - -	21,900
Trees and planting, - - - - - -	250,000
Engineering and engineering expenses, - - -	100,000
Total cost, - - - -	$1,487,147

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No. 29.

General Description.

In regard to the accompanying plan, it is desirable in the outset to premise two things:

I. *In general.*—It is impossible to state correctly, on paper, either in the form of a plan, or by means of a written description, all that which is demanded by the Commission in the present instance. That is, every thing which is done toward laying out the park, previous to, or otherwise, than by actually building the roads, planting the trees, and the other practical operations, can be only approximately set forth by topographers or landscape gardeners.

The most skilful artist can give only an approximate idea of the grade of any road, the height of a hill, the character of a grove, or the numerous other things desired, by indicating them by lines on level paper. And there is no pen so able, that it can as well or distinctly bring to the mind, by any written description, the beauties of certain view, or the changing effect of the varied condition demanded in a park, as may be received by the single and simple

glance of an eye trained and accustomed to the consideration of objects of natural beauty and harmony. For this obvious reason, the taste of the Commissioners, that characteristic, aptly named by Lord Chatham "the prophetic eye," and the general or specific personal knowledge, which they possess, of the natural condition of the land, will be called into service at all times, in examining and passing upon the designs offered for their consideration.

II. *Specially.*—The plan herewith submitted, owes whatever merit it may possess to its general truthfulness. It is believed that the natural conformations and character of the land selected for the park, are such that the greatest amount of beauty and utility may be obtained by most carefully and conscientiously adapting the plan and design to it, instead, as is too often done, of forcing the character of the landscape, or the arrangement of its parts, in a manner distinct and opposite to that which naturally presents itself.

The formation and condition of the lands, included within its limits, is most fortunate as regards diversity and availability. It is rare indeed that a tract of land of so great extent may be secured for the purposes to which this Central Park is devoted, or one of which the advantages are so numerous.

Nature has done much: All that is needed to make it a comfort, a pride, and an honor to the peo-

ple of the City of New York, is to base the adornments and improvements on that which we find ready to our hands.

Acting on this impression, this plan is merely an attempt to take advantage of this natural beauty and conformation; to lay out roads and walks, where nature seems to have provided a proper course for them: to use trees, water, and open spaces, according to the character of the soil, and the position of its grades; and not to establish an ideal plan and design, and then to wrest all else to conformity with it, at the expense of propriety and taste.

Nature is ever bounteous and lovely; let us always endeavor to use her gifts, as not abusing them.

Particular explanation and description of the plan, and practical reference to the individual subjects, is made in the various papers accompanying it, entitled:

1. General Description.
2. Plan of Operation.
3. Clearing and Grubbing.
4. Grading.
5. Road Making.
6. Draining.
7. Trenching.
8. Manuring.
9. Planting, Gardens, Grass and Lawns.
10. Irrigation, Lighting.

11. Description of Roads.
12. Management of Water.
13. Open Spaces.
14. Buildings and other Structures.
15. Natural Adornments.

The *general characteristics* are stated in this paper, as follows:—

I. Roads.

1. A grand route, consisting of a macadamized carriage track, fifty feet in width, with a soft horse path at its side, fifteen feet wide, which runs as near to the outer limits of the park, as is consistent with its being hidden from view of the external streets.

This has entrances on Fifty-ninth street, by the Fifth, Sixth, Seventh, and Eighth avenues. On the north, by the Old Boston Road, and is also easily accessible by any of the cross roads.

2. Two cross roads, necessary for business transit at suitable and convenient distances apart; thirty feet wide, and paved with Belgian pavement.

3. A single macadamized carriage road, twenty-five feet wide, passing through the more hidden and rougher portions of the park.

4. Several horse tracks, fifteen feet wide, in the retired parts.

5. Foot-paths of ten feet width, and less, in various parts, accessible only to the pedestrian.

II. Water.

1. Two large skating-ponds, one of which is to be reserved for the use of ladies.

2. Four lakes of various sizes.

3. Fountains in different parts of the park, of various sizes.

4. Brooks with cascades.

III. Open Spaces.

1. A parade-ground on the Fifth avenue between Sixty-Eighth and Seventy-Third streets.

2. A cricket field between the Fifth avenue and the present reservoir.

3. A skittle and bowls ground on the west side of the reservoir.

4. A wicket field, and other play-grounds in different parts.

IV. Buildings and other Structures.

1. The Crystal Palace and winter-garden placed on the high land, between Sixth and Seventh avenues, south of Sixty-Ninth street.

2. The old arsenal transformed into a gymnasium or concert hall.

3. The Superintendent's home, with chapel near by, on the hill St. Vincent.

4. Refreshment houses.

5. Towers and Monuments.

6. Gates at the different entrances, with gate houses attached.

7. A large and beautiful bridge over McGowan's pass, and bridges and culverts in other places, where the roads cross waters.

V. Natural Adornment.

1. Groves and avenues of trees.
2. Garden near the Crystal Palace.
3. Flower-gardens in various places.
4. The papers spoken of, contain as full and minute information on their various subjects as is deemed proper or necessary, in explanation of the design, and are arranged so that any particular subject desired may be easily referred to.

It is hoped they may convey a clear idea of the *theory* of management as proposed in them, and give sufficient practical instruction for the most economical prosecution of the work.

PLAN OF OPERATION,

Or Suggestions concerning the Work to be done on the Central Park.

Supposing the Plan to be adopted in time for the work to be regularly commenced by May 15th, we

shall find the Park in a good condition for its commencement. It will be all enclosed, excepting a portion near the new Reservoir ground, and will have been, in a great measure, cleared of obstructions. Its surface water has been very generally (though somewhat rudely) removed, and sufficient temporary roads and bridges for a large part of the work have been constructed. Some of the land has been trenched, but it needs draining to enable it to receive much benefit from the operation. A great deal of grubbing has been done, very much of which had better have been left undone. A large quantity of stone has been removed from the Park to the avenues and streets, where the hard stone among it is now being sledged, preparatory to being brought on to the ground to be broken for the roads. Probably ten to fifteen thousand yards of hard stone for the roads will have been broken. A nursery has been established, in which the trees are to be prepared for final planting. In short, every thing seems to favor a fair beginning, and to encourage the hope that the embarrassments and delays usually attending the commencement of new works of this character, have given way to a good state of preparation.

As the first and second divisions of the Park, or that part below Seventy-Ninth street, will of itself make a very satisfactory Park—one for which the

people are in great haste; and as the work on the new Reservoir would, for a few years, render the upper portion somewhat undesirable, it is proposed to confine the operations of this year, as far as possible, to the former.

Supposing 1,000 men and 200 horses to be employed at other work than the preparation of road-metal, they should be engaged in the following manner.

1. One hundred men, *Draining.*—To commence at the outlet of the brook at Fifty-Ninth street, near the Fifth avenue, and follow it through to the Eighth avenue, giving it sufficient depth for the thorough drainage of the low tracts by which it is skirted for nearly its whole length. Next, to proceed with the thorough drainage, with tile, of all of the land from which it is proposed to turn the water into this stream. This will complete the land drainage to about Sixty-Ninth street. The same work should be then done on the stream which empties at Fifth avenue and Seventy-Fourth street, and its tributaries, with such modifications as the proposed formation of ponds may require.

This work could probably be completed in about 100 working days, or by the first of October, and would finish the draining of the second division.

2. Three hundred men (divided into gangs of 50 men each) to commence cutting down bushes, lifting

stone and doing other work, preparatory to trenching on those tracts where trenching is to be done. This will probably occupy all of them until June 1st, and a portion of them somewhat longer. By this time the level tract near the Eighth avenue and Fifty-Ninth street, will probably have been drained, and they can commence at that point with the *trenching*, one gang falling in after another as fast as land shall be made ready for them. Four months will suffice for this work, and it may be fairly completed before October 1st.

3. Fifty men and horses will probably be required to assist the trenchers, being engaged either in drawing manure, or in removing stone and rubbish, and would be thus engaged, with some necessary interruption, until October 1st.

4. Fifty men, skilful gardeners, will be required in the nurseries, &c., and in preparing manure (by composting or otherwise).

5. Fifty men, under the direction of a competent director of such work, may be profitably employed during the entire season in following the drainers, and making the ponds and brooks.

6. Four hundred and fifty men and 150 horses will be left of the force to do the clearing and grading, and the making of the road beds. This is not nearly so many as might be employed on this work, and an increase of men and horses should be made as soon

as the Commissioners are satisfied that they can be properly superintended. When we consider the large amount of material to be removed from the street embankments in the lower parts of the Park, the grading of the parade-ground, and the grading of the road-beds, we see that there is more work to be done than could be accomplished by such a force before winter. Still, this is all work which can, with very great advantage, be done during the coming season. Indeed, no portion of it can be longer delayed without great disadvantage. The removal of the street embankments is absolutely essential to any work of importance; they cover land which is needed for other purposes, and which should be drained and trenched with the rest.

The parade-ground should be all graded by August 1st, that it may be drained, trenched, ploughed into ridges before winter, and seeded down the following season. It makes a difference of one year in the time of its completion, whether it be drained and trenched this fall or next spring, as the soil must have a winter's freezing and thawing before it will be ready for the grass seed.

The road-beds should also be graded this season, as they should have a year in which to settle, on embankments and hill-sides, before the metal is put upon them.

The number of men and carts not required in

work which is absolutely essential, is not sufficient, and the Commissioners should either allow more to be employed, or should give out the grading of the road-bed by contract.

If the work is all to be done by laborers employed by the Commissioners, at least five hundred more men and one hundred more horses will be required. There need be no question of the good policy of this arrangement, for under an efficient superintendence, a full force of fifteen hundred can be kept more closely at work, and the work can be done to better advantage than under the imperfect organization, and the absence of a necessity for strict and strictly enforced rules, which would obtain in the management of a much smaller force. With the larger force, work can often be done with greater punctuality, and more closely in the order which true economy suggests, than with the smaller.

To state the case briefly, it may be said that the improvement of the Park is (within a certain limit) a question not of days, but of days' work; and that the more these are judiciously concentrated, the less will be the comparative cost for salaries, running expenses, etc.

To arrange for the distribution of the working force beyond the coming season would be of little use, and it would doubtless be re-arranged to conform to circumstances which cannot be foreseen.

The work of the five hundred men and fifty horses in partial clearing, draining, trenching, and pond-making, may, without doubt, be completed by October 1st.

The order in which subsequent work should be done is as follows:

1. Construction of bridges, fountains, etc.
2. The formation of the play-grounds, and the general grading of the surface of the Park.
3. The planting of trees.
4. The making of gardens.
5. The construction of the McAdam's roads.
6. The making of lawns.
7. Lighting.

Of course there will be many circumstances which will entirely alter this arrangement, or require nearly all of these operations to be done at the same time; but, as a general rule, it will suffice.

The various items of Park work are more fully detailed in the accompanying notes.

The attention of the Commissioners is especially requested to the articles on draining, trenching and manuring.

With regard to *estimates* for the work of the Park, it is most respectfully submitted that it is impossible to comply with the demands of a recent resolution of the Board on that subject.

The intimation that estimates would be required

was given out too recently for the necessary computations to be made, had there been any data from which to make them.

In the absence of expensive surveys and calculations, it is impossible to say within fifty per cent. what will be the cost of the Park. For instance, there has been no survey of the rock under ground; and as it is not known what is the character of any tract in this particular, it is impossible to say whether excavations through it would cost ten cents per cubic yard, as for loam, or seventy-five cents per cubic yard as for rock.

Any estimate of the cost of the work must be the merest guessing, and must, at least, indicate a recklessness of professional reputation.

The plan which these documents are written to describe, has been made with an especial eye to the small amount appropriated for laying out of the Park, and is, in all respects, as economical as any plan, having its length of roads and its general features, can be.

Clearing and Grubbing.

The clearing of the land in the park has already been done to a considerable extent. That which remains to be done, is:

I. The removal of fruit trees from the whole park.

II. The removal of all other trees, vines and bushes, which it is not desirable to preserve, from those parts to be occupied by lawns, roads, walks and ponds, parade and play-grounds, and gardens.

III. The removal of all loose stones and imbedded boulders, except in those places proposed to be left in their present wild state, as south of the reservoir, and on the eastern slope of Observatory hill.

IV. Grubbing the ground where the present young growth is to be left for forest or grove,

1. The fruit trees should be removed at once, and if it is decided to make draining tile on the park, they should be seasoned for fuel. If not required for this purpose, they may be sold; the apple trees, especially, to manufacturers of tools.

2. There are on lands designed for parade and play-grounds, and for lawns, some fine trees which should not be disturbed. On the parade-ground there are some trees, near the borders, which would not be in the way of military evolutions, at least for a long time; and south of Seventy-First street, near the main drive, is a very fine pin-oak, which should not be removed, for the present at least. Many other trees of considerable size, which will have to be removed to make room for the roads, &c., may with care be taken up in winter, when the ground about their roots is frozen, and transported to other localities. All worthless trees and plants on land

which is to be worked, should be cut down even with the ground, and their roots may be taken out when the ground is trenched, (or otherwise prepared for its future use,) without the expense of special grubbing.

3. In removing boulders and stones, all that are required for construction, road-making, etc., should be removed to proper places, for preparation, and the others may be buried, by undermining where they lie, if too large for removal; or drawn away and used for filling, if small enough to be handled.

4. The grubbing among young forest trees has already been commenced. After it is determined what is required, no more of this work than is necessary should be done, as grubbing is too expensive an operation to be applied to land that is afterward to be trenched, or otherwise worked.

Grading.

Grading is an operation which should be commenced at once, that the land may be placed as soon as possible in condition to receive other treatment.

1. The removal of the loose stone and earth, which has been deposited for street fillings at Sixty-Second street, near the Eighth avenue; Sixty-Third street, near the Fifth avenue; Seventh avenue, from

Sixty-third to Sixty-Sixth streets; Seventy-First street, near the Eighth avenue; and, if possible, Eightieth street, between the Fifth avenue and the reservoir.

2. The removal of earth, stone and rubbish, near the sites of houses which have been removed.

3. The general smoothing of rough slopes and banks, and of the surface of ground intended for lawns.

4. The grading of the parade-ground.

5. The grading of the various play-grounds, and of the flower-garden.

6. The grading of the road-beds.

1. The street embankments, being unsightly, and undesirable to retain, should be removed. That at Eightieth street appears to have been built for the protection of the Croton water-pipes, and of the overflow sewer of the present reservoir. If the Croton Aqueduct Department can be induced to lower the water-pipes, and to give to the commissioners of the park the management of the overflow, the embankment might be removed to the level of the cricket-ground, and the waste water from the reservoir employed as advised elsewhere.

The material which the embankments in question would furnish can all be used, with advantage, in road-making, grading, etc.

2. The sites of old buildings should be cleared of

all rubbish, the cellars filled even with the ground, and shrubs and other indications of yards and gardens taken away.

This can be commenced at once, wherever the larger grading, and the making of roads, will not render it unnecessary.

3. The small grading should be postponed until after all rough work is finished, the ground cleared, drained, trenched and graded, and prepared to receive grass seed. It is true that the foppishness of the very general sentiment, among a certain class of people, demands that every thing be done with a delicate touch, and that no uncouthness of appearance be allowed while the park is being made. It is unsafe to pay the least regard to this. It is of comparatively little consequence whether the park looks well or not during the next year or two. And it is impossible to do the foundation work as it should be done, without a total disregard of present effect. It would be but a waste of labor to regrade every piece of ground as often as it may be thrown into confusion by necessary work.

Drain it, get out the stone, trench it, and finish the roads through it, and do whatever else may be necessary; and *then* fill holes, cut down ridges, cart away roots, etc., once for all.

This work is of the most simple character, and much of it can be done with the plough and scraper, with a great saving of manual labor.

4. The parade-ground has been located on the plateau below Seventy-Second street, and next to the Fifth avenue, for various reasons.

Assuming that it must be on the Fifth avenue, and near a broad street, the only choice was between the place above named, and that between the reservoir and Fifth avenue, and between Eightieth and Eighty-Sixth streets. A decision in favor of the Seventy-Second street location was made, because:

1st. The same amount of space (more than ten acres) can there be made level, at a very much less cost for grading.

2d. The present level space, which may be used almost immediately, is rather larger.

3d. The land is very much higher and drier.

4th. The situation, with reference to the prominent points of the park, is very much more exposed to view.

5th. It is nearer to the flower-garden, Crystal Palace, gymnasium and drill-room, skating-pond, and wicket-field, and to the city; while it is farther from those points on the avenue, where drinking shops will be most likely to be located.

6th. It allows the main drive to be laid on an easier grade, between Seventy-Fourth and Eightieth streets, and breaks up the much-to-be-dreaded "straight mile" from Seventy-Fourth to Ninety-Fourth streets, which the location of the parade

ground, near to the new reservoir, would render necessary.

The size of the parade-ground is about fourteen acres. This is less than is required by the circular, giving specifications; but, if more space is required, it may be easily extended to the nearly level ground west of Sixth avenue.

To grade this tract of fourteen acres, to the level of about seventy-six feet, above tide, will require the removal of about 27,000 cubic yards of earth and rock. This will cost about ten cents per cubic yard for earth, or about seventy-five cents per cubic yard, for rock. There is but little (comparatively) of the latter to be removed, probably not more than four thousand cubic yards.

This may be commenced immediately, and will require the work of fifty horses and one hundred and fifty men, for about forty working days. As soon as it is done, the soil may be drained, trenched, manured, and ploughed up into double ridges, to be exposed to the action of the frosts of the ensuing winter.

In the spring following, it might be seeded down to grass, and by frequent rolling and mowing, it would be made ready for use in two years from the present time.

5. The grading, and preparation of the various play-grounds should be done in the same manner

as above directed. As they are located on ground which is now very nearly level, they will require but little grading to bring them to a perfect plane.

Their areas are about as follows:—

Cricket-ground, nine acres.

Wicket-fields, four "

Skittle-ground, half "

Play-ground, (above the reservoir) three and one half acres.

Harlem play-ground, two and a half acres.

6. The beds for the roads, which follow almost exactly the conformation of the ground, will require but little grading. This should be done, wherever possible, one year before the road-metal is to be put on them, that they may have ample time to settle, and to become perfectly drained.

Road Making.

To describe the making and drainage of the main roads, it is only necessary to call attention to the "cross section of main road with horse-path, showing proposed drainage," (Plan $\frac{A}{HN}4$, Fig. 3,) and to the "longitudinal section of road drainage, showing the manner of collecting the manure and road-wash. (Plan $\frac{A}{HN}4$, Fig. 2.)

By the first of these drawings, it will be seen, that it is proposed to excavate the earth of the road

bed, in such a manner that the centre shall be four feet above the bottom of the drain, at either side of the road, giving it such a slope from the centre, as shall be most conducive to a rapid removal of all water that may reach it by filtration through the material of the road.

During the time allowed for the road-bed to settle, and become firm, it may be used for public driving, though the side slope will be too great for a pleasant track. The gutters being excavated only to a depth of three feet, (except for the laying of the tile for underground drainage, which will be covered to a depth of four and a-half feet from the level of the proposed gutters,) will not be injured for future operation.

When it is proposed to complete the roads, the grading will be perfected according to the line indicated in the cross section referred to. The drains for conducting away the water from the surface of the road, should be then laid, being made of six-inch tile, coated on the inside with asphaltum, or coal-tar, and cemented at the joints. The obstruction of these drains by road-wash, and the loss of the manure, which would otherwise be carried into them, is effected by the construction, at proper intervals, of large silt-basins, represented in Fig. 2. The entrance of the water into these basins, is through a grating, which will prevent the ingress of leaves,

sticks, etc., and which may be opened at times for the removal of the manure.

The overflow from these basins re-enters the drain at the middle of a pipe or tile, two feet long, the pipe being made of iron, so that the heavy fall of water may not, in course of time, break, or wear it out, as it might, were it made of clay or wood.

After these arrangements for draining are completed, the side drain, and the heavy slope of the road should be filled with large stones (from four to six inches in size,) to a line within one foot from the proposed surface of the road. Then should be laid on top hard stone, broken to a size of two inches, or less, for a thickness of one foot, and the whole thoroughly rolled very compactly together. The gutters are then to be covered with a grouting of broken stones and hydraulic cement, that the water may escape only at the entrances to the silt-basins.

The *best* material for the upper macadamizing of the road, is undoubtedly that which is now being broken on the park. It is feared, however, that this will prove too expensive; for it appears by official statistics, that the stone which was broken between the 14th of December and the 28th of February, (about 4,000 cubic yards,) has cost nearly as follows:

For selecting the stone ($1492—½ charged to broken stone,) - - - - - -	$746 00
" Drilling and blasting, (exclusive of powder and fuse,)	1,530 00
" Sledging, do do do - -	6,433 00
" Breaking (at $2.43 per yard,) - - -	9,720 00
Total cost, - - - - - -	$18,529 00
Cost per yard, - - - - - -	$4 63

A very good material of Westchester marble, or Ulster County blue limestone, could probably be obtained at a cost of about $2.75 per cubic yard.*

The horse-path at the side of the main road, should be drained in the same manner as the main road, and covered to a depth of one foot, with tan-bark, or the siftings of coal-ashes, or with both of these materials mixed.

The twenty-five foot carriage-roads, and the fifteen-foot horse-paths, should be made in the same manner as those described above.

The foot-paths are to be well drained by stone and tile beneath, and covered to a depth of eight inches with gravel, or Westchester marble sand, which latter material will cost on the park, about $1.75 per cubic yard.

The cross roads are to be paved with the Belgian, or the iron pavement, and to be guttered at each side in the same manner as in the city streets.

* It is said that broken stone of the same material as the Russ pavement, will be delivered to any part of the park for $2.50 per cubic yard, broken to a size of two inches.

Their slope should also be the same as in city roads of the same width.

Draining.

There is no subject connected with the making of a park, on land of the quality of that under consideration, which so thoroughly underlies the success of the entire enterprise, as that of *draining*. Without it, it is impossible to have pure air, dry walks, a soil fitted for the production of lawns, or such trees as are required in a park,—in short, to have a park at all.

It is true, that draining is not required in every part of the Central Park, there being some hill-tops, which are sufficiently drained by the slope of the rock underlying them; but in other localities, whether on comparatively even tracts—such as those between the Fifth and Sixth avenues, below Seventy-Second street, or about Eighty-Sixth street, near the Eighth avenue, and between the present reservoir and the Fifth avenue—or on tracts which are more diversified; as near the Fifth avenue and Fifty-Ninth street, the land will require thorough drainage, as has been attested, by various trenches or holes which have been opened in them, and which, in moderately wet weather, indicate a complete saturation of the soil.

It may be roughly estimated, that from four

hundred and fifty to five hundred acres of the land of the park, will require draining. It is not possible to state, with any accuracy, the probable cost of this work. The two important considerations of the amount of stone to be found in opening the ditches, and of the cost of the tile—which it is now impossible to decide—might make a difference of thirty per cent. in the amount. As an example of the manner in which a long experience has decided that draining may best be done—this is accompanied by a provisional plan of drainage, ($\frac{A}{H\,N}$ No. 2.)

This plan is entirely theoretical. It is correct, if rock below its surface would not prevent its execution. At all events, whether right or not, in this particular, it will serve to show the direction in which drains should be run; the size of the tile; the parts of the system in which the various-sized tiles should be used; the depth of the drains; the location of the silt-basins, etc.

The principle on which it is based, is the well known one, that drains act more *efficiently* for the drainage of hill-sides, when they run directly up and down their slopes. This admits of demonstration, and is the rule which guides the best draining engineers in Great Britain and France, but its explanation would require too much space for the present paper.

The drains are located, mainly, at a depth of

four feet; and the distance between drains of that depth, is forty feet. Where alternate drains approach each other, at their upper ends, nearer than eighty feet apart, the drain between them is lessened in depth; the full depth of four feet not being required in such cases, as the distance to be drained is less than forty feet. Such drains are indicated on the plan, by dotted lines; the dots extending to lines in those parts where, from the greater distance between the alternate drains, the drain thus indicated is required to be deeper.

The *tile* to be used in draining the tract represented in the plan, (Div. 2, Sec. 13, about seven and a half acres. This tract is considered without reference to the land about it,) are of the following sizes; one and one-fourth inch tile, for the parallel drains; two inch tile, for drains which collect the water of a number of parallel drains; three-inch tile, for those which collect a much larger amount of water, and carry it to the silt-basins; and four-inch tile, for the outlets from the silt-basins. These sizes, though less than are generally used in this country, are amply sufficient for the conveyance of all the water which will ever reach them, and are very much cheaper and less likely to break, in handling, than the larger sizes.

Every drain should be so constructed, that the water running in it shall, in no place, run at a less

speed—that is, over a less inclination, than in any other part of the drain above it—lest the silt, which had been carried in suspension in the water, while running at the more rapid rates, be deposited where it runs more slowly, and obstruct the drain. When rendered necessary by the conformation of the ground, the fall of the drain may be constantly increased as it approaches its outlet, as this will increase the speed of the water, and will not allow silt to be deposited.

This arrangement is shown in the profile of the drain, B. 1, (plan 3.) It sometimes requires the ditch to be cut to a rather greater or less depth than is designated in the plan; but the more nearly it approaches this, the more perfect is the system. The silt-basins A and B are wells, (plan $\frac{A}{B'N}$ 4, Figure 1,) built of brick, and coming to the top of the ground, where they are covered with an iron lid, on which is an arrow pointing in the direction of the out-fall and the number of the basin. The bottom is furnished with a cement-bowl, into which the drains discharge at a height of one foot from its lowest point; and the outlet drain is ten inches above the same point. This arrangement, by stopping the flow of water, causes the impurities held in suspension in it, to be deposited in the basin, only clear water being carried off from the top. From time to time these basins may be opened, and the

silt removed with a scoop. The silt basins enable us to see, at any time, how the drains are working. Lest, from carelessness, the lids to these basins should be left open, and rubbish allowed to fall into them, the outlet-drain should, in all cases, be furnished with a net-work of iron, to keep such rubbish from entering the drain tile, and obstructing it.

It is unfortunate, that a plan for drainage, verified by soundings, has not been made during the past season, that contract work might be commenced at once, and that due consideration might be given to every portion of the arrangement.

Under the existing circumstances, it is to be recommended, that the drainage of the more even tracts, on the first and second division, be commenced at once—the ditches to be opened by the rod; and that plans for the more difficult, diversified tracts be made as soon as possible, the most economical method, probably, being to give out the work by contract, with sufficient specifications.

The drainage of the first and second divisions, exclusive of brooks, outlets, and road-drains, would probably require ten thousand day's work, or the labor of one hundred men, for one hundred days; though the uncertainty of the amount of rock underground, which would interfere with the drainage, renders the estimate somewhat unreliable.

To make ditches four feet deep, eighteen inches

wide at the top, and three inches wide at the bottom, will require the removal of two yards of earth, per running rod—costing from fifteen to twenty-five cents per rod. The finishing of the bottoms of the trenches, the laying of the tile, and the filling of the first one-third of the drain, (compacting the earth over the tile,) should be most carefully done by day's work. This compressed earth should consist mainly of clay, and should be made so compact, that roots will not be likely to penetrate it; for if they enter the *tile*, they will cause the flow of water to be obstructed. In trenching, care should be taken to have no manure placed within six inches of either side of the drains, that roots may not be encouraged in that direction.

In opening a ditch the work should always be commenced at its lower end, that the water may not impede the operation; and in finishing the ditches, their falls should be verified, to be sure that they accord with the plan, and afford a slope which does not decrease as it approaches the outlet.

The laying of the tile should be commenced at the upper end of the ditch, that any loose material entering them may be washed out by the water running through them. If it were commenced at the lower end, they would be very likely to become filled before the operation was completed.

The tile should be so laid, that they touch the bottom of the trench in all parts, in order that they

may not be broken or displaced by the ramming down of the earth above them. The collars, where used, should be fitted carefully on the tile, and the bottom of the ditch scooped out to receive them, or filled in under the tile between them, as may be most easily done.

Whenever one drain runs into another, the receiving drain should be furnished with jointed tile.

All of these operations must be conducted with the utmost care, and under the constant supervision of trustworthy men. It would be worse than folly to expend so much money as will be required for material and labor in this work, and then to have it imperfect in the most essential points—*fall* and *continuity*.

The tile drainage of the Park should be viewed as a work which is to last for centuries, and which must be properly done at some time. It can be best done now, when the scarcity of large trees renders it a comparatively easy operation.

The Main Drains, where required to be of a larger size than can be made with tile, which will be only where there are now considerable brooks, which the plan of the park requires to be covered, should be furnished with small brick sewers.

The plan of the Park, accompanying this description, requires such an arrangement with regard to the brook which passes under Fifty-Ninth street,

near the Fifth avenue, or so much of it as lies between the Eighth avenue and the Pond, in the south-eastern corner of the Park. The brook which runs parallel with the Fifth avenue, from Eightieth to Seventy-Ninth streets, and the brook which passes under the Fifth avenue at Ninety-Ninth street, and which, from a diversion of the water of its sources into M'Gowan's Pond, may probably be made of sufficient capacity by the use of six-inch tile.

The foregoing remarks apply only to the drainage of the land—the drainage of the roads having been discussed under the head of "road making."

Tile.—The tile required for the drainage of the Park may be purchased at Albany, where a good quality of tile is manufactured, and may be shipped directly to the foot of Eighty-Sixth street, East River, and thus obtained with very little trouble.

If procured from this source, they should be contracted for by sample, and rigidly inspected on their arrival.

A cheaper, and in some respects, better way to obtain tile, would be to manufacture them on the ground. A standing objection to this plan has been the difficulty of obtaining clay suitable for the purpose. The objection has recently been removed by the discovery of a bed of excellent clay on the Park itself. This clay lies north of Eighty-Sixth street,

and west of the new Reservoir ground—a locality where there is ample space for the business of tile-making, and where it would not in any way interfere with the improvement of the Park. A tile made from this clay will be placed in the hands of the Clerk to the Commission at the earliest possible moment.

The economy of making the tile on the Park would be very considerable, while jointed tile, and other tile of peculiar form, could be made as required, without the annoyance and delay which always attend their procurement from distant *manufactories.*

The machinery and kilns required, would cost but little, compared with the great saving that they would effect.

The best machine is probably that of Mr. Clayton, of London, which would cost, to import, about $250. This machine makes both tile and the collars for connecting them.

Sufficiently good kilns for a temporary purpose could be very cheaply made of the clay from which the tile are manufactured. Such a kiln would burn about 30,000 one and a quarter inch tile at a time, and would last much longer than it would be required on the park, as the burning of the interior makes it as solid as vitrified brick.

The amount of tile required for draining the park, and their cost, are about as follows:

Material.		Size.	Probable cost, delivered in the Park, from Albany.	Observations.
600,000	Tile	1¼ inch	$7,200	
400,000	Collars	2 "	3,000	
200,000	Tile	2 "	3,000	
150,000	Collars	3 "	1,875	Too large to be made with economy on the park
40,000	Tile	3 "	1,000	
25,000	Tile	4 to 6 "	2,000	
			$18,075	

The only question of the economy of making the tile on the park is, whether the deposit of clay is sufficiently extensive for the purpose.*

It would probably be best to advertise for proposals for furnishing tile, stating that there is on the park a good quality of clay and a great amount of fuel, (old fruit trees, &c.,) which are at the service of the manufacturer, if he chooses to use them. The contractors to deliver the tile on or near any roadway on the park.

Trenching.

One of the most important methods of improving the park, is to *trench* all that portion of the ground except that covered by rocks, buildings, ponds, roads, trees now growing, &c., &c., which

* It would probably be much cheaper to bring clay for making tiles to the park, than to bring the tile itself.

will not require such improvement, or which is rendered impossible by the character of the surface.

By trenching we mean a complete reversal of the soil. The operation consists in digging a trench of the required depth, and (usually) three feet wide, throwing the earth all on one side, and then commencing on another piece of equal width, spading up the soil, and throwing it into the trench first made, in such a manner as to place the top spit, from the new, at the bottom of the old trench, and the bottom spit of the new trench at the top of the old trench.

A third trench is then formed, by throwing the soil, in the same manner, into the second, and so on across the plot, the earth thrown out from the first trench being used to fill the last one.

If coarse manure is used, it is placed in the bottom of the trenches, before any filling has been done. The reason for this is, that such manures, in their decomposition, are resolved, largely, into fertilizing gases, the tendency of which is to rise in the soil.

If, in trenching, more stones are found than will be required for road making and other work, they may with advantage be placed in the bottoms of the trenches, with the manure and surface soil. This, however, is not the usual custom.

The cost of this work, which has already been

done on the park, was not far from $260 per acre. This, however, was in a very wet, undrained soil, and was done by men not accustomed to such work. With a properly organized force it would probably cost, after a little practice, about $200 per acre, or from $60,000 to $80,000 for that portion of the park which will require it. This amount, though apparently large, will be judiciously expended, if it secure only one-half of the results which may fairly be anticipated from it.

The least depth to which it would be advisable to trench any soil is twenty inches, and, for the park, two feet would be far preferable, as increasing all of the beneficial effects of the operation.

The trenching should be done after the draining, for the following reasons:

1. The draining will in a short time so dry the soil, that it may be more easily worked, and this comparative dryness will obviate the evil effects which result from working the soil while wet.

2. By making the drains *before* the trenching and manuring are done, they can more easily be protected against the entrance of roots.

3. The tramping of the newly trenched soil (while wet), in making the drains, would very much lessen the advantages of trenching.

The following is a list of some of the more important results of trenching:

1. It places the richer parts of the soil at a considerable depth below the surface, and thus induces grass, trees, and other plants, to send their roots mainly to such a distance from the surface as will insure their finding a plentiful supply of moisture, even during the driest times, and where there would be the most complete drainage during the wet season.

2. It enables roots to occupy a much larger proportion of the soil, and to multiply their fibres without obstruction; the whole soil, for a considerable depth, is brought under contribution, and the impoverishment of any part is rendered improbable. If one portion of the soil contain fertilizing matter that is deficient in the remainder, there is nothing to prevent the plant from making use of it.

3. It facilitates drainage. After the soil of the park has been thoroughly loosened, as in trenching, and contains in every part the dead or living roots of plants, it can never regain (especially if thoroughly drained) the compact condition which it now has.

4. It improves grass for lawns by so placing its roots that it can, at all times, obtain the food and moisture which it requires for steady growth, while it is neither injured by drought nor forced into rank growth, as it is when its principal feeding roots are located near the surface, and are under the stimu-

lating influence of heat and warm rains, and where the organic matter of the soil is so near the surface, that the excess of heat and the more free circulation of air cause it to part more readily with its fertilizing constituents.

5. For the same reason it improves trees and other plants, keeping up a steady and uniform growth, without so much luxuriance as will cause the dangerous late growth, consequent on too much moisture and heat.

6. It renders the soil, in a degree, independent of climate, and will enable the growth of trees and shrubs, which would not (without this operation) acquire sufficient force to withstand the rigors of our winter.

7. It maintains in the soil a much more uniform degree of moisture than can be attained without it. It does this by facilitating the percolation of water, and by the deposit of water which exists as a vapor in the air, on the surfaces of the shaded and cooler particles of the soil.

8. The tendency of manure being to rise in the soil, or from the soil into the atmosphere, the large amount of earth above it (where it is placed in the bottoms of the trenches) prevents its loss, and retains it, until it is required by plants.

9. It will promote the healthfulness of the park, inasmuch as it hastens the drainage, and prevents

noxious exhalations from decaying manure and roots. It produces a degree of salubrity, and a steady growth, which can be attained in no other way so well.

Manuring.

The manuring of the Park is a subject which requires the most careful consideration and the closest management. There is such a variety of fertilizers, each of which is good in its place, that it is difficult to decide what to select for the Park.

Among the number which present themselves, there are a few which, from their fitness for the purpose, and their easy accessibility, deserve especial attention. For instance:

Stable Manure.	Plaster.
Swamp muck.	Wood ashes.
Street dirt.	Coal do.
Night soil.	Green sand marl.
Lime.	Bone dust.
Old mortar.	Super-phosphate of lime.
Gas-house lime.	Salt.

Stable Manure is so well known, and so easily attainable, that it is only necessary to say, that it will doubtless be the principal manure that will be used on the Park, and to indicate briefly the manner in which it should be treated to produce the best results, the leading principle which should

guide the directors of the work, with reference to this subject, is the well known one, that, although animal excrement must undergo thorough decomposition before it can be used by plants, yet, unless proper precautions be taken, this decomposition will cause the loss of more than three-fourths of its fertilizing value in the form of gases which pass into the atmosphere. The escape of these gases may be prevented by the use of clay, charcoal-dust, muck, plaster, and other substances—all of which have the power of absorbing these fertilizing gases.

The stable manure, which is to be placed in the bottoms of the trenches, should be used in its fresh state, because the soil above it will absorb all of the gases which it evolves, thus preventing its loss; and because these gases, and the heat of decomposition which will be imparted to the soil, will be the best possible ameliorators of the uncongenial subsoil which is brought to the surface.

Stable manure which is to be used near the surface, as in tree planting and in the flower-garden, should be decomposed in connection with some sort of absorbent matter which will retain its escaping gases, and the mass should be covered, that its soluble parts may not be removed by rains.

For rapidity of decomposition, a little lime or other alkali should be used, but not enough to throw out more ammonia from the manure than the absorbent is capable of readily taking up.

Street Dirt may be considered as thoroughly decomposed horse manure, with some sand and other impurities.

Muck is one of the best absorbents known, and should be composted with stable or other animal manure, for the purpose above described. None of it should be used in any other way in the economy of the Park.

Night Soil may probably be obtained without difficulty from the city scavengers, and is one of the best manures in the world for any purpose, except where considerable porosity and heat are desired, as in the use of fresh stable manure in trenching. The extent to which this manure should be substituted for others must depend, in a great measure, on its cost, which must be entirely a matter of negotiation, though it will be indispensable in the flower-gardens.

Lime should be employed on every acre of the lands of the Park, whether intended for lawns or plantations, being used at the rate of ten bushels (burned lime) to the acre on the untrenched land, and twenty bushels to the acre on the trenched land.

Its effects are as follows:

It neutralizes the organic acids of the soil.

It acts on its mineral portions, and aids in disintegrating them.

It prepares the fertilizing matters in the soil for the use of plants; and

It acts as a direct aliment to vegetation, every cultivated species of which requires lime for its growth.

It is no argument against the use of lime that the soil of the Park already contains enough of it for the uses of plants, as its mechanical and chemical effect are worth many times its cost, and are not produced by the natural lime of the soil, that being already in such chemical combination as prevents its action in the manner desired.

The best sort of lime for agricultural purposes is that produced by burning oyster shells, as it contains no magnesia. It should be used immediately after being slaked if with simple water, but if slaked with water containing salt in solution, as will be described under the head of *salt*, it should remain at least ten days in a mass; a much longer time would be preferable.

When the ground is not occupied by trees, or other obstructions, the lime may be very evenly sown by a machine made for that purpose.

Old Mortar is a very good manure. It contains a large proportion of lime, much of which is greatly enhanced in value by having become a "*nitrate*" from a union with nitric acid, produced by the action of the air on the hair which it contains. This

substance is well worth carting from any part of the city.

Plaster of Paris (sulphate of lime) is proverbially a good fertilizer. It contains, besides lime, sulphuric acid, which is a constituent of all cultivated plants, and it supplies this to their tissues.

It is a good absorbent of fertilizing gases, and may be used in the compost heap. It attracts moisture from the air, and is therefore particularly valuable in a dry season.

It should be used on the Park at the rate of about two bushels per acre, with occasional subsequent applications.

There are several sources in the city from which it can be procured in considerable quantities and without cost, if proper caution be used in making arrangements for it.

Gas-house Lime, from the various compounds of sulphur and lime which it contains, is injurious to vegetation, but after long exposure in compost with coarse organic matter, it becomes changed to sulphate and carbonate of lime, and is a valuable manure. It can be cheaply procured, and if composted with the surface soil and small roots which have been collected in grubbing among the trees and bushes on the Park, the mass would become after one season very excellent for use about delicate trees.

Wood Ashes (unleached), an invaluable manure,

may be obtained to a considerable extent from the establishments for the smoking of meats, and from other sources in the city. If procurable, it should be used at the rate of six bushels per acre. Its chief value is for the potash which it contains, and which is an indispensable element of fertile soils. Wood ashes give a peculiar fineness, strength, and depth of color to grass.

Coal Ashes, after the coal has been sifted out by those who collect it for that purpose, has little chemical value, but it is so open and friable in its texture, and so freely allows water to pass through it, while it induces such a copious deposit of dew when used as a top-dressing for trenched lands, that it is exceedingly valuable in the production of lawn grass.

Bone Dust and Super-phosphate of Lime, are in such high repute among farmers, and so excellent in their effect, that it seems necessary to allude to them here, not, however, to recommend their use very strongly. In remote districts, they are invaluable as a concentrated form in which to purchase much-needed ingredients; but here in a city, whose manurial wastes are from $10,000 to $20,000 per day, they cannot be used in competition with stable manure and night soil, if these be purchased and manipulated with care.

Salt, (*Chloride of Sodium*,) contains in the

cheapest form, chlorine and the base of soda, which are both necessary constituents of plants, and are essential to the fertility of the soil.

The salt which will be necessary for the soil of the park, may best be used in the water which is employed to slake the lime. For this purpose, all of the water which is thus used, should be a saturated solution of salt. It should be applied to the lime at intervals of four or five days, to cause it to absorb as much as possible of it.

The compound thus formed, is known as the *lime and salt mixture*, and is largely used for the decomposition of muck; certain chemical changes which it undergoes, when in connection with organic matter, rendering it particularly valuable for this purpose. All muck used in the park, should be prepared by this process.

By reference to the accompanying plans for drainage, it will be seen that it is intended to collect the manure which is washed from the roads, in order that it may be saved for use. The urinals and privies on the park, should also be supplied with arrangements for preserving their manure. The amount thus to be collected, should be sufficient always to maintain the park in a fertile condition.

In the practical manuring of the park, it is very desirable that accurate analyses of the soil should be made by a competent chemist. It is not impos-

sible to make the soil of the park sufficiently fertile without this; but with it, it is possible to save a very large amount of both time and money, by applying most largely those manures which are most needed to bring the soil to a fertile condition.

Whatever value may attach to soil analysis, is an argument in favor of having it made only by a thoroughly competent chemist; as an incorrect analysis would lead to grave errors..

About ten carefully selected samples of soil, from different portions of the park, should be analyzed.

It having been ascertained by analysis, what is needed to make it fertile in its mineral constituents, the necessary ingredients should be applied, either with or without organic matter, according to the requirements of the case; the following principles being kept in view:—

1. Sheds should be erected for storing all manure which contains soluble matters, and for composting organic manure.

2. Animal manure should never be brought in contact with any strong alkali, like lime, potash (in unleached wood ashes), etc., unless it be protected by an absorbent, such as muck or plaster, and then in only a very small amount.

3. Animal manure should never be applied to the soil in an undecomposed condition, without being deeply covered by ploughing or trenching.

4. Animal manure, which has been decomposed in compost with muck, or any other sufficient absorbent may be used on or near the surface of the soil, without risk of loss.

5. In forming lawns, no animal manure should be used nearer the surface than the bottom of the trenches, lest too great vigor and rankness be given to the grass.

6. In planting most deciduous trees, the soil cannot be made too rich, if the manure be thoroughly decomposed, so that there is no danger of heating.

7. Lime and ashes, having a tendency to sink in the soil, should always be applied *after* the ploughing and trenching have been finished. All other mineral manures may be used in this way, as they do not evaporate.

8. Plaster should be sown over the ground after the grass has appeared.

9. No other treatment, not very expensive, will place a soil in such good condition for lawns, as will the cultivation with mineral manures only, of potatoes, carrots, or other root crops, after trenching with a heavy dressing of stable manure at the bottom. The frequent working of the soil in cultivation and in harvesting, and the fibrous roots which are left in the soil, by this operation, are exactly suited to the amelioration of the soil for grass.

Planting.

The kind of trees to be planted in the different localities, being named in the paper on natural adornment, it is only necessary to offer here such suggestions or hints concerning the work of planting, as shall serve to guide those to whom it may be intrusted.

These need not be very full, as the arrangement and management of the trees and other plants will require the direction of men who, from long experience, are quite competent to attend to the minor details which are necessary to ensure success.

The points especially to be observed are:

First. The holes in which trees are to be set should be opened as early as possible, so that the air and frost may ameliorate the soil of their sides and bottoms. They should be of the same depth as the trenching, whatever that may be. Wherever it is possible to be avoided, they should not be placed directly over a drain. They should be of sufficient size to allow one foot in the clear, around the roots.

Second. The holes should be dug, if possible, before trenching, or at the same time; or should at least be indicated by stakes, so that the proper manure may be placed in their vicinity, when the ground is trenched.

Third. The earth taken from the holes, (except

the surface soil,) should be spread over the land, and its place supplied with that of a better quality, taken from the surface, where heavy grading has been done, or where road-ways have been opened, or else by a very thoroughly decomposed mould, such as might be made by composting with gas-house lime, and a little horse manure, the roots and leaf mould which have been collected by the grubbers.

Fourth. Before planting the tree, a very little heating manure, such as half-rotted horse litter, may with advantage be spread in the bottom of the hole, and covered with a layer of thoroughly rotted manure, and that, in turn, with a pure vegetable mould; over the mass may be sprinkled, at the rate of about one quart to each hole, the following compost:—

1 bushel bone-dust.

½ do slaked oyster-shell lime.

½ do dry wood ashes, or 6 lbs. potash sparlings.

1 pint fine salt.

1 quart plaster of Paris.

(The same compost may with advantage be used in the bottoms of the trenches near to the proposed localities of planting.)

On the top of this compost, in the holes, should be placed one inch or more of surface soil, and the

hole will then be ready for the reception of the trees.

Fifth. When the tree is planted, it should be placed as nearly as possible, in the same condition, with reference to position, shelter, etc., as in its original place in the nursery, or forest. As a general rule, no tree, when finally planted, should be under less favorable influences than those which surrounded it before removal.

Sixth. Forest trees of any portable size, except those which, like hickory, have tap roots, may be transplanted with safety, in the winter time, (after having had one year to form fibrous roots) in trenches filled with leaf mould, and well decomposed manure.

The digging up of the tree must be such as to leave a sufficient ball of earth, and to cut off all lateral roots. When the roots are thus cut off, the top should be shortened in, and deprived of its leafy twigs, in order to reduce the evaporating surface, as much as we have reduced the ability of the roots to supply moisture.

Seventh. Trees which are placed so as to be exposed to violent winds, should be staked and tied, to prevent their swaying, and the consequent loosening of their roots in the soil.

Eighth. After a tree is planted, the soil about its roots having been previously well moistened, is to be trodden down. This will aid the tree to keep its position.

For the work of the park, the most essential of the foregoing suggestions, are those which recommend digging the holes to the same depth as the trenching of the ground about them; and the placing of the manure under the trees, on the same level with that under the trenched ground.

Roots are thus encouraged to follow a horizontal direction; neither commencing at a lower level, and rising to that of the manure about them, after having curved down into soil which would often be too wet, nor taking a downward direction in their growth, which, were it continued, might lead to the drains, and obstruct or destroy them.

Gardens.

It is proposed to place the principal garden on the hill, north-west of the arsenal, where the nursery is now located. Other smaller gardens and beds of flowers might be made, at discretion, near the fountains, on the banks of ponds, in the points formed by converging roads, near the principal entrances, about the Crystal Palace, etc.

The soil of the flower garden proper, should be trenched to a depth of three feet, and should have mixed with it, at least one-third its bulk of well rotted vegetable mould, and a plentiful supply of a compost of night-soil, and charcoal dust, or muck, with lime, plaster, bone-dust, &c.

The walks should be excavated to a depth of four feet, and drains should be laid just under the soil at the bottom. They should then be filled, first with broken stone, and then with the debris of marble, or some other suitable material, which should be kept perfectly level, and rolled as compactly as possible.

These walks will serve as ample drains to the garden, and will always be dry, pleasant, and free from weeds.

Sufficient stone for the walks would doubtless be found in trenching the ground; these should be broken to a size of about six inches, and carefully put in their places to a depth of two and a half feet. They should then be covered to a depth of six inches, with stone broken to a smaller size, and so pounded down, as to prevent the marble sand which is to be placed above them, from finding its way down among those of a larger size.

Wherever smaller beds of flowers are to be made in the park, they should, as far as possible, receive the same careful preparation as has been suggested for the garden. In all cases, they should receive very heavy admixtures of vegetable mould.

The gardens are the only parts of the park which will require irrigation, and they require but very little—for the more hardy sorts of plants, none at all, if the ground is well drained, (that it may re-

main pervious to the air,) and is frequently stirred with the bayonet hoe.

What little irrigation may be necessary, may best be done by having small hydrants in different parts of the garden, that the water may be supplied more gently than if it were thrown directly (with a greater distance to fall) from the fountain.

Grass and Lawns.

By reference to the article on *trenching*, it will be seen that the proper preparation for grass, is to have the soil thoroughly trenched to a depth of two feet, thereby placing all the surface soil and organic manure at the bottom. The surface, after trenching, should be as devoid as possible of all stimulating manure, and where it is required to have the grass very firm and enduring, as on the parade and play-grounds, it would be well to give to the soil a heavy dressing of the siftings of coal-ashes. This would have the double advantage of rendering these surfaces drier during rains.

The theory of this treatment is, that by inducing the grasses to send their roots to a considerable depth, they are rendered less subject to the influences of a varied climate.

If opportunity offers, the grass seed should be sown on a light fall of snow, in March; or if it

cannot be done in that manner, let it be sown directly on the ground, and lightly brushed in with a bush-harrow. The seed should, in either case, be evenly sown, by a machine used for the purpose.

A very good mixture of grasses, for lawns, is the following from Flint's "Grasses and Forage Plants:"

Meadow fox-tail	1 pound.
Sweet-scented vernal grass	1 "
Red top	2 "
Hard fescue	3 "
Sheep's do	1 "
Meadow do	4 "
Red do	2 "
Italian rye grass	3 "
Perennial do	8 "
Timothy	1 "
June grass	2 "
Rough stalked meadow grass	2 "
White clover	8 "
Per acre	38 pounds.

The lawns should, of course, be kept very closely mown, or fed off by sheep, from the outset, not only to give it a strong, thrifty growth, but also to kill off all false grass, and to keep weeds from going to seed.

Irrigation.

The resolution of the Board, passed February 3d, requires particulars with regard to irrigation.

It is respectfully submitted that it would be un

wise to make any use of this means for enriching the soil of the park, for the following reasons:

1. It will be unnecessary as a means of supplying moisture, because the trenching and under-draining of the soil will render it so porous, that a sufficient amount of moisture, during dry seasons, will be deposited from the air circulating in its interstices, while the same condition of the soil, and the enrichment of its lower portion, will induce the roots to descend to a depth where sufficient water will be readily attainable.

2. It would be a more expensive operation than the result would justify.

3. It is, at least, questionable what would be the effect of irrigation on the healthfulness of the park. The extreme moisture of the surface soil, which must result from the excessive flooding with water, which would at times occur, would be very likely to produce an unhealthy condition of the atmosphere.

As the water must be let on to the land at night, the rising sun would almost invariably call forth such fogs, as would unfit the park for one of its chief uses —early riding.

4. From carelessness or neglect the flow of water would be very likely to become irregular, and to gully the surface of the park by an excessive flow in particular places.

5. It would increase the expense of draining the

park, as it would require provision for the removal of larger quantities of water.

6. The most important objection to *irrigation* is, that it would be unfavorable to fine lawns, the basis of which must be a soil which shall be rich at a considerable depth below the surface, but as poor as may be at the surface, so that the feeding ends of the roots shall be located at a point where the changing temperature of the air may have no influence on them, and where they are certain to be subject to such a degree of heat and moisture as shall maintain a uniform growth. Grasses so circumstanced would grow in a uniform manner, and would (other things being equal) be more enduring than under any other circumstances.

Irrigation would convey to the soil certain fertilizing matters held in snspension or solution in the water. On a soil like that of the Central Park, these fertilizing matters would be retained very near to the surface, and would cause grass to locate there a considerable portion of its roots. These roots, from their exposure to atmospheric changes, would cause the plants to grow with too great or too little vigor, according to the season, and would subvert the main object, a uniform growth. It is proverbial that irrigation causes very heavy and rank growth of grass, just the opposite of what is required for lawns.

Aside from these facts, it is to be considered that, on a surface so uneven as that of the park, it would be impossible to have all parts equally irrigated; the result of inequality in this respect being an unequal growth and fineness of grass.

Lighting.

It is proposed to confine the lighting of the park, for the present, within narrow limits.

The Commissioners will readily understand that the park, for many years at least, and until it shall be quite surrounded with houses, will be used only as a place of day recreation and enjoyment, and they will also perceive the decided impropriety and objection in throwing open its extent to public use during the night, unless it should be thoroughly and entirely lighted and patrolled by a large police force.

It is suggested, therefore, that gas should be introduced (from the avenues) for these parts only:

1. On the five cross-roads, and at their gates and gate-houses.

2. From the corner of Fifty-Ninth street and Fifth avenue, as far as, and including the concert hall or gymnasium.

3. About and within the Crystal Palace and winter garden.

4. In the flower gardens, where there should be sufficient light to enable the police to protect the plants.

5. On the old Boston road, from the Fifth avenue to and including the superintendent's house and chapel.

The pipes should be thickly and carefully coated with asphaltum in their entire extent, in order to prevent the slightest escape of gas by the joints or pores of the iron, and the consequent injury to vegetation. Being a public park, the expense of the lighting will be defrayed by the city, so that no *meters* will be needed.

Description of Roads.

It may not be undesirable to give a succinct sketch of the character of the ground and landscape through which the roads pass.

I The main carriage drive, entering at the corner of the Fifth avenue and Fifty-Ninth street (which it is presumed will be the principal entrance for vehicles), skirts Lily Pond on its left, and, sweeping around the high rock covered with evergreens, comes out at the open space where the roads separate. Here is placed a fountain, which is supplied with waste water from the reservoir.

To the left, the route continues up the valley,

meeting the entrances by the other avenues. To the right it passes back of the gymnasium (with a twenty-five foot road leading to it), and, running under the hill on which the large garden is placed, after crossing the first transit road, turns up, by a gentle rise to the parade-ground.

Here, its course is close to the avenue as far as Seventy-Second street, with a thick plantation of trees on the east, and affords a fine, uninterrupted view of any military evolutions on that field. As it descends the hill, turning to the left at Seventy-Second street, there is seen below the ladies' skating pond, with a jet fountain in the centre, a fine view extending to the northward up the valley, and to the west and north-west, the rough land, covered with evergreens, lying south of the reservoir. This descent will offer one of the most agreeable and picturesque views in the park.

At the base of the hill, the road crosses the skating pond by a stone bridge, and, following its border, passes the Seventy-Sixth street cross-road, and ascends the valley, with Cedar Knoll and its gracefully sloping hill on the west, turns to the left and skirts the Cricket-Ground.

At Eighty-Sixth street it enters a straight avenue, a half-mile in length, bordered on each side with large elms. Here the horse road is removed from its side, with twenty feet of turf between, and

on the avenue side is a thick plantation of trees and shrubs.

Meeting the old Boston road, it follows it as far as it lies in the park, and near the northern line, in front of the superintendent's house, turns to the left, and descends into McGowan's pass. To prevent too heavy a grade here, the road is carried over the lower part of the valley, on a high bridge, thereby crossing the brook, and a twenty-five foot carriage track, which has quitted the main road, just below Fort Fish.

This bridge is to be made of hammer-dressed stone, of handsome architecture, and will present an imposing appearance from the south, and will offer a beautiful view from its top. Below lies McGowan's Pond, and above it, on the west, rises Observatory Hill, with its sides covered with the native thickets and matted vines. (Plans and specifications of this bridge will be furnished, if desired.)

After crossing the bridge, the road runs under Observatory Hill, till near the Eighth avenue, and then crosses the outlet of Swan Pond, on a bridge forming a dam to its waters, and affording a full view of the cascade. From there it winds through a broken and diversified rough country, till it reaches Ninety-First street. Here is afforded a fine view of the new reservoir.

Thence, descending the Bellevue Hill, it sweeps

around the new reservoir embankment, and, intersecting the Eighty-Sixth street cross-road, near the corner of the present reservoir, descends the valley to the large skating pond.

At the head of this pond the combination of landscape and water view will be particularly pleasing. Hills rise on either side, covered with evergreens. To the left, high above, is the clock tower, near the corner of the reservoir; in front spreads out the expanse of the pond, with gentle slopes on the south, and beyond, in the distance, rises the beautiful dome of the Crystal Palace.

After crossing one of the branches of the skating pond, the road rises over the hills, and, winding down the slope toward the south, branches off at Eighth, Seventh, and Sixth avenues, returning again to its original starting point.

The grades throughout its entire extent are easy, and the radii of the curves large, so that in few, if any places, will it be impossible for carriage horses to trot with a heavy load.

II. It is presumed that, for all purposes of present transit, five cross-roads will be sufficient. In future, if needed, more may be added in appropriate places.

These roads are of easy grade and curve, to be paved with Belgian pavement, well lighted by gas, and in no instance allowed to run on the same bed

as the carriage drive. It is endeavored to isolate them much as possible, by cutting across the others at nearly right angles, and, in places where their crossings may be easily masked, by plantations of trees and shrubs.

With the exception of that at Eighty-Sixth street, the width will be thirty feet from gutter to gutter. On account of the greater transit by Eighty-Sixth street, that will be fifty feet wide.

The *first* enters under Chestnut Hill, at Sixty-Seventh street, on the Fifth avenue; rises by a gentle grade, to the centre of the park, passes to the north of the Crystal Palace; and thus affords easy access to it; by the edge of the Wicket-Field, and bending to the south, reaches the Eighth avenue at Sixty-Sixth street — properly named the Hill-Crossing.

The *second* leaves Fifth avenue, a little below Seventy-Sixth street, enters the park in sight of the Ladies' Skating Pond, and following up the valley, by the side of the brook, and across an arm of the Large Skating Pond, comes out on the west, near Seventy-Fourth street. To avoid running in, or by the side of the carriage road, it is taken up and through the rough hill east of the Eighth avenue; and, though on the plan, appearing to be near the drive at that point, is really many feet above it, and completely hidden by its rock cutting and the thick

plantation on either side. This is called the Valley Crossing.

The *third* runs by the side of the new reservoir embankment from Eighty-Sixth street on the Fifth avenue to the same on Eighth avenue. Called the Water Crossing.

The *fourth*, following nearly the present route of Jauncey's lane, leaves the Fifth avenue at Ninety-Sixth street, and reaches the Eighth avenue at Ninety-Third street, with a branch to the fifth cross road, coming out at One Hundredth street.—Named Jauncey Crossing.— It passes under Downing's Hill, and by the side of one of the play-grounds.

The *fifth* and last, entering at One Hundred and First street; and, on account of the views it affords of the McGowan and Swan ponds, is named the Lake Crossing.

The application of names to these business routes, may seem to savor of finicality; but the effect of these little things is the same as that of affording to the poor teamster, or the butcher's boy who drives over them, a view of the beauties of the park, even in his passing. Let us make of this park a means of raising the taste and appreciation of the masses. Let it not be merely a pleasure-ground for the rich, where they may enjoy an easy drive, or an exciting gallop; but, as well, an object of interest and delight to the business man and the poor foot-

trudger. Adorn these crossings as much as the grand route; afford to the common cartman as many beauties of landscape, as you do to the charioteer, and proportionately do you raise his taste and idea of the beautiful.

Let us be thankful, that by means of these very crossings, we may force a consideration of the lovely in Nature upon that class, which, alas! is only habituated to the dirty street; and whose usual prospect is bounded brick walls and chimney pots.

III. The single carriage roads will penetrate those portions of the park, which would be damaged by the introduction of the broader route.

The principal ones, are those which leave the main circuit.

1st. At the junction of the Sixth avenue route, running up the hill between the Crystal Palace and the large garden, descending the valley at Seventy-Sixth street, and after winding through the rough land, south of the Reservoir, runs under, and parallel to its east wall, and comes out on the "water crossing." This is the most diversified and beautiful of all the single roads.

2d. At the junction, where the route turns to quit the park, at Eighth avenue and Fifty-Ninth street. This runs up the hill to the west of the Crystal Palace, passes by the "wicket field," and winding down over the hill by the dam, runs

by the side of the pond till it reaches the circuit at about Seventy-Sixth street, west.

3d. On the edge of the parade ground and running around its limits.

4th. Under Fort Fish. winding down the hill side to the brook bed, and thence up the Stream under the high bridge. One branch running south of McGowan's Pond, and joining the circuit again near the Swan Pond; the other branch passing from the McGowan Pond, south by the Play-ground, and coming in again to the circuit by Jauncey Crossing.

5th. By the north-west corner of the Reservoir, and passing under the hill of the Monopteros.

6th. So as to encircle the Cricket field.

7th. So as to mount Observatory Hill at an easy grade, and encircle its summit.

These roads will all be well adapted to quiet and retired driving.

IV. The principal horse paths are:

1st. That which follows the main drive in its circuit, affording the same advantages of scenery and change of landscape, which that possesses.

2d. That passing through the evergreen covered hills, south of the Reservoir, with branches to the east and west circuit.

3d. The two branches near the Sixth avenue entrance in Fifty-Nine street.

It is hoped and believed that the superior advantages which the park will offer to the equestrian, will induce many to indulge themselves in, and enjoy that healthful exercise.

It is also desirable that there may be some method adopted, whereby the rider can reach the park, without passing over 2 or 3 miles of paving. It is believed that upon the request and recommendation of the Commissioners, the city authorities would give up a portion of one of the avenues leading to it, to be made into a horse track, and kept for that use.

V. There have been few foot paths designated in the plan.

They may be readily laid out, at any time during the work. The few on the Map, are marked by dotted lines to indicate their possible course.

These paths will vary from those which are regularly graded and drained 10 feet wide, and of systematic arrangement, to the narrowest trail which will mount rocks, and penetrate thickets.

They should, as soon as the ponds and playgrounds are laid out, be carried around their edges, so as to afford a convenient access to, and enjoyment of them.

Meanwhile, and until the park is entirely finished, and properly guarded, there can be no doubt but that the pedestrian will wander at will over its entire extent.

The method of building these roads, has been described in the paper on road making.

It has been endeavored to arrange these roads and paths, so as to offer the best opportunities of seeing and enjoying the whole park: and it is believed that, to a great extent, that object is attained in the system adopted for the plan.

Concerning the Management of Water.

The advantages which the park affords, in regard to water, are unusually great. In addition to the various streams running through it, (themselves sufficient to make all the lakes designed,) the overflow of the waste water from the reservoirs, (the use of which will doubtless be granted on application to the Aqueduct Department, as it now passes off by hidden conduits,) will enable us to enjoy clear, sparkling streams, lofty fountains, and tumbling cascades. That portion which now passes off by the waste pipe to the Eighth avenue, at Eighty-First street, could easily be diverted, so as to supply the cascades and fountains hereafter mentioned, and to fill and freshen the upper skating pond.

One part of that which now escapes by the Fifth avenue, at Eightieth street, could be conducted in the conduit running under the main route, south from the cricket ground, to the gushing fountain, at

the intersection of the drive with the Valley-Crossing; and the other portion could be brought over the south wall of the reservoir by a self-regulating syphon, so as to fill the little pond there with clear water, and then find its way down by the side of the road, in tumbling falls, to the Valley stream.

When the new reservoir is finished, the waste water from that would most amply supply all the fountains, cascades, streams, and lakes in the northern portion of the park.

There is even now a good supply in that part.

II.—*Ponds.*

1st. It is suggested that the lower and smaller of the two skating ponds should be reserved for the use of ladies, and their education in that (to this country) comparatively unknown exercise.

Houses.—One of which is designated on the Plan, on the borders of the upper pond, should be built near them, which would serve as resting and refreshment rooms for those engaging in this pastime, and in a few winters we should, without doubt, see skating as much in vogue among the ladies of New York as those of Munich or Vienna. In the vicinity of Boston, where there are many fine ponds, it is gradually growing into great favor.

These houses might be rented to persons who would supply skates, sledges, and refreshments, and who would keep the ice clear of snow during the season.

These ponds, as well as the others, should, after the bed has been properly excavated, so as to ensure against the evil of mud and decaying vegetable matter, be filled to within two feet of the surface with stones or rock, in order that no accident, by breaking through the ice, or of children straying into them in summer, should occur.

These ponds have their outlet under the Fifth avenue.

2d. The pond on the corner of Fifth avenue and Fifty-Ninth street has been named "Lilly Pond," on account of the advantages which its situation and rich soil present for the growth and culture of pond lilies and other indigenous water plants. It is to be surrounded by willows, save on the south. On that side it is proposed to build an arcaded wall, with a rocky cascade, (described in division II. of this paper, and for which plans and specifications will be furnished if desired.) This pond is fed, in addition to the waste water from the reservoir, by the drainage water from the west and north, and has its outlet under Fifty-Ninth street.

3d. The small pond south of the reservoir is very properly adapted to water-fowl, which could be domesticated there by furnishing suitable and con-

venient nest houses for them. The overflow from this would be by the brook running south.

4. That designated as "Swan Pond," is considered suited for the habitation of the bird from which it is named, and also possesses a cascade similar to that of Lily Pond. Its overflow would be by the dam under the bridge of the grand route, forming a pretty fall of several feet in height.

5. The M'Gowan Pond will serve as a beautiful mirror to the gorse-covered hill-side on the north, and to the large bridge over the pass. This also has its outlet by a high dam, arranged as a rocky cascade, over which the water finds its way to the stream through the pass.

II.—*Cascades and Fountains.*

The principal feature connected with the fountains, is the treatment of those high retaining walls, which are opposed to the upper Skating Pond, the Lilly Pond, and Swan Pond.

1. It so happens that the land is admirably adapted for water use at those places where the Eighth avenue and Fifty-Ninth street are supported by high walls of masonry. Therefore, instead of sloping away the sharp and perpendicular outlines of these walls by filling up, as will be done on the other retaining walls, it is proposed to make use of

them for purposes of architectural effect, and for cascades.

For instance, at Swan Pond there should be constructed along this retaining wall, on the side presented towards the water, a series of false arcades extending from the hill on the one side, where they might lose themselves in the general outline, to that on the other. There should be sufficient soil at the base of them to support the growth of climbing plants and vines, which would drape themselves over the pilasters and arches, thereby increasing the effect of the arcades, and giving the road the appearance of being carried over on a viaduct. Where these arches are opposed to the centre of the pond, let there be constructed a rough ledge of rock, thrown together at little cost, from the summit of which the water brought here by waste pipes from the reservoir shall tumble down to the basin below.

The same arrangement should be adopted at the other ponds mentioned, with, of course, a change in the character of the cascade; and it is confidently believed that the effect would be most unique and pleasing.

There being a longer extent of this wall on the Skating Pond, its uniformity would be broken up, by constructing a flying foot-bridge of iron, from the pavement of the Eighth avenue, to the high rock which stands near it, and about in the

middle of the water expanse on that side. This bridge would afford easy access from the avenue to the Skating Pond, and to Tower Hill.

2. If the use of the waste water of the reservoir is granted to the park, there will be little trouble in arranging fountains of any description in almost any portion of the grounds. Those which are suggested at present are:

The dripping fountain near the Lily Pond, in the angle, where the great drive separates.

The jet fountain where the 8th route meets the entrance from the Broadway corner.

A fine marble dripping and spouting fountain, with fish basin, in the centre of the large garden, near the Crystal Palace.

A full and strong single jet, rising from thirty to fifty feet from the surface, in the middle of the Ladies' Skating Pond. This latter would have a fine effect in descending the valley, either from the north or the south. It is not indicated in the plan.

At the south-eastern corner of the intersection of the Valley Crossing with the great drive half-hidden by overhanging evergreens, from a rocky cavern is made to gush out the water which is brought here from the north by an underground conduit running beneath the carriage-road from the waste pipe at Eightieth street. When the trees shall have overshadowed this, it will be particularly

charming. The waters from it flow into the lower skating-pond.

To the south of McGowan's Pond, where the roads, after joining, descend under the bridge, is placed another fountain and basin. It may be fed by that water which has been conducted from the whole land between it and the Jauncey Crossing.

III.—*Brooks.*

1. Of those brooks now existing in the park, it will be very desirable to dispose (by concealing) of portions of two, viz.: the one which runs north of Fifty-Ninth street and parallel to it, in the valley where the great drive is laid. Some parts of this are too low to make it of service; and in other places the road will necessarily be over its bed. The other is that which supplies the gushing fountain above the Ladies' Skating Pond. Although it would be very desirable to have this by the side of the horse-track, it cannot be done without crowding the carriage-road too far up to the hill west of it; it is therefore conducted in that part under the road.

2. The brook which now flows under the Fifth avenue at Ninety-Ninth street can very easily and properly be turned, so as to run into McGowan's Pond, and thence through the pass. It is desirable

that this should be done, as it is deemed much better to have one large, full stream, than many small ones.

3. A portion of the waste water from the west side of the reservoir could, with advantage, be led down through the valley by the road-side to the larger Skating Pond.

4. The finest stream will be that from the small pond south of the reservoir, provided there is conducted into it, some of the waste water of that side.

The fall through the defile up which runs the first-described single road, is at least forty feet; and the brook may be brought over ledges of rocks, and through the glen, in a most picturesque manner. Where it is necessary for the road to cross, it could be well done on rustic bridges.

This will be one of the wildest and most beautiful parts of the park. Winding up among the great rocks covered with evergreens, and with this brook brawling and dashing at the side, the passer-by could scarcely realize that he was within a gun-shot of two great city avenues, or anywhere save in the most secluded country dell.

Open Spaces.

1. In another paper are given the reasons for locating the parade-ground where it appears in the plan; and for not making it of the prescribed size.

It may be properly added here, that there are scarcely ever occasions when an open ground, larger than the one referred to, would be necessary for military evolutions in this city.

The grand movements of a brigade, or division, are almost always conducted when the soldiers are "in camp," according to their custom; and it is respectfully questioned whether it is expedient to devote so large a space for a parade, as that demanded in the specifications.

If, however, it should be insisted that the full extent of twenty acres, or more, is absolutely necessary, the parade, as now laid out, can be extended to a greater distance towards the west, with not very heavy expense for grading.

But before any suggestion of this kind be acted upon, it is prayed that the commissioners will ask themselves whether there is justice in devoting so much land—available for other purposes of a general nature—to that use which, at best, will be only at long intervals, and for the benefit of a few.

2. The cricket-field occupies a portion of the park, well adapted to the game, and for the convenience of spectators. It is only necessary to remove the rocky rise in the centre, the material of which would be well used in filling up in the immediate vicinity, and the gradual slope around it would meet the peculiar demands of such a field. Doubtless

with the additional advantage offered to the lovers of that manly sport, the taste for it will be greatly increased.

The only trees now existing within the proposed limits of the field, are the apple trees on the rocky part above spoken of. These are of no worth or value for shade or picturesque effect, and could be well removed.

3. The land and grade west of the reservoir, seems admirably adapted to the purposes of a skittle and bowls field, and, it is thought, will be a place of popular resort.

Most of the commissioners have doubtless watched "old men, young men and boys," engaged at these healthy sports, on the outer Boulevards of Paris, or the ramparts in old Holland towns; and they will readily perceive the fitness of the site for this purpose. The ground was happily levelled, either in building the reservoir, or in projecting the Seventh avenue, and could be made ready immediately at a trifling cost, while at the side under the reservoir is a turfy slope, all prepared, for the weary or lazy.

It is hoped and believed that the existence of the various play-grounds in the park, will attract many who otherwise would throng the billiard room and "boozing ken," in the city, and that thereby they may become *acclimated* to the influences of natural beauty.

4. While cricket and base-ball have of late years been in general favor in New York, the good old game of *wicket* seems to have lost ground. It is hoped to revive that game by particularly adapting one field to its use, and so naming it.

The more inducements that are offered to engage in manly sports, the more will those sports be followed, and correspondingly will the health and happiness of all concerned be increased.

The parade-ground is well fitted for "base ball," and would doubtless be often occupied by the various clubs, when not actually in use by military companies.

The other fields as planned are smaller, and made in reference to children's sports and games.

Buildings and other Structures.

I.—*The Crystal Palace.*

Years ago, Punch, "the inimitable," had a picture, and a story of an unfortunate man who *drew an elephant in a raffle.* The price of the ticket was little enough, and the prize was *enormous*—in fact, quite beyond his most sanguine wishes. But alas! Mr. Brown did not know what to do with it, when he one fine day became possessed of the beast, and his sufferings in its ownership were most humorously portrayed.

Now, the City of New York seems to have found its *elephant* in the "Crystal Palace," as if it were not enough that every one who has had any thing to do with it in any manner, has lost money and confidence in all enterprises: even now, that the poor thing is decidedly defunct, (so much so, that it is questionable whether the shaking which it received on the 8th of April, at the great Charity Féte, will even cause a tremor of life in its rigid limbs,) there are suits at law, in equity, in bankruptcy, injunctions of all sorts continually fired away at it; and the poor old palace seems to be almost given over to the moles, and bats, and lawyers.

Now, it is proposed in this design, to remove it from the watch and guard of the "undines" of the reservoir at Forty-First street, and placing it on the spot designated in the plan; discover if the wood and field spirits of Sixty-Sixth street in the park, will not become better guardians. Speaking seriously, it seems a great pity, that an object of so much beauty, should not be used to the best advantage. With the want of care it suffers from in its present location, it will soon become greatly damaged: while, if it were removed to the park, and used as hereafter suggested, it would become one of the principal features of interest and attraction, and serve most admirably the purposes to which it is proposed to devote it.

It is *urged*, therefore, that the commissioners enter into negotiations, ($200,000 would doubtless cover all cost of purchase and removal; and what is that sum when compared with the effect it would have on the park, and those frequenting it,) remove it to the site designated, and establish therein a great garden. Under its equable and genial temperature, the rarest and tenderest exotics might be produced, and the fee to be charged for entrance, would amply repay the cost of keeping it up. In it could be gathered every thing which could please, interest, or instruct.

A winter garden, where in the middle of January, one could wander by beds of blooming flowers.

A zoological collection—at present an institution not known to this country.

A great ball and concert hall.

A museum and bazaar of every thing under the sun. In short, an opportunity for collecting more objects of interest than would offer under any other circumstances.

London has its "*Zoological Gardens*,"—Paris its "*Jardin des Plantes*,"—why should not New York also boast its *public* institution—"*The Crystal Palace?*"

II. Instead of removing the old arsenal, it is suggested that it would be well to transform it into a gymnasium and drill room.

The two upper stories (thrown together) would make a fine room for athletic exercises. Two large drill rooms could be divided on the *first* floor, and the basement might to advantage be appropriated to the storage of tools and machines used on the park.

A broad hall run through the middle, with projecting porches at the ends, and a throwing together of some windows, and removal of others, would, with modifications of its external character, make such a change in the building as completely to disguise and alter its present appearance.

All this could be done at a slight expense, and a fine building is at once secured.

III. The old M'Gowan mansion on the hill St. Vincent, is too interesting a relic of the past to be removed. Let it be excised of its galleries and wings, and devoted to the use of the superintendent. From it would be afforded a most beautiful view of the whole country about, and connected with it would be the chapel, which it is hoped may be left for its present uses, and for regular religious service, under some settled minister. It would speak well for the park, that it had *its church;* and unquestionably, a society could easily be established in the vicinity, which would be of great benefit in many respects.

IV. There ought to be, in different portions of

the park, refreshment houses, which might offer to those desirous of passing the day in the park, better accommodations than those now afforded by the low drinking shops which fringe the exterior avenues.

They should be rented to persons of respectability and decency; and the sale of intoxicating liquors strictly prohibited. For the benefit of the German population, their mild "*lager bier*" might be dispensed; and those who have seen the family enjoyment of the "Fatherland" in this particular, could not begrudge them its use.

V.—*Towers and Monuments.*

1. At the south-west corner of the reservoir, it is proposed to place a stone tower, with a clock spire rising from one side. From this prominent position, the dials might be seen from nearly the whole park; while, at the same time, the additional elevation of its platform would enable the visitor to gain a more extended view.

(A plan and elevation of this will be furnished, if desired.)

2. On the high rock at Eighty-Third street and Eighth avenue, it is intended to locate that section of a Grecian temple known as the "*Monopteros.*" This would be a pleasant spot of resort, with a beautiful view to the south and the Skating Pond,

and on the platform should be placed some appropriate statue or group.

3. To the north of the new reservoir, as the hill overlooks the water, it is desired to erect some monument to the regretted Downing:

"Honor to whom honor is due;"

and let some memento of him—who, had he lived, would have been as much interested in the park—find its place where it may be seen and respected by all.

4. Nothing will conduce more to the perfection and refinement of the park, than to have each of its entrances adorned with appropriate gateways.

These should be of various designs, and according to the character of the site. It is not proposed to present any plans for them here, as that is a matter far in the future; but it is earnestly hoped they may not be overlooked ultimately.

Attached to them, or near by, should be lodges for the gate-keepers. These, likewise, should conform to the architecture of the gate, and the peculiarities of their position.

VI. The bridge over M'Gowan's Pass and brook, will be one of the most striking features of the park. Springing from side to side of the defile, the road approaching it on the east by a slight embankment, it will form a beautiful "*filling up*" to the picture

from the south; and, by its symmetrical proportions, cause great but agreeable contrast to the hill on either side. Its span will be fifty feet, and its height thirty-five.

Under it, by the side of the brook, passes a single carriage track; and from its top, one in crossing will have a charmingly diversified view of water-fall, lake, hill-side, and slope.

It is hoped, however, that the view to the northward may never be obstructed by the forty-two feet high retaining wall of One Hundred and Sixth street.

The Natural Adornments

are those which will affect the beauty and interest of the park more than any thing else, and yet are those of which less can be said to satisfaction in a written description of the length demanded in these papers, than on almost any other subject.

To attempt to describe the planting, otherwise than the practical instructions given in the paper on that subject, and the precise method to be pursued, would be alike impracticable and egotistical, unless full space and great time could be allowed. This work should be confided to the most skilful landscape gardeners, whose theory and operation should not be hampered by others' written description, nor even controlled by their own.

It may be desirable, however, to make some general remarks and hints on the subject.

In the present plan and design, very little planting and determination of the grouping on that portion of the park above the upper reservoir has been made, for these reasons:

1st. There are now on that part hundreds of trees, singly, or in thickets, which may in a few years become of great value, or perhaps turn out to be worthless; therefore it would be extremely desirable to wait for a short time at least, till their peculiarities shall have been developed, in order to decide which may be used to advantage, and which discarded.

2d. The lower portion of the park will occupy the work and attention of all persons concerned, for at least two years—that is, as regards planting; and in that time, modifications may be adopted which would affect the park materially.

Moreover, as has been before stated, the labor of so many men as will be employed on the new reservoir, and the passage of carts laden with building material, will seriously damage any thing which may be laid out or planted in the immediate vicinity.

It may be generally stated that in those rougher portions of the park where the rock crops out, the trees used should be principally evergreens. In rocky isolated hills, the *Norway spruce* is particularly

proper, both on account of its heady character and fine shape.

In the rough, hilly, and rocky land south of the reservoir, it is proposed to use evergreens of all varieties, and to make the whole extent of it a forest.

In the valley below it, soft maples, birches, willows, aspen, and other trees, which color well under the influence of the frost, should be used, so that their tints may form a pleasant setting to the ponds and a striking contrast to the dark green of the evergreens.

Avenues, where made, and also the bordering lines of the roads, may be of elms, lindens, maples, and other trees of large and regular form.

Let not oaks be forgotten, for though of slow growth, their beauty is unquestioned.

The chestnut, also, more usually considered as a forest tree, is really one of the most beautiful ones which can be used when it has a free opportunity to develop its branches, or where it may be grouped so as to display its dark green leaves or the soft tints of the flowers.

The locust and horse chestnut may be used to advantage in grouping, and their blossoms are most beautiful in their season.

The gracefully drooping American elm is most excellently adapted to the smooth surface of lawns or open spaces generally.

The American larch, too, is one of our most striking trees, on account of its pensile leaves in spring, and its rich tint in fall.

The lakes will be properly skirted with willows, and other sweeping trees.

But, for reasons above stated, this list will not be longer continued.

These trees may somewhat be started in the nurseries in the park; but it is believed it would be more desirable to contract with some persons who grow them, for the evergreens. They may probably be procured ready for planting at a less cost than if seeded in the park.

The stone walls of the reservoir need to be shrouded by vines and creepers; if there is any objection made to permitting them on the wall directly, they may be carried up on iron trellises, at a distance of a few feet.

And in this connection it is urged that care should be taken that none of the vines now growing on the park should be cut down. They are in many cases of many years' growth, and could not be replaced in a long time.

2. In the garden near the Crystal Palace, a plan has been adopted which combines the advantages of different parterres, which shall oppose the most marked contrast to each other, with the peculiarities of a labyrinth. If the paths were bordered by

hedges which could conceal every landmark, a person entering and pursuing the course which would seem to present itself naturally, would probably pass over every path before at last escaping from the puzzle.

The site selected for this garden has the advantages of excellent soil and a fine prospect.

The manner of planting the different flowers and shrubs, of course, is not required to be stated.

3. Other flower beds will properly be scattered about in different parts of the park, wherever the soil may seem suitable, or the location desirable.

In conclusion, it is earnestly urged upon the Commissioners that the park should be extended to One Hundred and Tenth street.

That portion of the land lying between One Hundred and Sixth and One Hundred and Tenth streets, is much finer for a picturesque park than any other which is now possessed, and would seem most properly to belong to the rest. It may now, in its wild state, be purchased for a reasonable sum, while, if once grading is commenced there, nothing in the future can ever remedy the damage which will be done.

Pray let us possess the whole which seems by nature designed for the park.

The Central Park is destined to become one of the great moral as well as physical features of this

city, and there can be no doubt of its great advantage in either respect.

When once the park is opened, and used by the public, the drinking shop and billiard room lose their supremacy. Vice must give way to the pure influence of Nature; and this nature being modified by art will assume its highest and most influential character.

A.
H. N:
"Art the Handmaid of Nature."

No. 32.

To the Honorable Board of Commissioners of the Central Park:

GENTLEMEN:—On account of the sectional maps not being completed until the sixteenth of March, we could not put as fine a finish on the plan as we could have wished, without omitting some more important work; we intended to have put on a piece at the upper end, also some ornamental lines at the sides. On the plan itself, every thing important is placed, with the exception of a small portion of the road drainage, which was arranged, and which we can put on in half a day, and would do if permitted. This would have been done, but we had arranged to keep our plan a few days longer, as we were informed by one of your honorable body, that any meritorious plan would not be excluded, even if not presented on the first of April; but going to your office the thirty-first day of March, we found that all of our labor and expense would amount to nothing, if we did not present it before 5 o'clock the next day; we then took off on our plan of design all the points for a profile of the circuit drive, also our men

were hurried up to finish the shading, which we had commenced; we then put on the road drains, until the time compelled us to stop. Afterwards, in making out a profile of the plan, we found that a small part of the road, in front of the Church of St. Vincent, could not be constructed without considerable difficulty; we propose a slight alteration of that part of the plan, and have made the report to correspond with it.

We have suggested but one or two names; we think that American Historical and Indian names are the most appropriate. Indian names especially are not only very poetical, but very becoming. It is a matter requiring time and good taste. If wished, we will furnish you with a list of very appropriate names.

In our description, so as not to lengthen the report, we have not given the views from the different elevated parts of the park, knowing that you are already familiar with them, neither have we used many adjectives.

Gentlemen: in making the estimates, we considered that your good sense would sweep aside the chaff (of close and accurate estimates of what the work would cost) which has been thrown before you at various times. In this we have not descended to the dollar, as some have done, neither have we clipped, cut off, and quibbled, as has been done, to keep under the sum allotted. We have made fair

estimates of what every thing would cost, and proposed those things which are essential, adding in some others, necessary to the design, merely suggesting others, to make a more complete design ; one which would tend to rank the metropolis of a great nation with others.

We do not think that any good Engineer would stake his reputation on close and accurate estimates of such a piece of work, more especially under the circumstances in which the competitors on this plan were placed—not only want of time, but we had good reason to doubt the closeness and accuracy of the data furnished. Again, the data did not give the depth at which the rock might be found below the surface; the nature of the ground, or the flow of the water and springs, all would affect the cost and design of planting and draining. The first would materially affect the cost of levelling, grading roads, or cutting drains; they would vary the plan of drainage, while the last is necessary so that no lake need be formed which at any time would become dry or stagnant.

The cost of planting the Botanical garden, we could not tell whether by your resolutions this was required or not; you are aware that this item can be varied in expense according to desire.

The cost of the Hall, Observatory, Buildings at the Entrance of Botanical garden, Statuary, and Fountains, not coming under either of your resolu

tions, they are not given, as a part of the whole sum. We supposed that you were aware that proper Ornamental Buildings would count by the hundred thousands, and that you meant that these should be provided for in some other way. There are many instances where plans have been made of Parks, and sites have been given for the buildings to be erected at some future time. It was necessary in forming our design to know the place and something of the size and height of the buildings (for which we have made designs); in construction these particulars will be essential to give the best effect to the Landscapes. We had to study the arrangement of Art, as well as Nature, so that we could present either entirely separate from the other, or both combined in beautiful harmony.

We did not design an Astronomical Observatory, though there are numerous places on the park very suitable for such a purpose, and we hope the time will come, when New York, one of the greatest commercial marts of the world, will have this necessary building; and also this nation, which is now advancing with giant strides, and promises to outstrip all competitors, may have her Institute (or the plural, if you please) where undeveloped genius (too poor to go abroad, and these are generally the greatest) may expand.

Closing these few statements of our difficulties, we subscribe ourselves,

"TO BE OR NOT TO BE."

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

" To Be or not to Be " has the honor to submit the following

REPORT.

The park, by our plan, will be divided into natural divisions by the different cross roads at Sixty-Fifth, Seventy-Second, Seventy-Ninth, Eighty-Sixth and Ninety-Sixth streets.

First Division.—The west side is to be devoted chiefly to the base-ball, and the children's airing-ground; the east side is to be kept wild, and as near to nature as possible, and will be a large dell planted with fir, and other wild trees, shut in by rugged precipitous rocks.

Second Division.—The central portion is to be taken for the Union Park and palace; on the east the level portion is for a play or cricket-ground, leaving a large part for a nursery, until the park is well wooded, to be retained afterwards for a trial ground of agricultural implements.

Third Division.—The low ground on the west, is to be used for a skating-ground in the winter, and an open play-ground in the summer. The east side for the botanical garden, the high ground kept for wild scenery.

Fourth Division.—All west of the old reservoir is to be densely wooded, and will form the *Poet's Elysium.*

The parade-ground, containing about thirty-one acres, occupies the whole eastern side.

Fifth Division.—In this division the new reservoir will leave nothing, except the roadways and two small portions on the west, the northern one to be added to the English park, the other will form a a shady play or picnic ground.

Sixth Division.—The ravine of McGowan's brook, and side of the hill above, is to be kept wild. All south and east will form an open English park; the low ground on the north-east corner to be used for a shady picnic ground, the high ground on the north-west corner to be set with but few trees, and kept for views.

The Drives

Are nearly level, having no greater inclination than one foot in thirty. In arranging them, the first object was to bring all the principal views into

the circuit, for the benefit of visitors of the city, who with but a day to spare, wish to see the park; this would give us too lengthened and crooked a route through the park, for those who might wish to go to any particular spot, or drive back to the city in a short time; here we were puzzled on account of the narrowness of the space; the idea then arose of side drives, to meet this want. After mature deliberation, we concluded to propose

The Side Drives.

Having a bridle or equestrian road on the outside, and a footway on the other, for the following reasons:

1st. They make direct communication from one part of the park to another. It might be urged, that the avenues themselves would do, but a moment's consideration, that they are paved and used for cars and traffic, will be a sufficient answer.

2d. They make splendid horse-roads for practising equestrianism. It is said by Europeans, that we have none. In our opinion, the healthful invigorating practice of equestrianism is not sufficiently practised in this country. Were our ladies to ride more, it would not only be a great amusement, but save them much suffering, on account of ill-health and poorly developed systems; here are provided

pleasant roadways, with a "long look ahead" to avoid collision, even if any should wish to strike into a gallop.

3d. It makes roads where people may drive fast, and obviate the necessity of doing so on the other roads. Europeans, also, say that Americans "don't want a park; they want only a race-course." Without danger to those wishing to enjoy themselves quietly in the park, here is vent for "Young America" to take a "good blow."

4th. They are direct roads for marching to the parade-ground, and viewing processions. How much better would it be, on holidays, for citizens to go out, away from business, where half the inhabitants might be accommodated with a view, and not breathe so much "second-hand air."

5th. They will improve the other roads. These not having fast driving will be freer from dust, and being made narrower, will be better shaded.

6th. They will save cost on the other roads, they being narrower than otherwise would be required, also side-walks will not be necessary on the sides.

7th. They will improve the sides, without costing as much as any other method would, when the cost of bridle-paths and direct roads is added. This subject occupied our attention a long time; we calculated a slope at one place, and found it would cost forty thousand dollars. We concluded this method would not be economical enough to answer.

8th. They will make, together with the avenues, grand boulevards or avenues. It was the original intention of the Act, granting the Central Park, to have the avenues at the side widened. By our plan, with two avenues, *two hundred* feet *wide*, and *two-and-a-half* miles *long*, (having a street, car-track, three walks, horse-road, and carriage-way,) we may properly say to the world, EXCELSIOR.

The Circuit Drive

Is shown by a heavy broken line in the centre.

Entering, from the crossing of Eighth avenue, Fifty-Ninth street, and Broadway, we leave the Eighth avenue side drive on the left, and enter a dense woody grove; passing which, we intersect with a road leading to the Seventh avenue entrance; as we go on, overlooking the children's airing ground, we shortly intersect another road, leading to Seventh avenue (connecting with a road to Sixth avenue); turning to the left, we enter a long splendid drive, which passes by the base-ball ground, while on the other side we have a large creek, and a view of a fine bridge over it; looking back, over the children's airing ground, we have a long prospective view, in the city, of Seventh avenue; before reaching the end of this drive, we cross the Sixty-Fifth street cross road; leaving this fine avenue, we

intersect a short road leading to the palace square, through which we have a full view of the side entrance of the Union Palace; a little further on, we cross the corner of the Union Palace square, where we have a perspective view of the side of the palace, square, and Union monument; a short distance further, we cut across the rear road to the Union Palace, where it enters the square; down this we see a wild, deep, wooded gorge; passing on, we intersect the Seventy-First street and Seventy-Second street cross road, and cross a fine bridge, overlooking several lakes and the skating-ground; skirting along the brow of the hill, we come to a full view of the large bridge; diverging to the left, we leave the cross-road, and intersect the Fifth avenue side of the circuit and cross the bridge; a few hundred feet further on, the Fifth avenue side of the circuit diverges to the right; as we still ascend the hill, we see on our right this drive, and between it and us a large lake; on the left we overlook the skating-ground, and have the Eighth avenue side drive in the distance; here we intersect a short connecting road on the left, designed to be used in ascending to the Observatory; passing on, we intersect the Seventy-Ninth street cross-road, leading, to the Observatory road; a little further on we turn to the left, leaving the Seventy-Ninth street cross-road; here we have the Observatory, towering above us on one

side, and on the other, a heavily-wooded dale; going over the rocks, we drive along the side of the Old Reservoir; keeping this dale on our left, we shortly turn off, and begin to ascend. Arriving at the summit, we have a perspective view of Eighth avenue and its side drive, also views of the observatory, bridge, and palace, beside the views of the city, Hudson river, and Palisades, &c.

Descending, and taking the same road back, we diverge to the left, at the side of the Reservoir, and ascend, getting a view of the interior; leaving this Reservoir, we intersect the Eighty-Sixth street cross-road; diverging from this, we enter the Eighth avenue side drive, along which we drive, overlooking a large picnic ground, passing which we leave the Eighth avenue side drive, and ascend along the side of the New Reservoir, until we are high enough to look on the water; here we have a view of this extensive artificial sea on one side, and the extensive English Park on the other; descending, we cross a small creek entering a small lake near; keeping on, we have a high steep hill on the right, on which we catch occasional glimpses of carriages and horses as they pass along the brow; entering the Ninety-Sixth street cross-road until we cross a small bridge, we diverge off to the right until we come to the great pleasure drive, along which we skirt for several hundred feet, at an elevation of from twelve to fifteen

above it, giving us an opportunity to overlook the whole, and view the stream and lakes in the centre; leaving, we descend and cross over a stream, which we follow for a short distance, passing four cascades facing the road, of nearly twenty feet fall; crossing again, we have an open view of a large lake and natural bridge.

Passing back of the Wallhalla building, we drive along a large stream of water until we come to another fine lake, having a cascade facing the road of some ten feet fall; leaving the brook, we shortly enter the Eighth avenue side drive, which we take until we come to the hill, up which we gradually ascend until we are high enough to have a view back over the park; here we intersect with a drive leading to the summit; the road now turns, and we have a view on our right of the glen and its lakes; raising our eyes we get a full, sweeping view of Harlem, Hurlgate, Long Island, &c., we there intersect with a short road leading to Seventh avenue, at the upper end; we now enter a winding part of the road, at times looking on the wide street at the upper end of the park, at others looking down on, or up to the drive on which we are driving; ever and anon we look down into the glen, its lakes, waterfall, and a large stream, spanned by a natural bridge, over which the road passes; on this we have, on one hand, a deep, gloomy chasm, into which the

water underneath us tumbles and disappears, on the other hand, several lakes and a cascade; (here commences the alteration mentioned in the address;) going over the hill, in front, we pass around in front of a fine building, (present church of St. Vincent,) getting a view of the picnic ground, the 100 foot jet of the fountain, the Fourth avenue railroad, &c. Then around to the upper end of the park, near the site of old Fort Fish, where we strike on the old Boston road; keeping this, we soon come on high ground, where we have a fine view of the great pleasure drive; another turn, and we overlook the drive in the glen, several lakes, the Wallhalla building, &c. Driving over the hill (here the alteration ends) we descend and enter the Fifth avenue side drive; leaving this, the first road we meet, we enter the great pleasure drive; taking this once round, we emerge at a road a little beyond where we entered, and strike into the Ninety-sixth street cross-road; keeping on the right, we enter the old Boston road; leaving this, we continue along the side of the New Reservoir until we ascend a high hill, on the brow of which, as we wind along we have an elevated view of the the great pleasure ground, the side of Mount Prospect, the drive winding along its side, Eighth avenue side of circuit drive, natural bridge, glen, lakes, new reservoir, &c. Descending and entering the old Boston road, we pass a fine monu-

ment, at its entrance, commemoratory of the revolutionary character of this ancient road, and enter the Fifth avenue side-drive, having on one side a thick grove.

As we pass the summit of this drive, we may see the whole length of this fine avenue. Soon ascending by the new reservoir, we enter a level road, at the side of the old reservoir, having a grove between us and the reservoir, and a horse-road or footpath on the other side, over which we see the whole parade-ground. Turning the corner of the reservoir, we enter Seventy-Ninth street cross-road; here we overlook a quiet, pretty lake, and catch a glimpse past a wooded promontory of the drive ahead, as it crosses a bridge. Proceeding on, we soon leave the side of the reservoir, and passing by a small road leading to the observatory, we enter a sweeping curve, which gives us the different views of the observatory; turning to the left from the Seventy-Ninth street cross-road, we intersect with a short connecting road from the Eighth avenue side of the circuit-drive used in ascending from that drive to the observatory. Here we diverge to the left, passing along the brow of a hill overlooking several parts of the circuit-drive, and a large lake, the inlet of which we cross by a bridge, with a lake on our left, which falls twelve feet in front of us into the stream over which we are passing; proceeding on, we come

upon the brow of a hill, skirting which we look down on the botanical garden, on the hot-house, the flower ring, the lake, rose-garden, nursery, grapery, &c. Turning to the right, we now come in full view of the great bridge, and driving along by a large, beautiful lake, we cross by a bridge near the outlet, (a large, broken, rocky cascade some twenty-three feet high;) we soon enter the Eighth avenue side of the circuit-drive, and get a view of the skating-ground; crossing the great bridge, we turn to the left and descend, having a large stream, a cascade, and a fine lake on our left; and looking back, we obtain another view of the great bridge; then ascending, turning to the right at the entrance of the botanical garden, we enter the Bellevue avenue, at one end of which can be seen the entrance of the Union Palace, at the other, the entrance of the botanical garden. Driving through this beautiful avenue, we pass two small lakes at the side, and enter Union square. Driving round to the front of the palace, we enter the road leading through the centre of the square, with lawns, statuary, and bowers on either hand, Union Fountain in the front, having the Union Palace fronting all. Passing round Union Fountain, we emerge from the square, and keeping to the left we soon pass a connection road, which leads off to the nursery and cricket-ground. Crossing Sixty-Fifth

street road, down which we see a large, long building, (the former arsenal,) and over and beyond another one, (Third avenue Railroad depot; descending, we obtain a view of a fine bridge where the Sixth and Seventh avenues direct road to the square crosses the stream at the bottom of the valley. We now have a natural pass over a deep gorge, at which we see below us a wild valley having a large stream, lakes, bounded by steep, rocky, and wooded hills. Turning, we soon enter the Fifth avenue side drive, catching glimpses of stream, lakes, precipices, &c., where we finish our drive, and enter the city at Fifty-Ninth street and Fifth avenue.

The Crossings

Unite Sixty-Fifth street, and the four wide streets, and are made as near direct as economy, beauty, and the design would allow; and would all be used as connecting roads, even if not designed to be used in crossing the park. The lower one is the only one of which no part is used in the circuit drive, or some other road; of the others, but little over two miles in length, nearly one mile is thus used.

Connection Roads.

On account of there being no railroad on the Seventh avenue, this entrance will always be as

much used if not more than any other; here we have provided a large entrance, and two modes of egress therefrom; one to intersect with the drive from Eighth avenue, and the other with the drive from Sixth avenue; this last drive also having a connection with the Eighth avenue drive, is taken along through the centre of the park, passing over a very fine picturesque bridge, till it intersects the Fifth avenue drive at its entrance to the Union square. The road, east of Union square, is designed for use in case the square should be filled with an assemblage of people; it is also used to reach the nursery and cricket-ground. The road from Sixty-Ninth street to the back of the Palace, is merely for use in bringing any thing to the Palace, and is made only thirty feet wide, being in the centre of a deep thickly wooded gorge; at its entrance the rock is cut as little as possible, so as to allow the Eighth avenue side drive to be carried over.

We can drive to the Observatory from either side of the circuit drive; ascending by the side of the Observatory, we then wind back along the side and in front, to the other side, where we come to a level place, at the side of which we have an elevation, on which we step, and ascend to the plateau of the Observatory; while the carriage passes on underneath the plateau, and descends until it reaches the drive by which we ascended.

On the west side of the present Reservoir, the carriage-way and footpath of the side drive is taken round the summit.

On the east, the footpath of the Fifth avenue side drive, is brought up Seventy-Ninth street, and runs along the circuit drive, at the side of the Reservoir, to Eighty-Sixth street.

Through the English Park, there is a bridle-path, which may be used by carriages as a connecting road of the circuit drive.

There are short connecting roads to the great pleasure drive, on each side of the two elevated spots, where the circuit drive overlooks the great pleasure drive.

The drive to the summit, at the north-west corner, leads up to the highest elevation, from which a long view of the Eighth avenue drive can be obtained, here it enters a small circular drive, round a monumental column supporting the statue of Washington. The column itself will be hollow, and is to be used for an observatory; leaving this, the drive leads to the side of Eighth avenue, giving a view of that avenue, then leads to the highest point above One Hundred and Sixth street, and winds round the summit, till it descends and intersects with the drive leading up the hill.

Sixth and Seventh avenues have short entrance roads intersecting with the circuit at the upper end of the park.

That priceless luxury given by our Heavenly Father alike to all, free of cost, must also be provided for, which brings us to the

Paths.

These are not arranged in detail, but the principal ones are shown; these give a circuit of the park, and lead to every prominent part or place in the park, where are arranged benches for viewing and resting. Among these views

i′ i″ k′	View the base-ball ground.
i′ k′	View the Eighth avenue circuit drive.
s′	View the entrance of the Botanical Garden, Great Bridge, part of the square, &c.
w′ y′ g′	View the interior of Botanical Garden.
t′	View the Skating-ground, Seventy-Second street, cross road and Botanical garden.
h′	Observatory plateau, villa place in front.
x′	View the Observatory (accompanying view show this).
c^2 c^2	View the Eighth avenue drive, Hudson river, &c.
h^2 g^2	View the new Reservoir.
i^2	View the new Reservoir, and Fifth avenue circuit drive.
l^2 m^2	View the Eighth avenue circuit drive, and great pleasure drive.

q^2 u^2 r^2 View the Manhattan Valley.

v^2 View the wild glen, Manhattan Valley, High Bridge, &c.

w^2 x^2 u^2 View the Fifth avenue side drive.

e^2 View the Eighth avenue side drive.

Fountains.

The largest is the Union Fountain in the south end of the Union Square. One on each side of the entrance of the Botanical Garden. A jet fountain, over one hundred feet high in the pic-nic-ground at the upper end. And one in the children's airing-ground at the lower end. Four at great bridge.

The Play-Grounds.

The Children's Airing-ground, consists of eight acres. Shaded. The portion enclosed by roads at Seventh avenue, entrance on the south.

The Base-ball-ground (A) of eight acres. Open.

The Cricket-ground (F) of five acres. Open. The level portion on Fifth avenue, adjacent to Seventy-Second street cross road.

The Skating-ground (D) of twelve acres. Open.

The Pic-nic ground (F) of four acres. Shaded. West of new Reservoir.

The Pic-nic ground (F) of three acres. Shaded. North-east corner.

The Scupping-ground, of two acres, in front of square.

Two Ice-roads for riding down to the Skating-ground.

We designed a set of Russian ice-roads here, but going to the park, we could not find one of the elevations as indicated by the maps.

Construction.—The Roads.

We considered that durable and nearly level roads were most necessary, even if they required the whole of the money appropriated. So this first item of expense is the largest. For height and width of roadways, (see accompanying plan,) excepting where in plan the crown is made circular, in construction to be made elliptical. All of the carriage roads are constructed in the following manner: Where there is ground underneath, large stones are placed, so that the upper points or faces will come about one foot from the top of the grade, the interstices of this, or where there has been rock cutting and filling, are levelled up by smaller stones. On this is put four inches of still smaller stone, then four inches of broken stone, for macadamizing, when a large roller is drawn over, then two inches more of the broken stone, and two inches of gravel, and finished by rolling again.

The horse roads are formed of gravel, eight inches deep, placed in a trench, cut or formed. Care should be taken that no rocks or stones come within one foot of the grade.

On the outside of the side-drives, we have taken eight feet of the sidewalk for grass and trees. On the inside, where there is excavation, the rock is not sloped off, and the foot-path is taken on the top, giving opportunities for viewing the drive, while throughout, this path takes its grade from the present surface of the ground, with the exception that at no one place is it more than eight feet lower than the carriage-way; also, at the highest point of the Fifth avenue side-drive it is filled from the roadway to the height of one hundred and eighteen feet.

The Centre Drives

Are located so that they will strike about every hundred and fifty feet, near the present surface. This will bring them, with the dressing and surplus obtained from grubbing and levelling, up to the required height, so that it will not require much expense to slope the sides. To lessen the expense also, we have used (see sectional maps) all graded streets, avenues, and the Boston Post Road, as much as the design would allow: the Sixty-Second street, by a flattened elliptic curve; Sixty-Third street, on the

other side; Seventh avenue, forming a beautiful drive, with a natural mound at the end; Seventy-First street, and the streets and avenues at the side of the reservoir.

Paths and Sidewalks.

These are all covered with fine gravel, hardened by rolling. The principal paths are ten feet in width. No sidewalk is put along the west side of the Seventy-Ninth street cross-road, on account of the difficulty of the construction of this portion; the roadway being carried over the rocks to cover them, the filling is obtained from the levelling of the adjacent rocks.

Lakes, Streams, Islands, and Waterfalls.

The streams are improved by drainage, and are widened by digging, and by interruptions in their flow, so as to form cascades and rapids.

The lakes are formed generally by the natural surface of the ground, and the islands are formed by throwing up the earth at the side, so that the water is brought inside. Where dams are required, the earth is obtained by extending the lake down on one side.

The southern stream is just the same as now

excepting being slightly increased by the fountain on the children's airing ground until we come to the centre of the park, where it widens into a large lake, which receives the waste water of the union fountain at its side. This lake at its outlet falls ten feet; and the stream soon widens into another lake. The dams of these lakes are formed by filling taken from the projection of the filling of Sixty-Third street, past the circuit roadway. Farther down, we have the several small lakes now there, and another small one found opposite Sixth avenue and Fifty-Ninth street.

The water from the fountains at the Botanical garden runs along the west side of the Bellevue drive for a short distance, and then leaving it, enters two already formed lakes on each side of the 71st street road; it then crosses by a sewer this old road, and enters the level vale of the second stream. This stream is kept in its present natural course above the great bridge.

That strip of ground east of the New Reservoir, south slope, will be drained from its summit by an open brook, between the new Reservoir and the side drive. This brook is taken at the elevation of ninety-five feet, along the bank of the new Reservoir, receiving the water from the waste weir of the Reservoir, and also the water of a small brook, the drainage of the land between the Reservoirs, and the leak

or stream now there, thence passing as a sewer under Eighty-sixth street cross road, and the parade-ground, draining the higher portions of this ground, and the circuit drive above it. At the archways, it is still carried in a sewer back by the reservoir, receiving the waste water of this one, keeping under ground to the Seventy-Ninth street cross-road, under which it crosses. It empties into an already-formed large lake, south of the reservoir. This lake at its outlet falls some twelve feet into another lake, of which the embankment of the circuit-drive forms a part of the side; at its outlet, by a little digging, we obtain a cascade of some twenty-three feet fall; the water at the bottom is taken along at the foot of the hill, until it passes under the great bridge, when it is brought into the stream above. This stream passes under the great bridge, through too archways in summer, but in winter it is stopped by the bridge, and covers the large vale above, forming the *Skating ground.* Below the bridge it widens into a small lake, and enters the Botanical garden, where a little farther on it forms a large lake about in the centre of the Botanical garden, thence as a wide stream it passes off by an arch under the Fifth avenue side drive.

The small star lake of the ring of the Botanical garden is formed by the water of the lower sewer of the parade ground.

The water from the flood-gate of the new reservoir, on its north side, is brought into a small lake which is further provided with water by a stream already there. This stream keeping its old course passes by a sewer under the great pleasure drive, until it nearly crosses to the other side, where being intercepted by the other side of the drive, it is diverted from its course by a cut from one to four feet deep, to a stream which now empties into McGowan's brook. At each end of this cut two small lakes are formed. These are farther supplied by the drainage of the strip—north slope—at the side of the new reservoir, and a small stream outside of the great pleasure drive. Leaving the lakes, the water passes under the great pleasure drive, and after passing under a bridge it falls nearly twenty feet, by four waterfalls, and empties into the large lake in the glen, formed by McGowan's brook. This lake has at its inlet a ten-foot fall from a small lake above. At its outlet there is another fall of ten feet into a wide stream or lake, which passes under the natural bridge, and tumbling ten feet, disappears under One hundred and Sixth street.

DRAINAGE.

We have shown but few of the drains, the main sewer on the parade-ground, the base-ball, and cricket-ground. As we mentioned, at first, the

drains cannot be given, unless a better knowledge of the nature of the ground, and depth of rock below the surface is known. We understand that the Croton Board are to see to the drainage of the low ground on the west side of the new reservoir.

We indicate all drainage necessary to the construction of the roads. The lines on the roads, at the sides, show the gutters. In one or two instances they indicate also a sewer underneath—lengthwise of the road for two or three hundred feet. The parallel lines are small sewers. These are put in spots where they can be put enough below the grade of the road, to allow of a good covering of stone and bushes. Where the lines are dotted, they indicate surface drains, and must be built during the construction of the roads.

LEVELLING.

We considered that there was not enough earth that could be dug out to cover over the rocks, to allow of planting; so we designed our roads, generally, so that they would either cut rocks, or pass over them; thus making good portion of the levelling come under the head of construction of the roads. Still in some other places we were compelled to arrange the plan, so that the rock, although exposed might add to the *tout ensemble* of the picturesque in

the design, and form viewing places. Those in the eastern part of the first division compelled us to design this part wild, just below the old reservoir. Here one of the lakes covers some, and others coming to the water, add to its beauty. Some are used for building the observatory, bridge, and arches, and filling the parade-ground; and several are left. The steep hill at the upper side of the new reservoir compelled us to take a roadway along its edge. The steepness of the hill above McGowan's brook to make a wild glen, and, at the upper end, put a natural bridge and winding road. Some earth will be obtained by improving the streams, and excavations can be made in some of the lakes.

Fencing.

We designed a beautiful iron fence, which we can furnish, if desired; but as the cost of iron and stone-coping swelled the cost to over two hundred thousand dollars, we would propose the construction of a wooden one. Our estimates are based on the construction of one made in the following manner: A turned post, the end dipped in tar, and set twelve feet apart, in a two foot wall, round pickets between, passing through two rails; this could not be torn away, and the cost would only be 10 per cent. of the cost of an iron one, and the interest on 15 per

cent. of the cost of an iron one, would not only keep it in repair, but renew it every fifteen years.

Lighting.

Considering the cost of keeping lights and maintaining police, we think that it is not necessary to light all of the park, and our estimates are made for lighting the side drives, the crossings, the Bellevue avenues, the square, and the Eighth avenue side of the circuit below the entrance to the square, and its connections with Sixth and Seventh avenues, the paths of the children's airing ground, the pic-nic ground, by the side of the new reservoir, and the pic-nic ground on the north-east corner.

The Natural Pass.

The natural pass on the circuit, back of the old arsenal, is constructed so that the faces of large rocks will be put side by side and form precipices on each side of the roadway.

The Natural Arch Bridge.

The natural arch bridge will be constructed in the same manner as the natural pass, forming an arch over the stream.

The Arsenal

Can either be taken for a building, wherein rejected models, from the Patent Office, can be kept, or, with the surrounding adjacent ground and stream, be formed into a Zoological Museum and Garden.

The Union Square (B).

The square will have a roadway, through the centre, with large lawns on the sides; at the sides footpaths are constructed, and branch off at each statue, and pass around the statue, and also back to the circular bench in the bower. The statues will represent the muses, arts, science, and commerce.

The Union Fountain (b) will be a monument fountain, the monument representing the Goddess of Liberty, supported by two groupings, in perfect union of the States, allegorically represented.

The Union Palace (a)

Is the present Crystal Palace, with the form of the main building changed from the regular (+) cross to the regular elongated (+) cross. To do this, from three of the wings, the part between the first two pillars, is taken and added to the fourth, making it twice as long as either of the others.

The Botanical Garden (C).

The entrance (c) is symmetrical, hence a description of one side will answer for the other; beginning at the centre, we have a gateway, just wide enough to permit the passage of a carriage; then a gateway for pedestrians, the pillars between to be richly ornamented by a statue, in relief, forming a fountain. Then a beautiful cottage building, having two terraces around, on which are placed pots of large choice flowers; the quarter circle on the side of the main building, is a hot-house, and will face out, for the benefit of the public, as they pass. The sheds (d) are designed for fastening horses, while visitors are in the garden. The hot-house (e) faces south, and is arranged so that the sun reaches it during the whole day, while it is protected from the north winds, by the hill behind; the inside will be arranged so that there will be two esplanades of terraces for the flowers to set on; the back one will be fifteen feet higher than the front, with stairway leading up; two roads lead up to the esplanades on the back. The earth dug out to form the hot-house, will be formed into terraces in front, on which, in the summer time, the exotics can be placed. The ring in front of the hot-house, is for the various flower-beds, with walks, and paths, &c. We could suggest that the lake, in the centre, could be surrounded by a glass building, and would

form a fine place for keeping the large lily, the Victoria Regia.

The Bridge (*f*).

The upper part is for the carriage-ways, the east side for those going up, and west, for those coming down; on each side are footways; from the bridge on one side can be seen the vale of the skating-ground and surroundings; on the other, the vale, having the lakes, gardens, &c. The lower part forms arcades for resting, and from the porticoes in the centre a stairway will lead down to the skating-ground, or streams, on the outside of which a large swan, or some animal is placed spouting water. We also have paths leading to the building from the paths at the ends. Entering this building we have a magnificent hall 230 feet long by 36 feet wide, ornamented in rich modern style, used as a shelter from unexpected showers, and as a central point for large festivals, or pic-nic parties. The skating-ground and ground between the bridge, and botanical garden, form in summer time a large pic-nic ground, while bands of music can occupy the porticoes. The towers on the ends will be occupied by the park police, or keepers. The whole bridge to be a worthy substantial edifice, unrivalled in beauty and grandeur.

OBSERVATORY (*h.*) VIEW TAKEN FROM POINT, &c.

On each side of the plateau leading to the octagonal view-place (*h*), footpaths ascend from the roadway (one for people from the carriages, and the other for pedestrians) to the foot of some long steps, at the top of which is the plateau, on which the structure stands, a square; on each corner will be statues allegorically representing (the upper ones) the Croton aqueduct and the Hudson river, (the others) the Atlantic and Pacific oceans. The observatory has four porticoes, each being placed on the side of the main structure, will have two elevations or stories; between the two rows of pillars on these elevations, the space will be filled by groups of children, in relief, showing the various uses of the Croton water, mechanical, chemical, planting, and extinguishing fires. At each end of the four porticoes, steps lead from the ground to the first floor of the porticoes, from which entrances lead to the centre of the structure, where can be seen the interior height of the building. The main building consists of four pillars, carried up to the third elevation, in each are placed winding stairs (two for ascending and two for descending, having outlets to the second elevation), uniting at the archway underneath the third elevation; a winding staircase leads to the upper elevations of the building, having outlets on

each to the surrounding piazzas, giving the magnificent views of the park, city, rivers, bays, &c. The whole building will be a grand, magnificent structure, attractive to the tourist.

The Parade Ground (*e*).

The dotted lines show each foot elevation.

The parade ground contains about thirty-one acres, (fifty acres; see printed report of commissioners for the year 1856,) there is a large level space for the evolutions of cavalry, while the rest is not very heavily graded. The filling over the water-pipes at Eightieth street, is not disturbed. The road and footpath, by the side of the reservoir, overlooks the whole; the arches under the road will form cool retreats on hot summer days, and shelter from storms.

Walhalla Building (*i*),

Will represent a Grecian temple of the Ionic order, having a large rotunda inside, and will have in *memoriam*, the busts of the great men of the nation, those whose names are renowned in the world for the benefit they have conferred on mankind.

The Washington Column

Will be surmounted by a cannon, eagles, &c. The pedestal will be ornamented by flags and other

emblems, and at each corner, standing out and looking up, a soldier will be placed, dressed in continental uniform. On the pedestal, running round spirally, will be a continuous representation in relief of the principal great acts of the Father of our country.

The pedestal, on the inside, will have a winding staircase ascending to the top, on which is a railing; in the centre is a pedestal supporting the statue of Washington.

Any other necessary buildings for offices might be built in the cottage style, and placed on the Eighty-Sixth street crossing between the two reservoirs.

The Planting.

The arrangement of the trees cannot be given, on account as stated before of the depth and quality of the soil not being known; we have only given the general ideas; it was impossible for us to give these in detail, it would require a long time and make a lengthy report. We might say, that along the straight avenues large shade trees are to be placed. The elm, lime, horse-chestnut, &c.; of the elms, the Dutch elm is about the best.

We have a simple and ornamental carriage maze, which could be placed on the north-west corner, if desired. Also, one to puzzle the brains of

pedestrians, which could be placed just below Eighty-sixth street, and near the Eighth avenue.

A provision might be made for foot-passengers to enter the park from Seventy-Seventh street, at the Eighth avenue, by constructing a light, airy, and beautiful foot-bridge over the side-drive. Structures of a similar kind could be thrown over these side-drives, giving accommodation and fine view-places.

We think that if we were to survey some, for the purpose of ascertaining the quantum of water and fall, we could arrange beautiful natural works of nature and art, by the plan of drainage-springs, water gushing from the rocks, pouring down in streams, or dropping from point to point; heads, statues, &c., pouring or projecting water, &c. Lakes could be improved, by either shutting off some vale above after a storm, or having retaining-gates to the upper ones, holding in the water and equalizing the flow.

The square at the Palace would allow the Palace to be increased to any desired extent, in case this nation would wish to have a World's Fair.

As the grades of the avenues, at the sides, were originally determined to suit the construction of streets on both sides, it is evident that they may now very properly be changed. It would be a desirable thing if a proper system of grades, to suit the park

and streets, and property adjacent, be calculated, and made a law by the proper authorities.

The Croton Board, also, might be willing to grant the rock projecting into the old reservoir, for as much land on Eighty-Sixth street between the two reservoirs. This, and the last suggestion, would allow great improvement to our plan.

The ground plans and side elevations of the different structures on our plan can be obtained at our office. Here can also be seen a magnificent view, in an unfinished state (but which will be finished by the middle of May). This view is taken from the view-point nearest the Botanical garden, and east of the Bellevue avenue, where can be seen part of the Bellevue, the Seventy-Second street crossing the great bridge in the distance, the valley and stream, the circuit-drive on the brow of the hill, running over a bridge, under which dashes a foaming cascade, over which, in the distance, towers the observatory, while close by, the Botanical garden, its buildings, hot-house, and flower-beds are brought in.

ESTIMATES ON THE COST OF CONSTRUCTING THE ROADS.

6.67 miles of 40 ft. roadway, (part of the Circuit Drive and connections), - - - -	$176,000
0.19 miles of 40 ft. roadway, and 15 ft. walks on each side (Bellevue Drive), - - - -	6,300
0.2 miles of 40 ft. roadway, and 20 ft. walks on each side, (Drive on west side of Union square), - -	6,100
2.64 miles of 40 ft. roadway, and 20 ft. walks on one side, (crossings and drive over parade ground), -	97,600

4.2 miles of 50 ft. roadway, 20 ft. bridle path, and 15 ft. path, (part of the side drives),	$210,400
0.37 miles of 50 ft. roadway, and 20 ft. bridle path, (part of the Fifth avenue side drive by Parade ground),	15,500
0.1 mile of 60 ft. roadway and 10 ft. walks on each side, (union of Circuit Drive at Great Bridge),	5,000
0.63 miles of 100 ft. roadway and 20 ft. walks on one side, (Great Pleasure Drive),	23,200
0.63 miles of 30 ft. roadway, (Drives to Observatory and summit hill N. W. corner and Sixty Ninth street road),	13,300
0.6 miles of 20 ft. roadway, (path through English Park and connections with Pleasure Drive),	7,200
	$560,000

ESTIMATES IN FULL.

Construction of the Roads,		$560,000
Construction of Paths and Benches,		50,000
Improvement of Lakes and Streams,		30,000
Drainage,		80,000
Grubbing, extra Grading and preparation of Ground for Planting,	$200,000	
Trees, Shrubbery, Planting, Seeding,	300,000	
		500,000
Fencing,		25,000
Lighting,		10,000
Grading Parade Ground,	$30,000	
Extra Cost of Arches,	5,000	
		35,000
Grading Union square, and Construction of its Roads and Paths,		20,000
Construction of the Great Bridge,		80,000
Botanical Garden,		100,000
		$1,490,000

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