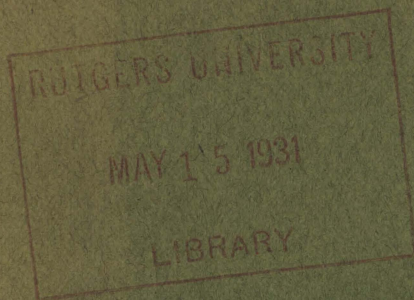


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SECOND ANNUAL REPORT
OF THE
SHADE TREE COMMISSION.

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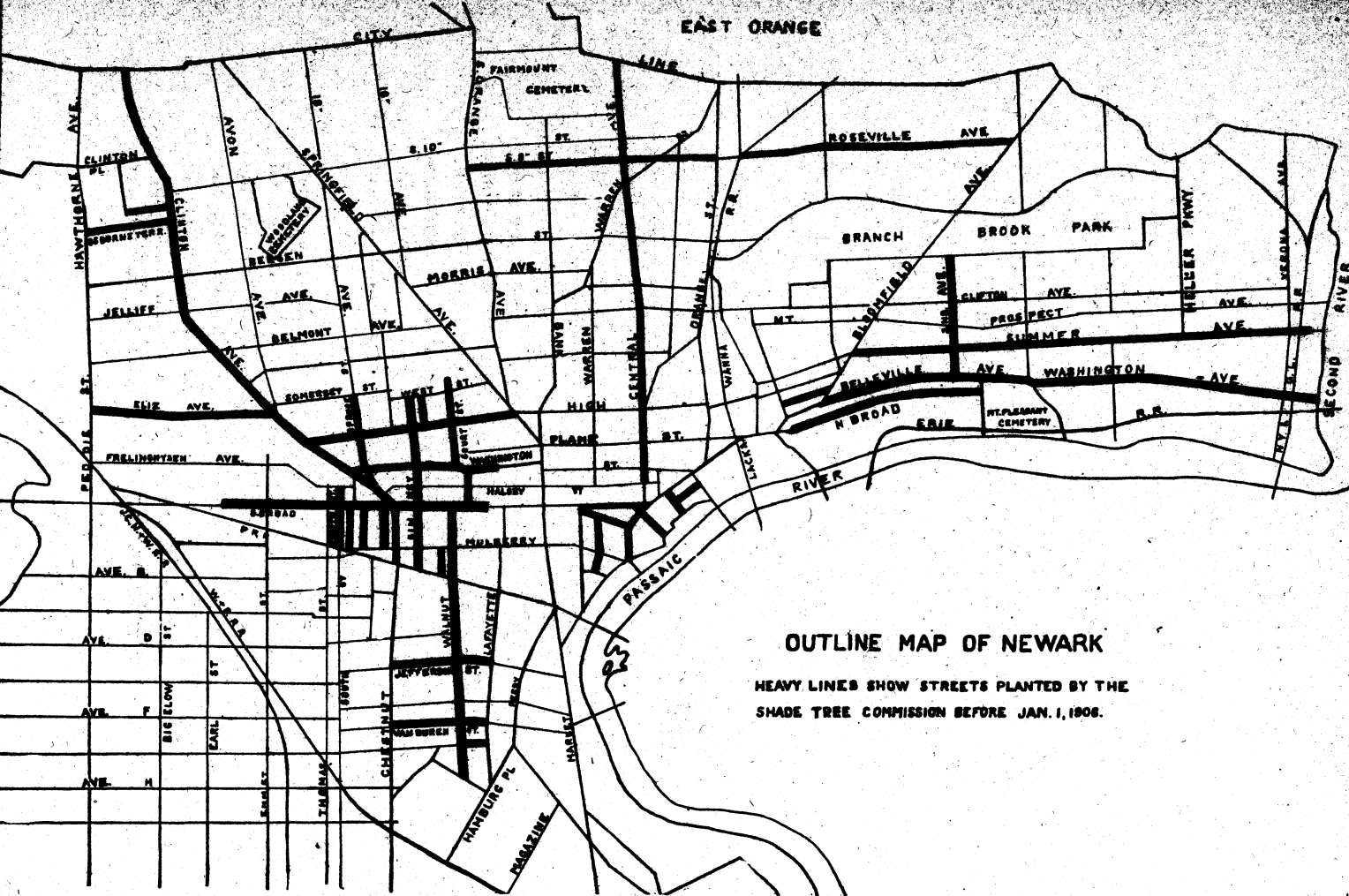
To the Honorable, the Mayor and Common Council of the City of Newark.

GENTLEMEN:—The Shade Tree Commissioners beg leave to submit herewith their second annual report.

During the past year progress has been made in several directions. A number of barren streets have been lined with trees, and many neglected trees have been trimmed. These activities were the same in kind, but on a larger scale than during 1904. In addition to this, the Commission made systematic warfare against insect enemies of trees, and has assumed the responsibility for the progressive management of the city parks. Thus the work of the Commission for the year 1905 divides itself under two headings. With the first division will be grouped our activities for the trees of the city at large. The second division embraces the care, maintenance and improvement of the parks under our jurisdiction since April of this year.

I. CARE OF THE SHADE TREES ON CITY STREETS.

The work for the city at large includes PLANTING. planting, spraying, trimming and maintenance. One thousand eight hundred and ninety-four trees were planted in the spring and fall of 1905. These with the trees already there, cover fourteen and one-half miles of street uniformly planted on both sides. The number and variety of trees planted on each street are represented on the annexed table. With each successive planting



EAST ORANGE

OUTLINE MAP OF NEWARK

HEAVY LINES SHOW STREETS PLANTED BY THE
SHADE TREE COMMISSION BEFORE JAN. 1, 1908.

the demands of the Commission as to the size and variety of trees have been raised. When it is realized that a pit of 56 cubic feet was dug for every tree planted; that this pit was filled with good top-soil, carted generally from a distance; that cement had to be cut, or flagging re-laid for many holes, this work assumes large proportions. These trees are, as a rule, planted thirty-three feet apart. This distance in the case of some trees, notably the elm, would be too near if trees attained their full size in the city. The varieties of trees are always selected with a view of attaining permanent results. When it is recalled that an elm tree may attain to the good old age of 300 years (Nesbitt-Sylviculture, p. 65), it will be seen that we are planting for the future, and that it is worth while to take pains.

A few citizens objected at the spring
OBJECTORS. planting. In some cases they claimed not to have seen the advertisements, and when the men began to excavate, resented it, not always because they objected to the trees, but because they felt they should have been consulted. Therefore, in the fall planting, the usual legal advertisements were supplemented by a notice addressed to each property owner and left at the house on the property. The owners were invited to inspect the proposed locations for trees, and to communicate their reasons for any objections. These were always carefully considered by the Commission. Under this method the objectors all but disappeared. In fact there were only nineteen with whom the Commissioners did not come to an agreement before the planting was done.

In the summary for the year 1904, we were
ASSESS- able to report 750 trees planted. The second
MENTS. step, calculated to reimburse the city for the cost, had not been tried. In October 1905, the costs of the 1673 assessable trees planted respectively in the fall of 1904, and in the spring of 1905, was levied upon the property and placed in the hands of the tax receiver

for collections. Out of a total of \$6,348.63 assessed \$3,819.05 was paid by December 31, 1905. The sum was immediately invested in planting operations. On advice of the State Department of Agriculture, we plan hereafter to enrich the soil on the spot, by thoroughly mixing plant-food with it. This obviates the necessity for carting the soil, and will reduce the cost of planting.

OTHER PLANTING. The Commission was instrumental in many cases in advising, assisting and stimulating private individuals to plant trees, and are thus to be credited with a larger number than their own planting. In every activity conducted by the Commission they strive to co-operate with private citizens in their endeavors for the trees of the city. A beautiful city without trees is well-nigh impossible, and loyalty for the city impels the assistance and encouragement of every citizen in his endeavor to beautify the city. Indeed, the work is beyond the capacity of a city department, unless it enlists the efforts of individual citizens. Three considerations were uppermost in selecting streets: first, to select the most appropriate streets, second, to do the work in every section of the city, and third, to plant those streets which citizens had requested to be planted. The annexed table shows where and when trees were planted by the Commission since its organization.

INSECT EXTERMINATION. The campaign next in importance was that waged against destructive insects. These ruin more shade trees than is commonly supposed. In our experience the wood leopard moth, commonly called the borer, is the most destructive. Their habitation in a tree is almost an unfailing premonition of its death. (See Bulletin, 81 p. 31, N. J. Ag. Exp. Sta.) If the trees were not weakened by some other cause, the grubs would not be there; its sickly condition is the signal for the attack. What disease has not killed, this borer will

soon destroy, unless immediate steps are taken. These borers were very numerous in the park trees, and are still very numerous in street trees. There is no wholesale method of combating them. They may be traced by the sawdust which comes out of their holes. If bi-sulphide of carbon is injected and putty placed over the hole, the fumes will kill the borer. The ordinary oil-can is a good instrument to do this with. Many citizens received assistance from our men in this treatment. Others received instructions which enabled them to do the work themselves.

Spraying for the cottony maple scale
 WINTER (Pulvinaria) was also resorted to. This
 SPRAYING. pest was killing a row of maple trees on Mt. Pleasant Ave., and was prevalent on Summer, Washington and Lincoln Avenues, and on the maples of the entire section bounded by South Orange Ave., Park Ave., Morris Ave., and the city line. The Niagara Spraying machine was satisfactorily used for this purpose, with soluble oil as the poison. Since these insects feed on plant tissues, they cannot be reached by stomach poisons. The solution used is calculated to kill the scale by contact. This work is best done before the trees are in leaf.

Early in the season, with the assistance of the State Entomological Department, an inspection was made of the trees in various sections of the city, to find out if the elm-beetle was present in disturbing numbers. The presence of eggs in the park and street trees provoked a spraying campaign to defeat their depredations. Contrary to popular belief the elm beetle was not a serious menace.

The tussock-moth caterpillar was the
 TUSSOCK most prevalent insect enemy of the
 MOTHS past season. Three operations were at
 CATERPILLAR. different times carried on to check them. Spraying was conducted on a large scale against the first brood while they were feeding. Between the first and second broods, cocoons and egg

masses were gathered by our force. The table on page 16 gives names of streets treated in this way by our men. In addition, boys and girls encouraged by the Commission's offer of ten cents per quart, gathered 190 quarts of these in various sections of the city. One quart contained by actual count 367 egg-masses. Allowing 500 per mass, which is a very conservative estimate, there would be 193,500 eggs in one quart. When it is remembered that each insect doubles and quadruples in size in one day, and that his appetite is not satisfied day or night, it is no small wonder that the army entirely consumes the leaves of a large number of trees each day.

The second brood was mild. The persistent campaign previously conducted undoubtedly was the cause, and the resulting decrease gives promise that the evil may be checked. The spraying for the second brood was more effective than the first. The arsenate of lead prepared by chemists of this city admitted of the application of stronger doses. We know these visitations of insects are local, and have been assured by Prof. John B. Smith that the measures adopted will rid the city of these pests. For list of streets sprayed consult table on page 16.

Some five hundred appeals from residents for assistance against insects were responded to by performing the work. These inquiries were always welcomed and every effort was made by the office to serve the public in the largest sense possible.

The trimming of trees was conducted
TRIMMING. on the same large and economical basis as the planting and spraying. It is often forgotten that shade trees need annual attention. Common knowledge tells that the hitching post may need a coat of paint occasionally, but that a growing tree should also receive care is a truth often overlooked. Thus most of the trees in the city have been neglected for years. As a result they are diseased, deformed and, many of them, dangerous. It will be a long time before we can catch up with the great

need of our trees. The Commissioners aimed to be impartial in the selection of streets for this branch of work. The streets showing the greatest need and whose improvement would be the most beneficial, received first care. Many appeals for trimming were responded to. Accordingly, the streets named on the table on page 16 received attention in trimming, removing dead branches and dead trees, painting and filling scars, placing wire guards, etc. In many instances the whole street was treated thoroughly, including the large and small trees; in some, only the smaller trees, which could be handled without ladders. In some other instances only a few blocks were treated in response to special needs.

MAINTENANCE.

Simultaneously with the above activities, a series of duties for the maintenance of the newly planted and the older trees were under way. A prolonged dry spell followed the Spring planting. The young trees were in great danger, until they were systematically watered. Equally urgent with occasional watering is the necessity for feeding the young trees. Provision has been made for supplying annually to each tree the plant food which it needs for the year. Thus the 3,000 newly planted trees were supplied with manure. In the Spring they will receive prepared fertilizer according to approved formulæ. No matter how hard the earth is tamped after filling in, it will settle. Thus operations of refilling holes and raising flagging are under way continually.

One hundred and nineteen trees out of seventeen hundred and thirty-eight planted the previous Fall and Spring died. This loss of six and one-half per cent. was reduced to about four per cent. by the guarantees of the nurserymen who furnished the trees. The trees which died were replaced, as were also gnawed stakes and damaged guards.

DANGEROUS TREES. Many reports reached the office every month about dangerous trees. Inspection is made to save these trees. If they are dead, permits are issued for their removal. When the sap-wood and the roots are sound, these landmarks have their lives insured for many years by the cementing of cavities, painting of wounds, considerate trimming, and other measures.

A NURSERY. The Commissioners keenly feel the need of a nursery where trees, flowers and shrubs can be raised, and much time has been spent in seeking a suitable plot. None has been found as yet within a reasonable distance from the centre of the city, which can be secured for three or five years for a moderate rental. We have, however, secured a number of lots in various sections of the city, where street sweepings and manure can be conveniently stored.

ARBOR DAY. A large number of cards were distributed throughout the public and private schools of the city for Arbor Day. These were prepared as souvenirs, and endeavored to inculcate a love for trees.

II. THE PARKS.

ROUTINE. Newark has twenty acres of city parks. They were laid out by our forefathers, and are a precious heritage. Who can estimate their value to the children, to the sick and the weary? Who is so unappreciative of their restfulness and beauty as to willingly allow any of them to be destroyed? They provide play grounds for little children free from the danger and dirt of the streets; they provided seats and shaded walks for older people. During the few nights of excessive heat last summer the Commissioners threw some of the parks open to all who desired to use them to sleep on the grass. A number of people deserted their close rooms in the tenements and availed themselves of the privilege. At

the recent Carnival they permitted the erection of grand stands after assurance was received that proper care would be taken. These acts are typical of the policy which animates the Commission in the maintenance of the parks, *i. e.*, the largest public utility consistent with proper care. But the Commissioners should be the judges when use becomes abuse, or when innocent use by many would prove destructive. They should have regulations which can be readily understood and quickly enforced. In furtherance of this, an ordinance was drafted for the protection of the parks and also the trees of the city, which was in fact milder than existing ordinances affecting the parks, and provided for their free use, unless prohibited by signs or guardians. It was the intention of the Commission to remove the prohibitory signs in the parks after the passage of the ordinance, until the needs of certain plots would demonstrate the necessity of restrictions.

It has become the custom to rail at the management of the city parks, but your Commissioners wish, in the first year of their charge of the parks, to assert that it was no mismanagement, but lack of funds which prevented the Board of Street and Water Commissioners from developing them more. Indeed, we understand they were obliged to supplement their appropriation from other moneys in their hands. Five thousand dollars per year is not enough to do more than simply maintain the parks in present condition. It provided nothing for betterment. There is a continual round of duties necessary to maintain them. Trees must be planted, pruned, fed and watered, sprayed, treated for borers, cavities filled, and replaced when dead. Lawns must be fed, cut, cleaned, re-sodded, re-sown, weeded, trimmed on the edges. Sidewalks must be re-laid, flagging replaced, paths cleaned and swept. Fountains must be repaired, seats and rubbish cans must be provided and cared for. Bulbs, shrubs, trees and seeds must be bought. Some of the duties are daily, some weekly, but all are repeated

many times annually. Then, in the Winter, miles of sidewalks must be cleared of snow or sanded.

SMALL PARKS. The small breathing spaces like Sussex, Madison, and Vailsburg Parks become valuable only when properly improved.

They are oases in the desert of brick and stone, if they are artistically developed and properly kept. They are vacant lots littered with rubbish, if they are not.

The larger parks like Lincoln, Military and Washington are adaptable to treatment, partly as forest parks and partly as gardens. Sooner or later the citizens will awaken to the undeveloped possibilities in these spots of green. Why not let the march of improvement which has characterized municipal buildings and streets be carried on simultaneously in the parks. Numerous steps have been taken by the Commission in furtherance of this plan.

NEW WORK. The first step was under the advice of a landscape architect, the making of a plan for the development of Military Park, which will raise this splendid green to its proper position. This will be carried out as means permit. A sample plot has been prepared for the collection of shrubs, in the hope that its beauty may move our Common Council to liberality. In digging for this bed, it was shown by the rubbish found that the parks had been filled in, and that under six inches of top-soil a stratum of sand occurs which must be greatly enriched before it will be suitable for the development of the park.

The second step in advance was the work of manuring the entire park. One hundred and thirty tons of thoroughly composted stable manure were used for this purpose. Lincoln and Washington Parks will receive the same attention. The third step was taken with the entirely unimproved site at High Street and Central Avenue, in plowing, grading and seeding it. This triangle with the sidewalks facing it, will receive complete treatment in harmony with a general plan

early in the Spring. Forty trees were planted in the various parks, including twenty-five about Central Avenue Park and seven about Clinton Park. Many weeks were spent in trimming the dead limbs from the trees. A scraggy decayed limb projecting beyond the ball of the foliage is never ornamental. If the borer is the cause of this decay, these cannot be cut and burned too soon if the other trees are valued. Branch after branch was girdled by this destructive grub. After weakening the branch he moves nearer the trunk. Instinct tells him that that branch is no longer safe. The keeper of the park is wise to take the hint, for the falling limb may injure human life. This pruning work was done thoroughly on Military and Lincoln Parks. Old scars were cleaned, old holes filled with cement and painted. Necessity for this work increases with the growth of the city. The English sparrows by driving out the song-birds who are so efficacious as insect destroyers in the country, leave the city trees helpless.

The spraying on the parks was done
SPRAYING. likewise in a wholesale fashion. The elm beetles were forestalled. Before they were hatched the leaves were covered with poison. The tussock-moth caterpillars were also checked by spraying. While the newspapers contained accounts of the almost complete destruction of the foliage from the trees of neighboring cities, the trees of our parks retained their leafy coverings, and so gave a practical demonstration of the beneficial effect of spraying. Artificial means must be used to aid the trees in their unequal fight. The sprayer anticipating the raid of the unsuspecting caterpillar, conveys the poison to every leaf.

The flagging was raised at Lincoln Park. All these were aggressive operations striving for a higher standard of maintenance. In addition there was the daily summer routine already stated in the first paragraph. The work is all so completely under the eye of the citizens that it is scarcely necessary to recapitulate.

By an examination of the financial report annexed, it will

be seen that \$4,998 has been spent in the parks in eight and three-quarter months, or at the rate of \$6,852 per year. For a number of years a larger sum will be needed for park expenditures to bring the parks up to a higher degree of cultivation. Some so-called parks have never been improved in any way. The citizens do not know them to be parks, but will gratefully approve the change from vacant lots to well kept lawns and shrubbery.

A number of suggestions are embodied in the above narrative. These may be supplemented by the following more formal recommendations:

1. The appropriation should be greatly increased.
2. The city must own greenhouses if the developed parks are to be economically supplied with bulbs and successive blooms.
3. Better police protection is needed. We have been unable to secure this, because of the inadequate force. Permanent improvements can be scarcely maintained without more officers.
4. The city parks should have first claim to the manure of the city stables. This material would be valuable when thoroughly composted.
5. New watering fountains should be supplied. This would be cheaper in the end. The item of repairs on the present ones is considerable.
6. New sidewalks should be laid in many of the parks.
7. An appropriation should be made for Vailsburg Park. We are in danger of losing this piece of ground, unless we develop it promptly.

Acknowledgment should be made at this time of the valuable assistance given the Commission by Professor John B. Smith, State Entomologist, and his assistant, Edgar L. Dickerson, B. S. These gentlemen have aided repeatedly and gratuitously in the inspections and working out of other problems. Professors Edward B. Voorhees, Director of the

Agricultural Experiment Station; Dr. Jacob G. Lipman, Soil Chemist and Bacteriologist; Prof. Edmund Bronk Southwick, Entomologist of Central Park, N. Y., and William S. Manning, ex-Superintendent of the Essex County Park Commission, gave equally prompt, cordial and gratuitous assistance in questions submitted to them. We are also greatly indebted to Mr. L. A. Sayre for trees presented and other assistance; to Mr. Philip N. Jackson, the Misses McCartin and Mr. McClegan for plots of ground placed temporarily at the disposal of the Commission.

CHARLES GRANT TITSWORTH, *President*

JAMES A. BERRY,

JAMES S. HIGBIE,

Commissioners.

CARL BANNWART,

Secretary.

Newark, N. J., December 31, 1905.

FINANCIAL REPORT OF THE SHADE TREE COMMISSION OF THE CITY OF NEWARK, N. J.,

For the Year Ending December 31, 1905.

RECEIPTS.

Balance on hand January 1, 1905....	\$2,021.86
By appropri'n for Shade Tree purposes	6,500.00
By appropriation for City Parks....	5,500.00
By assessment	3,819.05
Total receipts	<u>\$17,840.91</u>

EXPENDITURES.

On Streets:—

Planting	\$4,490.99
Advertising	239.54
Spraying	1,298.49
Maintenance	2,086.09
Supplies	3,414.72
Supervision	696.02
	<u>\$12,227.85</u>

On Parks:—April 10 to Dec. 31, 1905.

Planting	\$89.99
Advertising	52.50
Spraying	168.15
Maintenance	3,585.90
Supplies	405.78
Supervision	696.01
	<u>\$4,998.33</u>

Total expenditures.....	<u>\$17,224.18</u>
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Balance on hand Jan. 1, 1906	<u>\$616.73</u>
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List of streets planted by the SHADE TREE COMMISSION, showing time of planting, variety of trees and number of each variety planted.

Asterisk denotes streets planted the entire length or nearly so.

STREET.	Elms.	Norway Maples.	Sugar Maples.	Oaks.	Lindens.	Gingkos.	Oriental Planes.	Poplars.	White Ashes.	Fall 1904.	Spring 1905.	Fall 1905.	
*Atlantic.....	....	....	20	....	....	....	....	....	....	....	....	20
Baldwin.....	....	....	10	....	....	....	....	....	....	....	....	10
*Belleville Ave.....	....	....	96	....	....	....	....	....	....	....	96	....
*Broad, North.....	105	....	....	....	....	....	....	....	....	....	....	105
Broad, South.....	95	....	....	....	....	....	....	....	....	95	....	....
*Camp.....	7	....	....	1	....	....	....	....	....	....	....	8
*Central Ave.....	....	888	....	....	....	....	....	....	....	245	93	....
Centre.....	....	7	....	....	....	....	....	....	....	....	....	7
Charlton.....	....	....	....	....	....	3	....	....	....	....	3	....
Chestnut.....	....	....	33	....	....	....	....	....	....	....	....	23
*Clinton Ave.....	177	....	....	....	....	....	....	....	....	53	124	....
*Cottage.....	....	....	20	....	....	....	....	....	....	....	....	20
Court.....	....	....	....	15	16	....	....	....	....	....	31	....
*Eighth, South.....	....	99	....	....	....	....	....	....	....	....	....	99
*Elizabeth Ave.....	83	....	....	....	....	....	....	....	....	68	14	....
High.....	51	....	....	9	....	....	....	....	....	....	60	....
*Hill.....	14	....	....	....	....	....	....	....	....	4	10	....
Jefferson.....	....	80	....	....	....	....	....	....	....	....	....	80
Kinney, East.....	....	....	....	....	....	43	....	....	....	....	43	....
Kinney, West.....	....	....	37	....	....	....	....	....	....	....	....	37
Lafayette.....	....	5	....	....	....	....	....	....	....	....	....	5
Lincoln Park.....	23	....	....	....	....	....	....	....	....	4	19	....
*Lombardy.....	....	....	12	....	....	....	....	....	....	....	....	12
N. J. R. R. Ave.....	5	....	....	....	....	....	....	....	....	....	5	....
*Osborne Terrace.....	....	....	34	....	....	....	....	....	....	....	....	34
*Park Place.....	30	....	....	....	....	....	....	....	....	....	30	....
*Park, East.....	27	....	....	....	....	21	....	....	....	....	43	....
Pennington.....	....	....	17	....	....	....	....	....	....	....	....	17
*Rector.....	....	16	....	....	....	....	....	....	....	....	....	16
*Roseville Ave.....	73	24	....	71	....	....	....	....	....	....	....	168
Sandford.....	....	4	19	....	....	....	....	....	....	....	....	23
Second Ave.....	....	35	....	....	....	....	....	....	....	....	....	35
South.....	25	....	....	....	....	....	....	....	....	....	25	....
Spruce.....	....	....	....	....	19	....	....	....	....	....	19	....
Summer Ave.....	....	190	....	....	....	....	....	....	....	....	190	....
Tichenor.....	....	....	13	....	....	....	....	....	....	....	....	13
Van Buren.....	....	....	....	....	....	....	....	....	53	....	....	53
*Van Ness Place.....	....	....	4	....	....	....	....	....	....	....	....	4
*Walnut.....	26	....	....	....	23	....	....	147	....	193	....	....
*Washington Ave.....	....	110	....	....	....	....	50	....	....	....	160	....
Washington St.....	103	....	....	1	....	....	....	....	....	....	103	....
*Webster.....	....	30	....	....	....	....	....	....	....	....	....	30
Military Park, Arbor Day, 1904.....	....	85	....	....	....	....	....	....	....	85	....	....
	843	1,093	301	97	53	67	80	147	55	750	1,073	891	2,644

Trees were sprayed, trimmed and relieved of cocoons and egg-masses on the following-named streets:—

SPRAYED.

Bathgate Place,	Gray,	Orchard,
Belleville Ave. and	Halleck,	Park Place,
intersecting sts.	Halsey,	Park, East,
Bergen,	High,	Pennington,
Broad, N. & S.,	Hill,	Pennsylvania Ave.,
Camden,	Howard,	Rector,
Camp,	Humboldt,	Roseville Ave.,
Centre,	Hunterdon,	Saybrook Place,
Chadwick Ave.,	Lincoln Ave.,	Second,
Chestnut,	Lincoln Park,	Seventh, N. & S.,
Clinton Ave.,	Littleton Ave.,	Sherman Ave.,
Cottage,	Milford Ave.,	Sixth, N. & S.,
Eighth, N. & S.	Morris Ave.,	South,
Eleventh, N. & S.	Montclair Ave.,	Spruce,
Elizabeth Ave.,	Mt. Pleasant Ave.,	Stratford Place,
Fairmount Ave.,	Mt. Prospect Ave.,	Summer Ave.,
Fifth,	Mulberry,	Tenth, N. & S.,
First,	Murray,	Third,
Fourth,	Nairn Place,	Thirteenth, N. & S.,
Fulton,	Ninth, N. & S.,	Twelfth, N. & S.,
Garside,	Norfolk,	Washington Ave.

TRIMMED.

Bank,	High,	Spruce,
Bathgate Place,	Hill,	Summer Ave.,
Belleville Ave.,	Lincoln Park,	Third Ave.,
Broad, S.,	Montclair Ave.,	Walnut,
Central Ave.,	Mt. Pleasant Ave.,	Warren,
Clinton Ave.,	Ninth, S.,	Washington Ave.,
Court,	Second,	Washington St.,
Eleventh, N.,	Seventh, N.,	Webster,
Elizabeth Ave.,	Sixth, N.,	West,
Elwood Ave.,		William.

COCOONS AND EGG-MASSSES REMOVED.

Bleecker,	Halsey,	Orchard,
Broad, S.	Howard,	Park, East,
Central Ave.,		Washington St.



Department of Parks and Public Property

CITY OF NEWARK

NEW JERSEY

JOHN F. MONAHAN
DIRECTOR

FRANK A. FOLEY
DEPUTY DIRECTOR

JAMES V. MCCARRICK
SECRETARY

SHADE TREE

A revision of our exchange list is under way.
If you are interested in the accompanying Report, or in
our other literature, may we hear from you?

SHADE TREE DIVISION,

Carl Bannwart, Supterintendent.

