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Seventh Annual Report

Newark Shade Tree
Commission.



The
Cassio Press

Nottingham



Newark,
and
New York



PHOTOGRAPHED & COLORED BY C. N. Y.

LINCOLN POST MEMORIAL STATUE
UNVEILED MAY 30, 1911

Seventh Annual Report
of the
Shade Tree Commission



NEWARK, NEW JERSEY
1910



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Newark, N. J.

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FIXING THE VALUE OF SHADE TREES.

The Appellate Division of the New York Supreme Court has confirmed a judgment of the lower court, fixing what may be called a good round value on trees in the city.

A construction company doing some work on a street, found that the trees hindered their progress. They thereupon cut down the trees without so much as considering for one moment their value to the owner's property.

Suit was at once brought against the company, the damages being laid at \$500 for each tree cut down. The plaintiff recovered for the full amount as the value of the trees, and the court added \$1,000 more for punitive damages. It was this verdict which was carried to the Appellate Court and has been sustained.

The recent hot spell in our own city and in others has demonstrated the value of shade trees. Not only are they things of beauty, but in warding off the oppressive rays of the direct sun they afford great protection to both health and life. It is in the treeless, shadeless, unprotected parts of the city that the largest percentage of heat fatalities always occur. Even on days when not a breath of air is stirring, and when it is hot everywhere, the shade of a tree is grateful and affords a sense of relief.

Five hundred dollars may seem a large sum for a tree in the city, but it must be remembered that the value of the tree as kindling wood or as lumber, or even as the material for house trim or furniture, is not the thing to be considered. The tree required many years to grow. It not only adorned the property but it afforded health, comfort, enjoyment and protection to its owners. Its place, when destroyed, could not be filled by another tree inside of fifteen, twenty or thirty years, and all this time the owners of the property are deprived of its benefits.

When the courts take all these facts into consideration, and assess construction companies \$500 for each large tree wilfully destroyed by them, trees will be safer and the work of shade tree commissions will be better protected and more highly respected.

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SEVENTH ANNUAL REPORT
OF THE
Shade Tree Commission

*To the Honorable, the Mayor and Common Council of the
City of Newark, New Jersey:*

GENTLEMEN—The Shade Tree Commissioners have the honor herewith to submit their report for the year 1910, being the seventh annual report of this department.

It may not be amiss to set forth once more and in this place that the Shade Tree Commission of the City of Newark is invested by statute with "exclusive and absolute control and power to plant, set out, maintain, protect and care for shade trees in any of the public highways" of the City of Newark; and with "exclusive control of the public parks belonging to or under control of (the City of Newark) or any Department in the government thereof, with full power and authority to improve, repair, manage and control the same."

Jurisdiction

What follows undertakes to present in compact form an outline of the several activities conducted by the Commission in 1910 under warrant of these statutory provisions. First, we take

THE PARKS.

Nineteen hundred and ten was no exception to the rule that the city parks grow from year to year in beauty and in favor with the people. Greater numbers than in any for-

The
People
and the
Parks

mer year used these pleasant open spaces. At ruddy morn and dewy eve, through all the hours between, and when night had fallen on the city, these green areas were frequented by the multitude, men, women and children; demonstrating again their utility in furthering the public health and contentment and in promoting good order and good citizenship. By this time in our city's history it should go without saying that these parks are a most important factor in endearing Newark to its people and, as a consequence, in deepening and enlarging civic patriotism. It follows, therefore, that the upkeep and improvement of the city parks is a work of much importance; and the Shade Tree Commission, feeling this, aimed through the year to apply itself with all diligence and judgment to the maintenance and enhancement of the beauty of Newark's parks.

Park
Work
Important

We have some twenty acres of park space, consisting of lawns, walks, terraces and beds of shrubbery and flowers. These have been objects of the constant care of your Commission throughout the year. The mere work of "keeping up" these parks has been no small task. This of itself has necessitated persistent attention to such matters as mowing the grass, edging the lawns, taking out weeds, digging, watering and mulching the shrub and flower-beds, trimming and spraying the trees, painting and keeping in repair the settees and refuse cans, gathering up fragments of paper and debris, repairing and recovering the walks, keeping the walks clear of snow and sanding them, re-seeding and re-sodding the lawns, etc., etc. Then there has been the work of subsoiling; out of our entire park area we last year subsoiled 76,230 square feet. Other park work was the planting of shrub beds, the planting of annuals and bulbs to the number of 10,850, the setting out of specimen trees of varying species, manuring and general overhauling.

Mainte-
nance

PLACING BEDDING PLANTS, ETC.

In Military Park, we set out four beds of Cannas, one of Begonias, and one of Salvia. In Washington Park, two beds of Cannas. In Jackson, two of annuals and two of shrubs. Here also the lawns were topsoiled and seeded.



Shrubbery

In all the larger parks Christmas trees (cut, of course, and a residue from the Holiday superfluity) were set to secure a pleasing Winter effect. They bestowed on these parks a greatly improved seasonal aspect, the perspective along the principal paths giving the effect of avenues of rooted evergreens. When snow came the perspective effect was beautifully enhanced. The evergreens stood from four to twenty feet high, and consisted of firs, hemlock, spruce, balsams, etc. Incidentally they were designed to protect the shrub beds against possible Winter severity.

SOME MISCELLANEA.

In Military, Washington and Lincoln Parks all the statues and pedestals were given a thorough cleansing and refurbishing. Some of these were disfigured by unsightly blotches; some were encrusted with soot. These blemishes were removed and the statues coated with a preparation that retains the rich color of the bronze.

Refurbish-
ing
Statuary

New
Water
Supply

In Lincoln Park we began the installation of a new system of water supply. The old system was very inadequate, there being but one tap to draw on for the entire park. Under the new system the pipes are so laid and taps so set that we will be enabled to water the entire park surface with a one hundred foot length of hose. The pipes are on such grade that they are self-draining. In all there are now ten taps in this park.

New
System
of
Lighting

In Washington Park we began preparations to install a new system of lighting, which when completed will constitute a considerable improvement on the old system. This latter had become very manifestly inadequate. It consisted of three arc lights set wide apart. These afforded just light enough to make darkness visible. Under the new system there will be fifteen light standards, each standard equipped with a two cluster light, each cluster having thirty-two candle power. These standards are evenly distributed, with the result that the park will be now thoroughly lighted. The standards are of artistic design, viz.: a conventionalized tree presenting the essentials of tree architecture in the tapering stem, spreading base and top, with fluting to represent the indentations of the bark. This "tree" is encircled from base to top with a clinging vine; the branches from which the lights depend are suggestive of spreading boughs.



Heretofore we have been dependent for our sods on a market whose stock would often be of inferior quality, the sods carrying many weeds and being otherwise undesirable. It gives us pleasure to report that we now raise the larger part of our sods in our own nursery, and these are of excellent quality, absolutely free of weeds. Thus we are enabled to replace the worn areas with a good product at minimum cost.

Our
Own
Sods

RENOVATING MILFORD PARK.

This park is a triangle, the apex being formed by the junction of Elizabeth and Milford Avenues, the base by Bigelow Street. Owing to the poor quality of soil it had been impossible to get a good crop of grass. This park was thoroughly overhauled. We excavated to a depth of eighteen inches, removing a great quantity of stones. Five hundred tons of horse manure were added to the soil and thoroughly mixed therewith. The snows as they melt and the rains now soak in, and these water supplies of Nature's giving will be retained by the soil until the roots of the grass and of the trees need them in the dry, hot weather of July and August. Consequently the grass in this park should remain green all summer without any artificial watering.

How It
Was
Done

The old, uneven surface of this park which had presented an aspect not pleasing, was so re-graded that now it constitutes a beautiful concave slope. The walk on the Milford Avenue side was eliminated. The grade on the Elizabeth Avenue side was raised and the walk here was shifted back toward the park, thus leaving a wider planting strip between the walk and the curb. Also the walk on the Bigelow Street side was relaid.

Transfor-
mation

A new path was constructed crossing the park from the corner of Milford Avenue and Bigelow Street to a point on Elizabeth Avenue opposite Clifton Street. Beds of shrubs

were set out along the upper border, viz: along Milford Avenue side, extending in a curve to the Bigelow Street side at a point near Elizabeth Avenue, leaving the center of the park open for a lawn of green. The lawn was rolled and sown with grass seed, manured and watered. Oaks, Austrian Pines and Bolleana Poplars were set out among the shrubs. Along the Elizabeth Avenue side a line of shrubs was planted between the curb and walk beginning at the apex and extending around into Bigelow Street; a line of Button Balls also being set out on this same side. A list of the shrubbery set out in Milford Park is appended hereto.

COMFORT STATION, MILITARY PARK.

The Military Park Comfort Station was completed and became ready for use in July of this year. On July 28th it was opened to the public. Its history since then has demonstrated the great utility of this convenience. The attendance has averaged several thousand per day. The Station is open on all seven days of the week, of course, and from 6 A. M. to 12 P. M. It ought to be the forerunner of an adequate number of similar structures throughout Newark.

The Military Park Comfort Station is of the underground type. It is, as to inside measurements, thirty-three feet and seven inches wide by forty-four feet and eight inches long. On the men's side there are ten closets, twelve urinals and four lavatories; also a male attendant's room. On the women's side there are seven closets and five lavatories, with a female attendant's room. Some of the closets are reserved, a small fee being charged for their use. This privilege includes the use of fresh soap and clean towel.

Other parts of the equipment are the heating room, the coal bins, the ventilating tower with steel flue, fireproof

A Great
Public
Utility

Conveni-
ences

stairs and partitions, tile floors, stall partitions of polished marble, etc., etc.

\$17,500 had been appropriated for the construction of this Public Comfort Station. The actual cost was \$14,734.02. The expense of maintenance from the opening day to December 31, 1910, inclusive, was \$1,703.90. In its utility to the public this structure has already more than paid for itself.

Cost

PROPOSED LINCOLN MEMORIAL.

The Lincoln Memorial project was advanced steadily during the year. It has now reached a stage at which we are able to announce with confidence that the statue will be in place and ready for unveiling in a few months. It is expected that the unveiling will occur on Memorial Day (Decoration Day) 1911.

Ready

Those who have seen the final model are enthusiastic in their praise of the sculptor's work. The statue promises to be of the highest artistic merit both in design and execution. The Lincoln planned for is to be idealized. It will image the great President as he was during the especially stressful and anxious days of the middle period of the Civil War. The model shows him as he might have appeared when returning from one of his long vigils in the War Department. Walking homeward, he has seated himself on a rustic bench (in some park, perhaps) to rest and give himself to contemplation. The attitude of the figure is one of weariness and relaxation; yet the facial expression is that of complete absorption. There is about the whole man a pathetic air of melancholy and loneliness, a suggestion even of Gethsemane, as of one set apart to bear the burdens and carry the sorrows of his people.

Merit

Pro
Patria

John Gutzon de la Mothe Borglum, sculptor of this Lincoln, is a native of Idaho, who made his preliminary art

Sculptor

studies in San Francisco. Afterwards he was a student in the Academie Julian and Ecole DesBeaux Arts in Paris and was an exhibitor in the Paris Salon. He received the gold medal for sculpture from the Louisiana Purchase Exhibition. He is the sculptor for the Cathedral of St. John the Divine in New York City. Among his most noted works are groups in the Metropolitan Museum of Art, designs on buildings at Princeton University, the Lincoln head in the Capitol at Washington, and others. He has made a close study of Lincoln's life and character, and his expression of the Emancipator's character in bronze is considered among his best work.

Description

The bronze Lincoln will be six feet six inches in height and will be seated on a bench two feet high and eight feet long. Statue and bench will be of one piece, and will rest upon a base of granite. The base is to be twenty-nine feet four inches across the front, with a depth of twenty feet ten inches. It will be arranged in four gradations, the lowest stone longer than the upper three, which latter will rise regularly.

Setting

The Court House Plaza is to be the site of this memorial, which will stand at the center of the plot and will face eastward toward Broad Street, down Market Street. It will be necessary to rearrange the plaza in accordance with the sculptor's plans in order to make possible a harmonious placing of the statue with reference to the Court House and the approach.

Amos H.
Van Horn

All persons hereabout know of course that the Lincoln Memorial is one of several generous public benefactions of the late Amos H. Van Horn.

PROPOSED WASHINGTON MEMORIAL.

A Second
Bequest

A second generous bequest to the City, provided for in the will of the late Amos H. Van Horn, is the Washington Memorial to be set up in Washington Park.

A third will be a memorial to the soldiers and sailors of the Civil War. This is not yet designed. The Washington, however, is already under way, the first sketch model having been completed.

Like the Lincoln, the memorial to Washington will represent something distinctly original in idea. Purely and simply as an art proposition it is unique, in that it is an equestrian statue with the rider dismounted. Thus from the start the sculptor determined to get away from the conventions; and in elaborating his idea he will maintain this dominant note of independence. The monument is to stand in the southeast corner of the park, facing the intersection of Broad Street and Washington Place. The present intention is to have it on a mound about seven feet high and seventy-five feet in circumference. There is to be a simple granite pedestal three feet high. The bronze will rise above this twelve feet, making the total height about twenty-two feet above the surrounding ground level. Some of the smaller trees in this section of the park are to be taken up, leaving the larger trees farther back from the two streets to serve as a fitting background.

Unique in
Conception

For fifteen years, up to recently, Mr. Rhind, the sculptor, was a resident of New Jersey. He has made himself familiar with the Revolutionary history of the State and from that history has borrowed an incident which he has taken as the basic idea of the Washington memorial. The General stands on a slight elevation to enable him to see the faces of his troopers as he speaks to them a few words of counsel and farewell before parting from them for his ride to New York. This gave an opportunity for an original and decorative group. Instead of the rider on his horse, as we have seen him so many times, it has made it possible to preserve his dignified figure as the all-important part of the composition, while the horse pawing restlessly in the rear makes a valuable accessory for decorative purposes.

Saying
Good-bye

This idea is but suggested in the sketch model. The work will be modeled in two different sizes before being cast in bronze.

Sculptor

J. Massey Rhind, sculptor of the Washington, is a medalist of the Royal Academy and of the Louisiana Purchase Exhibition. Some of the most familiar examples of his work are the bronze doors on old Trinity Church, New York, a contract won in competition; the Stephen Girard in front of the City Hall in Philadelphia; the Colonel Colt Statue in Hartford; a large decorative fountain at Georgian Court, Lakewood; and all of the decorative work on Grant's Tomb in New York.

LIST OF SHRUBS PLANTED IN MILFORD PARK.

BOTANICAL NAME.	COMMON NAME.
Ligustrum Ovalifolium.....	California Privet
Ligustrum Iboia.....	Japan Privet
Lonicera Morrowi.....	Honeysuckle
Aralia Pentaphylla.....	Angelica Tree
Crataegus Coccinea.....	White Thorn
Virburnum Tomentosum.....	Viburnum
Aralia Spinosa.....	Hercules' Club
Weigela Candida.....	White Weigela
Philadelphus Grandiflorus.....	Syringa
Rhododendron Hybrid.....	Rhododendron
Azalea Ghent.....	Azalea
Azalea Mollis.....	Azalea
Rhus Copalina.....	Shining Sumach
Rhus Typhina.....	Staghorn Sumach
Rhamnus Catharticus.....	Buckthorn
Forsythia Fortunei.....	Golden Bell
Forsythia Suspensa.....	Golden Bell
Forsythia Viridissima.....	Golden Bell
Pinus Nigricans.....	Black Pine
Magnolia Stellata.....	Magnolia
Spirea Van Houttei.....	Spirea
Syringa Vulgaris Alba.....	White Lilac
Syringa Vulgaris Purpurea.....	Purple Lilac
Berberis Vulgaris.....	Common Barberry
Hydrangea Paniculata Grandiflora.....	Hydrangea
Rosa Rugosa Rubra.....	Red Rose
Rosa Rugosa Alba.....	White Rose
Weigela Floribunda.....	Diervilla

STREET TREE WORK

SOME USES OF STREET TREES.

A city that lacks beauty is a city behind the times; and a city that lacks trees, by that fact lacks beauty. Whether singly, or in mass, there is nothing in a city's streets so charming as bright green trees. Graceful in outline and robed in Nature's emerald they have a double beauty—beauty of form and beauty of color.

Beauty

It is the universal judgment that the attractiveness of a city depends largely on the trees planted along its streets. Whether one regards the graceful outlines of the leafless trunks and limbs, the tiny bud hastening its preparation for Spring, the feathery foliage as Spring bursts out anew, the glory of Summer, or the splendor of autumnal colors when every leaf becomes a flower, the tree stands forth a miracle of beauty and of power. If one healthy tree is a source of pleasure to the observant, long rows of well-kept trees with their graceful shade and flecks of sunshine, command attention from the most careless. They add more, we believe, to the beauty of a street than elaborate architecture—giving a loveliness and grace otherwise unattainable. And so, be it noted in passing, the street of the poor man may rival that of the rich.

The Poor
Man's
Architecture

Trees, because of their beauty, perpetually yield pure pleasure to the people; and this more and more as the people awake to them. Whatever thus adds to the stock of human joys has a real usefulness. That an American city should not be outdone by foreign cities in availing itself of this source of contentment seems beyond question. As President Eliot puts it: "The final aim of government by the people for the people is to increase the satisfaction and the joys of life to the highest possible degree for the greatest number of persons—to increase, that is, the number, variety and intensity of those sensations and emotions which give innocent and frequently recurring pleasure." And that is

All Men's
Pleasure

precisely the kind of pleasure given by trees, a pleasure "innocent and frequently recurring." To pass even one noble tree every day in going from the home to the workshop or office makes an appreciable addition to the satisfactions of the citizen.

Health

But trees do more than please the eye and adorn the city. They minister also to the city's health. This is a truth not yet widely noted; but there is nothing more certain. Mr. W. A. Murrill, Bulletin 205 issued by Cornell University, contends that "trees add to the healthfulness of a city by cooling and purifying the air. Besides cutting off the direct and reflected rays of the sun, foliage, by evaporating large quantities of water from its surface, exercises a marked effect on the temperature; and the reduction of the temperature in this way is greatest on dry, hot days when such reduction is most needed. Leaves also absorb impure and hurtful gases and manufacture the oxygen needed by us humans for respiration. Circulation of the air, due to unequal temperature, is likewise promoted by trees properly pruned and arranged; while the air of basements and cellars is rendered less humid by the removal of surplus water from the surrounding soil through the medium of roots and foliage."

Cooling
and
Purifying

Diminish
Death
Rate

This appraisal of the tree as a sanitary factor is confirmed by a resolution of the New York County Medical Society: "Resolved, That one of the most effective means for mitigating the intense heat of the Summer months and *diminishing the death rate among children* is the cultivation of an adequate number of trees in the streets." The sanitary value of the tree is illustrated further by the fact that the bill which was presented to the Legislature in 1890, to give the care of the street trees of New York City to the Park Commission, was *drawn by a physician*, a member of the State Board of Health, and was introduced as a *purely sanitary measure*.

The air we breathe contains oxygen, carbonic acid gas and ozone. The supply of oxygen is demonstrably generated by the plant life of the globe. The carbonic acid gas, hurtful to animal and helpful to vegetable life, is absorbed by the plants, and the proper atmospheric balance thus maintained. The large percentage of ozone in forest air, and the scarcity of it in the treeless streets where crowded dwellings abound, demonstrates that this tonic and recuperative element of the air is due to the presence of trees and the lack of it to their absence. The air in the vicinity of trees contains less bacteria and dust-particles than does the air outside of tree influence, which again demonstrates that the presence of trees decreases the total of atmospheric impurities. It is pertinent to note here that a local varnish manufacturer depends upon his row of well-kept trees to screen much of the dust from the air before it enters his windows to injure his product.

Vitalize
The
Air

Now it is manifest that a city that has beauty and a city that has health is a city where folks will want to dwell. To such a city a man will hie himself, set up his home, install his household gods, and establish himself under his own vine and fig-tree. So it would appear antecedently that trees have good, hard, practical real estate values. And everywhere the event is demonstrating what was thus antecedently to be expected. Trees are among the first things which impress a stranger in forming judgment as to whether a city is, or is not, a good place to live in. One need not be a lover of nature to appreciate the realty value of the refreshing shade of a row of street trees when the sun is blazing. What relief, what rest to weary eyes is the verdure of trees after the glaring pavements and shining windows of a bare street—and how desirable then becomes a residence on the verdure covered street. These are evident truths, and that realty values appreciate in consequence is equally apparent.

Realty
Value

Value
as per
Court
Decisions

The courts recognize trees as an asset to the property on, or in front of which they stand. In many cases the courts have decided that the destruction of a street shade tree detracted from the value of the abutter's property to the amount of \$50, \$300, \$400. In cases where several trees fronting the same property have been destroyed by illuminating gas, the courts have awarded \$150 to \$200 per tree to the abutter.

A Thousand
Dollar
Difference

Prof. T. J. Burrill, of the University of Illinois, cites the following instance of the money value of trees: "Two lots on the same street were offered for sale. These lots were essentially the same in all respects save that in one case there were four trees, about twenty-five years old. Two of these were in the street and two on the lot inside of the street. In the case of the other lot, the only trees (two of them) were on the street, and these were less than half the age of the others. The prices asked for the lots were respectively \$2,500 and \$1,500. A man wishing to build compared the two lots and decided in favor of the \$2,500 one, namely with the four trees—\$1,000 for four trees, or we might say for two trees. This lot had sixty-six feet frontage and contained about one-fourth of an acre. On such an acreage the net profit for twenty-five annual crops of corn might perhaps have been \$25. And each crop would have received more care than did the four trees during the whole of the twenty-five years. \$1,000 to \$25—the contrast is instructive! Yet there are today persons of intelligence who, in looking forward to results, will prefer to trust the corn."

It is a small task to plant a tree. The subsequent attention needed is not large. The trees once started help themselves as scarcely anything else of moment to us ever does. They grow while we sleep. They drink the sunshine and compound their own



food out of the refuse gases of the air and the watery solutions of the soil. Out of these inert, inattractive, barely recognized substances, by a miracle of transformation there comes forth that thing of life and beauty—which is also a *thing of tangible money value*—a tree.

SOME PRINCIPLES TO OBSERVE.

More and more these eminently practical uses of city street trees are being realized. They appeal no longer to the “man of feeling” only, the simon pure lover of beauty just for beauty’s sake; exceedingly “hard-headed” citizens are coming to see that city trees have other values beside beauty, values that can be quoted in terms of dollars and cents. But if these uses of street trees are to be realized in practice certain vital principles must be adhered to.

For example, not all shade trees are adapted to city street conditions, nor can all be trained to such adaptation. The selection of the right kind of tree sometimes involves a complex problem. Although we have more than five hundred species of native trees, but few of these are suitable for street planting—perhaps not more than a dozen. This is not surprising in view of the very definite characteristics required in a street shade tree.

Thus, lawn trees may have branches drooping or even reaching to the ground, as with some evergreens. Not so the street tree. Here the lowermost branches must be high enough to be clear of pedestrians and of roadway traffic. The lawn tree may have a crooked stem and a shape that is awry; and, other things being equal, these characteristics but tend to enhance the tree’s beauty. Not so the street tree. Here, as is manifest, the stem must be straight and the shape symmetrical.

Again lawn and park trees are not exposed as is the street tree to the disadvantages of poor soil, heat, drought,

Selection of
Varieties

Crown

Stem

Symmetry

"Enduring
Hardness"

smoke, coal gas, and what not. The street tree must encounter these; therefore it must be especially hardy, capable of withstanding such trying conditions. Further, the street tree, unprotected as it is from the buffeting of the weather, must be strong to resist the heavy windstorms that sweep through city streets. Then there is the weighty burden of sleet and snow that tries the endurance of all trees, in the country as well as in the city, on lawn as well as in street—the street tree, because of different root conditions, requires extra vigor to stand up uninjured beneath this burden.

Vigor
Required

Litter

Cleanliness in habit of growth is another important requirement in street trees. The falling of leaves, twigs, bark, seedlings, flowers, berries and other fruit makes the sidewalk untidy, while slippery fruit debris is not only unsightly but dangerous. Then flowers and fruit tempt to the injuring of trees.

In a
Nutshell

In a word trees designed for street planting should be straight of stem and symmetrical in shape; they should have a crown beginning not less than seven or eight feet above the ground; they should be clean in habit and free from litter; they should be of special hardiness. Also, and obviously, they should be readily transplantable, i. e., nursery-grown, relatively immune from insect attack, and long-lived.

A POINT OF GREAT IMPORTANCE.

We invite attention here to a point of much importance in the matter of selection of varieties for planting. Regard should be had to the topography of the streets designed to be planted; that is, to the width of the sidewalk, the material used in paving, proximity or remoteness of the building line as related to the sidewalk and curb, and whether a "tree belt" can be maintained and guaranteed for the generations to come. By "tree belt" is meant a wide strip of open ground between the curb and the outer line

Make
and
Maintain
a
Tree-Belt

of the sidewalk, this open strip to be forever preserved from all encroachment, whether at the surface, or below or above the surface, thus affording an adequate feeding ground for the trees. Elms, for instance, should never be planted unless such a strip is guaranteed; the same is true of Pin Oaks and Red Oaks.

In the matter of making provision for a city adorned with trees, our Newark forefathers built more wisely than is generally appreciated. They made their principal streets of an ample width, providing for this strip of continuous open ground—a tree belt to be reserved absolutely for the trees. Such a provision is of fundamental importance; without such a belt a street lined with flourishing trees is an impossibility. Broad Street, Clinton Avenue, High Street, Belmont Avenue, Elizabeth Avenue—all ancient thoroughfares—were laid out with due regard to this essential requisite.

A Wise
Provision

It is for us, the people, to choose between sidewalks and trees; or rather between the sidewalk paved from the building line to curb, and the "tree belt." It is for us to see that these strips of open ground, essential to tree life, are not flagged or otherwise paved. How many times has the covering of these open strips with impervious pavement signed the death warrant of stately trees and thereby destroyed the very foundations of the beauty of the thoroughfare. Sometimes this is due to mere philistine ignorance, sometimes to deliberate vandalism and a spirit of lucre—though, as we have shown, that same spirit is woefully mistaken; it robs itself of dollars and cents when it does that which robs the street of trees.

Death
Warrant

ADAPTATION TO SOIL.

The adaptation of the street tree to the soil is fundamentally important. This is a vital requirement, and unless it is heeded it is in vain to plant. Thus, the Horse Chestnut

The Tree
and its
Habitat

requires strong, moist soil; the Red Oak is less friendly to moisture; the Pin Oak and the Elm tolerate and even thrive in heavy soil. Not the least of the good points of the Norway Maple is its adaptability to a variety of soils and atmospheres. The Poplar and Ailanthus may be set out, often with success, in soil where no other species will grow.

ESCHEW RAPID GROWERS.

For
Long
Life

Trees of rapid growth are short-lived. Also the wood is brittle and easily broken in a storm or by weight of snow or ice. For the sake then of both durability and beauty such trees should be rejected for street planting. It is natural to wish for speedy results; but in tree planting speed is not compatible with staying qualities, or, in the long run, with shapeliness.

AS TO INSECTS.

Consider
the
Borer
and
His Pals

Trees should be selected which are most immune from insect attack. There are few varieties absolutely free from insect pests. Of the rest, some enjoy greater immunity than others. The Plane, the Norway Maple, the Poplar and the Ginkgo are all comparatively immune. Here in Newark the Elm is susceptible to the Wood Leopard Moth (Elm Borer), Woolly Louse, Elm Leaf Beetle, and Tussock Moth Caterpillar. This is especially to be regretted as it makes the growth here of this fine tree problematical unless effective measures are employed against the pests named. The Silver Maple in Newark is attacked by the Maple Borer, a deadly enemy; the Sugar Maple has for its foes the cushiony scale and the *Pseudococcus acericola*, and a mysterious blight. The Linden and the Horse Chestnut are especially subject to the Tussock Moth Caterpillar. This is, however, easily controlled.



SMOKE, GAS, ETC.

We have already pointed out that in some cases city street trees must encounter smoke, gas, impure air and the high temperature induced by proximity to buildings:

THE VARIETIES THAT WOULD BEST STAND THESE CONDITIONS ARE:

CLASS I. MOST DESIRABLE.

Norway Maple (small).
 American Elm (large).
 Oriental Plane (large).
 Pin Oak (medium).
 Red Oak (medium).
 European Linden (large).

Degrees
 of
 Adaptability

CLASS II. GOOD—UNDER SPECIFIED CONDITIONS.

Horse Chestnut (small).
 Tulip (large).
 Red Maple (medium).
 Ailanthus (pistillate variety).
 Ginkgo (small).
 Sugar Maple (medium).
 Carolina Poplar (medium).

CLASS III. TABOOED—(INFESTED WITH BORERS.)

Silver Maple.

LOCATING THE TREES.

The following general instructions will be pertinent here:

1.—In order to ensure durability (of such plantings as the Maple, Elm, Oak or Plane) it will be necessary to provide and maintain a continuous strip of open ground between the curb and the walk. A width of six to eight feet is sufficient for the thrifty growth of these trees; a minimum of three feet is essential to their very existence.

Tree
 Belt
 Again

Elbow
Room

2.—For the same reason, a tree should never be set at less than two feet in from the curb. Plant a tree too near the curb, and it cannot attain a healthful symmetrical growth; the roadway conditions as affecting the soil beneath the road preclude the possibility of growth in that direction. Furthermore trees so located are exposed to all manner of external injuries. They are gnawed by horses, bruised by trucks, broken by runaways, smashed by projecting contents of wagons, further damaged by hubs, and so on and so on. For example, up to a certain time it was our custom to set our stakes between the tree and the curb, with the result that on some streets the stakes were regularly broken; the hubs of garbage wagons were the principal cause. Hence it is evident that the trees also would have suffered injury, and in many cases outright destruction, had they not been set back at a safe distance from the curb.

Set
Back
from
Curb

Not
Too Near
Houses

3.—To avoid interference, a row of street trees should not be nearer to the houses than fifteen feet (except in the case of trees that may be maintained at a set size by annual trimming, as described below, and their interference with houses thus eliminated). Some other reasons for avoiding too close proximity of trees to houses are as follows: The spreading roots are checked as soon as they reach the foundation wall; the houses are deprived of two prime requisites to health and cheerfulness, viz: light and air; and the sidewalks are kept damp and muddy.

Varieties
for
Business
Street

So far we have had in mind such plantings as would be left to attain their normal shape and size. There is, however, a class of plantings known as "formal plantings." This term is used to designate trees which are trained by artificial means (such as pruning, etc.) to a certain desired shape and size. Such plantings would fit some conditions not otherwise provided for, as for instance those

of a business thoroughfare. By means of these "formal plantings" the business street could have its pleasant row of trees without incurring excessive shade, the obscuration of signs, or encroachment on the business uses of the street. The varieties best adapted for such formal training, and therefore the most suitable for the business thoroughfare, are undoubtedly the Sycamore and the Carolina Poplar.

We have dealt with but a few "planting principles," and at these we have only barely glanced in the most general way. Time and space would fail us to speak even in general of methods of alignment, of soil and its analysis and treatment, of the adaptability of such and such soil to such and such species of tree, etc., etc. But enough has been said to make it abundantly manifest that the problem is a "big" one and complicated, that **THE PLANTING OF TREES** is an **EXPERT PROFESSION**, and that in consequence planting should not be undertaken except under expert advice and supervision.

Planting
Problem
a Big
One

THE SETTING OUT.

A brief word here as to this important phase of the subject of tree planting. We must ask readers to be content with the following condensed account of how we "set out" in Newark:

1. An excavation is dug four feet in length, four feet in breadth, and three and one-half feet in depth, making a pit of fifty-six cubic feet. From this excavation the common street soil is removed and replaced with topsoil or is otherwise enriched. This is a minimum pit. It gives the young tree an opportunity to find nourishment easily while adjusting itself to the new conditions.

Pit
and
Subsoil

Size
and
Quality

2. In the trees we set out, well-developed roots, straight trunks and a minimum diameter of two inches one foot above the ground are required. The heads must begin not less than seven, nor more than eight feet above ground and must have well-developed crowns and good leaders. Annually transplanted trees, free from diseases and from injurious insects, we insist on; none others are accepted.

For
the
Horse

3. Each tree is surrounded by a galvanized wire guard six feet high, six inches in diameter, one-half inch mesh, topped with a collar made of rubber hose to prevent chafing.

Stake

4. A stake not less than two and one-half inches in diameter and nine feet long is driven deep into the soil and to this stake the tree is attached, the tree being thus held in place until it has acquired its own firm grip upon the soil.

Neat
Finish

5. In a number of cases it has been necessary to cut the flagging or cement. In every such case the Commission takes pains to so finish the cut that it presents a perfectly neat appearance.

6. We may add here, that where a tree of our planting has died we have replaced it without expense to the abutter.

A
Profitable
Crop

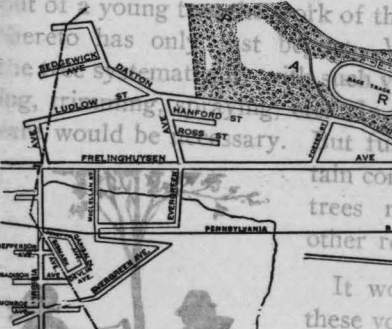
This year the Shade Tree Commission planted 18 miles of Newark's streets, setting out 2,974 trees. This makes a total, since the inception of the Commission in 1904, of 137 miles with 17,537 trees. Since trees, as before pointed out, have not only aesthetic and hygienic values but real value as well, this crop promises to be a most profitable asset for Newark. It will go far to enhance the City's desirableness as a place to work in and to live in. It is gratifying to report that the average assessment per tree in 1910 was only 2.92; and this covered not only the cost of the tree itself but also the expense of cutting flagging and cement, of excavating and subsoiling, and of the guard and

Low
Cost

STREETS PLANTED SINCE 1904
SHOWING SPECIES USED
BY THE
NEWARK SHADE TREE COMMISSION
NEWARK, N.J.

- NORWAY MAPLE** —————
SUGAR MAPLE ~~~~~
ASH LEAF MAPLE ++++++
OAKS ///////////////
ORIENTAL PLANE =====
GINKGO -x-x-x-x-x-
WHITE ASH -x-x-x-x-x-
HORSE CHESTNUT -o-o-o-o-o-
TULIP -x-x-x-x-x-
ELM -x-x-x-x-x-
POPLAR -x-x-x-x-x-
LINDEN -x-x-x-x-x-

JUNE 1911



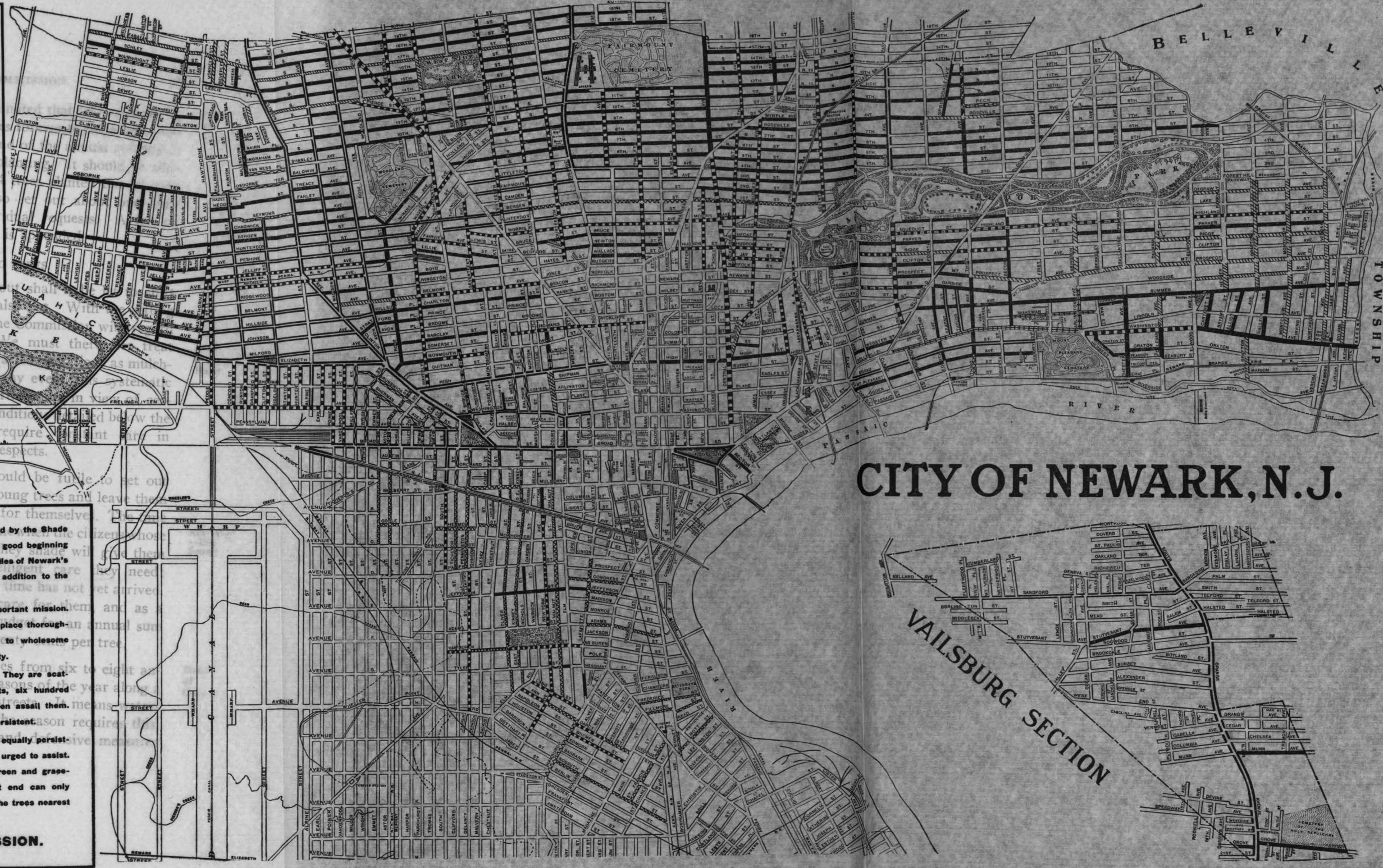
These marks show the streets planted by the Shade Tree Commission and the species used. A good beginning has been made. One hundred and thirty miles of Newark's streets have been planted in six years in addition to the trees set out privately.

These trees are charged with an important mission. We depend upon them to convert commonplace thoroughfares into well-shaded avenues; to invite to wholesome out-of-door life by their charm and variety.

But the trees are young and tender. They are scattered over three hundred miles of streets, six hundred miles of frontage. Dangers seen and unseen assail them. The enemies are many, multifarious and persistent.

These conditions must be met with equally persistent care and maintenance. All citizens are urged to assist. We strive for the invaluable dividend of green and graceful arches and cooling shade. This great end can only be attained if each citizen is vigilant for the trees nearest his frontage. **LEND A HAND!**

SHADE TREE COMMISSION.



CITY OF NEWARK, N.J.

VAILSBURG SECTION

collar and stake. It ought to be noted that this assessment, once paid, never recurs. It covers forever to the abutter the cost of the tree, etc., as above, and of the annual systematic care bestowed on the tree after planting. It should be added that over and above the 2,974 trees planted this year as per statute, the Commission also set out about one hundred trees in response to individual requests. A list of trees planted, and varieties used, is appended.

CARE OF YOUNG TREES.

And now that the tree is set out shall it be let to shift for itself? Well, hardly. No—also not. With the setting out of a young tree the work of the Commission with regard thereto has only just begun. We must thereafter treat the tree systematically with such varied operations as mulching, trimming, spraying, etc. In any event, this systematic care would be necessary. But furthermore in view of certain conditions detailed below the trees require constant care in other respects.



It would be futile to set out these young trees and leave them to care for themselves. The time may come when the citizens whose homes they shade will give them the intelligent care they need; but that time has not yet arrived.

Therefore the Commission must care for them, and as a consequence we must plan in our budget for an annual sum of maintenance averaging about twenty cents per tree.

The systematic care given involves from six to eight annual visits by our men at various seasons of the year along a frontage of two hundred miles of streets. It means watering the newly-set-out trees when the season requires this. It involves the varied preventive and defensive measures

Much
for
Little

Lend
a
Hand

Not Yet
—But
Soon?

Items
of
Care

Replacing

against insect attack. It requires cultivation of the soil around the roots ("watering with the rake") to assure the best conditions of growth. It obligates annual pruning, replacing of stakes and guards when necessary, and the replanting of the four or five per cent. of new plantings which die annually as a result of runaways, illuminating gas and other artificial causes. All these items constitute a somewhat formidable obligation when viewed with relation to the young trees already set out, the care of which is guaranteed. The Commission earnestly solicits the Common Council to enable it for the future to sustain its guarantee as in the past.

CARE OF THE OLDER TREES.

But the Commission is not only planter and caretaker of young trees, it is the Warden of the older trees as well. Of these latter there are approximately 40,000 on Newark's streets.

No
Small
Task

The work of maintaining and protecting these older growths is no small task. Their enemies are not a few and are multiform. To say nothing of destructive insects there are other agencies yet more destructive and more difficult to control.

No
Child's
Play

As injuriously affecting both old and young trees, there are the thoughtless small boy, the runaway horse, the ruthless driver, the occasional rowdy; there are the layers of gas, sewer and water pipes and electric wire conduits; there are pavers and sidewalk layers who surreptitiously cut the roots, and builders who bruise and maim the trunk; there are overhead wires and underground gas leaks, both illuminating and sewer gas; and there are—others. No child's play to protect street trees from all these. Yet the job was undertaken, and from year to year it comes nearer and nearer to full accomplishment. Conditions are improving and will further improve if only we "keep everlastingly at it."

Besides injuries resulting as above from leaking gas, leaking electricity, trucks, building operations, cutting of roots, etc., the trees are sometimes injured by frost cracks, strangling metal bands about the trunk, horse bites, nails and spikes driven into the tree to attach signs, insufficient open space about the base of the tree, impeding the access of air and water to the roots, etc., etc. Of these varied forms we have space to speak particularly only of injury from horse bites, and injury from insufficient open space. However we first take up the subject of insect attack.



Some
Injuries

INSECT ENEMIES.

During the season 1910 protection of the trees from insects was carried on as follows. We sprayed all trees, large or small, on all streets where we had knowledge this treatment was needed. Also we responded, so far as our equipment would allow, to individual requests from other quarters brought to our attention. There were some 800 such requests. These were investigated and in every case where inspection revealed the need, the trees were sprayed. The spraying was aimed against the caterpillar, the scale and the beetle. Annexed to this report is a list of streets sprayed. Bisulphide of carbon was used against borers when these could be located. These latter pests present by far the greatest insect problem, as intimated above. Every storm attests the borer's deadly work in weakening certain branches so that the heavy winds break them down.

1910
Campaign

Much as has been said in the previous pages regarding the planting, care and maintenance of street trees, and systematic care and improvement of parks, it must be borne in mind that from late May to early Autumn our energies are for the greater part centered on the insect campaign. While New-

A
Bad
Lot

ark is extremely fortunate in not having yet been visited by the destructive Gypsy and Brown Tail moths, it has nevertheless several pests capable of alarming depredations. These require constant watchfulness to keep them in check.

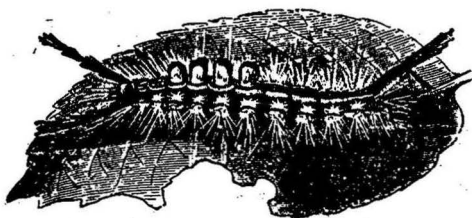
The worst enemy to the city's trees is the

TUSSOCK MOTH.

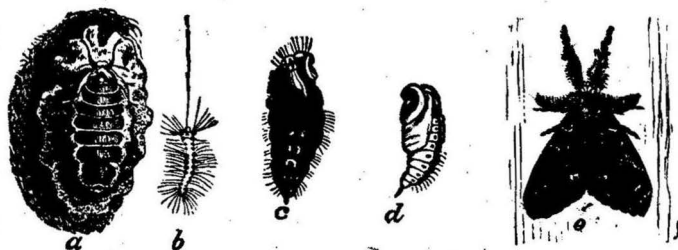
This insect is distinctly a shade tree pest and directs its ravages against an unlimited variety of trees and shrubs. It has a particular zest for the Linden and Horse Chestnut. In Newark it is found on every tree except the Ailanthus, Ginkgo and Sycamore.

Pretty
But
Vicious

The Tussock Moth caterpillars are easily recognized by their very pretty red, yellow and black markings. The eggs hatch in the Spring and the caterpillars ascend to the leaves and feed until full grown. They then crawl to the lower limbs and form cocoons, which are very conspicuous, even to the untrained eye. In a short time the moth emerges from this cocoon and deposits eggs, which soon hatch and once again the caterpillars ascend the tree and feed upon the leaves. Here in Newark the first brood is the most destructive, as the second brood is very small in this locality. The accompanying plate shows the various stages in the life cycle.



Caterpillar of the Tussock
moth.



The White-marked Tussock Moth; *a*, the wingless female ovipositing on the empty cocoon; *b*, young caterpillar suspended by a silken cord; *c*, pupa of the female; *d*, pupa of the male; *e*, male adult or moth. After Riley.

These illustrations are published by courtesy of the State Department of Entomology.

The treatment for the destruction of this pest is both preventive and remedial. The first consists of going over infested territory in mid-summer, immediately after the eggs are deposited, and wetting these eggs with creosote, to which is added enough coal tar to color it black.

Slay
Him



SPRAYING

The second method is that of spraying with a stomach poison, while the caterpillars are feeding. This is very effective when the poison is applied in time. The first spraying under this method is with arsenate of lead and Bordeaux Mixture, the Bordeaux being added as a fungicide.

The following is the

FORMULA.

Arsenate of Lead	12 lbs.
Bordeaux Mixture	8 lbs.
Water	100 gals.

The
Weapon

This solution is deposited on the under side of the leaf in a very fine spray. The accompanying half-tone shows a spraying gang at work.

It is impossible with our present comparatively limited appropriation to systematically spray every tree in the city; yet the Shade Tree Commission holds itself in readiness as far as possible to spray any tree, or trees, on any streets if so requested. It is too often the case, however, that these requests are made after the tree is nearly defoliated. If we were promptly notified at the first appearance of the caterpillar, these private calls could be attended to more effectively.

Early
Spray
Catches
the Worm

Second only to the Tussock moth in its ravages upon Newark's trees is the

ELM LEAF BEETLE.

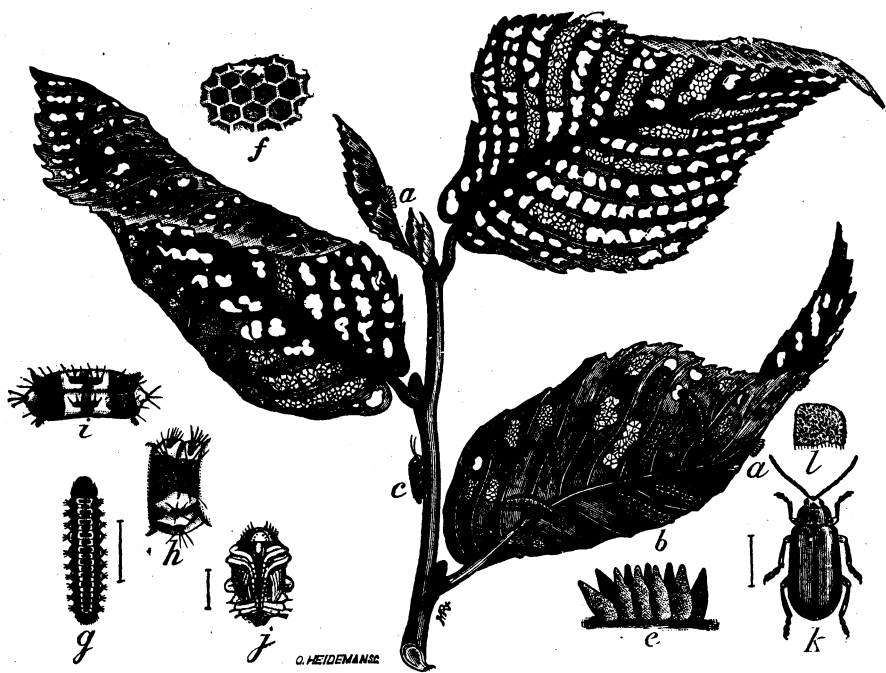
This pest was imported from Europe about half a century ago, and is now widespread throughout the country. It confines its attacks solely to the elm. It is present in such great numbers that it frequently causes the death of large trees by its persistent attack, year after year, upon the foliage. The beetle winters in the adult stage seeking shelter in any protected spot. In the spring they crawl to the leaves and after feeding a while deposit eggs on the under side of the leaf. The young soon hatch and begin to feed on the under side of the leaves. North of here only the first brood is destructive, but in this latitude the second and third broods are also destructive, their ravages extending until early frost terminates their activity. The treatment is for

Another
Predatory
Fellow

Early
and
Often

the greater part remedial. Early in the Spring the trees are sprayed with a strong solution of arsenate of lead to kill as many of the adult beetles as possible before they deposit their eggs. Immediately after the young emerge from the egg it is necessary to spray again, using a weaker solution of arsenate of lead since the larvae are more susceptible to the poison than the adults. Intermittent sprayings are necessary throughout the Summer and early Fall to control such numbers as may have escaped first treatments.

The accompanying cut shows the various stages in the life cycle of this beetle.



The elm-leaf beetle: *a, a*, egg patches on leaves; *b*, larvæ feeding; *c*, adult; all natural size; the holes eaten through the leaves are by the adults, the scraped surfaces are by the larvæ; *e*, egg mass; *f*, surface of an egg; *g*, larva; *h, i*, larval details; *j*, pupa; *k*, beetle; *l*, surface of elytra; *e* to *l* enlarged. From Div. Ent. U. S. Dept. Agl.

Several other pests, whose food is the foliage of trees such as the web worm, the tent caterpillar, etc., appear only in isolated cases and easily succumb to the above treatment. But turning from these insects which feed upon the tissues and juices of the leaves, there are those which confine their attacks to the bark or wood of the tree. Foremost among these are the

Other
Leaf
Eaters

BORERS.

We have to combat several varieties of these. But the method of attack and the treatment are practically identical for all varieties. They are found chiefly on the Silver and Sugar Maple, but occasionally they attack the Elm and a few other trees. The eggs are deposited on the bark and the young soon hatch and crawl to a convenient place and commence to bore into the wood, working first upon the smaller branches and then descending to more spacious quarters as they increase in appetite and size. They are voracious in their feeding habits, and *a single borer often causes the death of a young tree*. Their work can easily be seen in large trees, as it takes the form sometimes of a gnarly protuberance, sometimes of a depression, on the surface of the bark. The treatment of this pest is very difficult; the only method in use at present is to go over the trees at regular periods and exterminate all that can be found. This is accomplished by killing the larvae with a sharp pointed wire, or by injecting bisulphide of carbon into the cavity where the grub is feeding and closing the passage with putty. Both of these methods are efficient but are necessarily very tedious.

A
Demon
"Bug"

It is a deplorable fact that the English sparrow has driven out all the songsters that would otherwise abound in the trees of our city streets and parks. In rural districts the song birds keep the borers in check, so that their ravages there are scarcely noticed.

Raus
Mit
the
Sparrow

SCALE.

Another insect enemy is the scale. Of this, there are several varieties and New Jersey is their stronghold. Unchecked, they work havoc to the trees. The cottony maple scale was found in small numbers during the past year, and an application of whale oil soap—1 lb. soap to 5 gals. water—was found to be very effective. The oyster shell scale was more prevalent than for a few years past, and was found on elm trees, quite a radical departure from its fixed habitat. Since this class of pests are sucking insects, it is necessary to apply a contact poison, and many trees were systematically sprayed with kerosene emulsion and whale oil soap. These treatments were in every case effective. Isolated cases of San Jose, Tulip and Scurvy scale have been found, and very successfully combatted. During the past year we have tried several new scalicides, recently put on the market; but up to the present time we have found none that can in our judgment take the place of kerosene emulsion and whale oil soap, either in efficiency or cost of production.

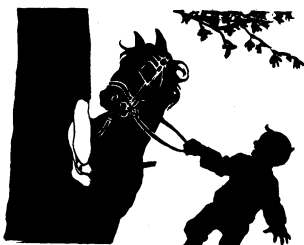
Sappers

'WARE THE HORSE.

Protection from horses is not so easy as protection from insects. The former is largely dependent on the "sweet reasonableness" of the driver. If he recognized the value of the tree and the property rights therein of the abutter and the city, we are convinced he would

take pains to keep his horse from the tree—to suppose otherwise would be to suppose the driver an unpatriotic boor. But such recognition of tree values is amazingly rare and that not among drivers only. So that the

Enter
The Horse;
Also his
Driver



time is not yet when we can trust the matter to "sweet reasonableness." In this as in other matters, we are still on the hither side of the millenium and still need to invoke the law's compulsion. Ravages due to the bitings of horses will not be materially lessened until citizens everywhere unite against the evil. The citizen should frown it down where frowning will achieve results. Where it will not, he should co-operate with this Department in enforcing the law against the evil. We are prepared to prosecute at once every case in which the evidence warrants the swearing out of a complaint. Given the name of the driver, the names of witnesses, the name of complainant, the location of the tree, and the time of day, we believe we can secure a conviction.

Citizens
Should
Unite
Against It

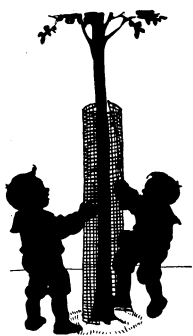
BUT THERE IS A BETTER WAY. In towns and cities the trunk of every tree, whether young or old, newly planted or in full growth, should be enclosed to a proper height in a wire guard or wire netting of a small mesh. This simple expedient would effectually protect the tree from the teeth of the horse. Every property owner should thus guard the trees abutting his tracts of realty. It would cost but little. It would achieve much. It would end the havoc wrought by the horse.

Tree
Guards
Indispens-
able

VANDALISM.

In addition we have pressed the work of protecting trees from injuries during building operations, laying of sidewalks, pavements, etc. With the contractors engaged in these operations we have sought to establish a better mutual understanding. And therein definite progress may be reported. Nevertheless some are still recalcitrant. One company cut the roots of a splendid elm without a permit, and shortly after repeated the unwarranted

Contractor's
Operations



How
Some
Owners
Dealt
With
This

Rights
of the
Public

performance on 'still another fine elm. In each case the evil was wrought without the consent or even the knowledge of the property owners. When these came to learn of the outrage they were indignant; and it is cheering to know that they are holding up the offending company's bills, insisting on damages before settling the accounts. More power to the owners, and may the damages be exemplary. This Department recognizes that in some rare instances it may be necessary to sacrifice a tree. But no one has the right to cut any part of any tree without the written permit of the Shade Tree Commission. Not even the abutter has such right. In every tree in a public street the public has an interest. The Commission represents the interests of the public in the tree. No street tree should be cut until the public through its representative has satisfied itself of the necessity for such cutting. It is deplorably true that splendid trees, the growth of the patient years, are often sacrificed where there is absolutely no necessity and for the mere convenience of some hacking vandal or the saving of a few dollars. It should be added that in many instances the cutting referred to renders the tree unsafe—a standing menace to life and limb and property.

STIFLED AND STARVED.

Deadly
Sidewalking

Another hurtful practice is that of flagging or cementing a walk close up to the base of the tree. This shuts out air and water from the roots and robs the tree of these essentials to its life. There is need of enlightening owners in this matter. They doom their trees to certain death by this practice. Yet owners who would pay large sums rather than lose their trees offend in this respect. An opening should always be left about the base of a tree so that water and air may have free and unimpeded access to the roots. On narrow sidewalks this end can be obtained with little encroachment on the walking surface by leaving a long narrow opening, or with no encroachment by the use of iron gratings.

Opening
Essential

DIAGRAMS SHOWING

1ST—PROPORTION OF OPEN GROUND AT BASE OF TREE NECESSARY TO LIFE AND VIGOR OF SAME.

2ND—METHOD OF COMPUTING AREA OF SUCH OPEN GROUND.

3RD—VARIOUS OUTLINES FOR SAME.



MINIMUM FIGURES

SIX SQUARE FEET OF OPEN GROUND FOR A TREE THREE INCHES IN DIAMETER AND FOR EACH INCREASE OF TWO INCHES IN DIAMETER OF TREE, THE AREA OF OPEN GROUND IS TO BE INCREASED ONE SQUARE FOOT. AIR AND WATER MUST FIND UNIMPEDED ACCESS TO THE ROOTS, OR THE TREE WILL DIE.

SHAPE OF OPEN GROUND AT BASE OF TREE		SQUARE	RECTANGULAR	CIRCULAR
DIAMETER OF TREES IN INCHES	3	BASE AND SIDES 2 FT. 5 IN.	BASE 2 FT. MAXIMUM LENGTH 3 FT.	DIAMETER 2 FT. 10 IN.
	5	BASE AND SIDES 2 FT. 8 IN.	BASE 2 FT. MAX. LENGTH 2 FT. 7 IN.	DIAMETER 3 FT.
	7	BASE AND SIDES 2 FT. 10 IN.	BASE 2 FT. MAX. LENGTH 4 FT. 3 IN.	DIAMETER 3 FT. 3 IN.
	9	BASE AND SIDES 3 FT. 2 IN.	BASE 2 FT. 6 IN. MAX. LENGTH 3 FT. 11 IN.	DIAMETER 3 FT. 6 IN.
	11	BASE AND SIDES 3 FT. 5 IN.	BASE 2 FT. 6 IN. MAX. LENGTH 4 FT. 8 IN.	DIAMETER 3 FT. 10 IN.
	13	BASE AND SIDES 3 FT. 7 IN.	BASE 2 FT. 6 IN. MAX. LENGTH 5 FT. 5 IN.	DIAMETER 4 FT.
SHAPE OF OPEN GROUND AT BASE OF TREE		SEMI-CIRCULAR	ROUNDED	ELLIPTICAL
DIAMETER OF TREES IN INCHES	3	RADIUS 1 FT. 11 IN.	BASE 2 FT. 5 IN. MAX. LENGTH 2 FT. 7 IN.	BASE 2 FT. 5 IN. MAX. LENGTH 3 FT. 3 IN.
	5	RADIUS 2 FT. 2 IN.	BASE 2 FT. 9 IN. MAX. LENGTH 2 FT. 10 IN.	BASE 2 FT. 10 IN. MAX. LENGTH 3 FT. 3 IN.
	7	RADIUS 2 FT. 4 IN.	BASE 2 FT. 11 IN. MAX. LENGTH 3 FT. 2 IN.	BASE 2 FT. 11 IN. MAX. LENGTH 3 FT. 8 IN.
	9	RADIUS 2 FT. 6 IN.	BASE 3 FT. MAX. LENGTH 3 FT. 5 IN.	BASE 3 FT. MAX. LENGTH 4 FT. 1 IN.
	11	RADIUS 2 FT. 9 IN.	BASE 3 FT. 7 IN. MAX. LENGTH 3 FT. 9 IN.	BASE 3 FT. 7 IN. MAX. LENGTH 4 FT. 2 IN.
	13	RADIUS 2 FT. 10 IN.	BASE 3 FT. 8 IN. MAX. LENGTH 3 FT. 10 IN.	BASE 3 FT. 8 IN. MAX. LENGTH 4 FT. 6 IN.

It makes clearer than hitherto that it is a violation of law, punishable by fine or imprisonment, to cut or otherwise injure a tree or any part thereof, or do aught that would occasion such injury. We have made special efforts to spread among the people a knowledge of the provisions of these ordinances, and to point out to property owners that a wise regard for their trees would insure a cordial compliance with the same. Some owners most gladly complied when the "sweet reasonableness" of the requirements was thus pointed out. But there is much room for improvement in this particular.

While much damage is still wrought, whether heedlessly or maliciously, and only a few offenders have been prosecuted, yet the Ordinance has enabled us to exercise a more effective influence than before on behalf of the trees. This instrument will wield an increasing power for good as the several City Departments co-operate in its enforcement. And the growing revival in public sentiment of love for trees, and appreciation of their value, will be a powerful coadjutor in the guardianship of these stately growths that adorn our streets.

Now
Altogether
for the
Trees

RECOVERING FOR GAS KILLED TREES.

A noteworthy feature of our work during 1910 was the "rounding up" on different thoroughfares throughout the city of a number of trees which had been killed by gas poisoning. On South Broad Street we discovered no less than 32 such trees; on Hawthorne Avenue not less than 34; on Summer Avenue 47; on Bergen Street 81; on Poinier Street 8; on Wakeman Avenue 7; and so on. Illuminating gas escaping from defective pipes had impregnated the soil, poisoning the roots, and thereby causing the death of these trees.

We took up this matter with the Gas Department of the Public Service Corporation. Negotiations were instituted the outcome of which was an agreement on the part of the Gas Company to bear the cost in each case of "taking down the dead tree and setting out a live tree instead"; this on condition that the property owner "in consideration of these premises" as above would "remise, release and discharge the said Public Service Gas Company and its successors of and from all claims and damage by reason of, or arising out of, damage or injury to the tree" in question. During the coming year the terms of this agreement will be carried out. The City will be reimbursed to the extent of several thousand dollars for the loss of these gas destroyed trees; and the money thus collected will go to the planting of new trees to take the place of those destroyed.

It will be necessary in each case not only to remove the dead tree but to remove the root system thereof as well; also to dig out four to five tons of gas impregnated soil and replace this with four to five tons of fresh virgin top-soil. Then the new tree will be planted and furnished with a stake and wire guard, the latter to protect the tree from horse bites. The cost appraised against the Gas Company will cover all these items, the work, of course, to be done by us. The new trees will be guaranteed by the Commission.

We have already compiled a long list of these gas poisoned trees and expect to add thereto from time to time as occasion requires. This list shows the location of each such tree, its variety and caliper, the cost of removing it and of subsoiling, the cost of the new planting, the property owner's name and address, the date of "Release" and other like details.

(From "The Survey," N. Y.)

A UNIQUE TREE STATUTE.

New Jersey by her shade tree statute converted the rocky pioneer trail of the tree planter into a graded, progress-fostering roadway. For whereas without this law the advance of tree planting and protection was slow, tortuous and inadequate, the municipalities of this state now bid fair to excel in the ease with which extensive plantings may be almost automatically projected, completed, paid for and maintained.

The law provides for a shade tree commission of "three freeholders who shall serve without compensation, and who shall have the exclusive and absolute control and power to plant, set out, maintain, protect and care for shade trees in any of the public highways" of the municipality. A later statute gives the same commission exclusive control of the city parks.

The trees which were nobody's particular care, are now committed to the custody of three leading citizens adequately empowered, whose zeal, civic patriotism, love of trees and administrative ability are concentrated on maintaining and promoting the welfare of the trees of their home city. The advantages of this arrangement are not only obvious in prospect but have been demonstrated by the event in Newark and elsewhere.

The status of street trees is raised, for they stand forth now before all the people as the special wards of a special municipal department specially created to protect them. The fine stately old trees which have come down to us from the fathers, but which have so long been strangers to considerate treatment, at last are coming into their own. Not only does a commission protect them, a public sentiment which is constantly enlarging co-operates.

The Commission is not only warden of the older trees but also planter of the new. In Newark, where the law has been in force six years, 17,000 young trees on one hundred and two miles of streets have been set out. Picture this! One hundred and two miles of new plantings, adorning the streets, gladdening the eye, cooling and purifying the air, and enhancing the city's beauty and wealth. There they stand; and there they grow, increasing in stature and fulfilling the promise of their sapling days. Of course this increase in growth and beauty is not the result merely of "time and the elements," for a tree commission is required to systematically mulch, trim, spray, fertilize and otherwise nurture its young plantings.

An innovation is the authority of a shade tree commission to assess the cost of new plantings against the property in front of which they are set out. This assessment becomes a lien. The money from this source is reinvested in other plantings. Only the actual cost of the tree, guard, stake and labor is so taxed. The average assessment last year was \$2.93. This covers once for all the entire cost. If the tree dies it is replaced under guarantee without extra charge to the property.

The Commission is required to give public "Notice of Intention" to plant certain streets or portions of streets through "one or more of the newspapers of the municipality." After "a hearing granted to all persons who appear in relation to such contemplated improvements," the streets to be planted are finally determined. Instructions are then given to go ahead, and the season's planting is begun.

Planting pits are dug at a distance of 33 feet apart. Where the sidewalk is cut pains are taken to leave the walk in good condition. From each pit 56 cubic feet of earth is removed and replaced with good soil enriched with fertilizer. When the new soil has settled the tree is set in

place surrounded with a wire guard topped with rubber collar; and a stake is attached to hold the tree steady until it has got its own firm grip upon mother earth. The trees for each street are all of one specimen and of equal size. Each tree is guaranteed. With forty clear days in both spring and fall, the two planting seasons, and setting out 50 a day, the year's "output" will be 4,000 more trees to adorn 12 more miles of streets and to begin the transforming of commonplace thoroughfares into park-like highways overarched with waving trees uniform in species and size.

The assessment bill shows the property owner that the cost assessed against him for the excavating, the subsoiling, the tree, the guard, the stake and the guarantee is less than what he would have to pay a nursery for the tree alone. This saving to the property owner, made possible by the wholesale nature of the operations, will explain how the Commission can advertise 30 miles of streets or 60 miles of property fronts, and not find one owner opposed.

The shade tree statute does not become operative until the "governing body" of a municipality authorizes the appointment of a commission—except where there is a population of over 200,000, when the Mayor on his own initiative may appoint. In all these communities the problem of the care, increase and protection of street trees is being studied by these local conservers of the city's tree assets. To appoint a Commission is to set in motion a legal mechanism toward adequate municipal control.

This is the story of six years' progress in New Jersey, the pioneer years of preparatory work. It is fair to expect cumulative progress in supervising street trees and preventing every form of destructive agency. Through Mr. J. Horace McFarland's initiative a similar statute is operative in Pennsylvania. Buffalo and Chicago, and the nation wide exchange list of the Newark Commission demonstrate how general is the interest in this method, now no longer

an experiment. These sowings of tested seed will surely mature in a more general adoption of the law. All over the country communities are gradually realizing that the tree is as much a friend to men in the city as in the country. From this conviction will follow the more general provision for the trees' protection.

SUMMARY OF PROVISIONS OF THE NEW JERSEY SHADE TREE STATUTES, AS THEY AFFECT NEWARK.

JURISDICTION.

The Shade Tree Commission of the City of Newark, which consists of "three freeholders who * * * serve without compensation," is invested by statute with "exclusive control and power to plant, set out, maintain, protect and care for shade trees in any of the public highways" of the City of Newark, and with "exclusive control of the public parks belonging to, or under the control of (the City of Newark) or any Department in the government thereof, with full power and authority to improve, repair, manage, maintain and control the same."

POWERS.

The statutes confer on the Shade Tree Commission power to pass, enact, alter, amend and repeal ordinances for the protection, regulation and control of all shade trees planted or growing on the highways of the city; also for the protection, regulation and control of City Parks with the trees, flowers, shrubs, statuary and other improvements and city property therein.

The Commission is empowered to prescribe fines and penalties for the violation of its ordinances or any of them and to fix the amount of such fines and penalties.

The courts which now or hereafter shall have jurisdiction over actions for the violation of ordinances of the municipality shall have jurisdiction in actions for the violation of such ordinances as the Commission shall enact; and said ordinances shall be enforced by like proceedings and processes, and the practice for the enforcement of said ordinances shall be the same as that provided by law for the enforcement of the ordinances of the municipality.

A copy of an ordinance or ordinances of the Commission, certified to under the hand of the clerk, secretary or president of the Commission, shall be taken in any court of this State as full and legal proof of the existence of such ordinance or ordinances.

PURCHASE OF LAND FOR PARKS.

The Commission is authorized by statute to purchase lands for public parks, with the concurrence of the Finance Committee of the Common Council.

When, for any reason, the Commission cannot arrange for the purchase of certain land for park purposes, it is lawful for the City to acquire the title by condemnation, *provided*, that no application or proceeding shall be instituted for that purpose, except by and with the consent of the Finance Committee of the Common Council.

The Finance Committee is empowered to borrow so much money as may be necessary for the purchase and acquirement of lands for park purposes; and to issue bonds or obligations of the city therefor, bearing interest not to exceed four per cent. per annum, in an amount not to exceed \$300,000, and for a term or terms not to exceed forty years; these bonds to be exempt from taxation. The Finance Committee may dispose of such bonds or obligations at public sale, after due advertisement, but in no case for less than par.

REQUIRED TO GIVE NOTICE.

The Commission is required to give notice in one or more of the city newspapers of its intention of setting out or planting any shade trees, or changing the same, in any highway. Such notice must be given for at least two weeks prior to any meeting in which the Commission shall decide to make such improvement.

SHADE TREE ASSESSMENTS.

The statutes require that the cost of planting and transplanting any trees in any highway, and of boxes or guards for the protection thereof, shall be borne by the real estate in front of which such trees are planted or set out, and that the cost thereof as to each tract of real estate, shall be certified by the Shade Tree Commissioners to the Receiver of Taxes.

Upon the filing of such certificates, the amount of the cost of such improvement becomes a lien upon the lands in front of which said trees are planted or set out.

The Receiver of Taxes is required to place the assessment so made against any property in the annual tax bills rendered to owner or owners of such property, and the same shall be collectible in the same manner as the other taxes against said property are collected.

CREDITS.

All moneys collected from fines or penalties for the violation of any ordinance of the Commission, and all moneys collected for assessments made for the cost of planting and transplanting trees, etc., shall forthwith be paid over to the proper municipal authorities and placed to the credit of the Commission, subject to be drawn upon by the Commission in manner provided by law.

STREETS PLANTED, AND VARIETIES SET OUT IN 1910.

SPRING, 1910.

NORWAY MAPLES.

Grove St.....	102
No. Munn Ave.....	37
No. 6th St.....	142
No. 7th St.....	118
Peck Ave.....	36
Randolph St.....	20
Ridge St.....	33
Schley St.....	100
So. 12th St.....	109
So. 13th St.....	50
So. 15th St.....	43
So. 18th St.....	254

Total1044

BUTTON BALLS.

Badger Ave.....	47
Clifton St.....	51
Concord St.....	41
Earl St.....	28
Orange St.....	24
Peddie St.....	148
So. 19th St.....	295
Van Buren St.....	29

Total 663

LINDENS.

Bragaw Ave.....	69
Wainwright St.....	107

Total 176

POPLARS.

New York Ave.....	56
South St.....	30

Total 86

OAKS.

So. 14th St.....	141
So. 17th St.....	139
Woodside Ave.....	70

Total 350

HORSE CHESTNUTS.

Nye Ave..... 55

Total 55

Request Plantings..... 51

2425

FALL, 1910.

NORWAY MAPLES.

Berkeley St.....	60
Chadwick Ave.....	14
Lillie St.....	35
No. 10th St.....	50
No. 11th St.....	48
No. 12th St.....	34
Rose St.....	63
Treacy Ave.....	9

Total 313

BUTTON BALLS.

Boyd St.....	20
Fifteenth Ave.....	58
Jelliff Ave.....	57
Nineteenth Ave.....	46

Total 181

Request Plantings..... 55

549

Total, Spring.....2425

Total Fall..... 549

2974

LIST OF STREETS TRIMMED, 1910.

Abinger Pl.	Emmet St.	Miller St.
Abington Ave.	Fairmount Ave.	Milford Ave.
Adams St.	Fairview Ave.	Millington Ave.
Alexander Ave.	Fabyan Pl.	Monroe St.
Alpine St.	Ferguson St.	Montrose St.
Alyea St.	Fillmore St.	Morris Ave.
Ann St.	Fortuna St.	Mott St.
Arlington St.	Frederick St.	Mt. Prospect Ave.
Astor St.	Freeman St.	Mulberry St.
Avon Ave.	Garrison St.	Munn Ave.
Bank St.	Gotthart St.	Nairn Pl.
Barbara St.	Grove St.	Napoleon St.
Bathgate Pl.	Halstead St.	New York Ave.
Belmont Ave.	Hamburg Pl.	Niagara St.
Bergen St.	Hawkins St.	Nichols St.
Berkeley St.	Hawthorne Ave.	Norwood St.
Berlin St.	Hazelwood Ave.	Oakland Terrace
Beverly St.	Hedden St.	Oliver St.
Bigelow St.	Hermon St.	Osborne Terrace
Birks Pl.	Hillside Ave.	Oxford St.
Bloomfield Ave.	Hobson St.	Palm St.
Bowery St.	Houston St.	Park Ave.
Boylan St.	Howell Pl.	Parkhurst St.
Bragaw Ave.	Hunter St.	Passaic St.
Branford St.	Hunterdon St.	Patterson St.
Bremen St.	Ingraham Pl.	Peddie St.
Brill St.	Isabella Ave.	Pennington St.
Broad St.	Jackson St.	Pennsylvania Ave.
Bruen St.	Jefferson St.	Peshine Ave.
Brunswick St.	Jelliff Ave.	Poinier St.
Chester Ave.	Johnson Ave.	Polk St.
Chadwick Ave.	Komorn St.	Plymouth St.
Chestnut St.	Kossuth St.	Porter Ave.
Christie St.	Lafayette St.	Porter Pl.
Cliff St.	Lang St.	Prospect St.
Clifton St.	Lehigh Ave.	Providence St.
Clinton Ave.	Lentz Ave.	Read St.
Clinton Pl.	Leslie St.	Renner Ave.
Columbia Ave.	Lexington St.	Richelieu Terrace
Concord St.	Liberty St.	Ridgewood Ave.
Congress St.	Lincoln Pl.	Roseville Ave.
Cypress St.	Littleton Ave.	Runyon St.
Darcy St.	Lyons Ave.	St. Francis St.
Delancey St.	Madison Ave.	St. George St.
Demarest St.	Madison St.	St. Paul Ave.
Dewey St.	Magazine St.	St. Vincent St.
Dover St.	Maine St.	Sanford Ave.
Earl St.	Mapes Pl.	Schalk St.
East Kinney St.	Market St.	Scheerer Ave.
East Ferry St.	McWhorter St.	Schley St.
Elizabeth Ave.	Meade St.	Seymour Ave.
Elm St.	Meeker St.	Shephard Ave.
Elm Road	Merchant St.	Sherman Ave.

Silver St.	Union St.	Weequahic Ave.
Smith St.	Van Buren St.	Weequahic Pl.
South St.	Vanderpool St.	Westcott St.
South Belmont Ave.	Van Ness Pl.	West End Ave.
South Orange Ave.	Vermont Ave.	Wright St.
Springfield Ave.	Vernon Ave.	1st Ave.
Stanton St.	Voorhees St.	2nd Ave.
Stengel Ave.	Wainwright St	6th Ave.
Stuyvesant Ave.	Wall St.	7th Ave.
Sunset Ave.	Walnut St.	12th Ave.
Thomas St.	Warwick St.	14th Ave.
Tichenor St.	Washington St.	16th Ave.
Tyler St.	Waverly Ave.	17th Ave.

LIST OF STREETS SPRAYED DURING THE YEAR 1910.

Abington Ave.	Cottage St.	Irving St.
Academy St.	Court St.	James St.
Adams St.	Crawford St.	Jelliff Ave.
Alpine St.	Custer Ave.	Johnson Ave.
Arch St.	De Graw Ave.	Kearny St.
Arlington St.	Dey St.	Kinney St., East
Astor St.	Eagle St.	Kinney St., West
Avon Ave.	Earl St.	Kossuth St.
Baldwin St.	Elizabeth Ave.	Lake St.
Bank St.	Elliott St.	Lafayette St.
Barclay St.	Elm St.	Leslie St.
Bathgate Pl.	Elwood Ave.	Lewis St.
Belleville Ave.	Emmett St.	Lillie St.
Belmont Ave.	Fairmount Ave.	Lincoln Ave.
Bergen St.	Fairview Ave.	Linden St.
Bigelow St.	Franklin St.	Littleton Ave.
Bleecker St.	Frelinghuysen Ave.	Livingston St.
Bloomfield Ave.	Garden St.	Lock St.
Boston St.	Garside St.	Longworth St.
Boyd St.	Gillette Pl.	Madison Ave.
Broad St.	Gould Ave.	Magnolia St.
Broome St.	Gray St.	Marshall St.
Bruce St.	Green St.	Meeker Ave.
Brunswick St.	Halleck St.	Mercer St.
Burnet St.	Halsey St.	Milford Ave.
Camden St.	Hampden St.	Miller St.
Camp St.	Hartford St.	Milton St.
Carteret St.	Harvey St.	Montclair Ave.
Central Ave.	Hayes St.	Montgomery St.
Chester Ave.	High St.	Monmouth St.
Chestnut St.	Highland Ave.	Morris Ave.
Clayton St.	Hill St.	Morton St.
Clifton Ave.	Hillside Ave.	Mt. Pleasant Ave.
Clifton St.	Hillside Pl.	Mt. Prospect Ave.
Clinton Ave.	Howard St.	Mulberry St.
Clinton Pl.	Humboldt St.	Mulberry Pl.
Coes Pl.	Hunter St.	Murray St.
Colden St.	Hunterdon St.	Myrtle Ave.

Nairn Pl.	Runyon St.	West St.
Nelson Pl.	Rutgers St.	Wickliffe St.
Nesbitt St.	Sayre St.	William St.
New St.	School St.	Wilsey St.
Newark St.	Searing St.	Wright St.
N. J. R. R. Ave.	Sherman Ave.	1st Ave.
Newton St.	Sidney Pl.	2nd Ave.
New York Ave.	Somerset St.	3rd Ave.
Nichols St.	South St.	4th Ave.
Norfolk St.	South Belmont Ave.	6th Ave.
Nuttman St.	South Orange Ave.	9th Ave.
Oliver St.	Spruce St.	13th Ave.
Orange St.	Stanton St.	14th Ave.
Orchard St.	State St.	17th Ave.
Orleans St.	Stirling St.	18th Ave.
Park Ave.	Stratford Pl.	3rd St.
Park Pl.	Summer Ave.	4th St.
Parkhurst St.	Summit St.	5th St.
Pennington St.	Sussex Ave.	No. 6th St.
Pennsylvania Ave.	Taylor St.	No. 7th St.
Peshine Ave.	Thomas St.	No. 8th St.
Plane St.	Tichenor St.	No. 9th St.
Poinier St.	Valley St.	No. 11th St.
Prince St.	Vanderpool St.	So. 6th St.
Quitman St.	Verona Avenue.	So. 8th St.
Randolph Pl.	Wakeman Ave.	So. 9th St.
Renner Ave.	Walnut St.	So. 10th St.
Richmond St.	Warren St.	So. 11th St.
Ridgewood Ave.	Warwick St.	So. 12th St.
Rose St.	Washington Ave.	So. 13th St.
Roseville Ave.	Washington St.	So. 16th St.
Rowland St.	Waverly Ave.	So. 19th St.

MULCHING LIST FOR THE YEAR 1910.

Abington Ave.	Broome St.	De Graw Ave.
Adams St.	Brunswick St.	Delavan Ave.
Alpine St.	Camden St.	Dickerson St.
Ann St.	Camp St.	Earl St.
Arlington Ave.	Carteret St.	Elliott St.
Astor St.	Center St.	Emmett St.
Atlantic St.	Central Ave.	Fabyan Pl.
Avon Ave.	Chadwick Ave.	Fairmount Ave.
Badger Ave.	Charlton St.	Fairview Ave.
Barclay St.	Chester Ave.	Farley Ave.
Belleville Ave.	Chestnut St.	Ferry St.
Belmont Ave.	Clifton Ave.	Fillmore St.
Bergen St.	Clifton St.	Frederick St.
Boyd St.	Clinton Ave.	Frelinghuysen Ave.
Bragaw Ave.	Concord St.	Fulton St.
Brandford St.	Congress St.	Garside St.
Bremen St.	Cottage St.	Gillette Pl.
Broad St., North	Court St.	Gold St.
Broad St., South	Darcy St.	Grafton Ave.

Grove St.	N. J. R. R. Ave.	Tichenor St.
Halleck St.	New York Ave.	Tyler St.
Halsey St.	Nichols St.	Van Buren St.
Hamburg Pl.	Nye Ave.	Vanderpool St.
Hedden Terrace	Oliver St.	Van Ness Pl.
Hermon St.	Orange St.	Verona Ave.
High St.	Oraton St.	Wainwright St.
Highland Ave.	Orchard St.	Wakeman Ave.
Hillside Ave.	Osborne Terrace	Walnut St.
Hillside Pl.	Pacific St.	Washington Ave.
Holland St.	Park Ave.	Washington St.
Howard St.	Park Pl.	Watson Ave.
Hudson St.	Parker St.	Waverly Ave.
Hunter St.	Parkhurst St.	Webster St.
Hunterdon St.	Peck Ave.	Wickliffe St.
Jackson St.	Peddle St.	Wilsey St.
Jefferson St.	Pennington St.	Woodside Ave.
Jelliff Ave.	Pennsylvania Ave.	Wright St.
Johnson Ave.	Peshine Ave.	2nd Ave.
Kearny St.	Poinier St.	3rd Ave.
Kinney St., East	Prince St.	4th Ave.
Kinney St., West	Quitman St.	5th Ave.
Kossuth St.	Randolph St.	6th Ave.
Lafayette St.	Rector St.	7th Ave.
Lake St.	Renner Ave.	8th Ave.
Lang St.	Ridge St.	9th Ave.
Leslie St.	Ridgewood Ave.	10th Ave.
Lillie St.	Rose St.	11th Ave.
Littleton Ave.	Roseville Ave.	12th Ave.
Lincoln Ave.	Runyon St.	13th Ave.
Livingston St.	Sandford St.	14th Ave.
Lombardy St.	Schley St.	15th Ave.
Madison Ave.	Seymour Ave.	16th Ave.
Mapes Pl.	Sherman Ave.	17th Ave.
Market St.	Somerset St.	18th Ave.
Meeker Ave.	South St.	1st St.
Milford Ave.	South Belmont Ave.	2nd St.
Miller St.	South Orange Ave.	3rd St.
Millington Ave.	Springfield Ave.	4th St.
Monmouth St.	Spruce St.	5th St.
Montclair Ave.	St. Francis St.	No. 6th St.
Montgomery St.	Stanton St.	No. 7th St.
Morris Ave.	Stratford Pl.	No. 8th St.
Mott St.	Summer Ave.	No. 9th St.
Mt. Pleasant Ave.	Summer Pl.	No. 10th St.
Mt. Prospect Ave.	Sussex Ave.	No. 11th St.
Mulberry St.	Sylvan Ave.	No. 12th St.
Munn Ave.	Taylor St.	No. 13th St.
Murray St.	Thomas St.	No. 14th St.

FINANCIAL STATEMENT FOR 1910.

RECEIPTS.

Balance on hand January 1, 1910.....	\$ 490.54
By Tax Ordinance Appropriation.....	50,000.00
“ Shade Tree Assessments and Arrears.....	11,598.47
“ Sundry Services	165.98
“ Sale of Trees	330.80
	<hr/>
	\$62,585.79

DISBURSEMENTS.

Pay Roll—Planting Street Trees.....	\$4,870.76
“ “ —Maintaining Street Trees.....	9,265.84
“ “ —Spraying Street Trees....	2,639.83
“ “ —Parks	9,655.55
“ “ —Comfort Station.....	913.01
“ “ —Office	6,068.34
	<hr/>
	\$33,413.33
Trees	10,957.52
Tree Gratings	312.00
Tree Collars	40.00
Wire	2,154.41
Stakes	357.30
Manure	223.09
Fertilizers	212.80
Bedding Plants and Shrubs.....	1,224.39
Seed	91.02
Sods	45.00
Stone, Cement, Screenings	45.14
Stone Walk, Military Park.....	224.80
Repairs to Fountains and Plumbing.....	39.26
Lumber, Hardware, Lettering—Settees.....	749.60

Cleaning Statuary and Pedestals.....	\$250.00
Pipe Rail, Military Park.....	231.98
Hose	125.22
Water Rent	75.00
Oiling and Staining Rustic Shelter, Central Square Park	30.00
Squirrels and Squirrel Feed.....	27.53
Purchase of United State Flag.....	22.25
Flag Repairs	10.30
Maintenance Supplies, Comfort Station.....	514.00
Plumbing and Repairs, Comfort Station.....	126.50
Light and Power, Comfort Station.....	90.39
Coal, Comfort Station.....	60.00
Insecticides	842.50
Gas	572.50
Spraying Machine Appurtenances, Repairs.....	154.35
Paints, Oils, Brushes.....	180.55
Harness, Fodder and Keep. 2 Horses.....	609.15
Purchase of Tree Moving Machine.....	300.00
Wagon Repairs	236.10
Tools	168.32
Tools Sharpened and Repaired.....	136.87
Hardware	62.32
Lumber	18.04
Purchase of Automobile (Allowance Old Car, \$400.00)	475.00
Garage, Auto Supplies and Repairs.....	819.53
Printed Matter	1,417.05
Stationery	388.00
Postage	199.76
Drawings, Photos and Photo Supplies.....	134.72
Books, Pamphlets, Periodicals.....	16.65
Block Maps of Newark, Repairs.....	10.30
City Directory	6.00

Adding Machine	\$275.00
Lettering and Varnishing Door and Safe.....	12.00
Sundry Office Supplies.....	4.75
Messenger Service	10.20
Telegrams and Telephone Service.....	30.62
Street Car Tickets, R. R. Fares, Trav. Expenses	306.00
Expressage and Freight.....	46.93
Local Inspections	43.25
County Fair Exhibit.....	39.68
Trenton Exhibit	31.97
Tree Protectors' League Badges.....	71.00
Hire of Chairs for Meetings.....	6.50
Hire of Rig.....	63.00
Landscape Architect's Services.....	142.08
Advertising Legal Notices.....	397.08
Insurance	56.62
Adjusting Tree Assessments.....	13.71
Balance	2,634.86
	<hr/>
	\$62,585.79

Of this amount, \$37,448.21 was expended for the planting, maintenance and care of trees on streets, and \$20,798.82 for the development, maintenance, care and improvement of Public Grounds, Parks, etc., from January 1, 1910, to December 31, 1910. Also \$1,703.90 was expended on the maintenance of the new Public Comfort Station, Military Park, from August 5, 1910, to December 31, 1910.

Respectfully submitted,
 JAMES A. BERRY, *President*,
 GEORGE B. ASTLEY,
 BERNARD M. SHANLEY, JR.,
Commissioners.

CARL BANNWART,
Secretary.
 December 31, 1910.

APPENDIX

THE SHADE TREE PROTECTORS' LEAGUE OF NEWARK, N. J.

By A. V. L., Director Science Department, Normal
School, Newark, N. J.

WHAT IT IS.

A league of school children organized to aid and protect the street trees of Newark, New Jersey. A band of over a thousand children divided into chapters who this past summer waged active warfare on marauding insects, gave first aid to thirsty trees during the droughts and vigorously stirred the earth at the base of the street trees to give the roots a chance to breathe as well as to conserve the moisture.

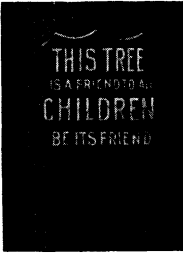
Not content with constructive work alone the children established themselves tree guardians and quickly acquainted themselves with the law, prevented tree injuries and courteously stood their ground with linemen, pavement layers and careless drivers, whom they saw endangering



"MY TREE"

the trees, until the offenders threw up their hands and decided that while they had hoped to escape the eye of the city custodians, the children were everywhere and could not be shaken off.

HOW IT BEGAN.



Mr. Carl Bannwart, the Secretary of the Shade Tree Commission of Newark, N. J., leaves no stone unturned to aid the city's proteges, the trees, "whose stately growing columns and overarching living rustling canopies of green are such potent elements of the city beautiful." The Newark Shade Tree Commission has planted since its organization six years ago, nearly seventeen thousand trees along one hundred and eighteen miles of city streets. Confident that the children could be interested in the work, the Secretary originated the idea of the Shade Tree Protectors. The badge was struck off in February, 1909. Before beginning the work Mr. Bannwart blocked out the campaign providing for means to awaken the children's interest, direct the effort, systematize the work, instruct in class-room and field and lay a sound basis for continued effective work. So effective and well organized was the work that the Secretary of the commission found that he had builded all too well, and that the children, not content with what was outlined for them, in their innocent enthusiasm began to suggest points to the Shade Tree Commission for the extension of its work. Truly these chickens fairly flew home to roost but nothing pleased the organizer of the League more than just this evidence of the children's good faith.

HOW IT WAS CARRIED ON.

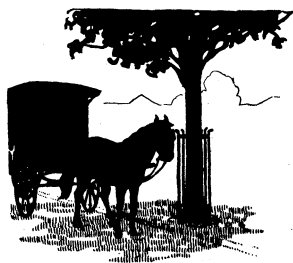
Permission being obtained from the Board of Education, the work started in eleven schools, a branch being formed

in each. A director, one of the regular teachers, was chosen in each school. Her duties were light, however, the main work being done by the Shade Tree representatives.

A meeting was called, the children's interest aroused by a talk from Mr. Bannwart upon what trees do for us, suggestions made as to what we can do for the trees, and the Branch of the Shade Tree Protectors organized. A name was selected such as the Pioneers, Elm, Maple, Franklin or whatever seemed most suitable. Officers were elected and a place and time fixed for the next meeting. Each child was furnished with a leaflet, "What To Do First" (see cut) and a blank for him to write his report upon for the next meeting. At the succeeding meeting the children made their reports, another practical talk was given and a second leaflet distributed, "What To Do Next"

(See cut). A feature of the second meeting was the giving out of the badges (see cut) to those children whose reports showed that by direct aid given to the trees they had earned the badge.

Each succeeding meeting gave opportunity for reports but at the same time the children learned a few practical things on some one subject as "The Recognition of Injurious Insects," "Needs of the Street Trees," "How to Plant a Tree," "How to Know the Trees," etc.





WHAT TO DO FIRST

Shade Tree Protectors' Instructions

SEE SOMETHING

One of the first things is to get acquainted with the trees on the four sides of your block. How many are there? Are they young or old? Pretty healthy or needing a tonic? How many of the Shade Tree Commission's young trees are there? (You will know them by the stake and wire guard). Have you a tree in front of your house? If not, is there one on your neighbors sidewalk?

DO SOMETHING

Do you think you could manage to give that tree a good drink twice a week, two or three painfulls each time, letting it sink in slowly? Bring in as many answers as you can to these questions at the next meeting and we will talk them over.

Number of Old Trees in Block.....
 Number of Young Trees in Block.....
 Health.....
 Shade Tree Commission planting.....
 How many Trees Watered?.....
 How many Times Watered?.....

LEARN SOMETHING

What the Trees do for your Block

Watch the people on these hot days and see how they select the shady side of the street. In waiting for a car see them stand under the shade of a tree rather than in the hot sun. Notice the horse whose master leaves him in the heat, creep up until he gets his head under the grateful shade cast by the branches of the shade tree. Think how hot and sunny the house would be if that tall Maple were cut down, which now brings coolness and shade to the front rooms? Many a sick person lies and watches the graceful swaying branches and restful green on the leaves.

Do You Know

That a full-grown tree sends out 187 gallons of water a day through its leaves into the air? Think what a difference that makes in hot, dry weather.
 That trees purify the atmosphere. The foliage takes in carbonic acid gas, which gas is deleterious to us, and gives out oxygen, which is healthful—indeed indispensable—to us?
 That a tree in front of your house makes it cooler in summer and warmer in winter?
 That it increases the value of property. A house with a tree in front of it sells for more than one without?
 That half the people do not know these facts and do not appreciate them until someone speaks of it?
 That you and I can help the City of Newark by knowing these facts, letting other people know them too and lending a helping hand to the trees?

"Many a traveler in the heat,
 Finds the cooling shade most sweet,
 Stops to rest within the shade
 That some wayside tree has made,
 Feels the moist and dewy air

From a hundred leaflets fair
 Fan his heated brow today,
 And I think I hear him say:
 'Bless the hand that set that tree
 On this sunny street for me.'"

"Trees are the handiwork of God—
 We are banded together in their defence"



WHAT TO DO NEXT

Shade Tree Protectors' Instructions

CULTIVATE

The roots of those trees of yours need a breath of air and a good square meal. Are they getting it? Down under the ground the roots are working busily enough, but they have a hard time. Help them by loosening up the soil around the base of the tree once a week. An ordinary garden trowel, spade or a good sharp stick will do it. Then when you water the tree the roots will have a better chance to take in the liquid food from the soil and make a fine tree above ground.



INVESTIGATE

Find out a little about the health and happiness of your trees. Are there any invalids among them? Is there any poor tree that a horse tried to make a meal of? The next meeting of the League will be an experience meeting, when we will talk over what has happened to our trees. Here is a small list of possible tree accidents. You know the Shade Tree Commission has Tree Doctors in its employ. Perhaps we can send the doctor around to your tree to see what we can do for it.

Tree Injuries Easily Seen

1. Are there any of your trees with the leaves eaten away by insects?

.....

2. Have any of them large holes showing decayed wood?

.....

3. Have any of them dying branches due to telephone or telegraph wires?

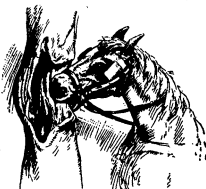
.....

4. Are there any tree trunks badly gnawed?

.....

5. Are any of them being crowded by the sidewalk?

.....



AGITATE

Interest some of the people around you if you can. You notice how curious some of them seem as to what you are doing. That is your chance. Tell them about the League and what you are trying to do. Let the other children in the block help you. They will soon realize as you do that the tree has feelings as well as you and I. Make friends for your tree. We can attend to the foes later.

*Thus, year by year, as the months go round,
Be like the work of our loyal core,
Till the city shall be with beauty crowned,
And its streets like a garden fair.—SELECTED.*

*"Trees are the handiwork of God—
We are banded together in their defence."*

WEEKLY REPORT.

.....Shade Tree Protectors.

From.....19...., to.....19....

No. of trees watered.....

No. of times watered.....

No. of trees cultivated.....

No. of Violations reported.....

Remarks

.....

Member's Name

Address.....

Necessity then arose for practical field instruction and the Shade Tree Commission appointed men from their corps of workers to go with the children and show them how to "cultivate," or loosen the earth around the base of the tree. The children were shown the eggs, cocoons and larvae of the tussock moth on the trees themselves, and even taught to track the insidious borer to his lair. The pictures show some of this street instruction.

WHAT IT DID.

Figures will give little of the vitality of the work, yet something may be gained from the following data. The spirit will show in the anecdotes and illustrations.

MONTHS OF JULY AND AUGUST.

One thousand school children at work with varying degrees of intensity. The figures below, however, were compiled from the reports of two hundred and fifty children only.

Ages ranging from 7 to 14 years.



PRACTICAL INSTRUCTION

1873 street trees watered at least twice a week. Last summer will be remembered by farmer and citizen alike as one of unprecedented drought.

9388 waterings reported in writing by the children on the little blanks provided. This takes no account of children who watered the trees and failed to write it down. Also

takes no account of the zeal which overflowed into the watering of home and school lot trees.

1939 street trees cultivated by individual children. This does not include "gang" work where groups of boys took it upon themselves to attend to certain streets on their own initiative. One gang alone cultivated 280 trees in two hours, a Shade Tree representative accompanying them to demonstrate the method of cultivation.

457 violations reported in writing by 250 children. This

refers to violations of city ordinances as to tying horses to trees, pouring salt water from ice-cream freezers at the roots of trees, etc. No count was made of oral reports given in League meetings.

At one meeting of a Branch particularly interested in the work there were:

Present, 19 children;

Reported since last meeting (two weeks), 183 trees watered;

1637 waterings;

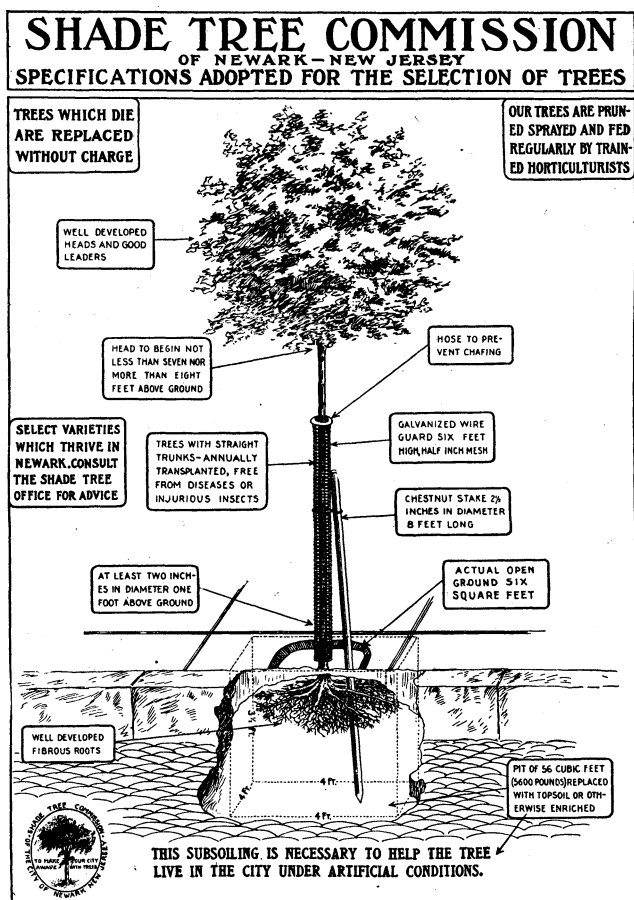
171 of these trees cultivated;

19 violations of city ordinances.



ANECDOTES.

At first the residents were non-plussed at the children's watering and digging around the street trees (city property) in front of their houses, and not a little suspicious. As soon, however, as they understood they gave their hearty co-operation. There were few cases to the contrary.



In one instance a little nine-year-old girl tried to water a tree in front of a candy store. The owner of the store came out and told her to mind her own business.

"But I am minding my own business," said the little one gently, showing her badge and explaining. The man was in a temper, however, and would listen to no explanation. Still persisting, he "slapped her face."

"Oh," said the directress, in questioning the child about the matter, "I hope you didn't say or do anything in return!"

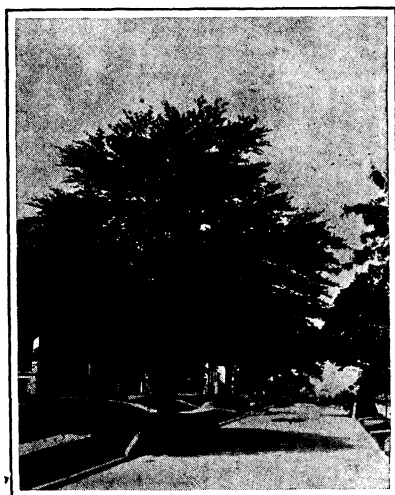
"Oh, no!" and the child philosophically shrugged her shoulders. "I just waited until his back was turned and sneaked up and watered the tree."

One boy had no trees near his home, so he found a pointed iron, went some distance down town and loosened the earth around two hundred and fifty trees.

Little Teddy Yadkowsky held up a contractor on a cement pavement job until he threatened to call the police. Then the boy's face beamed with genuine delight and he said, "O, I wish you would! Then he would tell you, too, that the city demands an opening of four square feet left around all street trees."

The contractor succumbed to Young America, late of Russia.

One girl cared for forty trees for ten weeks.



SAVING A TREE ABOVE GRADE.

A little boy of ten years in a plaster cast insisted on working with the other boys to help the trees.

Camillo's postcard speaks for itself, even to the unconscious peremptoriness of the request, "Prompt Answer." He is one of the Shade Tree Protectors' most enthusiastic members, the soul of courtesy at heart and a fine prospective citizen. In his zeal for new members Camillo made a sign upon a soap box lid, climbed out of his third story tenement and tacked it on the front of the house:—"All children who want to be a member of the Branchbrook Shade Tree Commission may ask Camillo. Top floor." Six new members were the result of this unique notice.

Newark, N. J.

(Prompt Answer.)

Dear Mrs. Corwin,

The new members of the league are more interested in the work than any old members of the league. They have been asking me about the badge, because they have seen many violations, and the people would not believe they were members of the club (without the badge). I am searching and searching every day to find a pointy iron stick so that I can go down High Street and cultivate all of the trees. Me, Joe and the new members are not forgetters of what must be done to the trees.

Camillo Tipaldi.

Camillo was incited to the hunt for the "pointy iron stick" by the report of the boy previously mentioned.

CHILDREN'S ESSAYS.

Read at the general meeting of the officers at the end of summer. (Spelling intact.)

HOW I AM WATCHING THE TREES.

Tuesday afternoon as I was going through Washington Street Park I noticed that the trees are in need of care very much. They are being destroyed by insects, such as caterpillars and worms. I knocked off very many of them with a stick and stepped on them but of course not enough to be of any help. It looks very much as if they had no friends, and still they all say they like trees. As for me, I could sit under their shade all day if I had them at my home. I hope all the girls and boys of the Shade Tree Commission Club are watching the trees as I. If so we shall soon have the insects destroyed. Then we shall have our trees with bright green leaves, and a pleasure to sit under.

I hope this will receive quick attention, so that our trees will be saved.

Helen Clark
(Lafayette member.)

WHY I AM A SHADE TREE PROTECTOR

Why I like to protect trees is to have our city "awake with trees," and to let our city look beautiful.

Why I am a Shade Tree Protector is to help the Shade Tree Commissioners to take care of the trees.

I protect the trees as if I were taking care of my sister.

I protect 15 trees and trying to protect more. I water these 15 trees 2 times a week and I have cultivated ten of them

Helen Caputo,
Sergeant of the "Olivers"

WHAT I KNOW ABOUT TREES

Trees are the very first plants on the globe of the earth. We could not have any fruit or rubber if it were not for the trees, they bring air, shade in front of our houses, and make it look beautiful, and "we are banded together in

their defence." The trees are in front of our houses and also other parts must be watered at least twice a week and cultivated once or twice a week or they will die.

Nearly every year the Newark shade tree commission may have to collect many trees because they died. If we had taken good care of them they would not have died, trees must not be crowded by the sidewalk or any other places they must have much water to grow as we must have food to grow. The groceries men must not throw any salt water on them and horses must not chew the trees. The owner of the house must have some wire around the tree take good care of them. The young trees we are going to be careful of, because their roots are small and they cannot reach to the wells to give them water to drink like the old trees have. The old trees do not suffer much as the younger trees, anybody could have a young tree built near his home for less than \$5.00.

Camillo Tipaldi,
Treasurer "Branch Brook."

CONCLUSION.

To the readers of The Nature-Study Review little mention need be made of the value of such work. Militant nature-study it certainly was. Intensive study of civics it proved to be. The children soon learned the law, the penalty and the court of appeal if no attention was paid to the warning; but best of all they learned the lesson that to win by education and tactful argument was a greater victory than to punish for violation. Such an education of heart and brain driven home by muscular effort and emphasized by the "pointy stick" should count for something in the formation of character.

