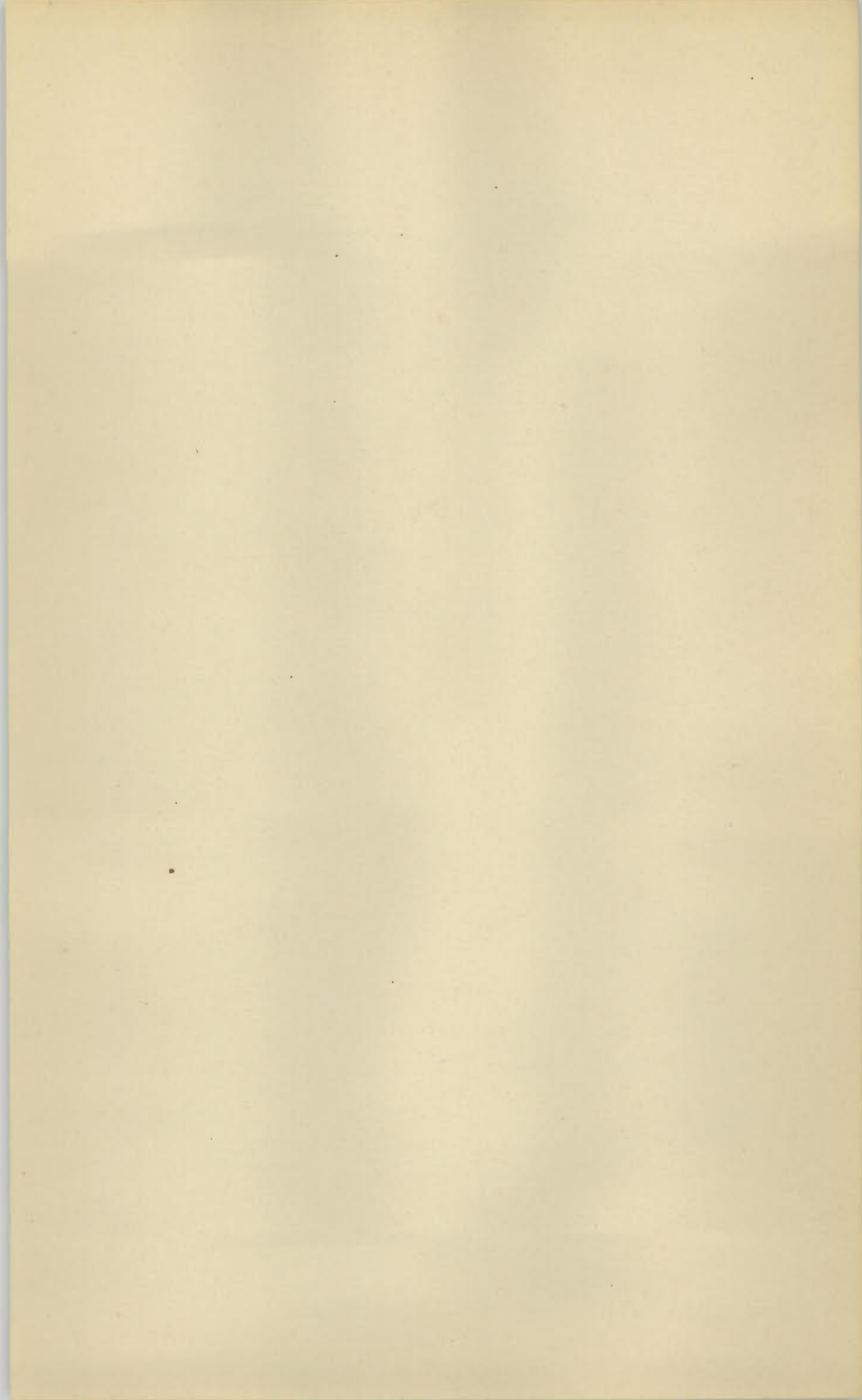


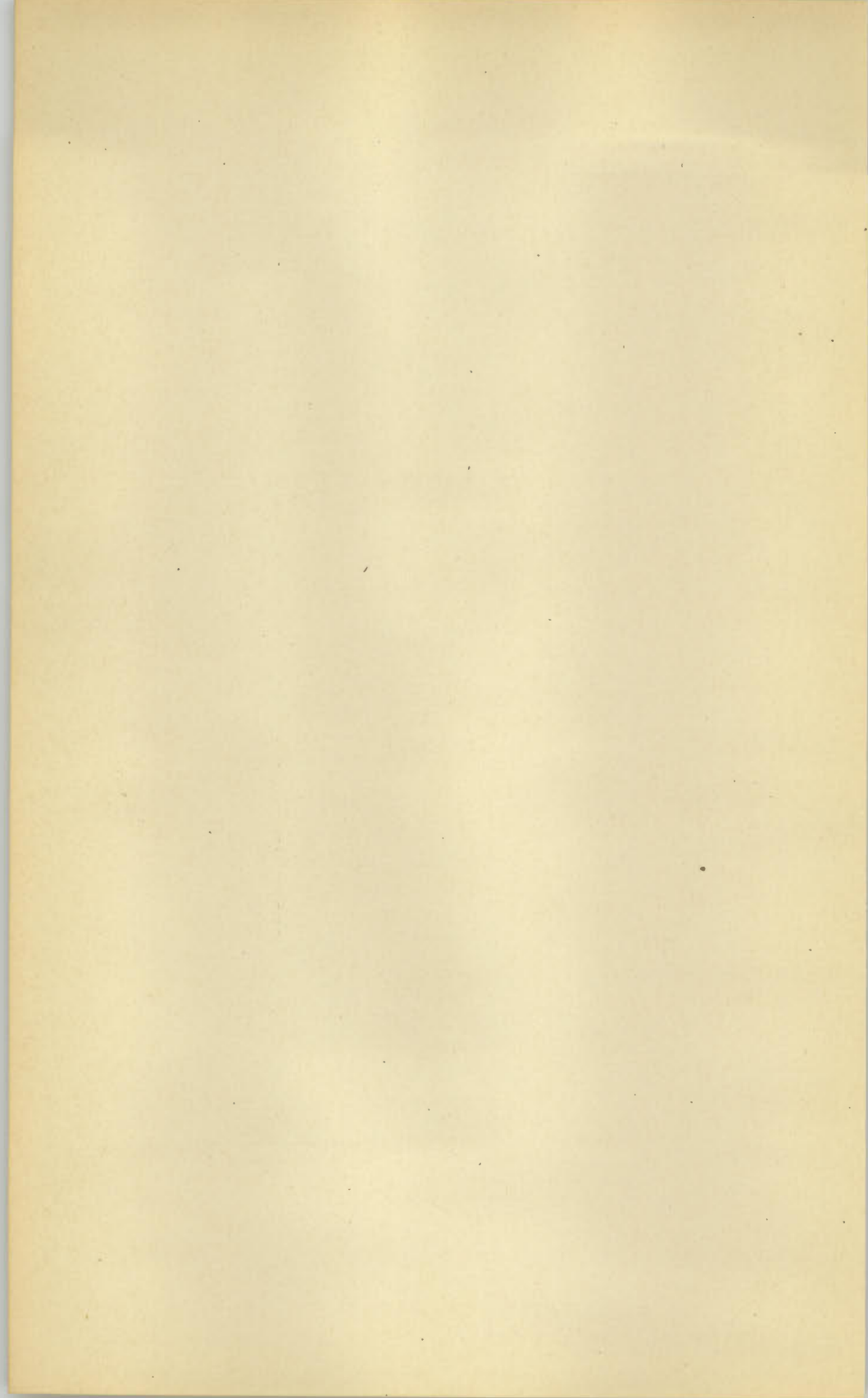
REPORT  
OF THE  
FOREST PARK RESERVATION COMMISSION  
OF  
NEW JERSEY  
1911

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New Jersey State House







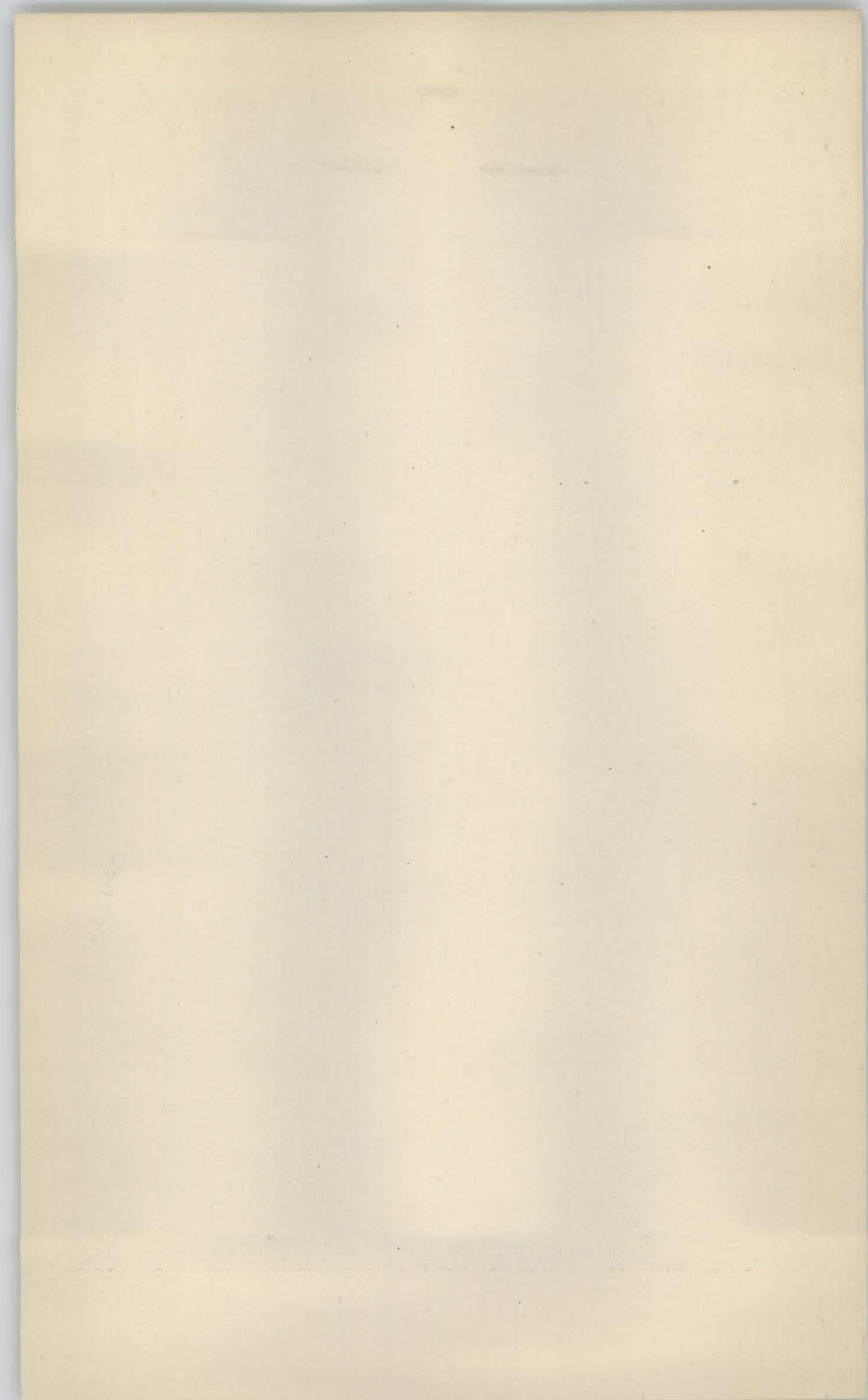




Fig. 1.—A Forest Park. Essex County.

SEVENTH ANNUAL REPORT  
OF THE  
FOREST PARK RESERVATION COMMISSION

OF  
NEW JERSEY

For the Year ending October 31st

1911

**New Jersey State Library**

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1912.

# SEVENTH ANNUAL REPORT

## FOREST PARK PRESERVATION COMMISSION

New Jersey

For the Year Ending October 31st

1911

New Jersey State Library

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## The Forest Park Reservation Commission.

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Hon. WOODROW WILSON, GOVERNOR, *ex-officio President.*

HENRY B. KÜMMEL, Trenton, *Executive Officer.*

ELMER H. SMITH, Salem.

CHARLES L. PACK, Lakewood.

WILLIAM W. SMALLEY, Bound Brook.

---

ALFRED GASKILL, Trenton, *Forester and Secretary.*

JAMES O. HAZARD, Trenton, *Assistant Forester.*

CHARLES P. WILBER, Trenton, *State Firewarden.*

OFFICE, State House, Trenton.

---

### DIVISION FIREWARDENS.

Div. A—WILLIAM LINDSAY, Dover.

Div. B—FREDERIC C. TORREY, Lakehurst.

Div. C—JOSEPH E. ABBOTT, Hammonton.

Div. D—LEONIDAS COYLE, Millville.



# The Forest Park Reservation Commission

THE COMMISSIONERS OF THE LAND OFFICE  
HARRY B. HARRIS, Chairman  
EDWARD A. HARRIS, Secretary  
CHARLES L. HARRIS, Treasurer  
WILLIAM A. HARRIS, Clerk

ALBERT G. HARRIS, Chairman  
JAMES W. HARRIS, Secretary  
CHARLES L. HARRIS, Treasurer  
WILLIAM A. HARRIS, Clerk

ALBERT G. HARRIS, Chairman  
JAMES W. HARRIS, Secretary  
CHARLES L. HARRIS, Treasurer  
WILLIAM A. HARRIS, Clerk

## Letter of Transmittal.

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*To His Excellency Woodrow Wilson, Governor of the State of  
New Jersey and ex-officio President of the State Board of  
Forest Park Reservation Commissioners:*

SIR—I have the honor to submit the annual report of the Forest Commission for the year ending October 31st, 1911, as required by law. The control of forest fires continues to be our greatest problem, though marked progress has been made. The work of the Commission in practical forestry and on behalf of the shade trees apparently meets with public approval. The thirteen pages of illustrations accompanying the report are necessary to a proper understanding of our work.

Respectfully yours,

HENRY B. KÜMMEL,

*Executive Officer.*

ALFRED GASKILL,

*Secretary.*

## Letter of Transmittal

To the President, The Hon. H. D. Dewar, Secretary of the State,  
Washington, D. C.  
I have the honor to acknowledge the receipt of the  
report of the Commission for the year ending October 31, 1915,  
and to express my appreciation for the valuable information  
contained therein. The report of the Commission is a most  
valuable contribution to the knowledge of the history and  
development of the United States, and the Commission  
has done its duty in a most efficient manner. The  
report is a most valuable contribution to the knowledge  
of the history and development of the United States, and  
the Commission has done its duty in a most efficient  
manner. The report is a most valuable contribution to  
the knowledge of the history and development of the United  
States, and the Commission has done its duty in a most  
efficient manner.

Respectfully,  
J. H. Dewar

Very truly yours,  
J. H. Dewar

Very truly yours,  
J. H. Dewar

J. H. Dewar

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| 3  | 3. The third illustration is a map of the island of Java, showing the location of the various districts and towns mentioned in the text.     |
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| 5  | 5. The fifth illustration is a map of the island of Molucca, showing the location of the various districts and towns mentioned in the text.  |
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| 10 | 10. The tenth illustration is a map of the island of Cebu, showing the location of the various districts and towns mentioned in the text.    |



## Report of the Forest Commission.

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The satisfaction that the Forest Commission has with its year's work is sadly marred by the loss of Dr. Edward B. Voorhees, who died on June 7th, 1911. Dr. Voorhees was one of the three men appointed to the Forest Commission when it was created and served ably and faithfully until continued ill health induced him to resign so that an active man might take his place. The State is fortunate in having had so wise an adviser while its forest policy was developing.

### SUMMARY.

Condition of forests improving—Forest fires less destructive—Many penalties imposed for violation of law—Co-operation with Federal Government and with railroads—Private forest owners practicing forestry—State forest reserves increasing in value though not in area—Much work done and planned for shade trees—Laws are effective and appropriations satisfactory—Organization—Fiscal account.

Forestry has apparently attained a permanent place in New Jersey. Seven years ago, when the Forest Commission was created, the woodlands of the State were so degraded that few believed it possible for the remnant to be saved. Fires in South Jersey and reckless cutting in North Jersey were chiefly responsible for this condition. To-day the situation promises better things. Interested owners are taking control of the woodlands in the north, while the measure of security against fires that has been given in the south is proving that the forests there are still capable of reviving. It will be understood of course that fire alone is not responsible for the poor forests in South Jersey, nor mishandling alone responsible for the condition of those in North Jersey. Both evils, and some others,



attach to both sections though they are radically different in most respects.

#### GENERAL POLICY.

No new way has been found to advance the work entrusted to the Commission, and what it is doing continues mainly along the lines laid down several years ago. The chief effort has been to meet the situation in a practical way, and to solve the problems presented rather than to say much about what should be done or how. The fact that nearly one-half (46 per cent.) of New Jersey's area is classed as woodland gives ample ground for a strong effort to develop this resource. That practically all of the forest long ago passed from public to private possession makes clear the course that should be followed in seeking to develop it. Thus all that the Commission does is based upon the principle of making it worth any owner's while to protect and develop his woodland. This policy does not necessarily preclude the acquisition and maintenance of State reserves, though it does subordinate that feature and has led the Commission to announce that unless the State shall decide to devote much more money than it now does to its forest interests, and specifically shall provide for the care as well as for the purchase of forest lands, it will advocate using for the protection and betterment of all forests without regard to ownership all the money that is available, and that until the whole body of woodland shall be reasonably safe from fire it will not seek to increase the State's possessions. It will be noted that this attitude is in strong contrast to that of most other bodies charged with the forest interests of a State.

#### FOREST FIRES.

Justification for the Commission's policy of setting fire control above all else is found in the fact that fire, or the fear of fire, heretofore has made a forest a poor investment. New Jersey is not alone in this respect, and though this Commission was the

larger proportion of these fires were put out before any appreciable damage was done than is found in any other class. This can mean only that the policy of the Commission of working with the railroad managers rather than against them is producing results.

One of the most important of these results is that most, if not all, of the roads are making more careful inspections of motive power, giving and enforcing stricter orders to trainmen and section men, clearing their rights-of-way better, and in various ways evidencing a willingness to support the local fire service. In the conviction that no mechanical device now known will entirely prevent the discharge of sparks from the stack of a coal-burning locomotive operating under the requirements of modern traffic, but that the setting of some fires is unavoidable, the Forest Commission assumes that ordinarily a fire of this kind is an accident and calls for no penalty other than the payment of the cost of extinguishing it. Without exception the railroads have accepted this and pay without question all bills contracted in extinguishing fires that are shown with reasonable certainty to have been set from their trains. During the year 183 cases, involving \$1,346.23, were settled in this way. That much of the interest shown is inspired by a desire to lessen the claims for damages made against the railroads may be admitted. It works none the less to the advantage of the forests.

#### FIRE LINES.

Unfortunately the "Act for the Protection of Woodlands," commonly called the fire line law, enacted in 1909, is still before the courts in such a way that the Commission has held it wise to refrain from making any attempt to compel the railroads to construct or to maintain fire lines. The statute has nevertheless been observed in an effective way through the joint voluntary action of several of the larger railroads and adjoining property owners with the Forest Commission. There have thus been made 82 miles of fire lines, which with the 153 miles constructed in 1910 gives a total of 235 miles now helping to guard the wood-

lands of the State. The record of what these fire lines have done, and especially the action of several roads in maintaining and extending them voluntarily, justifies the assertion that fire lines are an effective and a recognized means of protecting adjacent forests against fires set along the railroads. Fig. 10.

#### AIDING WOODLAND OWNERS.

The second great problem to be solved is the development of private woodlands so that they shall represent actual value to their owners, not merely possible or speculative value as most of them have done heretofore. Only by thus appealing to property interest can material progress be made, since the great bulk of New Jersey's forest is, and is likely to remain, in private possession. The progress in this direction that has already been made is certified by statements of numerous owners that their forests are worth more than they were before the State forest policy gave them security. The Commission therefore seeks to interest as many owners as possible in their own property, and on merely nominal terms offers to help all who care to ask for assistance. The responses made to this offer are steadily increasing, so that in connection with the shade tree work which the Commission is also doing it has been necessary to provide an additional forester. Though it is difficult to measure the value to the State of a work of this kind, it is clear that if such assistance rendered to any property owner means the definite devotion of a given area to forest management a two-fold advantage is gained: first, that a forest from which timber may be derived is established; and second, that an example to other forest owners is furnished.

#### FOREST RESERVES.

The determination of the Commission to suspend all effort to increase the area of the State's forest reserves in no way lessens its interest in those that have already been acquired, now aggregating nearly 14,000 acres. Each tract is under the care of a warden who is especially active in protecting the property against fire. By improvement fellings, by experimental plantings and



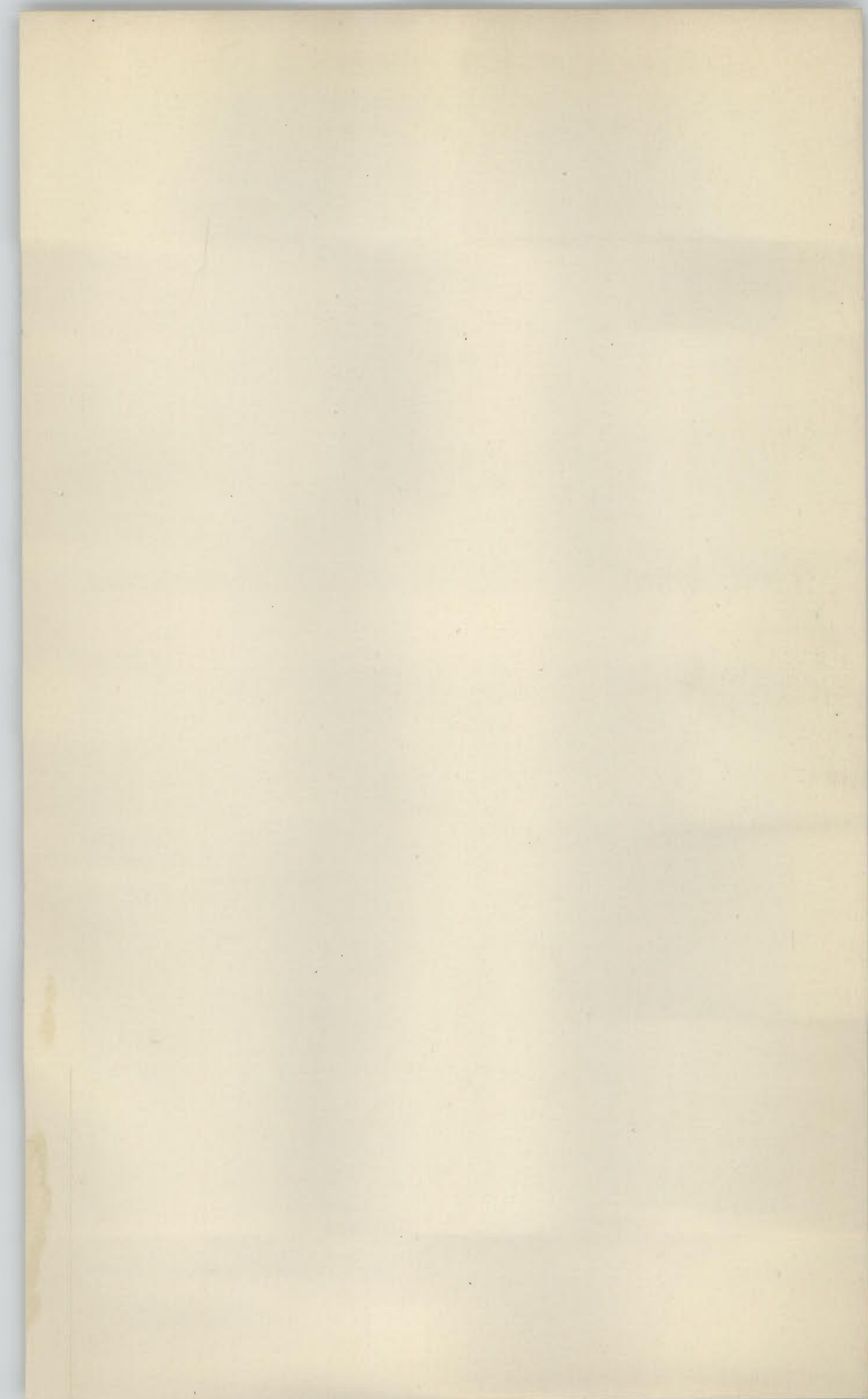




Fig. 2.—An Outlook Point; Forest too Open for Best Effect.



Fig. 3.—Even the Young Forest is Opened to the Public.

**Four Views of Forest Within Fifteen**



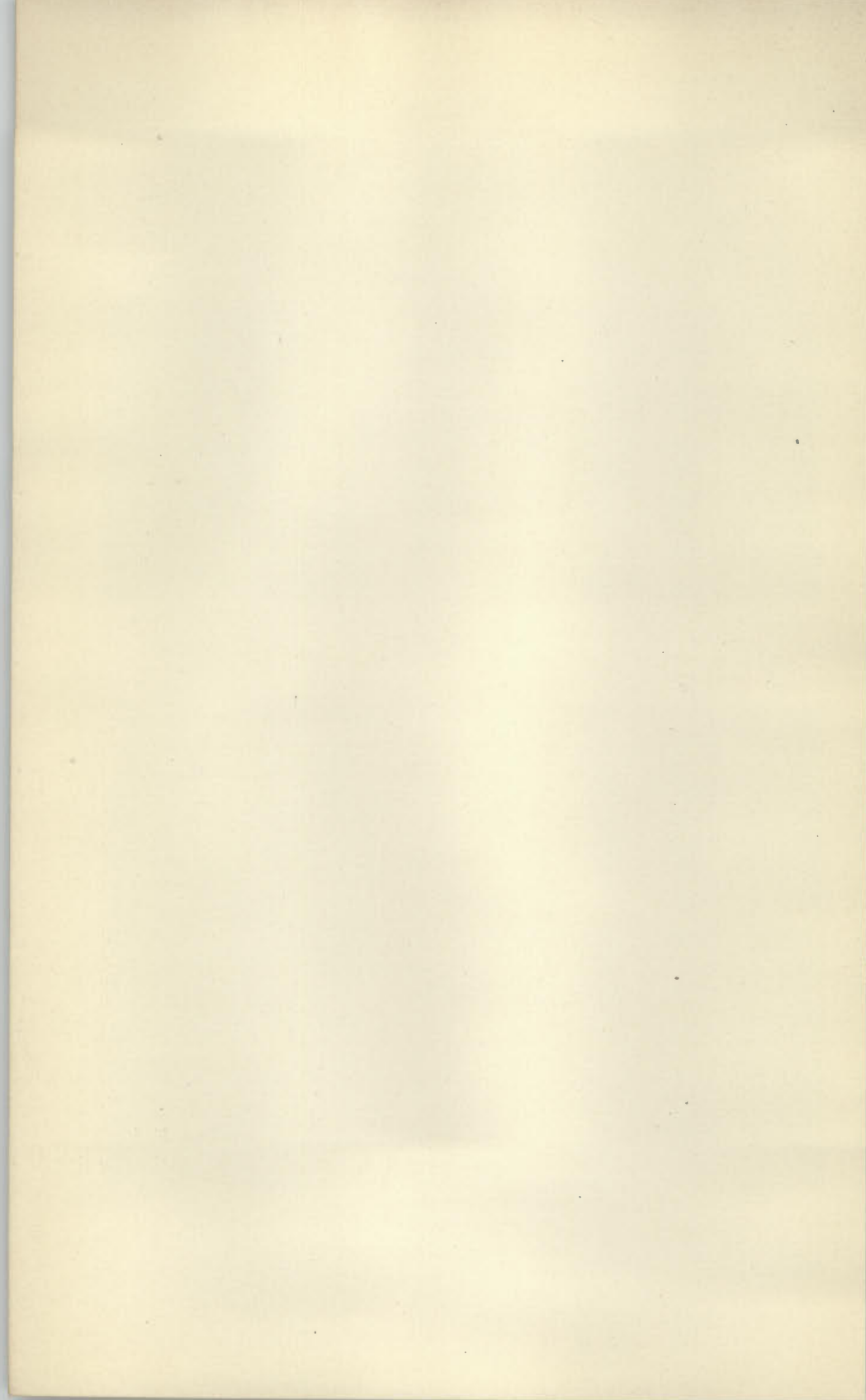
Fig. 4.—Park Forest; Extensive and Varied, yet Easily Accessible.



Fig. 5.—A Bit of Old Woods, Yielding Some Revenue Though Maintained for Park Uses.

**Miles of New York—Essex Co. Parks.**





in various other ways the reserves are being made to serve as examples of what forestry will do for such properties. Generally and severally the State reserves are in better condition than when they were acquired, and are now worth considerably more than they cost.

#### SHADE TREES.

Interest in shade trees is increasing greatly. Under the authority given by the last Legislature the Commission is making an effort to induce communities and citizens to establish and care for these blessings of our cities and towns. While the actual direction of any work of this kind must ultimately reside in local authority, it is altogether proper for the State to help the people solve the problems that invariably come to novices, and to keep in constant touch with the situation so that dangers and ills may be avoided or guarded against, as well as opportunities to do constructive work taken advantage of. In all these ways assistance has been given as opportunity offered. The organization of a State Shade Tree Federation referred to in the report of the Forester, is indicative of the importance of this subject in the eyes of the people. The Commission believes that most country roads should be tree-bordered and stands ready to do its part in any effort to that end that may be determined upon as wise and expedient. Through co-operation with county boards and the State Road Commissioner the improved roads at least can be made much more attractive than they now are at no great cost and within a comparatively short time.

The utilization of every available woodland area as a forest park is a civic duty. It is not difficult to provide public playgrounds of this character suited to the population that may enjoy them. The Essex county parks are an example for large communities, the forest park of Bridgeton one for small places.

#### LEGISLATION AND APPROPRIATIONS.

The Forest Commission acknowledges with much satisfaction the public approval of its policy and acts as recorded by the Legislature in its last session. Four supplementary laws were

passed unanimously and all the money asked for granted. With adequate laws and increased appropriations it is now felt that the State is prepared to maintain an effective fire service and a vigorous forestry branch. It is believed that the appropriation on the forest fire account is sufficient and that, for a year or two at least, no material increase is likely to be needed. On the other hand, general forestry will probably demand more and more attention, and a reasonable increase in the appropriation, from year to year. The appropriations made for the fiscal year 1912 are:

|  |         |
|--|---------|
| For forestry work, care of State reserves, etc., ..... | \$8,500 |
| For the forest fire service, .....                     | 15,000  |

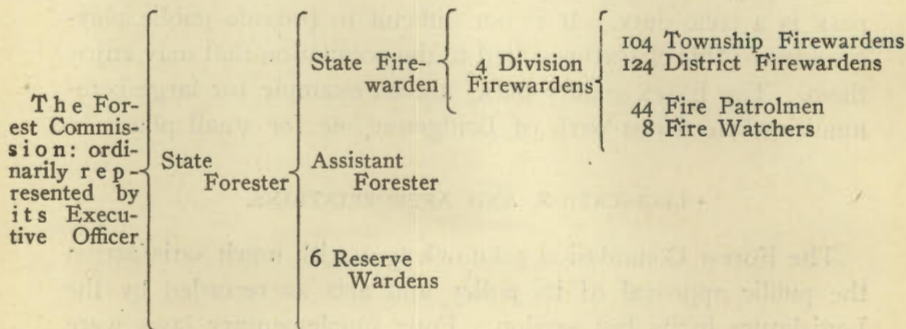
To the latter sum will be added about \$5,000, representing the townships' share of local wardens' salaries and fire fighting costs. Thus for a total expenditure of not over \$20,000 a year, an average of one cent an acre, the State is reasonably well equipped to guard its whole forest area.

#### ORGANIZATION.

On November 1, 1911, the resignation of Mr. T. P. Price, as Chief Division Firewarden, formerly State Firewarden, took effect, and Mr. C. P. Wilber, Assistant Forester and Acting State Firewarden, was promoted to be State Firewarden.

On September 27 Mr. J. O. Hazard reported for duty as Assistant Forester.

The work of the Forest Commission is organized as follows:



## Financial Statement, Forest Park Reservation Commission, for Fiscal Year 1911.

### ADMINISTRATION ACCOUNT.

Appropriations, ..... \$8,000 00

#### EXPENDITURES.

|  |            |                   |
|--|------------|-------------------|
| Salary and expenses, Forester and Secretary, ..... | \$3,157 74 |                   |
| Salary and expenses, Assistant Foresters, .....    | 1,510 23   |                   |
| Clerk and office expenses, .....                   | 1,473 92   |                   |
| Expenses, Members of Commission, .....             | 111 98     |                   |
| Instruments and books, .....                       | 205 48     |                   |
| Co-operation and education, .....                  | 74 81      |                   |
| Mays Landing Reserve, .....                        | 32 46      |                   |
| Bass River Rerserve, .....                         | 314 86     |                   |
| Bass River Nursery, .....                          | 43 70      |                   |
| Edward C. Stokes Reserve, .....                    | 160 00     |                   |
| Lebanon Reserve, .....                             | 396 23     |                   |
| Mount Laurel Reserve, .....                        | 71 27      |                   |
| Penn Reserve, .....                                | 300 55     |                   |
| Conger Tract, .....                                | 6 80       |                   |
| Miscellaneous, .....                               | 122 24     |                   |
| Unexpended balance, .....                          | 17 73      |                   |
|  |            | <u>\$8,000 00</u> |

### FOREST FIRE ACCOUNT.

Appropriations, ..... \$10,400 00

#### EXPENDITURES.

|   |            |                    |
|---|------------|--------------------|
| Salaries and expenses State Firewardens, .....    | \$4,501 66 |                    |
| Clerk and office expenses, .....                  | 693 98     |                    |
| Extinguishing forest fires:                       |            |                    |
| On account of 1909 fires, .....                   | \$137 34   |                    |
| On account of 1910 fires, .....                   | 1,911 01   |                    |
| On account of 1911 fires, .....                   | 1,702 51   |                    |
|   |            | <u>3,750 86</u>    |
| Local Firewardens' salaries and special expenses: |            |                    |
| Bills carried over from 1910, .....               | \$71 66    |                    |
| Bills paid on account of 1911, .....              | 1,037 17   |                    |
|   |            | <u>1,108 83</u>    |
| Equipment, .....                                  | 157 53     |                    |
| Miscellaneous, .....                              | 29 29      |                    |
| Unexpended balance, .....                         | 157 85     |                    |
|   |            | <u>\$10,400 00</u> |



## 18      REPORT OF THE FOREST COMMISSION.

## Financial Statement—Continued.

## RECEIPTS.

|   |                   |
|---|-------------------|
| Balance on hand November 1st, 1910, .....                       | \$46 03           |
| For Products of Reserves, .....                                 | 93 80             |
| For Expenses of Forester in co-operative work, .....            | 62 48             |
| From Settlements with Sundry Violators of Forest Fire Law, .... | 2,021 24          |
| Total, .....  | <u>\$2,223 55</u> |
| Paid to State Treasurer, .....                                  | \$322 07          |
| Paid to Sundry Township Treasurers, .....                       | 1,841 93          |
| Paid Justice-of-peace costs, .....                              | 16 63             |
| Balance in hand October 31st, 1911, .....                       | 42 92             |
|   | <u>\$2,223 55</u> |

HENRY B. KÜMMEL, *Executive Officer*,  
 ELMER H. SMITH,  
 CHARLES L. PACK,  
 WILLIAM W. SMALLEY,  
*Commissioners.*

# The Forest Fire Service.

---

BY CHARLES P. WILBER, STATE FIREWARDEN.

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## SUMMARY.

An unusually dry and dangerous season—Large, destructive fires notably fewer—Property saved worth many times the cost of fire service—Effect of organization shown in analysis of causes of fires—Two hundred and fifty-three penalties, amounting to over \$2,000, collected from violators of fire law—The State service aided by a grant of \$1,000 from the Federal Government—The fire organization greatly strengthened—Woods roads as fire protection—Railroad fire lines prevent many fires.

## THE FIRE SEASON.

In keeping with the conditions that have prevailed for three years, the season of 1911 was unusually favorable to forest fires. This applied not only to New Jersey, but to the whole northeastern section of the country, and reports from other States in the belt show a widespread and serious forest fire problem.

A late spring aggravated the normal danger at this season, and the menace was increased by a lack of rainfall so marked in its influence upon the forest fire situation that the official weather reports for March and April make special mention of its "fostering a condition under which forest fires found particularly favorable footing"; and again that "there was a noticeable effect of this dry period on the forest fires that broke out shortly after the close of the month" (April). In May these conditions reached a climax officially designated as "the driest



May on record" for this region. This condition, following without break the drouth of the two months preceding, places this as the worst month of the year and the worst individual month for many years. From Massachusetts comes this statement: "Not in many years has Massachusetts been subjected to so terrible a fire scourge as has fallen to her lot the past spring. By the middle of May the losses were easily twice as great as for the entire twelve months of 1910." Pennsylvania was visited by a veritable scourge of spring forest fires. Maine was so beset that the annual forest fire appropriation of \$68,000 and a \$10,000 Federal forest fire patrol fund were exhausted by the middle of August in the effort to check the conflagration.

TABLE I.—FOREST FIRES IN 1911 AND PREVIOUS YEARS.

| Year.                                     | No. of Fires. | Total Acres Burned. | Acres per Fire. | Total Loss. | Loss per Fire. |
|---|---------------|---------------------|-----------------|-------------|----------------|
| No organized service, incomplete reports. |               |                     |                 |             |                |
| 1872, .....                               |               | 100,000             | .....           | \$1,000,000 | .....          |
| 1880, .....                               | 54            | 71,074              | 1,316           | 252,240     | \$4,671        |
| 1885, .....                               |               | 128,000             | .....           | 1,128,000   | .....          |
| 1895, .....                               | 49            | 66,120              | 1,349           | 600,000     | 12,245         |
| 1902, .....                               | 65            | 98,850              | 1,520           | 169,323     | 2,605          |
| 1903, .....                               | 79            | 85,046              | 1,076           | 305,744     | 3,870          |
| 1904, .....                               | 81            | 41,530              | 512             | 193,413     | 2,388          |
| Organized fire service.                   |               |                     |                 |             |                |
| 1907, .....                               | 167           | 11,525              | 69              | 11,647      | 70             |
| 1908, .....                               | 533           | 52,978              | 100             | 64,536      | 121            |
| 1909, .....                               | 563           | 93,525              | 166             | 133,944     | 238            |
| 1910, .....                               | 611           | 81,452              | 133             | 127,850     | 209            |
| 1911, Forest fires, ....                  | 289           | 64,404              | 122             | 86,940      | 165            |
| Embryo fires, ...                         | 239           |                     |                 |             |                |

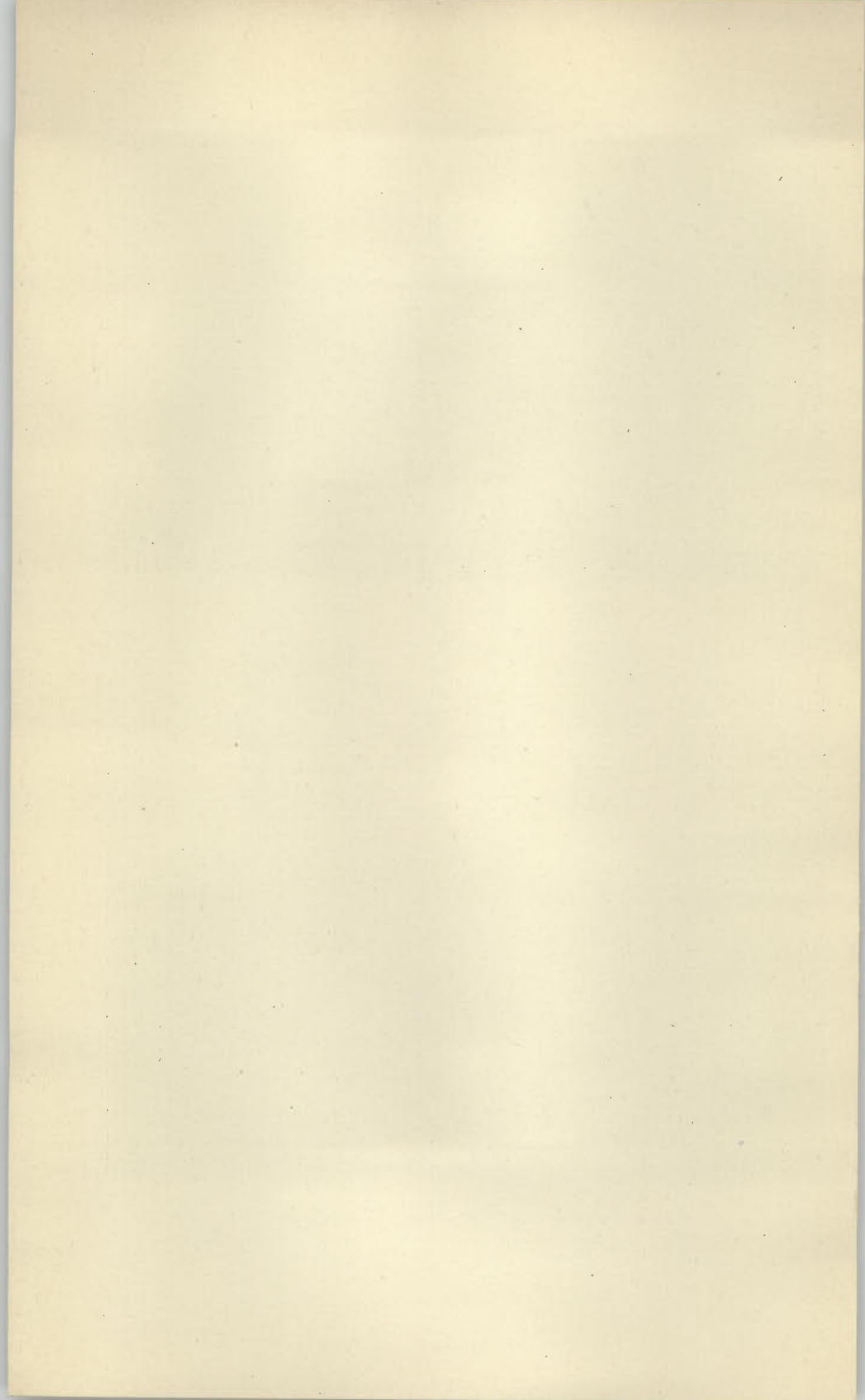
These general conditions are accurately reflected in the forest fire record for this State, which shows that 84 per cent. of the true forest fires, and over 75 per cent. of all fires reported,



Fig. 6.—A Forest Fire in "The Pines."



Fig. 7.—A Pine Plantation in South Jersey. Though the Trees Grow Remarkably Well the Risk of Loss by Fire is Great. Note Inflammable "Indian" Grass.



occurred within the three spring months. It is also significant that with almost no exception every fire that burned a large area was recorded between March and the end of May, with the greater proportion in the latter month. High winds accompanying the drouth created such a situation that the setting any fire on or near forest land was foolhardy and the control of one having appreciable headway in all probability a matter of days instead of hours.

Dry weather continued well through August, when heavy rains gave a much-needed relief, and, though the September precipitation was below the normal, it tided over the hazard until the frequent and generous rainfall of October gave comparative security.

Despite the tendency of the whole season to stimulate the occurrence of fires, a comparison of the figures for this year and those of 1910 (see Table I), brings out a decided decrease for the year. The relation of each separate month to the year's total is given in Table II and points peculiarly to one acutely abnormal month in May when 189 fires burned this year instead of last year's 42. Further, the fires that now occur are more and more confined to those periods of the year when the conditions of weather and the seasonal activities may properly be expected to produce the greatest danger. Cleaning up and clearing land, with the consequent disposal of the brush and refuse, in the spring, and berrying and gunning in the late summer and fall, are properly chargeable with these conditions in the main.



TABLE II.—FIRES BY MONTHS AND COUNTIES, 1911.

| COUNTY.              | Year |      | November. |      | December. |      | January. |      | February. |      | March. |      | April. |      | May. |      | June. |      | July. |      | August. |      | September. |      | October. |      |
|----------------------|------|------|-----------|------|-----------|------|----------|------|-----------|------|--------|------|--------|------|------|------|-------|------|-------|------|---------|------|------------|------|----------|------|
|                      |      |      | F.F.      | E.F. | F.F.      | E.F. | F.F.     | E.F. | F.F.      | E.F. | F.F.   | E.F. | F.F.   | E.F. | F.F. | E.F. | F.F.  | E.F. | F.F.  | E.F. | F.F.    | E.F. | F.F.       | E.F. | F.F.     | E.F. |
| <i>North Jersey.</i> | F.F. | E.F. | F.F.      | E.F. | F.F.      | E.F. | F.F.     | E.F. | F.F.      | E.F. | F.F.   | E.F. | F.F.   | E.F. | F.F. | E.F. | F.F.  | E.F. | F.F.  | E.F. | F.F.    | E.F. | F.F.       | E.F. | F.F.     | E.F. |
| Bergen, .....        | 8    | 8    | 1         | ...  | ...       | ...  | ...      | ...  | ...       | ...  | ...    | ...  | 4      | 2    | 3    | 4    | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | 2    |
| Morris, .....        | 23   | 8    | 2         | ...  | ...       | ...  | ...      | ...  | ...       | ...  | 3      | 1    | 12     | 2    | 6    | 4    | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | 1    |
| Passaic, .....       | 7    | 3    | 1         | 1    | ...       | ...  | ...      | ...  | ...       | ...  | ...    | 1    | 3      | ...  | 3    | 1    | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Somerset, .....      | 2    | 2    | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | ...    | ...  | 2      | 2    | ...  | ...  | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Sussex, .....        | 15   | 3    | 1         | 1    | ...       | ...  | ...      | ...  | ...       | ...  | ...    | ...  | 7      | 1    | 6    | ...  | 1     | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | 1    |
| Warren, .....        | 1    | 0    | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | ...    | ...  | 1      | ...  | ...  | ...  | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Totals, ..           | 56   | 24   | 5         | 2    | ...       | ...  | ...      | ...  | ...       | ...  | 3      | 2    | 29     | 7    | 18   | 9    | 1     | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | 4    |
| <i>South Jersey.</i> | F.F. | E.F. | F.F.      | E.F. | F.F.      | E.F. | F.F.     | E.F. | F.F.      | E.F. | F.F.   | E.F. | F.F.   | E.F. | F.F. | E.F. | F.F.  | E.F. | F.F.  | E.F. | F.F.    | E.F. | F.F.       | E.F. | F.F.     | E.F. |
| Atlantic, .....      | 71   | 43   | 2         | 3    | ...       | ...  | 1        | 1    | ...       | 1    | 10     | 7    | 26     | 6    | 26   | 13   | 4     | 2    | 2     | 4    | ...     | 4    | ...        | ...  | ...      | 2    |
| Burlington, .....    | 23   | 2    | 1         | ...  | ...       | ...  | ...      | ...  | ...       | ...  | 2      | ...  | 5      | ...  | 8    | ...  | ...   | ...  | 3     | ...  | 4       | 2    | ...        | ...  | ...      | ...  |
| Camden, .....        | 35   | 100  | 1         | 3    | ...       | 1    | ...      | 6    | ...       | 6    | 8      | 21   | 3      | 19   | 19   | 25   | ...   | 5    | 1     | 13   | 3       | 1    | ...        | ...  | ...      | ...  |
| Cape May, .....      | 10   | 18   | ...       | 1    | ...       | ...  | ...      | ...  | ...       | ...  | 1      | 4    | 6      | 2    | 3    | 1    | 2     | ...  | 1     | 2    | 2       | 3    | ...        | ...  | ...      | ...  |
| Cumberland, .....    | 24   | 21   | 1         | ...  | ...       | ...  | ...      | ...  | ...       | 1    | 2      | 3    | 3      | 6    | 14   | 9    | 1     | 1    | 1     | 1    | 2       | ...  | ...        | ...  | ...      | ...  |
| Gloucester, .....    | 3    | ...  | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | 1      | ...  | 1      | ...  | 1    | ...  | ...   | ...  | 1     | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Middlesex, ..        | 8    | 3    | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | ...    | ...  | 2      | 1    | 5    | 2    | 1     | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Monmouth, ..         | 9    | 4    | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | 1      | ...  | 1      | 3    | 1    | 2    | ...   | 2    | 1     | 1    | ...     | ...  | 1          | ...  | ...      | ...  |
| Ocean, .....         | 23   | 22   | ...       | 2    | ...       | ...  | 1        | ...  | ...       | ...  | 4      | 1    | 7      | 6    | 9    | 5    | 1     | 3    | 1     | 3    | 1       | 1    | ...        | ...  | ...      | ...  |
| Salem, .....         | 5    | 2    | ...       | ...  | ...       | ...  | ...      | ...  | ...       | ...  | 1      | ...  | 1      | 1    | 3    | 1    | ...   | ...  | 1     | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| *, .....             | 22   | ...  | ...       | ...  | ...       | ...  | ...      | ...  | 1         | ...  | ...    | ...  | 6      | ...  | 15   | ...  | ...   | ...  | ...   | ...  | ...     | ...  | ...        | ...  | ...      | ...  |
| Totals, ..           | 233  | 215  | 5         | 9    | ...       | 1    | 1        | 8    | 1         | 9    | 33     | 38   | 55     | 43   | 104  | 58   | 9     | 11   | 12    | 24   | 13      | 11   | ...        | 1    | ...      | 2    |
| State Totals,        | 289  | 239  | 10        | 11   | ...       | 1    | 1        | 8    | 1         | 9    | 36     | 40   | 84     | 50   | 122  | 67   | 10    | 11   | 12    | 24   | 13      | 11   | ...        | 1    | ...      | 6    |

\*Fires that burned in more than one township.

F.F.—Forest Fires.

E.F.—Embryo Fires.

## INCREASING PROPORTION OF SMALL FIRES.

There is no one feature of the work done by the Forest Fire Service more indicative of the improved forest fire conditions in the State than the fact that during the year 45 per cent. of the total number of fires reported can be properly recorded as not forest fires. Figures show that of the 528 fires reported, 239 were put out before they had burned so much as five acres. It thus appears that nearly half of the fires of which the fire-wardens knew were reached in time, and handled in such a way that they had no opportunity to do appreciable damage. This emphasizes the increasing activity and efficiency of the local men. It indicates further an interest on the part of the people in general through which the wardens are enabled to learn of fires promptly and to obtain assistance in the numbers necessary to check them while in the smaller stages. The significance of this feature of the record is self-evident; not alone in the reduced loss of property which it assures, but in the consequent lowered expense entailed in fighting small fires, even if numerous, as compared with the bills for extinguishing conflagrations that are allowed to gain headway. The fact that the number of embryo fires is still maintained though large fires grow steadily fewer is but a natural outcome of the restriction of the fires to smaller areas. Where heretofore a fire has burned a large area and rendered that specific location immune from fire for the season, and perhaps for the next season as well, the same areas now present a catchment for numerous small fires, requiring greater vigilance perhaps, but of far less consequence as consumers of time and money.

TABLE III.—FIRES BY RELATIVE AREA BURNED AND COUNTIES, 1911.

| COUNTY.                                 | Number of Forest Fires. |               |                 |                  |        | Total Embryo Fires (less than 5 acres). |
|---|-------------------------|---------------|-----------------|------------------|--------|---|
|   | 5-10 Acres.             | 11-100 Acres. | 101-1000 Acres. | Over 1000 Acres. | Total. |   |
| <i>North Jersey,</i>                    |                         |               |                 |                  |        |   |
| Bergen, .....                           | 1                       | 7             | ....            | ....             | 8      | 8                                       |
| Passaic, .....                          | ....                    | 7             | ....            | ....             | 7      | 3                                       |
| Morris, .....                           | 3                       | 16            | 4               | ....             | 23     | 8                                       |
| Somerset, .....                         | ....                    | 2             | ....            | ....             | 2      | 2                                       |
| Sussex, .....                           | 3                       | 9             | 2               | 1                | 15     | 3                                       |
| Warren, .....                           | ....                    | 1             | ....            | ....             | 1      | ....                                    |
| Total, .....                            | 7                       | 42            | 6               | 1                | 56     | 24                                      |
| <i>South Jersey,</i>                    |                         |               |                 |                  |        |   |
| Atlantic, .....                         | 15                      | 35            | 17              | 4                | 71     | 43                                      |
| Burlington, .....                       | 4                       | 14            | 5               | ....             | 23     | 2                                       |
| Camden, .....                           | 7                       | 22            | 5               | 1                | 35     | 100                                     |
| Cape May, .....                         | 1                       | 6             | 3               | ....             | 10     | 18                                      |
| Cumberland, .....                       | 3                       | 14            | 7               | ....             | 24     | 21                                      |
| Gloucester, .....                       | 1                       | 1             | 1               | ....             | 3      | ....                                    |
| Middlesex, .....                        | ....                    | 5             | 3               | ....             | 8      | 3                                       |
| Monmouth, .....                         | ....                    | 7             | 2               | ....             | 9      | 4                                       |
| Ocean, .....                            | 2                       | 12            | 8               | 1                | 23     | 22                                      |
| Salem, .....                            | 2                       | 1             | 2               | ....             | 5      | 2                                       |
| Fires that burned in more than one twp. | 2                       | 2             | 12              | 6                | 22     | ....                                    |
| Total, .....                            | 37                      | 119           | 65              | 12               | 233    | 215                                     |
| State total, .....                      | 44                      | 161           | 71              | 13               | 289    | 239                                     |

The relative proportion of large and small fires is given more particularly in Table III, and points, as always, to the fact that the larger area burned lies in the southern territory where forest types offer more favorable footing, and the wide reaches of level, untenanted woodland render both discovery of and access to a fire more tardy. It is therefore Atlantic, Burlington, Camden, Cumberland and Ocean counties that suffer most heavily. Moreover, these same counties, with Gloucester, are those in which the occupations of the people create the greatest danger. The berry crops, swamp work, and the development of real estate, with its consequent influx of persons ignorant of or careless in using fire, peculiarly expose these sections to burning. (See Table IV and Figs. 13 and 13a.)



## PROPERTY SAVED BY THE FIRE SERVICE.

Once more especial stress is laid upon the fact that the value of the fire service is properly measurable in damage prevented, and not alone by offenses punished or fires put out. Again it is possible to make an estimate of what has been accomplished in this respect, though the recital must be prefaced by the statement that the figures named can represent a fraction only of the value of the service rendered. The capacity of a forest fire for doing harm is a factor in no way fixed, on which no satisfactory estimate can be placed, and for which no systematic assembling of data is attempted. The figures given, therefore, summarize the statements on reports sent in by local wardens. They are necessarily fragmentary, but since the values are not appraised on the ground they are made amply low to insure no over-valuation. With all these reservations it is possible to show that by promptly controlling only 37 fires, at an expenditure of \$1,022, property worth nearly \$67,000 was saved. This property included fifty-nine houses and thirty-two other buildings, three cranberry bogs, two of considerable area, five hundred railroad ties, three hundred cords of wood and a large cedar swamp. Among the properties from which fire was kept are named a schoolhouse, two public parks, a large bungalow settlement in North Jersey, and a South Jersey town. Besides this repeated statements occur to show that fires were cut off in time to save timberland of merchantable value. Low as these figures are in comparison with the full results obtained, they are still powerful indicants of the service's worth as a protection within the danger zone of forest fires.

## CAUSES OF FOREST FIRES.

To prevent fires from starting it is as essential that the cause from which they come be known as for a diagnosis to precede a cure. Though the specific agent escapes detection the agency may more often be determined. A statement of the year's fires by causes appears in Table IV.



TABLE IV.—FIRES BY CAUSES AND COUNTIES, 1911.

| COUNTY.  | NUMBER.     |     |                |     |          |     |             |     |                |     |          |     |     |     | Totals. |     |
|--|-------------|-----|----------------|-----|----------|-----|-------------|-----|----------------|-----|----------|-----|-----|-----|---------|-----|
|  | Locomotive. |     | Brush Burning. |     | Smokers. |     | Incendiary. |     | Miscellaneous. |     | Unknown. |     |     |     |         |     |
|  | FF          | EF  | FF             | EF  | FF       | EF  | FF          | EF  | FF             | EF  | FF       | EF  | FF  | EF  | FF      | EF  |
| <i>North Jersey.</i>                                     |             |     |                |     |          |     |             |     |                |     |          |     |     |     |         |     |
| Bergen, .....  | I           | I   | I              | ... | I        | ... | ...         | ... | ...            | 2   | 5        | 5   | ... | 8   | 8       | ... |
| Morris, .....  | 4           | 2   | 4              | ... | ...      | I   | ...         | ... | ...            | 3   | 15       | 2   | ... | 23  | 8       | ... |
| Passaic, .....   | ...         | I   | 2              | ... | ...      | ... | ...         | ... | ...            | ... | 5        | 2   | ... | 7   | 3       | ... |
| Somerset, .....  | I           | I   | I              | ... | ...      | ... | ...         | ... | ...            | ... | ...      | I   | ... | 2   | 2       | ... |
| Sussex, .....  | 4           | ... | 3              | ... | 2        | ... | ...         | I   | ...            | ... | 6        | 2   | ... | 15  | 3       | ... |
| Warren, .....  | I           | ... | ...            | ... | ...      | ... | ...         | ... | ...            | ... | ...      | ... | ... | I   | ...     | ... |
| Totals, .....  | 11          | 5   | 11             | ... | 3        | I   | ...         | I   | ...            | 5   | 31       | 12  | ... | 56  | 24      | ... |
| <i>South Jersey.</i>                                     |             |     |                |     |          |     |             |     |                |     |          |     |     |     |         |     |
| Atlantic, .....  | 21          | 17  | 12             | 3   | I        | I   | I           | ... | 3              | 3   | 33       | 19  | ... | 71  | 43      | ... |
| Burlington, .....  | 3           | ... | 4              | I   | 4        | I   | 2           | ... | 2              | ... | 8        | ... | ... | 23  | 2       | ... |
| Camden, .....  | 9           | 84  | 2              | 2   | I        | ... | ...         | ... | 2              | I   | 21       | 13  | ... | 35  | 100     | ... |
| Cape May, .....  | 4           | 12  | 3              | 2   | ...      | ... | ...         | ... | ...            | ... | 3        | 4   | ... | 10  | 18      | ... |
| Cumberland, .....  | I           | 4   | 5              | 3   | ...      | ... | 2           | ... | I              | 4   | 15       | 10  | ... | 24  | 21      | ... |
| Gloucester, .....  | ...         | ... | 2              | ... | ...      | ... | ...         | ... | ...            | ... | I        | ... | ... | 3   | ...     | ... |
| Middlesex, .....   | ...         | 2   | 3              | ... | ...      | ... | ...         | ... | ...            | ... | 5        | I   | ... | 8   | 3       | ... |
| Monmouth, .....  | I           | I   | ...            | ... | I        | I   | ...         | ... | 2              | ... | 5        | 2   | ... | 9   | 4       | ... |
| Ocean, .....   | 7           | 11  | 5              | I   | 3        | ... | ...         | ... | 2              | 3   | 6        | 7   | ... | 23  | 22      | ... |
| Salem, .....   | ...         | ... | 3              | I   | ...      | ... | ...         | ... | ...            | ... | 2        | I   | ... | 5   | 2       | ... |
| Fires that burned in<br>more than one<br>township, ..... | 7           | ... | 2              | ... | 2        | ... | ...         | ... | 3              | ... | 8        | ... | ... | 22  | ...     | ... |
| Totals, .....  | 53          | 131 | 41             | 13  | 12       | 3   | 5           | ... | 15             | 11  | 107      | 57  | ... | 233 | 215     | ... |
| State Totals, ..   | 64          | 136 | 52             | 13  | 15       | 4   | 5           | I   | 15             | 16  | 138      | 69  | ... | 289 | 239     | ... |

FF—Forest Fires.

EF—Embryo Fires.

*Fires of Unknown Origin.*

This year again the proportion of fires of unknown origin is higher than in any other class, though in a lower degree. Thus 138 forest fires and 69 small burnings must be recorded in this most unsatisfactory and indefinite column. Until, however, a systematic patrol can be maintained, the number of wardens

increased and the effectiveness of both assured this condition is likely to be maintained. But New Jersey is not the only State in which we meet this condition, for it is a general weakness felt wherever there is a State forest fire organization.

The actual ratio of this class to others is, nevertheless, on the mend, for but 39 per cent. of the reported fires are so rated, while 57 per cent. of the total came under it a year ago, 46 per cent. in 1909, and 53 per cent. in 1908. A concrete gain has, therefore, been made in eliminating uncertainty in our knowledge of fire causes.

### *Railroad Fires.*

Of the known agencies setting fires the railroads still lead as offenders, being responsible for 38 per cent. of all the fires reported. This, as was pointed out last year, is what may be quite properly expected, since the lack of control of locomotive fires is far less culpable than those from any other source. This does not mean that there are no means of reducing the number of railroad fires far below that now recorded, but sparks will fly from locomotives until mechanical devices, not yet known, are found to control their emission. Therefore, where proper care is taken to use and keep in repair the best spark arresters available, the remedy must be sought upon the ground.

Conditions vary greatly on the different roads and each must be treated individually. For instance, it seems to be established that locomotives burning anthracite coal throw more live sparks than those of equal power using the bituminous. This may account in part for the great number of small fires set by the Atlantic City Railroad. Conditions being such, the commission sees no reason to change its attitude toward spark arresters, *i. e.*, that it is wiser to hold the railroads responsible for results than to prescribe the use of some mechanical contrivance.

During 1911 there were 200 fires for which there is reasonable evidence that a railroad was responsible. Of these 136 were extinguished while of insignificant size, and of the 64 rated as forest fires, only 17 burned as much as 100 acres. Thus, though the record against the railroads is still bad, it shows unquestioned

improvement. This may be ascribed partly to the policy pursued by the Forest Commission of holding them for the costs of putting out such fires, and partly to the action of the railroads in constructing and maintaining fire lines. (See pp. 60 to 64.)

#### *Brush Fires.*

Fires of this nature are again, next to railroad fires, the largest known class numerically, although it is noticeable that a considerable number of reports have been received this year of brush burning violations from which no forest fire resulted. While in actual numbers the fires reported equal those of last year, yet, in the promotion of a general knowledge of and respect for the brush-burning law, the prompt imposition of an increased number of penalties has been a large advance. There have been 52 forest fires reported from this cause, with 13 additional cases in which the area burned was insignificant.

#### *Permits.*

During the year there were 2,450 permits issued. The number of these permits points to the menace created each year by this one class of fires, while the insignificant percentage of such fires which escape to become forest fires, or even come to the notice of the wardens as fires at all, testifies to the value of the permits in insuring care in the use of fire where necessary. Further, a falling off of more than 1,000 from the number of permits issued last year, despite an equally strict enforcement of the requirement, sustains the previous argument that the permit clause in the law is curtailing needless burning with its consequent risks.

#### *Smokers' Fires.*

No proper estimate can be made of the number of fires from this cause. Although definite information indicates that but 15 forest fires and 4 small burnings are chargeable to it, it is certain that could the fires now classed as unknown, but properly chargeable to smokers, be so listed, the number would be largely increased. Moreover, they are the most dangerous and persistent



class of fires, in that they so often start in places where and at times when their growth to large size is assured before the fight on them can be begun. The danger is so widespread, and people so liable to neglect and carelessness in this respect, that there is practically no way in which proper supervision can be had without a patrol too extensive to be practicable.

Unlike the railroad and brush fires but few have been definitely connected with violations of the law. This fact is eloquent of the handicap in dealing with such offenders. That relief may be had in more attention to our highway rights of way is certain (See p. 59.) Final control must come, however, through aroused public interest and activity and a more general appreciation of the capacity of the most innocent spark to produce a fire of large proportions.

#### *Incendiary Fires.*

The forest fires of this sort are again few in number, there being but 5 recorded, with one other case where the fire was small. That the malicious setting of a fire in or near the woods is a risky business for the offender is certain. That the increased attention the forest fire problem now receives magnifies this risk likewise is sure. And the assured insistence on a penalty commensurate with the proven guilt makes forest firing with intent less likely each year.

#### *Miscellaneous and Automobile Fires.*

Of the burnings of miscellaneous origin reported this year, —those started by saw-mills, children at play, automobiles, etc.,— there have been 15 actual forest fires and 16 small fires. Fires set by automobilists grow each year to be felt as a more serious menace. The increased mileage of good roads within the State, and the tremendous growth in the number of automobiles used, continually enlarge this source of fires. The fact that matches of the wind-fire type are used so universally, and that the tendency of automobilists to build small fires while picnicing by the roadside is so strong, makes effective control a very real concern.



It is particularly difficult to check this firing because the movements of an offender are so uncertain and his departure from the locality so rapid that evidence of identity is rarely available. Often, too, a fire is left behind unconsciously. Despite the fact that the most severe fire of the year, and several other bad burnings also, were attributable to this source, responsibility was fixed for but one insignificant fire. This instance evidenced how troublesome it is to enforce a proper penalty. The offender was a non-resident and having returned outside our jurisdiction before the facts were known, the only penalty possible to impose was to revoke his tourist's license. That was promptly done by the State Commissioner of Motor Vehicles. Thus to the unusual difficulty of locating an offender is added in these cases a strong likelihood of his being beyond reach of punishment when located.

#### PENALTIES COLLECTED.

Never since the organization of the forest fire service has there been shown such progress and efficiency in the punishment of violators of the law. And this is a matter for congratulation less because of the actual punishment of those concerned than because it obviously tends toward increased care and watchfulness with fire where heretofore there was negligence or wilful disregard of the law. An old trail is a dim trail, but more and more as the service becomes better organized is the former unavoidable delay in investigating reported violations on the mend. The new force of Division Firewardens recently added is telling already, because of the attendant promptness in disposing of such work. There have been 206 cases, of the total 528 reported during the year, requiring investigation in the field. In some instances the time spent was brief, though a number of fires demanded the time of a warden for periods reaching into weeks. In spite of this amount of work, to which also must be added a large share of time spent on older cases, it has been possible during the present year to fix responsibility upon and to penalize the offenders in 125 cases of the total 258 violation cases recorded in 1911. In Table VII these cases are item-

ized to show each instance in which a violation of the law has been reported. Not every case can be supported by legal evidence sufficient to convict, and circumstances in some made it inadvisable to push the matter to a penalty. The latter class comprises but a small number, and few known violators have been released without being held accountable in some way. Each violation case is judged on its individual merits, and the Forest Commission finds it inexpedient to insist on equal severity. Thus, when the infliction of a penalty would have imposed a burden on the township in caring for dependents of a violator a settlement was made in another way. In some other cases the firefighters concerned withdrew their claims for pay in order to spare the offender. In another instance a man was allowed to work out his fine on a State reserve, since his condition made money payment impossible.

As will be seen from Tables VII, VIII and IX, a large proportion of the offenders are released from liability upon payment of the whole cost of the fire. While in no way retreating from its intention to prosecute every violator of the law, the commission seeks to prevent fires, rather than to impose penalties. Thus, when the fault lies not in the intention but in excusable ignorance of the law, poor judgment or pure accident, harsh measures and consequent enmities are not only impolitic but unjust. This position is strengthened by the provision of law that money so recovered shall be paid to the township by which it was originally expended.

The continued co-operation of the railroads in settling bills for fighting fire in every case where there is reasonable evidence of their responsibility gives assurance of their appreciation of the service rendered. Of 192 fires on which claims were made, 83 have already been settled and 15 withdrawn upon evidence developed by the companies that the responsibility was misplaced. The 94 others still pending adjustment are expected to be in large part settled on the opening of the new calendar year, in accordance with an arrangement permitting periodic instead of individual settlements of these cases.\*

In no case this year has a court trial been necessary, although

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\* Fifty-three of these 94 were settled before April 1, 1912.



TABLE V.—FOREST FIRES, 1911.

| County and Township.     | Number        |               | Acres Burned. | Loss to Forests and Other Property. | Cost to Extinguish. | Paid by † |          |            |
|--------------------------|---------------|---------------|---------------|-------------------------------------|---------------------|-----------|----------|------------|
|                          | Forest Fires. | Embryo Fires. |               |                                     |                     | Township. | State.   | Offenders. |
| Atlantic County—         |               |               |               |                                     |                     |           |          |            |
| Absecon (City), . . .    | ..            | ..            | 2,878         | \$1,880                             | \$228 85            | \$44 77   | \$44 78  | \$139 30   |
| Buena Vista, . . . . .   | 18            | 9             | 2,878         | \$1,880                             | \$228 85            | \$44 77   | \$44 78  | \$139 30   |
| Egg Harbor, . . . . .    | 10            | 4             | 3,032         | 1,640                               | 227 35              | 90 92     | 90 93    | 45 50      |
| Egg Harbor (City), . .   | 2             | 2             | 110           | 90                                  | 24 00               | 12 00     | 12 00    | .....      |
| Folsom, . . . . .        | 2             | 2             | 118           | 130                                 | 26 05               | 5 77      | 5 78     | 14 50      |
| Galloway, . . . . .      | 8             | 1             | 3,915         | 4,295                               | 278 75              | 124 61    | 124 64   | 39 25      |
| Hamilton, . . . . .      | 17            | 9             | 9,707         | 6,923                               | 283 10              | 127 54    | 127 56   | 28 00      |
| Hammononton, . . . . .   | 10            | 10            | 634           | 757                                 | 304 90              | 138 45    | 138 45   | 28 00      |
| Mullica, . . . . .       | 15            | 1             | 2,765         | 1,605                               | 413 75              | 48 58     | 48 60    | 316 57     |
| Port Republic, . . . . . | 1             | ..            | 800           | 2,500                               | 27 20               | 13 60     | 13 60    | .....      |
| Weymouth, . . . . .      | 9             | 5             | 447           | 159                                 | 145 32              | 52 75     | 52 77    | 39 80      |
| Total, . . . . .         | 92            | 43            | 23,906        | \$19,979                            | \$1,959 27          | \$658 99  | \$659 11 | \$650 92   |
| Bergen County—           |               |               |               |                                     |                     |           |          |            |
| Alpine (Boro.), . .      | 6             | 6             | 132           | \$241                               | \$61 05             | \$29 27   | \$29 28  | \$5 00     |
| Franklin, . . . . .      | 1             | ..            | 15            | 15                                  | .....               | .....     | .....    | .....      |
| Hohokus, . . . . .       | ..            | 1             | ..            | 10                                  | 4 00                | 2 00      | 2 00     | .....      |
| Oakland (Boro.), . .     | 1             | 1             | 15            | 50                                  | 31 90               | 1 75      | 1 75     | 28 40      |
| Ridgefield (Boro.), .    | ..            | ..            | ..            | ..                                  | .....               | .....     | .....    | .....      |
| Total, . . . . .         | 8             | 8             | 162           | \$316                               | \$96 95             | \$33 02   | \$33 03  | \$33 40    |
| Burlington County—       |               |               |               |                                     |                     |           |          |            |
| Bass River, . . . . .    | 1             | ..            | 300           | \$100                               | \$4 50              | \$2 25    | \$2 25   | .....      |
| Evesham, . . . . .       | 2             | ..            | 125           | 350                                 | 14 00               | 6 00      | 6 00     | \$5 00     |
| Medford, . . . . .       | 5             | ..            | 268           | 165                                 | 105 70              | 49 10     | 49 10    | 7 50       |
| New Hanover, . . . . .   | ..            | 1             | ..            | 2,600                               | 15 00               | .....     | .....    | 10 00      |
| Pemberton, . . . . .     | 6             | ..            | 2,245         | 1,025                               | 147 40              | 39 42     | 39 43    | 68 55      |
| Shamong, . . . . .       | 3             | 1             | 100           | 50                                  | 43 75               | 2 40      | 2 40     | 38 95      |
| Southampton, . . . . .   | 5             | ..            | 1,086         | 420                                 | 102 40              | 46 67     | 46 68    | 13 55      |
| Tabernacle, . . . . .    | 3             | ..            | 340           | 1,810                               | 30 70               | .....     | .....    | 50 00      |
| Washington, . . . . .    | ..            | ..            | ..            | ..                                  | .....               | .....     | .....    | .....      |
| Woodland, § . . . . .    | 2             | ..            | 550           | 800                                 | 23 50               | .....     | 17 50    | 6 00       |
| Total, . . . . .         | 27            | 2             | 5,014         | \$7,320                             | \$486 95            | \$154 59  | \$154 61 | \$199 55   |
| Camden County—           |               |               |               |                                     |                     |           |          |            |
| Berlin, . . . . .        | ..            | ..            | ..            | ..                                  | ..                  | ..        | ..       | ..         |
| Chesilhurst (Boro.), .   | 2             | 4             | 2,540         | \$1,000                             | \$69 05             | \$38 27   | \$38 28  | .....      |
| Clementon, . . . . .     | 4             | 3             | 950           | 1,115                               | 79 90               | 39 95     | 39 95    | \$5 00     |
| Delaware, . . . . .      | 2             | 2             | 15            | 185                                 | 15 00               | 7 50      | 7 50     | .....      |
| Gloucester, . . . . .    | 5             | 2             | 790           | 250                                 | 85 35               | 42 67     | 42 68    | .....      |
| Voorhees, . . . . .      | 2             | 1             | 60            | 15                                  | 17 00               | 8 50      | 8 50     | .....      |
| Waterford, . . . . .     | 15            | 1             | 1,588         | 3,015                               | 209 65              | 101 09    | 101 16   | 8 30       |
| Winslow, . . . . .       | 6             | 87            | 136           | 255                                 | 358 65              | 26 95     | 26 95    | 306 00     |
| Total, . . . . .         | 36            | 100           | 6,079         | \$5,835                             | \$834 60            | \$264 93  | \$265 02 | \$319 30   |

## FIREWARDEN'S REPORT.

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TABLE V.—FOREST FIRES, 1911.—Continued.

| County and Township.    | Number        |               | Acres Burned. | Loss to Forests and Other Property. | Cost to Extinguish. | Paid by † |          |            |
|-------------------------|---------------|---------------|---------------|-------------------------------------|---------------------|-----------|----------|------------|
|                         | Forest Fires. | Embryo Fires. |               |                                     |                     | Township. | State.   | Offenders. |
| Cape May County—        |               |               |               |                                     |                     |           |          |            |
| Dennis, § .....         | 1             | ...           | 75            | \$30                                | .....               | .....     | .....    | .....      |
| Lower, .....            | 2             | 9             | 83            | 794                                 | \$74 54             | \$19 77   | \$19 77  | \$35 00    |
| Middle, .....           | 3             | 7             | 220           | 125                                 | 53 00               | 20 00     | 20 00    | 13 00      |
| Upper, .....            | 4             | 2             | 2,112         | 1,675                               | 119 90              | 37 20     | 37 20    | 30 00      |
| Woodbine (Boro.), ..... |               |               |               |                                     |                     | .....     | .....    | .....      |
| Total, .....            | 10            | 18            | 2,490         | \$2,624                             | \$247 44            | \$76 97   | \$76 97  | \$78 00    |
| Cumberland County—      |               |               |               |                                     |                     |           |          |            |
| Commercial, .....       | 2             | 2             | 100           | \$425                               | \$36 60             | \$16 30   | \$16 30  | \$4 00     |
| Deerfield, .....        | 3             | ...           | 200           | 175                                 | 10 00               | 5 00      | 5 00     | .....      |
| Downe, .....            | 1             | 1             | 10            | 55                                  | 27 00               | 13 50     | 13 50    | .....      |
| Fairfield, .....        | 1             | ...           | 115           | 100                                 | 11 00               | 5 50      | 5 50     | .....      |
| Landis, .....           | 11            | 4             | 3,635         | 2,170                               | 230 70              | 107 39    | 107 41   | 20 90      |
| Lawrence, .....         | 1             | 2             | 100           | 112                                 | 31 50               | 5 75      | 5 75     | 20 00      |
| Maurice River, ....     | 5             | 4             | 2,152         | 620                                 | 139 60              | 65 92     | 65 93    | 11 00      |
| Millville (City), ..    | 3             | 8             | 285           | 270                                 | 80 05               | 21 75     | 21 75    | 72 00      |
| Total, .....            | 27            | 21            | 6,597         | \$3,927                             | \$566 45            | \$241 11  | \$241 14 | \$127 90   |
| Gloucester County—      |               |               |               |                                     |                     |           |          |            |
| Clayton( Boro.), ..     |               |               |               |                                     |                     | .....     | .....    | .....      |
| Elk, .....              |               |               |               |                                     |                     | .....     | .....    | .....      |
| Franklin, .....         | 6             | ...           | 1,457         | \$5,725                             | \$66 50             | \$23 95   | \$23 95  | \$43 60    |
| Monroe, § .....         | 1             | ...           | 200           | 100                                 | 42 20               | 21 10     | 21 10    | .....      |
| Total, .....            | 7             | ...           | 1,657         | \$5,825                             | \$108 70            | \$45 05   | \$45 05  | \$43 60    |
| Middlesex County—       |               |               |               |                                     |                     |           |          |            |
| East Brunswick, ..      | 2             | ...           | 95            | \$85                                | \$27 50             | .....     | .....    | \$27 50    |
| Madison, .....          | 4             | ...           | 380           | 250                                 | 56 60               | \$28 30   | \$28 30  | .....      |
| Monroe, .....           | 1             | 1             | 250           | 25                                  | 14 00               | 7 00      | 7 00     | .....      |
| Sayreville, .....       |               | 2             | .....         | 10                                  | 5 00                | .....     | .....    | 5 00       |
| South Brunswick, ..     | 1             | ...           | 105           | 100                                 | 5 30                | .....     | .....    | 5 30       |
| Total, .....            | 8             | 3             | 830           | \$470                               | \$108 40            | \$35 30   | \$35 30  | \$37 80    |
| Monmouth County—        |               |               |               |                                     |                     |           |          |            |
| Atlantic, .....         | 2             | 2             | 1,850         | \$8,600                             | \$83 10             | \$3 00    | \$3 00   | \$77 00    |
| Freehold, .....         | 4             | ...           | 300           | 350                                 | 109 45              | 54 72     | 54 73    | .....      |
| Howell, .....           | 4             | 2             | 1,200         | 4,195                               | 227 85              | 96 79     | 96 81    | 39 00      |
| Middletown, .....       |               |               |               |                                     |                     | .....     | .....    | .....      |
| Shrewsbury, .....       |               |               |               |                                     |                     | .....     | .....    | .....      |
| Wall, .....             | 1             | ...           | 60            | 300                                 | .....               | .....     | .....    | .....      |
| Total, .....            | 11            | 4             | 3,410         | \$13,445                            | \$420 30            | \$154 51  | \$154 54 | \$116 00   |



TABLE V.—FOREST FIRES, 1911.—Continued.

| County and Township.   | Number        |               | Acres Burned. | Loss to Forests and Other Property. | Cost to Extinguish. | Paid by † |          |            |
|------------------------|---------------|---------------|---------------|-------------------------------------|---------------------|-----------|----------|------------|
|                        | Forest Fires. | Embryo Fires. |               |                                     |                     | Township. | State.   | Offenders. |
| Morris County—         |               |               |               |                                     |                     |           |          |            |
| Boonton, .....         |               |               |               |                                     |                     |           |          |            |
| Hanover, .....         | 3             |               | 55            | \$120                               | \$515 50            | \$18 00   | \$18 00  | \$15 50    |
| Jefferson, .....       | 7             |               | 575           | 1,400                               | 143 00              | 71 50     | 71 50    | .....      |
| Montville, .....       |               | 1             |               |                                     |                     |           |          | .....      |
| Mt. Arlington, .....   |               | 1             |               | 100                                 | 15 00               | 7 50      | 7 50     | .....      |
| Mt. Olive, .....       | 4             |               | 242           | 522                                 | 69 00               | 34 50     | 34 50    | .....      |
| Pequannock, .....      | 3             |               | 175           | 310                                 | 60 15               | 26 57     | 26 58    | 7 00       |
| Randolph, .....        | 3             |               | 78            | 180                                 | 39 20               | 19 60     | 19 60    | .....      |
| Rockaway, .....        |               |               |               |                                     |                     |           |          | .....      |
| Roxbury, .....         | 3             | 6             | 190           | 1,905                               | 60 80               | 18 72     | 18 74    | 23 34      |
| Total, .....           | 23            | 8             | 1,315         | \$4,537                             | \$438 65            | \$196 39  | \$196 42 | \$45 84    |
| Ocean County—          |               |               |               |                                     |                     |           |          |            |
| Berkeley, .....        | 5             | 1             | 1,701         | \$10,370                            | \$152 70            | \$56 75   | \$56 75  | \$39 20    |
| Brick, .....           | 1             |               | 1,500         | 2,100                               | 68 00               | 34 00     | 34 00    | .....      |
| Dover, .....           | 1             |               | 20            | 50                                  | 12 00               | .....     | .....    | 12 00      |
| Eagleswood, .....      |               | 1             |               | 5                                   | 7 00                | 3 50      | 3 50     | .....      |
| Jackson, .....         | 3             |               | 245           | 235                                 | 75 20               | 17 62     | 17 63    | 39 95      |
| Lacey, .....           | 1             | 3             | 30            | 10                                  | 25 40               | 10 75     | 10 75    | 3 90       |
| Lakewood, .....        | 2             | 3             | 30            | 77                                  | 13 00               | 4 00      | 4 00     | .....      |
| Little Egg Harbor, ..  | 3             |               | 1,000         | 1,800                               | 101 25              | 33 12     | 33 13    | 35 00      |
| Manchester, .....      | 8             | 12            | 710           | 415                                 | 112 00              | 23 75     | 23 75    | 64 50      |
| Plumstead, § .....     |               |               |               |                                     |                     |           |          | .....      |
| Ocean, .....           | 1             | 2             | 300           | 600                                 | 42 65               | 19 82     | 19 83    | 3 00       |
| Stafford, .....        | 1             |               | 500           | 1,000                               | 31 90               | 15 95     | 15 95    | .....      |
| Union, .....           | 3             |               | 450           | 1,505                               | 113 00              | 56 49     | 56 51    | .....      |
| Total, .....           | 29            | 22            | 6,486         | \$18,167                            | \$754 10            | \$275 75  | \$275 80 | \$197 55   |
| Passaic County—        |               |               |               |                                     |                     |           |          |            |
| Pompton, .....         | 1             | 1             | 75            | \$75                                | \$7 50              | \$3 75    | \$3 75   | .....      |
| West Milford, ....     | 6             | 2             | 345           | 155                                 | 187 20              | 41 55     | 41 55    | \$109 10   |
| Total, .....           | 7             | 3             | 420           | \$230                               | \$194 70            | \$45 30   | \$45 30  | \$109 10   |
| Salem County—          |               |               |               |                                     |                     |           |          |            |
| Alloway, .....         |               |               |               |                                     |                     |           |          | .....      |
| L'r Alloways Creek, .. |               |               |               |                                     |                     |           |          | .....      |
| Pittsgrove, .....      | 5             | 2             | 433           | \$485                               | \$93 40             | \$41 07   | \$41 08  | \$27 50    |
| Quinton, .....         | 1             |               | 10            | 70                                  | 13 90               | .....     | .....    | 13 90      |
| Total, .....           | 6             | 2             | 443           | \$555                               | \$107 30            | \$41 07   | \$41 08  | \$41 40    |

## FIREWARDEN'S REPORT.

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TABLE V.—FOREST FIRES, 1911.—Continued.

| County and Township. | Number.       |               | Acres Burned. | Loss to Forests and Other Property. | Cost to Extinguish. | Paid by †  |            |             |
|----------------------|---------------|---------------|---------------|-------------------------------------|---------------------|------------|------------|-------------|
|                      | Forest Fires. | Embryo Fires. |               |                                     |                     | Township.  | State.     | Offenders.  |
| Somerset County—     |               |               |               |                                     |                     |            |            |             |
| Bernard, .....       |               |               |               |                                     |                     |            |            |             |
| Bridgewater, .....   |               |               |               |                                     |                     |            |            |             |
| North Plainfield, .. | 2             | 2             | 140           | \$65                                | \$17 50             | \$7 00     | \$7 00     | \$4 50      |
| Warren, .....        |               |               |               |                                     |                     |            |            |             |
| Total, .....         | 2             | 2             | 140           | \$65                                | \$17 50             | \$7 00     | \$7 00     | \$4 50      |
| Sussex County—       |               |               |               |                                     |                     |            |            |             |
| Byram, .....         | 1             | 1             | 250           | \$135                               | \$20 75             | \$2 00     | \$2 00     | \$16 75     |
| Hardyston, .....     | 3             | 1             | 40            | 45                                  | 23 00               | 7 00       | 7 00       | 9 00        |
| Montague, .....      | 1             | ...           | 4,000         | 2,000                               | 173 55              | 86 77      | 86 78      | .....       |
| Sandyston, .....     | 1             | ...           | 15            | 50                                  | 13 10               | 6 55       | 6 55       | .....       |
| Sparta, .....        | 6             | ...           | 240           | 440                                 | 65 00               | 24 00      | 24 00      | 17 00       |
| Stillwater, .....    | 1             | ...           | 10            | 50                                  | 6 25                | .....      | .....      | .....       |
| Vernon, .....        | 2             | 1             | 850           | 885                                 | 139 20              | 50 47      | 50 48      | 42 00       |
| Wallpack, .....      |               |               |               |                                     |                     |            |            |             |
| Wantage, § .....     |               |               |               |                                     |                     |            |            |             |
| Total, .....         | 15            | 3             | 5,405         | \$3,605                             | \$440 85            | \$176 79   | \$176 81   | \$84 75     |
| Warren County—       |               |               |               |                                     |                     |            |            |             |
| Allamuchy, .....     |               |               |               |                                     |                     |            |            |             |
| Blairstown, .....    |               |               |               |                                     |                     |            |            |             |
| Hardwick, .....      |               |               |               |                                     |                     |            |            |             |
| Knowlton, .....      |               |               |               |                                     |                     |            |            |             |
| Pahaquarry, .....    | 1             | ...           | 50            | \$40                                | \$17 40             | \$8 70     | \$8 70     | .....       |
| Total, .....         | 1             | ...           | 50            | \$40                                | \$17 40             | \$8 70     | \$8 70     | .....       |
| State Total, ..      | *309          | 239           | 64,404        | \$86,940                            | \$6,709 56          | \$2,415 47 | \$2,415 88 | \$2,089 61‡ |

\* This total is greater than the actual number (289) because several fires burned in two or more townships at once.

† The sum of these columns often differs from the corresponding "Cost to Extinguish" item because a fine was larger than the bill, or a bill was withdrawn, etc.

‡ This total is greater than the year's collection (\$2,021.24) because all violation cases are not yet settled.

§ No fire service.

three of last year's offenders resisted the imposition of penalties until court proceedings were under way. This argues well both for the commission's policy in proposing settlements and for the assurance given every offender that the power of the State is not used to enforce an unjust judgment.

Three instances have been reported of men who refused assistance to a warden requiring their service as firefighters. In two of these cases it was found that while there was an actual refusal, the circumstances did not make the offense such that the imposition of a penalty was necessary. In the third the warden was at fault. The attitude of those called to fight forest fires has been noteworthy from the start, and it is a matter for comment that in so few instances has serious objection been made to service of this sort. In almost all communities the danger from a burning forest is too well realized to permit debate on the necessity for its control, and the fact that there may be someone authorized to take charge of such work is giving satisfaction and not creating discontent.

Three violators upon whom guilt was fixed are still unpenalized, because they have left the State and are, therefore, outside the jurisdiction of the law. Such cases are kept open indefinitely in the hope that the offender may return and thereby permit the impartial administration of the law.

Table VI gives in condensed form the status and disposition of all violations in 1911.

TABLE VI.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.

| Kind of Violation.     | Number and Status 1911. |          |          |          |                               | Settled Since Nov. 1, 1911. |
|------------------------|-------------------------|----------|----------|----------|-------------------------------|-----------------------------|
|                        | Totals.                 | Pending. | Settled. | Dropped. | Offender Out of Jurisdiction. |                             |
| Railroad, .....        | *183                    | 94       | 83       | 6        | ....                          | 53                          |
| Brush Burning, .....   | 59                      | 12       | 35       | 9        | 3                             | 6                           |
| Smokers, .....         | 5                       | ....     | 2        | 3        | ....                          | ....                        |
| Miscellaneous, .....   | 9                       | 3        | 5        | 1        | ....                          | ....                        |
| Refusal to Fight, .... | 2                       | ....     | ....     | 2        | ....                          | ....                        |
| Totals, .....          | 258                     | 109      | 125      | 21       | 3                             | ....                        |

\* This total does not include claims withdrawn, etc.



There still remain two cases unsettled from 1908 and 1909. In both these instances, and one from 1910, the violators had left the State before action could be taken, but like those mentioned above these are still held open pending a possible return of the offenders. The 22 other violation cases of 1909 remaining unfinished a year ago have all been settled, and of the 100 offenses reported in 1910 as undisposed of but 11 remain to be adjusted.

The penalties collected in 1911 aggregate \$2,021.24 of which the railroads paid \$1,346.23 and individuals \$675.01. A law not enforced is a stumbling block to the advancement of its purposes, but New Jersey's forest fire law has proven its efficacy by its growing power in application.



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.

| DATE.           | COUNTY AND TOWNSHIP.                    | OFFENDER.                 | OFFENSE.   | SETTLEMENT.                                       |
|-----------------|---|---------------------------|--|---|
|                 | Atlantic County—                        |                           |  |   |
| March 10, ....  | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Paid firewarden's bill, \$6.00.                   |
| March 21, ....  | Buena Vista, .....                      | Joseph Marieffi, .....    | Allowed brush fire to escape, ..                   | Paid firewarden's bill direct.                    |
| March 21, ....  | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Paid firewarden's bill, \$6.00.                   |
| March 24, ....  | Buena Vista, .....                      | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| April 12, ....  | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Paid firewarden's bill, \$9.00.                   |
| April 13, ....  | Buena Vista and<br>Hamilton, .....      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Paid firewarden's bill, \$12.60.                  |
| April 27, ....  | Buena Vista, .....                      | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 2, .....    | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 11, ....    | Buena Vista and<br>Franklin (Glouc.),.. | Ulderico Cavoli, .....    | Allowed brush fire to escape, ..                   | Referred to Attorney-General<br>for settlement.   |
| May 14, ....    | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Paid firewarden's bill, \$12.00.                  |
| May 25, ....    | Buena Vista, .....                      | New Jersey Central R.R.   | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| August 10, ...  | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| August 11, ...  | Buena Vista, .....                      | Louis Anelia, .....       | Allowed brush fire to escape, ..                   | Paid firewarden's bill, \$2.00.                   |
| October 27, ... | Buena Vista, .....                      | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| April 28, ....  | Egg Harbor and Ham-<br>ilton, .....     | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 1, ....     | Egg Harbor, .....                       | Richard Cule, .....       | Allowed brush fire to escape, ..                   | Discharged, bill \$12.00 directly<br>to township. |
| May 7, ....     | Egg Harbor, .....                       | Harlan Hollenbeck, ....   | Refused to respond to call of<br>firewarden, ..... | Case dropped with warning.                        |
| May 14, ....    | Egg Harbor, .....                       | Atlantic City R. R., ...  | Fire set by locomotive, .....                      | Paid firewarden's bill, \$3.00.                   |
| May 23, ....    | Egg Harbor, .....                       | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| April 12, ....  | Folsom Borough, ....                    | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| August 5, ....  | Folsom Borough, ....                    | Atlantic City R. R., .... | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 2, .....    | Galloway, .....                         | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 7, ....     | Galloway, .....                         | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 12, ....    | Galloway, .....                         | Pennsylvania R. R., ....  | Fire set by locomotive, .....                      | Pending, claim submitted.                         |
| May 29, ....    | Galloway, .....                         | Jos. Holt, .....          | Auto party set fire, .....                         | License revoked by Motor Ve-<br>hicle Dept.       |
| April 13, ....  | Hamilton, .....                         | Atlantic City R. R., .... | Caused fire by carelessly burn-<br>ing ties, ..... | Paid firewarden's bill, \$4.00.                   |

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—*Continued.*

| DATE.           | COUNTY AND TOWNSHIP.        | OFFENDER.                 | OFFENSE.  | SETTLEMENT.  |
|-----------------|-----------------------------|---------------------------|---|--|
|                 | <i>Atlantic County—Con.</i> |                           |   |  |
| May 12, .....   | Hamilton, .....             | Bartholomew Birchner,     | Burned brush without permit, and allowed fire to escape, .. | Paid \$5.00 on account of fire-warden's bill, \$7.50.  |
| May 25, .....   | Hamilton, .....             | Vincenzo Giocolone, ...   | Burned brush without permit and allowed fire to escape, ..  | Pending, offender left State.                          |
| June 9, .....   | Hamilton, .....             | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| June 10, .....  | Hamilton, .....             | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| August 9, ....  | Hamilton, .....             | William Giberson, ....    | Fire escaped from sawmill, ..                               | Dropped, insufficient evidence.                        |
| March 22, ....  | Hammonton, .....            | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Dropped, insufficient evidence.                        |
| May 1, .....    | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| May 7, .....    | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.                        |
| May 7, .....    | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$14.00.                       |
| July 6, .....   | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| July 24, .....  | Hammonton, .....            | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| August 24, ...  | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| October 27, ... | Hammonton, .....            | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, waiting receipt of township's bill.           |
| March 25, ....  | Mullica, .....              | Charles W. Walley, ....   | Allowed brush fire to escape, ..                            | Paid firewarden's bill, \$9.40.                        |
| April 27, ..... | Mullica, .....              | Alexander Ziminock, ...   | Burned brush without permit, and allowed fire to escape, .. | Paid \$5.00 on account of fire-warden's bill, \$40.75. |
| April 29, ..... | Mullica, .....              | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| April 29, ..... | Mullica, .....              | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| May 7, .....    | Mullica, .....              | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$16.40.                       |
| May 15, .....   | Mullica, .....              | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |
| June 2, .....   | Mullica, .....              | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim awaiting receipt of township's bill.    |
| March 23, ....  | Weymouth, .....             | Alfred Campbell, .....    | Allowed brush fire to escape, ..                            | Paid firewarden's bill, \$21.30.                       |
| April 7, .....  | Weymouth, .....             | John Dougherty, .....     | Allowed brush fire to escape, ..                            | Pending.   |
| May 14, .....   | Weymouth, .....             | Atlantic City R. R., .... | Fire set by locomotive, .... }                              | Paid firewarden's bill, \$2.50.                        |
| May 14, .....   | Weymouth, .....             | Atlantic City R. R., .... | Fire set by locomotive, .... }                              |  |
| May 14, .....   | Weymouth, .....             | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Pending, claim submitted.                              |



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.           | COUNTY AND TOWNSHIP.                  | OFFENDER.                                      | OFFENSE.   | SETTLEMENT.                                     |
|-----------------|---------------------------------------|--|--|---|
| May 25, .....   | Weymouth, .....                       | George Albertson, .....                        | Burned brush without permit,<br>and allowed fire to escape, ..                                 | Referred to Attorney General<br>for settlement. |
| April 28, ..... | Bergen County—<br>Alpine, .....       | Herman Walker, .....                           | Allowed brush fire to escape, ..   | Paid firewarden's bill, \$5.00.                 |
| May 3, .....    | Alpine, .....                         | Harry Hoffman, .....                           | Threw lighted match in litter<br>beside road, .....  | Released with warning.                          |
| April 18, ..... | Oakland Borough, ...                  | New York, Susquehanna<br>and Western R. R., .. | Fire set by locomotive, .....  | Pending, claim submitted.                       |
| October 29, ..  | Oakland Borough, ...                  | New York, Susquehanna<br>and Western R. R., .. | Fire set by locomotive, .....  | Pending, claim submitted.                       |
| May 10, .....   | Burlington County—<br>Evesham, .....  | Margaret Worthington, ..                       | Grandson, Henry Miller, set<br>fire to grass without permit,<br>and allowed fire to escape, .. | Released with warning.                          |
| May 15, .....   | Evesham, .....                        | A. W. Lofland, .....                           | Allowed brush fire to escape, ..   | Paid fine, \$5.00 without suit.                 |
| March 25, ....  | Medford, .....                        | Hazleton Miller, .....                         | Allowed brush fire to escape, ..   | Paid firewarden's bill, \$7.50.                 |
| May 15, .....   | Medford, .....                        | Frank Yannerello, .....                        | Caused fire by careless smok-<br>ing, .....  | Dropped, insufficient evidence.                 |
| August 4, ....  | New Hanover, .....                    | James Tantum, ....                             | Burned brush without permit,<br>and allowed fire to escape, ..                                 | Paid fine, \$10.00 without suit.                |
| May 5, .....    | Pemberton and South-<br>ampton, ..... | Walter Stewart, .....                          | Caused fire by careless smok-<br>ing, .....  | Paid firewarden's bill, \$27.10.                |
| July 16, .....  | Pemberton, .....                      | Pennsylvania R. R., ....                       | Fire set by locomotive, .....  | Pending, claim submitted.                       |
| July 16, .....  | Shamong, .....                        | New Jersey Central R.R.                        | Fire set by locomotive, .....  | Pending, claim submitted.                       |
| August 22, ...  | Shamong, .....                        | New Jersey Central R.R.                        | Fire set by locomotive, .....  | Pending, claim submitted.                       |
| May 11, .....   | Tabernacle, .....                     | Ethelbert Haines, .....                        | Allowed brush fire to escape, ..   | Pending, referred to Attorney<br>General.       |
| April 10, ..... | Woodland, .....                       | Henry Griffiee, .....                          | Caused fire by careless smok-<br>ing, .....  | Worked out penalty, \$17.50.                    |
| August 12, ...  | Woodland, .....                       | Edward Tice, .....                             | Carelessly threw away lighted<br>match, .....  | Pending.  |

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.            | COUNTY AND TOWNSHIP. | OFFENDER.                 | OFFENSE.                                   | SETTLEMENT.                     |
|------------------|----------------------|---------------------------|--|---------------------------------|
|                  | Camden County—       |                           |  |                                 |
| May 18, .....    | Chesilhurst Borough, | Harry Loudon, .....       | Burned brush without permit,               | Pending, offender left State.   |
| May 3, .....     | Clementon, .....     | James M. Cooper, .....    | Allowed clearing fire to escape,           | Pending, offender left State.   |
| July 29, .....   | Clementon, .....     | Joseph Bockewitz, .....   | Burned brush without permit,               | Paid fine, \$5.00 without suit. |
| March 11, ....   | Delaware, .....      | Pennsylvania R. R., ....  | Fire set by locomotive, .....              | No bill incurred, case dropped  |
| March 24, ....   | Waterford, .....     | New Jersey Central R.R.   | Fire set by locomotive, .....              | Pending, claim submitted.       |
| May 25, .....    | Waterford, .....     | B. Butcher, .....         | Carelessly threw away lighted match, ..... | Pending.                        |
| July 29, .....   | Waterford, .....     | New Jersey Central R.R.   | Fire set by locomotive, .....              | Pending, claim submitted.       |
| August 3, ....   | Waterford, .....     | New Jersey Central R.R.   | Fire set by locomotive, .....              | Pending, claim submitted.       |
| Dec. 3, 1910, .. | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$5.00. |
| January 10, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| January 10, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$1.00. |
| January 18, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$1.00. |
| January 18, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| January 28, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$1.00. |
| January 30, ...  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$4.00. |
| February 26, ..  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$4.00. |
| February 26, ..  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$4.00. |
| February 26, ..  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| February 27, ..  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$3.00. |
| February 27, ..  | Winslow, .....       | New Jersey Central R.R.   | Fire set by locomotive, .....              | Pending, claim submitted.       |
| February 28, ..  | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$4.00. |
| March 2, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$3.00. |
| March 3, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| March 6, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| March 8, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$3.00. |
| March 8, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| March 9, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$5.00. |
| March 9, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$2.00. |
| March 9, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....              | Paid firewarden's bill, \$3.00. |



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.          | COUNTY AND TOWNSHIP. | OFFENDER.                 | OFFENSE.                       | SETTLEMENT.                     |
|----------------|----------------------|---------------------------|--------------------------------|---------------------------------|
|                | Camden County—Con.   |                           |                                |                                 |
| March 10, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$6.00. |
| March 11, .... | Winslow, .....       | New Jersey Central R.R.   | Fire set by locomotive, .....  | Pending, claim submitted.       |
| March 14, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| March 14, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| March 22, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| March 22, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .... } | Paid firewarden's bill, \$5.00. |
| March 22, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .... } |                                 |
| March 23, .... | Winslow, .....       | New Jersey Central R.R.   | Fire set by locomotive, .....  | Pending, claim submitted.       |
| March 25, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| March 25, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| March 25, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$4.00. |
| March 25, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 2, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 3, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 3, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 3, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 4, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 8, ..... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 10, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$1.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$4.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$4.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 11, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Pending.                        |
| April 12, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| April 13, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$2.00. |
| April 26, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$8.00. |
| April 27, .... | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |
| May 1, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$4.00. |
| May 1, .....   | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....  | Paid firewarden's bill, \$3.00. |

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.          | COUNTY AND TOWNSHIP.       | OFFENDER.                 | OFFENSE.                      | SETTLEMENT.                      |
|----------------|----------------------------|---------------------------|-------------------------------|----------------------------------|
|                | Camden County— <i>Con.</i> |                           |                               |                                  |
| May 2, .....   | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$1.00.  |
| May 2, .....   | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.00.  |
| May 4, .....   | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| May 7, .....   | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$11.00. |
| May 7, .....   | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.00.  |
| May 11, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$20.00. |
| May 11, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| May 13, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| May 14, .....  | Winslow, .....             | Pennsylvania R. R., ....  | Fire set by locomotive, ..... | Pending, claim submitted.        |
| May 14, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| May 14, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$4.00.  |
| May 15, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| May 15, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$1.00.  |
| May 15, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.00.  |
| May 24, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| May 27, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| May 28, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| May 29, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| May 29, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| May 29, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| May 30, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| June 2, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| June 16, ..... | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| June 16, ..... | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| June 17, ..... | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 6, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 6, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 6, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 6, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 7, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |
| July 8, .....  | Winslow, .....             | Atlantic City R. R., .... | Fire set by locomotive, ..... | Pending, claim submitted.        |



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.                     | COUNTY AND TOWNSHIP. | OFFENDER.                 | OFFENSE.  | SETTLEMENT.  |
|---------------------------|----------------------|---------------------------|---|--|
| <b>Camden County—Con.</b> |                      |                           |   |  |
| July 10, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| July 11, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| July 11, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| August 6, .....           | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| <b>Cape May County—</b>   |                      |                           |   |  |
| February 19, ..           | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| March 21, ....            | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| March 23, ....            | Lower, .....         | Alexander Winlock, ...    | Allowed brush fire to escape, ..                            | Paid fine, \$5.00 without suit.  |
| March 24, ....            | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| March 31, ....            | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| April 2, .....            | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| April 7, .....            | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| May 3, .....              | Lower, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| March 16, ....            | Middle, .....        | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.00.  |
| April 11, ....            | Middle, .....        | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.00.  |
| August 10, ...            | Middle, .....        | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| August 10, ...            | Middle, .....        | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending.   |
| August 11, ...            | Middle, .....        | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| March 21, ....            | Upper, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim waiting receipt of township's bill.                     |
| March 22, ....            | Upper, .....         | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Pending, claim waiting receipt of township's bill.                     |
| April 25, ....            | Upper, .....         | Sarah L. Thompson, ...    | Burned brush without permit, and allowed fire to escape, .. | Released with warning.   |
| May 10, .....             | Upper, .....         | James Bishop, .....       | Dumped hot ashes in the woods which set fire, .....         | Fire fighters withdrew all claims for services, and offender released. |
| May 10, .....             | Upper, .....         | B. R. Smith, .....        | Burned brush without permit.                                | Paid fine, \$1.00 without suit.  |
| <b>Cumberland County—</b> |                      |                           |   |  |
| May 5, .....              | Commercial, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Pending, claim submitted.  |
| May 6, .....              | Deerfield, .....     | Antonio Pepitone, ....    | Allowed brush fire to escape, ..                            | Released with warning.   |

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—*Continued.*

| DATE.          | COUNTY AND TOWNSHIP.        | OFFENDER.                | OFFENSE.   | SETTLEMENT..  |
|----------------|-----------------------------|--------------------------|--|---|
|                | Cumberland Co.— <i>Con.</i> |                          |  |   |
| May 6, .....   | Landis, .....               | M. P. McFadden, ....     | Allowed brush fire to escape, ..                               | Pending.  |
| June 3, .....  | Landis, .....               | James D. McConnell, ..   | Burned brush without permit, ..                                | Paid fine, \$5.00 without suit.   |
| May 3, .....   | Lawrence, .....             | T. Angelo, .....         | Burned brush without permit,<br>and allowed fire to escape, .. | Paid fine, \$20.00 without suit.  |
| May 4, .....   | Maurice River, .....        | Pennsylvania R. R., .... | Fire set by locomotive, .....                                  | Pending.  |
| May 14, .....  | Maurice River, .....        | Pennsylvania R. R., .... | Fire set by locomotive, .....                                  | Pending.  |
| May 25, .....  | Maurice River, .....        | Pennsylvania R. R., .... | Fire set by locomotive, .....                                  | Pending, claim submitted.   |
| March 3, ..... | Millville, .....            | Charles Keighley, ....   | Allowed brush fire to escape, ..                               | Paid fine, \$50.00 without suit,<br>on account of this violation<br>and that of April 10th. |
| March 15, .... | Millville, .....            | Barton Bartholomew, ..   | Burned brush without permit, ..                                | Paid fine, \$1.00 without suit.   |
| March 21, .... | Millville, .....            | Moses Alderman, .....    | Burned brush without permit, ..                                | Paid fine, \$10.00 without suit.  |
| March 21, .... | Millville, .....            | Jacob Lobel, .....       | Burned brush without permit, ..                                | Paid fine, \$3.00 without suit.   |
| March 21, .... | Millville, .....            | Frank Horwitz, .....     | Burned brush without permit, ..                                | Paid fine, \$3.00 without suit.   |
| April 10, .... | Millville, .....            | Charles Keighley, ....   | Burned brush without permit,<br>and allowed fire to escape, .. | (See violation of March 3d).  |
| April 13, .... | Millville, .....            | Pennsylvania R. R., .... | Fire set by locomotive, .....                                  | Pending, claim submitted.   |
| April 23, .... | Millville, .....            | John Stiles, .....       | Burned brush without permit, ..                                | Released with warning.  |
| April 27, .... | Millville, ....             | Nathan Cohen, .....      | Burned brush without permit, ..                                | Paid fine, \$3.00 without suit.   |
|                | Gloucester County—          |                          |  |   |
| March 18, .... | Franklin, .....             | Dominick Negre, .....    | Allowed brush fire to escape, ..                               | Released with warning.  |
| April 29, .... | Franklin, .....             | Samuel Ferran, .....     | Burned brush without permit,<br>and allowed fire to escape, .. | Paid fine, \$25.00 without suit.  |
| May 11, ....   | Franklin, .....             | John Eckbold, .....      | Burned brush without permit,<br>nad allowed fire to escape, .. | Pending.  |
|                | Middlesex County—           |                          |  |   |
| April 25, .... | East Brunswick, ....        | Fred Richter, .....      | Burned brush without permit,<br>and allowed fire to escape, .. | Pending.  |
| May 4, .....   | East Brunswick, ....        | Robert Huebner, .....    | Allowed brush fire to escape, ..                               | Referred to Attorney General<br>for settlement.   |
| May 3, .....   | Sayreville, .....           | Pennsylvania R. R., .... | Fire set by locomotive, .....                                  | Pending, claim waiting receipt<br>of township's bill.                                       |



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.            | COUNTY AND TOWNSHIP.                               | OFFENDER.                            | OFFENSE.   | SETTLEMENT.  |
|------------------|--|--------------------------------------|--|--|
| May 3, .....     | Middlesex County— <i>Con.</i><br>Sayreville, ..... | Pennsylvania R. R., ....             | Fire set by locomotive, .....                                | Pending, claim waiting receipt of township's bill. |
| May 5, .....     | South Brunswick, ....                              | Elias Dobin, .....                   | Burned brush without permit and allowed fire to escape, ..   | Pending.   |
| March 25, ....   | Monmouth County—<br>Atlantic, .....                | New Jersey Central R.R.              | Fire set by locomotive, .....                                | Pending, claim submitted.                          |
| April 26, .....  | Atlantic, .....                                    | New Jersey Central R.R.              | Fire set by locomotive, .....                                | Pending, claim submitted.                          |
| September 9, .   | Atlantic, .....                                    | New Jersey Central R.R.              | Fire set by locomotive, .....                                | Dropped, no bill incurred.                         |
| April 26, .....  | Howell, .....                                      | New Jersey Central R.R.              | Fire set by locomotive, .....                                | Pending, claim submitted. to township.             |
| March 22, ....   | Morris County—<br>Hanover, .....                   | G. Meiners, .....                    | Allowed clearing fire to escape, ..                          | Pending.   |
| April 28, .....  | Jefferson, .....                                   | T. Scott Fichter, .....              | Allowed brush fire to escape, .                              | Released with warning.                             |
| April 24, .....  | Mount Olive, .....                                 | Del., Lack. and Western R. R., ..... | Fire set by locomotive, .....                                | Dropped, insufficient evidence.                    |
| April 12, ....   | Pequannock, .....                                  | Alfred Gilland, .....                | Allowed brush fire to escape, .                              | Paid firewarden's bill, \$7.00.                    |
| April 28, ....   | Pequannock, .....                                  | Jacob J. Mandeville, ..              | Allowed brush fire to escape, .                              | Dropped, insufficient evidence.                    |
| April 26, ....   | Roxbury, .....                                     | Del., Lack. and Western R. R., ..... | Fire set by locomotive, .....                                | Dropped, insufficient evidence.                    |
| May 7, .....     | Roxbury, .....                                     | Del., Lack. and Western R. R., ..... | Fire set by locomotive, .....                                | Pending, claim submitted.                          |
| Nov. 30, 1910, . | Ocean County—<br>Berkeley, .....                   | Maimone Antonio, ....                | Burned brush without permit, ..                              | Released with warning.                             |
| May 7, .....     | Berkeley, .....                                    | Samuel Cook, .....                   | Allowed camp fire to escape, ..                              | Paid firewarden's bill, \$33.20.                   |
| May 7, .....     | Berkeley, .....                                    | Donald Shaw, .....                   | Refused to respond to call of firewarden to fight fire, .... | Dropped with warning.                              |
| May 25, .....    | Berkeley, .....                                    | Pennsylvania R. R., ....             | Fire set by locomotive, .....                                | Pending, claim submitted.                          |
| April 12, ....   | Dover, .....                                       | Anton Cabrelle, .....                | Allowed brush fire to escape, .                              | Discharged bill, \$12.00, direct to township.      |
| April 27, ....   | Jackson, .....                                     | James D. Holman, ....                | Allowed clearing fire around cranberry bog to escape, ....   | Pending, waiting receipt of township's bill.       |
| June 1, .....    | Lacey, .....                                       | New Jersey Central R.R.              | Fire set by locomotive, .....                                | Pending, claim submitted.                          |

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911.—Continued.

| DATE.                    | COUNTY AND TOWNSHIP.  | OFFENDER.                                   | OFFENSE.   | SETTLEMENT.   |
|--------------------------|-----------------------|---|--|---|
| <i>Ocean County—Con.</i> |                       |   |  |   |
| March 21, ....           | Little Egg Harbor, .. | Alfred S. Lawrence, ...                     | Allowed camp fire to escape, .                             | Paid \$10.00, on account fire-warden's bill of \$19.00. |
| May 5, .....             | Little Egg Harbor, .. | Smith Cranmer, .....                        | Allowed grass fire to escape, .                            | Paid \$25.00, on account fire-warden's bill of \$60.00. |
| Nov. 10, 1910, .         | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| Nov. 16, 1910, .         | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| March 22, ....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| March 23, ....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| March 26, ....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| April 2, .....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| April 2, .....           | Manchester, .....     | Pennsylvania R. R., ....                    | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| April 7, .....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| April 13, ....           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| April 29, ....           | Manchester, .....     | George Bell and Richard Moore, .....        | Caused fire by careless smoking, .....                     | Dropped, insufficient evidence.                         |
| May 6, .....             | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| May 22, ....             | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| July 23, ....            | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| August 19, ...           | Manchester, .....     | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| May 25, ....             | Ocean, .....          | Jesse A. Estlow, .....                      | Burned brush without permit, and allowed fire to escape, . | Released with warning.                                  |
| June 1, .....            | Ocean, .....          | New Jersey Central R.R.                     | Fire set by locomotive, .....                              | Pending, claim submitted.                               |
| <i>Passaic County—</i>   |                       |   |  |   |
| March 24, ....           | West Milford, .....   | New York, Susquehanna and Western R. R., .. | Fire set by locomotive, .....                              | Paid firewarden's bill, \$15.00                         |
| April 28, ....           | West Milford, .....   | Mrs. W. W. Hastings, ..                     | Hired man allowed clearing fire to escape, .....           | Paid firewarden's bill, \$29.00.                        |
| May 7, .....             | West Milford, .....   | John Eckhart, .....                         | Burned brush without permit, and allowed fire to escape, . | Paid firewarden's bill, \$65.10.                        |

TABLE VII.—VIOLATION OF THE FOREST FIRE LAW, 1911.—*Continued.*

| DATE.           | COUNTY AND TOWNSHIP.                       | OFFENDER.  | OFFENSE.   | SETTLEMENT.  |
|-----------------|--|--|--|--|
| March 24, ....  | Salem County—<br>Pittsgrove, .....         | Mrs. Abram Studnic<br>and Barney Studnic, ..           | Burned brush without permit,<br>and allowed fire to escape, .. | Paid fine, \$5.00 without suit.                          |
| May 2, .....    | Pittsgrove, .....                          | H. Block, .....  | Twice burned brush without<br>permit, .....                    | Paid fine, \$20.00 without suit.                         |
| May 26, .....   | Pittsgrove, .....                          | Charles Deal, .....                                    | Burned brush without permit, ..                                | Paid fine, \$2.50 without suit.                          |
| May 11, .....   | Quinton, .....                             | Jonathan Cuff, .....                                   | Burned brush without permit,<br>and allowed fire to escape, .. | Paid firewarden's bill, \$13.90.                         |
| April 19, ..... | Somerset County—<br>North Plainfield, .... | Dr. N. P. E. Grosszman,                                | Hired man allowed brush fire<br>to escape, .....               | Paid firewarden's bill, \$4.50.                          |
| May 5, .....    | Sussex County—<br>Byram, .....             | Dana Padget, .....                                     | Caused fire by carelessness<br>with matches, .....             | Pending, referred to Attorney<br>General for settlement. |
| April 7, .....  | Hardyston, .....                           | New York, Susquehanna<br>and Western R. R., ..         | Fire set by locomotive, .....                                  | Pending, claim submitted.                                |
| May 7, .....    | Hardyston, .....                           | New York, Susquehanna<br>and Western R. R., ..         | Fire set by locomotive, .....                                  | Pending, claim submitted.                                |
| April 1, .....  | Sparta, .....                              | New York, Susquehanna<br>and Western R. R., ..         | Fire set by locomotive, .....                                  | Pending, claim suspended.                                |
| April 26, ..... | Sparta, .....                              | Clarence Decker, .....                                 | Caused fire by careless smok-<br>ing, .....                    | Paid firewarden's bill, \$10.00.                         |
| April 24, ..... | Sillwater, .....                           | Guiseppe Oazzi, .....                                  | Burned brush without permit,<br>and allowed fire to escape, .. | Released with warning.                                   |
| April 18, ..... | Vernon, .....                              | Walter Paddock and<br>Stanley Sanders<br>(boys), ..... | Thoughtlessly set fire playing, ..                             | Parents paid firewarden's bill,<br>\$5.60.               |
| May 6, .....    | Vernon, .....                              | B. F. Paddock, .....                                   | Allowed brush fire to escape, ..                               | Paid firewarden's bill, \$36.40.                         |
| May 6, .....    | Vernon, .....                              | Thomas Mann, .....                                     | Burned brush without permit,<br>and allowed fire to escape, .. | Pending.   |
| April 29, ..... | Warren County—<br>Pahaquarry, .....        | New York, Susquehanna<br>and Western R. R., ..         | Fire set by locomotive, .....                                  | Dropped, insufficient evidence.                          |



TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1910. ACTION IN 1911.

| DATE.           | COUNTY AND TOWNSHIP.                    | OFFENDER.                             | OFFENSE.  | SETTLEMENT.   |                                   |
|-----------------|---|---------------------------------------|---|---|-----------------------------------|
| 4<br>FOR        | Atlantic County—                        |                                       |   |   |                                   |
|                 | May 1, .....                            | Buena Vista, .....                    | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$8.00.   |
|                 | May 28, .....                           | Buena Vista, .....                    | New Jersey Central R.R.                                     | Fire set by locomotive, .....                               | Paid firewarden's bill, \$9.00.   |
|                 | October 18, ...                         | Egg Harbor, .....                     | Lewis Albezet, .....  | Allowed brush fire to escape, ..                            | Pending.                          |
|                 | August 13, ...                          | Folsom (Borough), ..                  | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$10.00.  |
|                 | May 20, .....                           | Galloway, .....                       | Pennsylvania R. R., ....                                    | Fire set by locomotive, .....                               | Paid firewarden's bill, \$25.40.  |
|                 | April 16, .....                         | Hamilton and Mullica,                 | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewardens' bills, \$25.65. |
|                 | April 22, .....                         | Hamilton, .....                       | F. M. Hendricks, .....                                      | Allowed brush fire to escape, ..                            | Pending, offender left State.     |
|                 | August 13, ...                          | Hammonon, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$12.00.  |
|                 | March 22, ...                           | Mullica, .....                        | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.40.   |
|                 | July 25, .....                          | Mullica, .....                        | Pennsylvania R. R., ....                                    | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.10.   |
|                 | March 21, ...                           | Weymouth, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.64.   |
|                 | March 27, ...                           | Weymouth, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.26.   |
|                 | April 11, ...                           | Weymouth, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$18.20.  |
|                 | August 13, ...                          | Weymouth, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.90.   |
|                 | September 30, .                         | Weymouth, .....                       | John Moore, .....   | Allowed brush fire to escape, ..                            | Paid firewarden's bill, \$1.58.   |
|                 | October 17, ..                          | Weymouth, .....                       | Atlantic City R. R., ....                                   | Fire set by locomotive, .....                               | Paid firewarden's bill, 75 cents. |
|                 | Burlington County—                      |                                       |   |   |                                   |
| April 28, ..... | Medford and Evesham, .....              | Samuel Hinchman, ....                 | Allowed brush fire to escape, ..                            | Paid firewarden's bill, \$28.90.                            |                                   |
| May 2, .....    | Pemberton, .....                        | Theodore Budd, .....                  | Burned brush without permit, and allowed fire to escape, .. | Paid firewarden's bill, \$3.50.                             |                                   |
| May 29, .....   | Pemberton, .....                        | Frank Ross and Robert Hilliard, ..... | Caused fire by careless smoking, .....                      | Paid firewarden's bill, \$16.00.                            |                                   |
| April 16, ..... | Woodland, Tabernacle and Southampton, . | Walter Sloan, .....                   | Allowed clearing fire around cranberry bog to escape, ...   | Prosecuted, convicted and fined \$50.00 and costs, \$16.63. |                                   |
| Camden County—  |   |                                       |   |   |                                   |
| March 27, ...   | Chesilhurst, .....                      | Pennsylvania R. R., ....              | Fire set by locomotive, .....                               | Paid firewarden's bill, \$2.00.                             |                                   |
| April 16, ...   | Chesilhurst, .....                      | Pennsylvania R. R., ....              | Fire set by locomotive, .....                               | Paid firewarden's bill, \$8.75.                             |                                   |
| February 8, ... | Winslow, .....                          | Atlantic City R. R., ....             | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.00.                             |                                   |
| February 11, .. | Winslow, .....                          | Atlantic City R. R., ....             | Fire set by locomotive, .....                               | Paid firewarden's bill, \$2.00.                             |                                   |



TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1910. ACTION IN 1911.

| DATE.                      | COUNTY AND TOWNSHIP. | OFFENDER.                 | OFFENSE.                      | SETTLEMENT.                      |
|----------------------------|----------------------|---------------------------|-------------------------------|----------------------------------|
| Camden County— <i>Con.</i> |                      |                           |                               |                                  |
| February 23, ..            | Winslow, .....       | Pennsylvania R. R., ....  | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| February 26, ..            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$6.00.  |
| February 26, ..            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.50.  |
| March 4, .....             | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| March 9, .....             | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.50.  |
| March 14, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| March 15, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| March 16, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$6.00.  |
| March 17, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| March 18, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.00.  |
| March 18, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.00.  |
| March 19, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$6.00.  |
| March 19, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| March 20, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$12.00. |
| March 21, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| March 21, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$1.75.  |
| March 22, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.50.  |
| March 22, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.00.  |
| March 22, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.75.  |
| March 23, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$1.75.  |
| March 23, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$6.75.  |
| March 23, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$7.75.  |
| March 25, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$6.75.  |
| March 25, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$2.75.  |
| March 26, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$5.75.  |
| April 2, .....             | Winslow, .....       | New Jersey Central R.R.   | Fire set by locomotive, ..... | Paid firewarden's bill, \$1.00.  |
| April 15, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$3.00.  |
| April 15, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$4.50.  |
| April 16, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$15.50. |
| April 16, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$22.00. |
| April 20, .....            | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, ..... | Paid firewarden's bill, \$11.50. |

TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1910. ACTION IN 1911.—Continued.

| DATE.              | COUNTY AND TOWNSHIP.                | OFFENDER.                                   | OFFENSE.   | SETTLEMENT.  |
|--------------------|-------------------------------------|---|--|--|
| Camden County—Con. |                                     |   |  |  |
| April 30, .....    | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$9.75.                                |
| April 30, .....    | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$8.50.                                |
| July 21, .....     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire caused by burning waste<br>thrown from locomotive, ...    | Paid firewarden's bill, \$2.00.                                |
| July 27, .....     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$2.00.                                |
| July 29, .....     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$17.80.                               |
| July 29, .....     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$5.00.                                |
| August 1, ....     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$7.00.                                |
| August 11, ...     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$3.00.                                |
| August 13, ...     | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Pending.   |
| September 16, ..   | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$5.00.                                |
| September 17, ..   | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$6.00.                                |
| September 17, ..   | Winslow, .....                      | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$2.50.                                |
| Cape May County—   |                                     |   |  |  |
| Dec. 24, 1909, ..  | Lower, .....                        | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Dropped, township presented<br>no bill.                        |
| March 16, ....     | Lower, .....                        | Atlantic City R. R., ....                   | Carelessly burning ties, .....                                 | Paid firewarden's bill, \$7.00.                                |
| August 6, ....     | Middle, .....                       | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$3.00.                                |
| September 16, ..   | Middle, .....                       | Pennsylvania R. R., ....                    | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$15.70.                               |
| April 16, ....     | Upper, .....                        | Atlantic City R. R., ....                   | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$6.00.                                |
| Cumberland County— |                                     |   |  |  |
| April 15, .....    | Deerfield and Fair-<br>field, ..... | David Everingham and<br>Matthew Cuff, ..... | Burned brush without permit,<br>and allowed fire to escape, .. | Paid fine, \$20.00, and prelimi-<br>nary costs of prosecution. |
| May 16, .....      | Deerfield, .....                    | New Jersey Central R.R.                     | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$3.00.                                |
| October 9, ...     | Deerfield, .....                    | Fred Kranart, .....                         | Burned brush without permit,<br>and allowed fire to escape, .. | Paid \$20 fine without suit.                                   |
| October 16, ...    | Deerfield, .....                    | Kahn Adler, .....                           | Allowed brush fire to escape, ..                               | Paid \$20 fine without suit.                                   |
| May 28, .....      | Downe, .....                        | New Jersey Central R.R.                     | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$40.70.                               |



TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1910. ACTION IN 1911.—Continued.

| DATE.           | COUNTY AND TOWNSHIP.                        | OFFENDER.                               | OFFENSE.   | SETTLEMENT.  |
|-----------------|---|---|--|--|
| May 28, .....   | Middlesex County—<br>East Brunswick, .....  | Jacob Swiller, .....                    | Burned brush without permit,<br>and allowed fire to escape, .. | Prosecuted, decision pending.                      |
| March 25, ....  | Morris County—<br>Hanover, .....            | Del.; Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$32.00.                   |
| April 10, ..... | Hanover, .....                              | Del., Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$14.00.                   |
| April 10, ..... | Hanover, .....                              | Del., Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$27.00.                   |
| October 12, ..  | Jefferson and Sparta<br>(Sussex county), .. | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Pending.   |
| March 25, ....  | Mount Olive, .....                          | Del., Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$57.80.                   |
| March 26, ....  | Mount Olive, .....                          | Del., Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$12.00.                   |
| April 2, .....  | Mount Olive, .....                          | Del., Lack. and Western<br>R. R., ..... | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$101.70.                  |
| July 25, .....  | Ocean County—<br>Lacey, .....               | Tuckerton R. R., .....                  | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$17.25.                   |
| March 11, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$2.00.                    |
| March 20, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$4.00.                    |
| March 21, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$5.00.                    |
| March 23, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$2.00.                    |
| March 25, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$11.00.                   |
| March 26, ....  | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$6.00.                    |
| October 2, .... | Manchester, .....                           | Pennsylvania R. R., .....               | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$28.00.                   |
| October 3, .... | Manchester, .....                           | New Jersey Central R.R.                 | Fire set by locomotive, .....                                  | Pending, claim submitted.                          |
| March 19, ....  | Stafford, .....                             | Tuckerton R. R., .....                  | Fire set by locomotive, .....                                  | Paid firewarden's bill, \$4.50.                    |
| March 30, ....  | Union, .....                                | Tuckerton R. R., .....                  | Fire set by locomotive, .....                                  | Pending, claim waiting receipt of township's bill. |



TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1910. ACTION IN 1911.—*Continued.*

| DATE.           | COUNTY AND TOWNSHIP. | OFFENDER.                                      | OFFENSE.                         | SETTLEMENT.                      |
|-----------------|----------------------|--|----------------------------------|----------------------------------|
|                 | Passaic County—      |  |                                  |                                  |
| April 15, ....  | Pompton, .....       | Erie R. R., .....                              | Fire set by locomotive, .....    | Pending.                         |
| April 15, ....  | Pompton, .....       | Erie R. R., .....                              | Fire set by locomotive, .....    | Pending.                         |
|                 | Salem County—        |  |                                  |                                  |
| October 3, .... | Pittsgrove, .....    | Frank Rothman, .....                           | Allowed brush fire to escape, .. | Paid firewarden's bill, \$10.40. |
|                 | Sussex County—       |  |                                  |                                  |
| April 2, .....  | Hardyston, .....     | New York, Susquehanna<br>and Western R. R., .. | Fire set by locomotive, .....    | Paid firewarden's bill, \$6.00.  |
| April 2, .....  | Sparta, .....        | New Jersey Central R.R.                        | Fire set by locomotive. ....     | Pending.                         |

TABLE IX.—VIOLATIONS OF THE FOREST LAW, 1909. SETTLED IN 1911.

| DATE.              | COUNTY AND TOWNSHIP. | OFFENDER.                 | OFFENSE.  | SETTLEMENT.  |
|--------------------|----------------------|---------------------------|---|--|
| Atlantic County—   |                      |                           |   |  |
| October 29, ...    | Buena Vista, .....   | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.00.  |
| July 18, .....     | Folsom Borough, .... | Atlantic City R. R., .... | Fire caused by careless burning by section men, .....       | Paid firewarden's bill, \$12.20.   |
| October 16, ...    | Hammonton, .....     | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.00.  |
| August 10, ...     | Winslow, .....       | Pennsylvania R. R., ....  | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.35.  |
| September 8, .     | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$4.00.  |
| October 6, ...     | Winslow, .....       | Atlantic City R. R., .... | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| Gloucester County— |                      |                           |   |  |
| March 27, ....     | Franklin, .....      | Lewis E. Jackson, ....    | Burned brush without permit, and allowed fire to escape, .. | Offender tried, convicted, but fled jurisdiction.                            |
| Ocean County—      |                      |                           |   |  |
| April 11, .....    | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$4.00.  |
| April 28, .....    | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| May 4, .....       | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| May 30, .....      | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Compromised with railroad company which paid \$153.93, half amount of bills. |
| June 18, .....     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| July 9, .....      | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$3.00.  |
| July 14, .....     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$1.00.  |
| July 14, .....     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$4.00.  |
| July 26, .....     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| August 2, ...      | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$10.00.   |
| August 3, ...      | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$6.00.  |
| August 10, ...     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.00.  |
| August 12, ...     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$4.00.  |
| August 31, ...     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$2.00.  |
| September 3, .     | Manchester, .....    | New Jersey Central R.R.   | Fire set by locomotive, .....                               | Paid firewarden's bill, \$5.00.  |

## FEDERAL CO-OPERATIVE FIRE PATRÓL.

In one branch of fire control the past year has developed the first effort made in the State on any general scale; this is a paid fire patrol. A fund of \$200,000 was made available by the last Congress for "the protection from fire of the forested watersheds of navigable streams" in co-operation with the various States. Under this act such help is offered only to those States which have by law provided for forest fire protection, and in no case can the amount furnished by the Federal Government in any year exceed the amount appropriated by the State within the same time for similar purposes.

By an agreement made on July 1st with the Secretary of Agriculture, in whose hands the disbursement of the fund is placed, \$1,000 of this Federal appropriation was allotted to New Jersey, and available during the balance of the calendar year for the establishment of a forest fire patrol. Under the existing interpretation of the law, this expenditure was restricted to the watersheds in the northern portion of the State, and, since the exposure of this section is far less emphatic in the summer months, it was determined to concentrate this year on the fall season.

The general system fixed upon was a road patrol, with lookout stations upon the few points available from which a sufficient outlook and reasonably prompt communication to the territory under observation could be had. After a thorough investigation of the area, 44 patrolmen were engaged, each assigned to a specific route. Their duty was to traverse these routes and report to the proper firewarden, or to extinguish themselves all fires seen, and to apprehend those responsible for them. Five lookout stations were also established from which frequent observations were made each day.

The fire watchers at these stations were on duty every day in October and November, but the fund available was so limited that it was necessary to authorize the patrol only on days when the people in the woods were likely to be most numerous, viz., holidays and hunting days. The patrol was ordered for a period of fifteen days in all, covering these dates so far as possible.



In actual service, however, the time covered by all was less, because of the wet weather that so often prevailed, under which conditions the patrol ceased automatically. The average time served by each patrol was but nine days, and this brief service, linked with prevailing weather conditions, should properly, and does, account for a lower aggregate of tangible results than had been expected. On the other hand, the moral effect of a body of men known to be on the watch for fires and their originators is an item in the account that the future probably will appraise highly.

Despite the conditions stated, however, the patrol reported 27 fires with the significant feature that 17 of them, found on days and in situations making it quite probable that they would have become true forest fires without this prompt attention, were put out by the patrol themselves and that a warden or competent fighting force was notified of all others in time to prevent a serious fire. It is particularly noteworthy also that so far there has been no fire reported from the patrolled section of which mention is not made by some patrolman.

A continued and thorough supervision of the men when on duty proved that, with few exceptions, their work was done conscientiously throughout and a canvass subsequent to the patrol season further showed that practically all are ready to serve again. The fall work has, therefore, accomplished these things: the actual control of fires in the patrolled district; the establishment of an organized force available for future use; the focussing of public interest in this section on the forest fire problem in a way never before realized; and finally, though not concretely measureable, the stimulating of respect for the fire law and of care among forest users in handling fire.

The actual expense to the Federal Government has been \$984—for patrol service only—and the expense to the State—for patrol organization and administration only—approximately \$492, in addition to the cost of the regular fire service. It is believed that the work already done has paved the way for a continuance of this fire preventative, so vastly preferable to the most effective cure. The hope is further that the lesson in effectiveness found in the present record may encourage private enter-



THE  
FOREST FIRE SERVICE  
OF NEW JERSEY  
BY TOWNSHIPS  
1911

Scale of Miles  
5 10 15

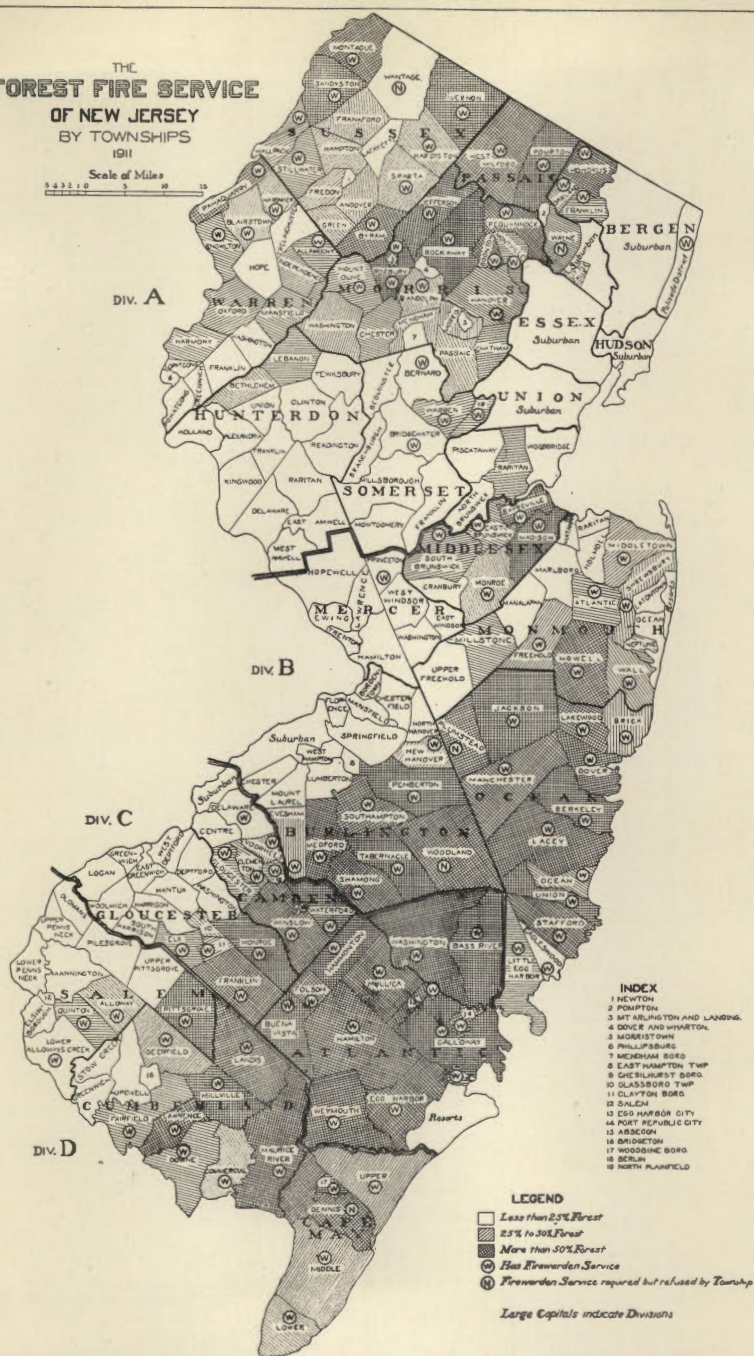


Fig. 13.—The State Forest Fire Service.



NEW JERSEY  
FOREST FIRES  
BY TOWNSHIPS  
1911

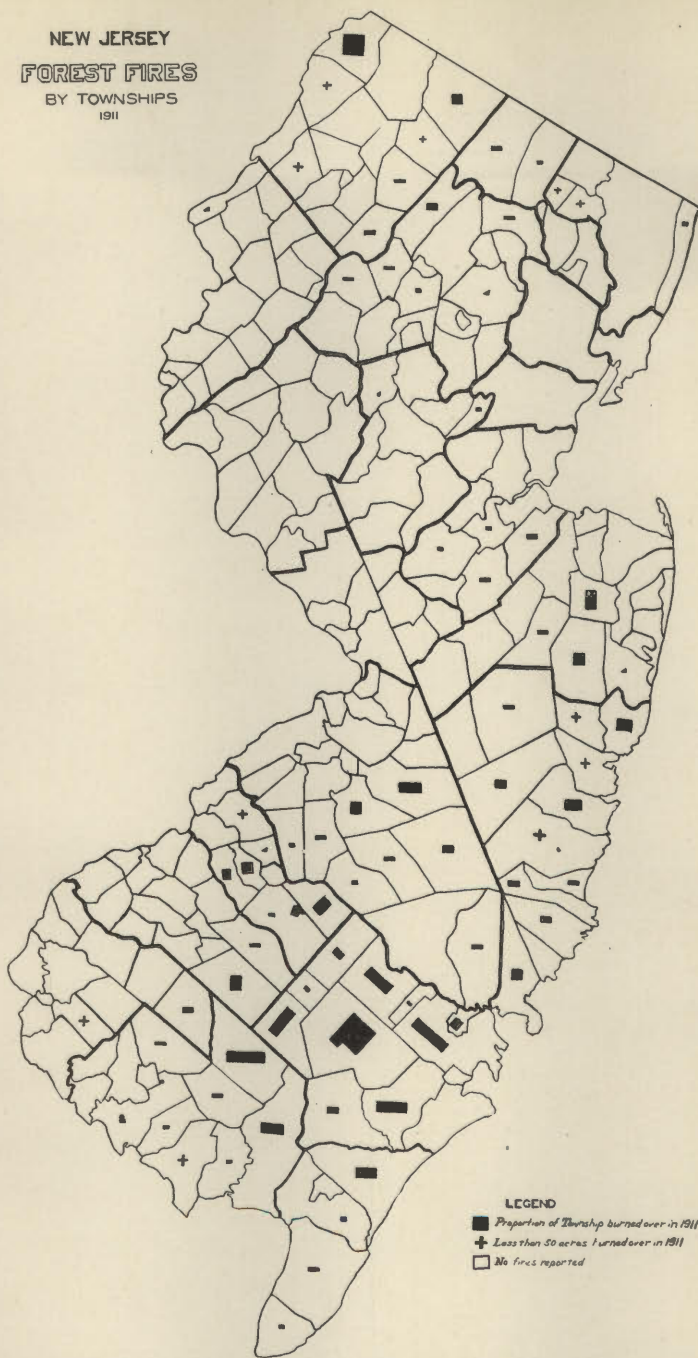
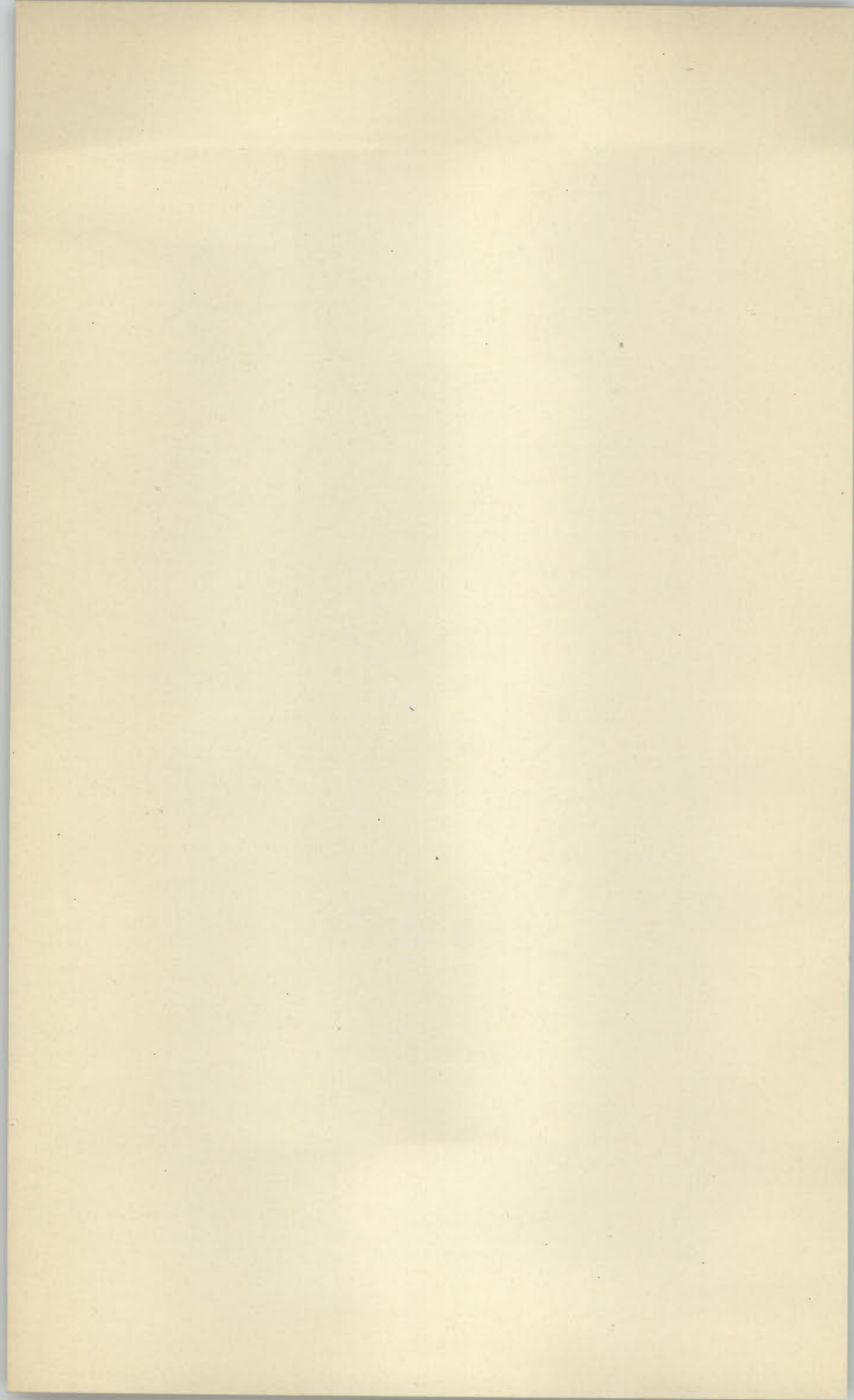


Fig. 13a.—Forest Area Burned, 1911. The black spot in each township—see opposite map—represents the proportion of the township burned, but not the location of fires.



prise of a similar type, where forest interests are large enough, or small ones closely enough allied, to make a fire patrol a practical as well as a vital feature.

#### THE FOREST FIRE ORGANIZATION.

Particularly noteworthy has been the advance made during the past year in the reorganization of the whole fire service and in the increased effectiveness secured thereby on the administrative side by the addition of four State firewardens and, locally by the increased number, and the improving interest and efficiency, of the local wardens.

Made possible by an amendment to the fire law passed by the last Legislature, four division wardens have been added to the State firewarden's office, who work with that office in the administration of the forest fire business of the State. These men have headquarters in (1) Dover, (2) Lakehurst, (3) Hammonton and (4) Millville, and divide the State into divisions composed as follows: (1) Bergen, Essex, Hudson, Hunterdon, Morris, Passaic, Somerset, Sussex, Union and Warren counties and that part of Middlesex county lying north of Raritan river. (2) Mercer, Monmouth, and Ocean counties, the portion of Middlesex lying south of the Raritan river, and Burlington county exclusive of Bass River and Washington townships. (3) Atlantic, Camden and Gloucester counties and Bass River and Washington townships in Burlington county. (4) Cape May, Cumberland and Salem counties. (See fig. 13.)

By increased activity of the local wardens, by marked promptness in handling the business of the fire service, particularly violations of the law, and by a growing co-operation between the townships and State in the control of fire, results prove the value of this extension in the short time it has been active. It is believed that these results present but surface features whose underlying utility the next year's work will amplify and prove.

The achievement of the local organization in its sphere also shows encouraging improvement. Former wardens whose service was unsatisfactory have been replaced by men whose heart is in the work. Many of those who previously neither



appreciated the significance of the movement nor accepted the responsibilities of their position have taken a new grip. Also, where often heretofore the incumbent has been urged to a reluctant acceptance of the wardenship, vacancies may now be filled from several candidates. Alert and effective attention to fires has marked the season's record and a note that "quick work and hard fighting enabled us to put the fire out without much damage" still commands the same appreciation but less remark than in the past. Not the least satisfactory and useful feature of this year's gain, however, is the increased thoroughness in preparing and promptness in submitting reports by the firewardens, which renders it possible to take up an investigation before the matter has grown old. The items are not all on this side of the account, however, and the work of weeding out and stimulating is far from complete. In a number of cases incompetence or inactivity has caused a warden to be put on probation. For actual malfeasance removals are exceptional but were necessary in two cases.

During the year the fire service has been installed in eight new townships as follows: Absecon City, Berlin, Bernard, Bridgewater, Middletown, North Plainfield, Shrewsbury and Warren, and with the beginning of the new calendar year wardens will probably be appointed in eight more. On the other hand, wardens have been discontinued in Harrington township, Bergen county, because the forest exposure there has been so broken that they are not needed. There is no antagonism among the people.

An effort has also been made to find means of supporting wardens in the few townships that have refused to make their own appointments despite a requisition by the Commission. Although a pacific adjustment of these differences is always sought, it is apparent that strong measures will have to be resorted to.

The Commission is now prepared to make the fire service effective in every part of the State where it is needed.

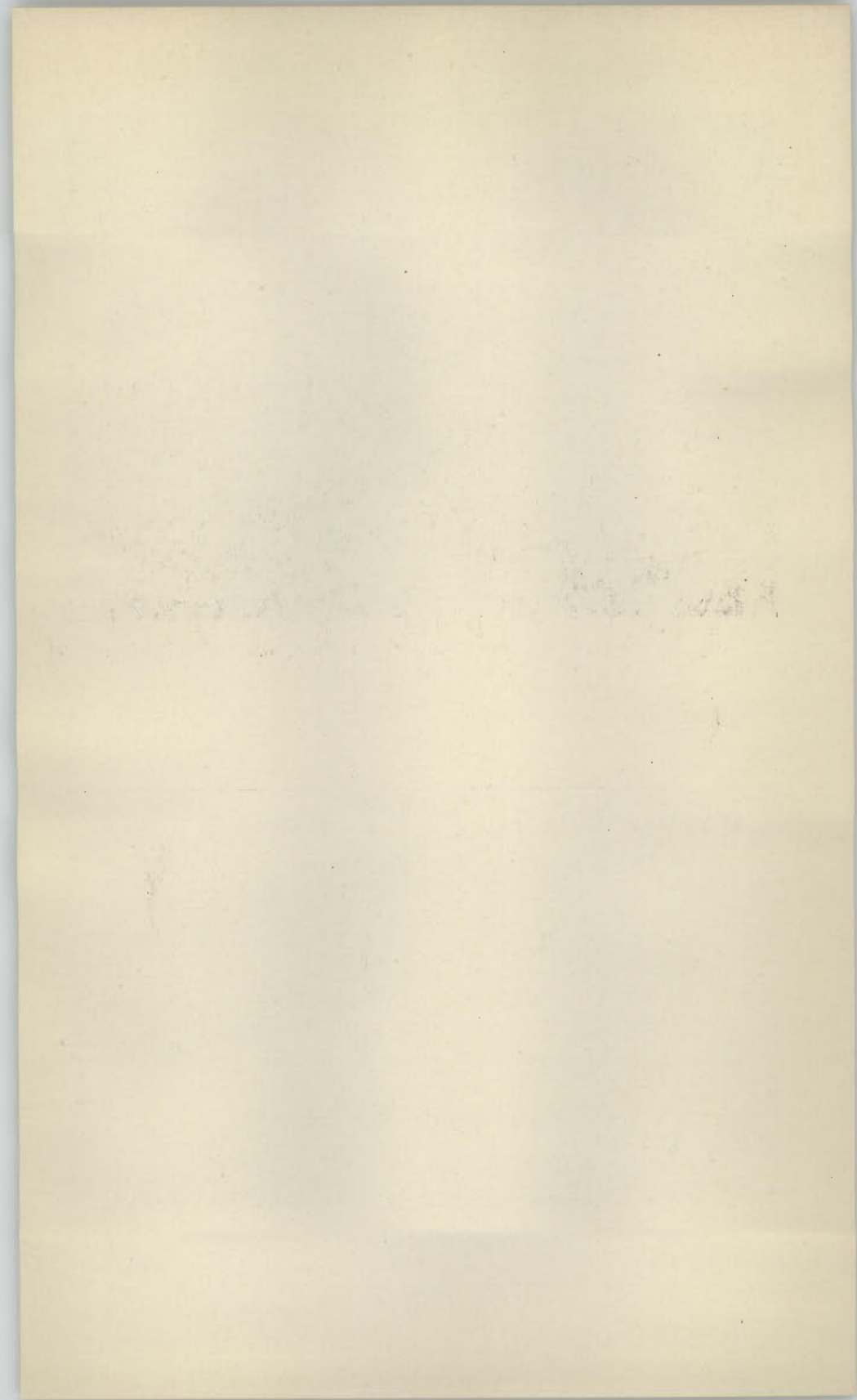




Fig. 8.—A Typical Road in "The Pines"—Overgrown and Difficult to Travel as Well as Favorable to Forest Fires.



Fig. 9.—A Similar Road Made to Serve as a Fire Lane.



## ARE ROADS A WOODLAND MENACE OR PROTECTION?

As has been already indicated (see p. 29), probably a larger proportion of the fires than appears on the surface may be traced to traffic along the roads traversing the forested sections. The increasing tendency to rapid transportation and the continual extension of improved roads adds to this danger each year. Carelessness with matches and smoking materials is proverbial, and that portion of the forest affected by the road menace is peculiarly exposed to the starting of fires by these agencies. That a road in the condition indicated in Figure 8 is a natural fire trap needs no argument, nor is the area shown there an exaggeration of conditions that are very general in all the wooded sections.

Aside from its value in curtailing the fires started, a properly or even reasonably well-cared-for roadside affords in many instances the only secure line of attack in fighting an advancing fire. That many roads are needlessly neglected, and that thereby the efficiency of the fighters' service is curtailed, if not cut off, is evidenced by constant comment from the wardens, of which the following is typical: "We could have put it out in shorter time, but the roads were grown up and we were unable to back fire." See Figs. 8, 9.

Fires started along a road cannot be traced to those responsible except under peculiarly fortunate circumstances. To control them, therefore, we must rely entirely upon a gradual improvement in the carefulness of the public in such situations and on the preparation of the roads to obviate their tendency to spread a fire.

A law (Chapter 98, Laws of 1900) now stands upon the statutes which gives the townships ample authority to keep their roads in a safe state, but the movement must come through the governing bodies of the townships. Some few, though a deplorable minority, are already alive to the opportunity offered by this law and are requiring its application in their territory.

That the tax now levied upon some townships for fire fighting would in a few years be sufficiently reduced by proper care of the roads to compensate for the expense put into this work may

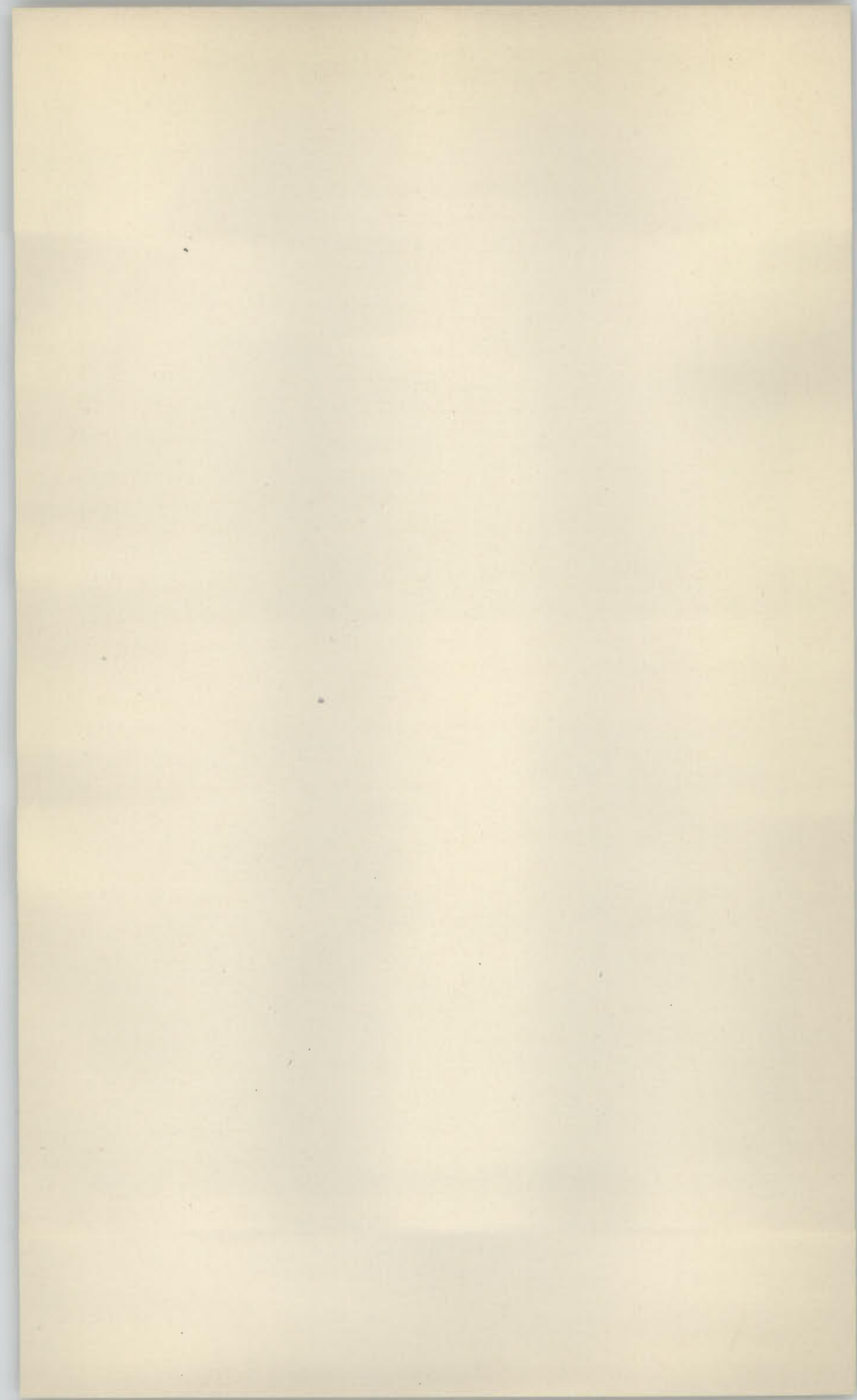
be open to question, but it is at least an open question. That such attention to road conditions is sane insurance to abutting woodland, for both fire prevention and control, does not admit of argument. The success that has attended the construction of railroad fire lines as fire deterrents (see below) leaves no doubt that time and money spent in similar improvements of our roadsides would materially reduce the area burned in our woodlands.

#### RAILROAD FIRE LINES.

What is commonly called the Railroad Fire Line Law, Chapter 74, Laws of 1909, is still in the courts, the suit by James Vreeland restraining the Erie Railroad Company and the Forest Commission from enforcing it being still undecided.

Though this state of uncertainty is deplorable, the situation has elements of encouragement, chief among them being the voluntary extension of their fire lines by the New Jersey Central Railroad, by the Atlantic City Railroad, and, to a limited extent, by the Pennsylvania Railroad. If the law had been enforced more or less as a compulsory measure some of the advantages of this voluntary execution would have been lost.

With respect to the effectiveness of the fire lines the fire-wardens' reports have but one tale to tell; namely, that wherever they have been established serious forest fires have not occurred, while outside the lines some bad ones have begun. Though it has never been claimed that a fire line of this character would automatically prevent any fire beyond it, it is significant that the record of the year shows only one fire which jumped the safety belt and got into the adjoining woodland. Four fires were started beyond the fire lines by sparks thrown entirely across them, so that to this extent the lines were of no value; though, as the consequent fires were all extinguished before they became serious, it is reasonable to conclude that the lines are practically effective at their present width. A further value in the measure is found in the action of practically all the railroads in the State regarding the cleaning of their rights of way. All the South Jersey roads at least are more scrupulous in this





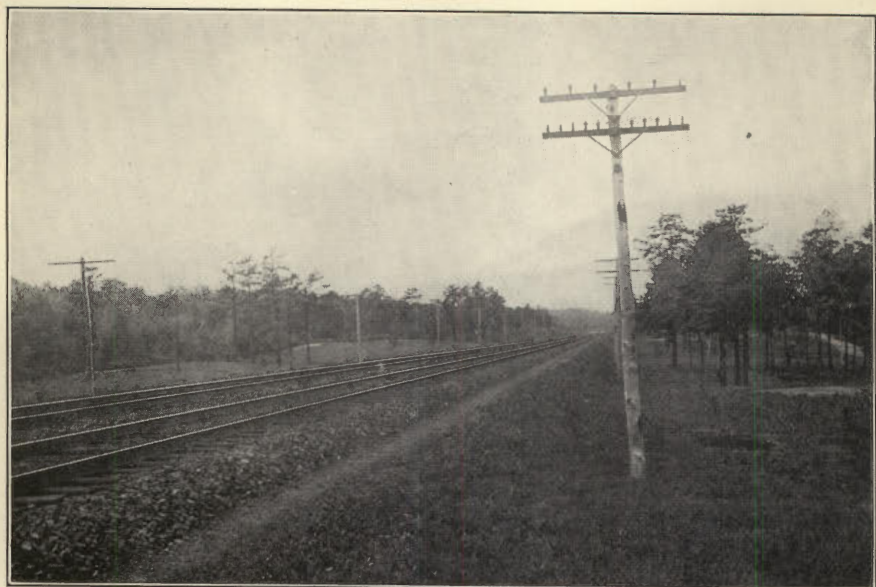


Fig. 10.—Railroad Fire Line in Good Shape. It Has Just Been Cleaned the Third Time.



Fig. 11.—A Fifteen Feet Wide Fire Line Cut Through the Forest Where there is no Road. This Cost \$15 a Mile and Should be Recleared Every Two Years.

respect than ever, and in not a few instances their clearings have been extended considerably beyond the right of way with the consent of property owners.

This is by no means an expression of satisfaction with what has been done by all the roads, for some have failed to do anything, and even in South Jersey the quality of the work is variable. This, however, is only natural in view of the position taken by the Forest Commission, that so long as the constitutionality of the law is in question it will strive only to secure the construction and maintenance of fire lines by voluntary action, not by an attempt to enforce the provisions of the act.

The new work done by each railroad may be summarized thus :

*Pennsylvania Railroad.*

In the fall of 1910 it was arranged that fire lines should be extended at the following points: 1. Along the Philadelphia and Long Branch Railroad, (a) between Pemberton and New Lisbon, about two and one-fourth miles; (b) east of Toms river, about four miles; (c) on the Browns Mills branch, about three miles. 2. Along the Freehold and Jamesburg Agricultural Railroad, (a) east of Fairfield, about five-eighths of a mile; (b) west of Farmingdale, about three-eighths of a mile; (c) between Farmingdale and Manasquan, about two and seven-eighths miles. 3. Along the Camden and Atlantic Railroad, (a) between Lucaston and West Berlin, one and one-eighth miles; (b) between Berlin and Atco, one and one-fourth miles. 4. On the Maurice River branch, at various points between Manumtiskin and Port Norris, two and one-fourth miles. 5. On the Bridgeton branch, at various points between Aura and Finley, five and one-half miles. 6. On the Salem branch, at various points between Tomlin and Riddleton, two and one-half miles; a total of 25.6 miles. Of this construction only 2.4 miles along the Camden and Atlantic Railroad and 10.25 miles along the Maurice River, Salem and Bridgeton branches, a total of 12.65 miles, was carried through, although between one and two miles of standard fire lines were made at points not ordered,



chiefly on the West Jersey and Seashore division. Wide clearings without safety belts were also made at other points.

Comparatively little reclearing of lines previously made has been done beyond the railroad right of way. As the record of the Pennsylvania Railroad with respect to the starting of forest fires grows steadily better, the necessity for maintaining fire lines decreases. Nevertheless, it is regrettable that this road has not found it expedient to protect itself by this means. No provision for new construction next year has been undertaken as only a fraction of the line authorized a year ago has been made.

*New Jersey Central Railroad.*

For the year 1911 this railroad agreed to extend its fire lines:

1. Along the Toms River branch, (a) between Lakehurst and Toms River; (b) between Toms River and Waretown; about 26 miles in all.
2. Along the main line of the New Jersey Southern Railroad between Winslow and Landisville, about 7 miles.
3. Along the High Bridge branch between Morris County Junction and Hopatcong, about 3 miles.

The work under 1 and 2 was all done in a satisfactory manner, although the total necessary clearing was found to be only 28.25 miles. On the High Bridge branch, however, many objections by property owners were made and it was deemed advisable to withdraw that section. The New Jersey Central Railroad has thus made in two years 66 miles of standard fire line, all of which is kept in good condition. This road further enjoys the distinction of being the only one in the State which has definitely agreed to extend its lines the coming winter. Thirty-two miles have been provided for through the necessary notices to property owners.

*Atlantic City Railroad.*

This road has made 23 miles of new fire lines under agreement with the Forest Commission and about 18 miles more, partly effective, in co-operation with property owners. This construction with the 35 miles made last year gives a total of 76



miles. The new work done is: 1. On the Gloucester branch, between the north branch of Timber Creek and Hilltop station, five-eighths of a mile. 2. On the Cape May branch, between Tuckahoe and Woodbine, 7.6 miles. 3. On the Ocean City branch, one-half mile. 4. On the main line: (a) Between Williamstown Junction and Winslow Junction, 7 miles; (b) between Hammonton and Egg Harbor, 7.5 miles. On the Cape May branch, extra voluntary work, 18 miles. All the line but the last has been well made according to standard and the reclearing on most sections is unusually well done. Fig. 7. For next year the Superintendent informs us that he is not authorized to agree to any new construction. There is a probability, however, that some recognized exposures will be covered.

*Lehigh and Hudson River Railroad.*

The exposure along this road is slight, but the requirement of 700 feet east of Allamuchy station has been covered.

*New York Central and Hudson River (West Shore) Railroad.*

The year's requirement for this road was 2,830 feet to be made northward from West Englewood station. The line has been made as projected, and last year's cutting worked over in a satisfactory manner. As the extension of the lines along this road are likely to encounter objections from property owners it was deemed advisable not to attempt to extend them at this time.

*Tuckerton Railroad.*

Last fall the Superintendent asked authority to cover the whole length of this road with fire lines. This was accordingly given after the usual notification to property owners. But the making of fire lines has gone slowly. Only a few spots along the road have been worked, and not much done outside the right of way toward keeping up the line constructed last year. In view of the many fires started along this road it is unfortunate that

standard fire lines have not been maintained throughout its whole length.

*Raritan River Railroad.*

The management of this road asked for authority to construct fire lines along the whole length of its Serviss branch, considerably more than would have been required to be made in one year. Though the consent of property owners was obtained in the manner prescribed by law no work on the fire lines has been done.

*Mount Hope Mineral Railroad.*

The total exposure along this road was covered by the construction of fire lines in 1910. These have been satisfactorily maintained and the road's full obligation under the law is thereby fulfilled.

*Other Railroads.*

With respect to all other railroads in the State no effort has been made to enforce the law, and practically nothing has been done by way of voluntary construction outside the rights of way. The fires that have been started along these roads, notably by the Delaware Lackawanna and Western and the Erie, have been numerous and some of them serious, a condition that is in strong contrast with that found on the South Jersey railroads, where with a much greater exposure, and a greater number of fast moving trains, the damage by fires has been relatively less.

The total length of effective fire lines now in the State is approximately 235 miles.

*Wharton and Northern Railroad Fire Car.*

Reference was made in the last report to an order by the Forest Commission authorizing the Wharton and Northern Railroad Company to maintain a high speed motor car equipped with fire fighting apparatus as a substitute for the fire lines which under the law the road might be required to make and maintain.

This car has been kept in service throughout the season, running close behind each train whenever the vegetation along the track was in a condition to burn. The experiment has been entirely successful. No fires have been started from the railroad, the management is satisfied alike with its freedom from damage claims and with the small cost of operation. The success of this single car may be referred to as evidence of the wisdom of authorizing a body like the Forest Commission to meet each situation in whatever promises to be the most practicable way. Such a car would be a nuisance on any of the larger roads; it is even doubtful if one could be run satisfactorily on any other railroad in the State than this where trains are few and the speed not great.

#### *Action of Property Owners.*

The willingness of property owners to co-operate with the Forest Commission and the railroads in the maintenance of fire lines is even more unanimous than it was a year ago, if their failure to file objections may be taken as an index. Thus of the 348 property owners who were notified of the intention to construct fire lines this year only 18 objected. Every objection has of course been upheld in accordance with the policy laid down by the Forest Commission, and in the case of the High Bridge branch of the New Jersey Central Railroad above referred to, the construction of a length of fire line was suspended on account of the objections so interrupting it that it could have had but little value. All this has had the further effect of satisfying those most interested that neither the Forest Commission nor the railroad have any sinister object in carrying through this work. The law, if it shall be finally upheld, apparently safeguards the interest of the property owners in every reasonable way. The fear that the right of entrance given a railroad company might develop into a title by possession is being allayed, and it is found practicable in cases of assumed injury to make an adjustment which satisfies all interests.



*What a Fire Line Is.*

As interest in these fire lines is still active, while knowledge of their construction and specific objects is limited, the following description from last year's report is here reproduced:

Figure 12 shows in a diagramatic way the essential features of a railroad fire line constructed on level ground. Many people, including some railroad superintendents, think that the best fire line is one which is entirely clear of trees for a width of not less than 100 feet. If the ground could be entirely bared, and kept so, that would be true, but since weeds, sprouts and a variety of growth could not be suppressed at a reasonable cost, it is much better to allow trees to stand at intervals over the greater part of the danger zone because their crowns interrupt falling sparks, and in many cases may prevent such sparks from reaching the inflammable material on the ground until they have lost their power to ignite it.

The essential features of the fire lines as required in this State are: A safety belt, or bared strip, ordinarily 10 feet wide and usually 100 feet from the nearest rail of the track. This safety belt serves in a way as an automatic fire check. From its whole length and width every particle of vegetation and inflammable matter is to be removed and the mineral soil exposed, and so maintained. Between the safety belt and the roadbed lies what is called the danger zone, usually 100 feet wide. Here the ground is simply cleared of grass, brush, etc., by mowing or burning, or both, and the trees where they form thickets are thinned out. There is no need to remove any tree of fairly good form unless it crowds closely upon several others, but all trees which remain are trimmed of branches to a height of 6 feet.

If a spark is thrown from a locomotive stack beside one of these fire lines the interference of the standing trees will probably so retard its fall that its igniting power is lost; but if a spark is not so killed it is practically sure to fall inside the safety belt. There it finds little to burn, and if some grass or dry leaves are ignited the fire can gain little force or headway before it

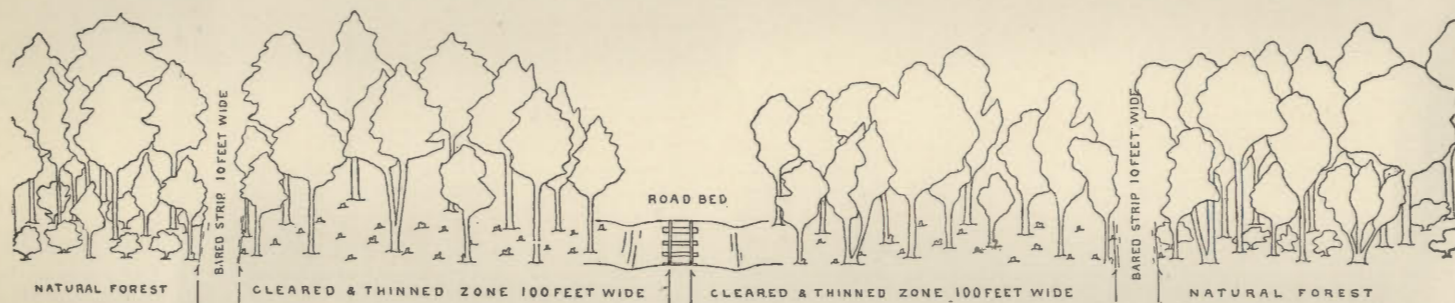
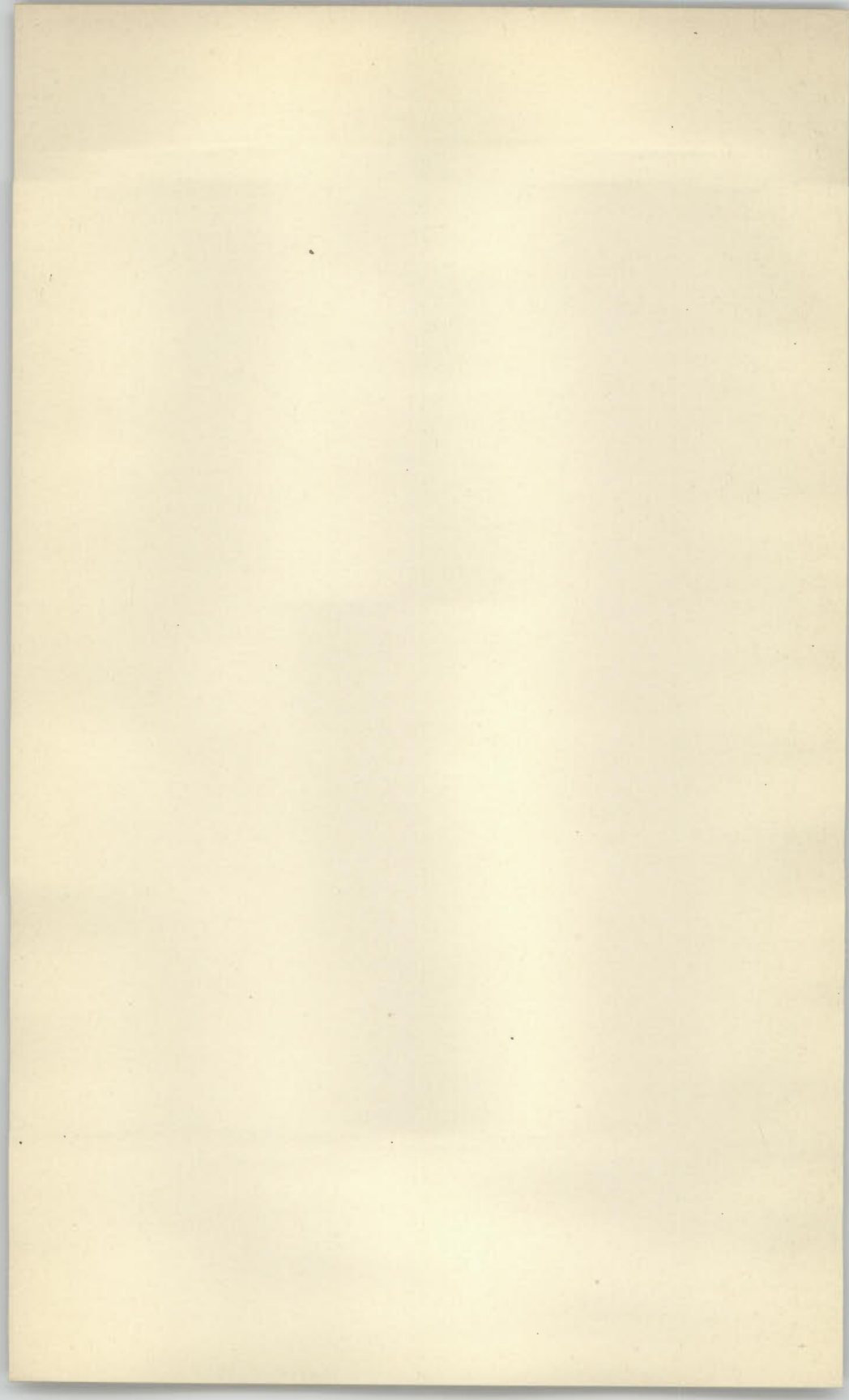


Fig. 12.—Diagram of Railroad Fire Line Constructed on Level Ground According to Chapter 74, Laws of 1909.





reaches the safety belt. If this safety belt is properly maintained a small fire is not apt to cross it, even if there is considerable wind, but must go out for want of fuel. If a fire starts while the wind is strong no practicable barrier will stop it. Fire fighters are needed.

#### *Cost of Fire Lines.*

No new figures of the cost of fire lines have been secured. According to our best information, therefore, the cost still ranges from \$125 to \$500 a mile; the former figure approximating the cost in the pine forests of South Jersey, the latter where the ground is rough and rocky.

#### *Value of Fire Lines.*

The Commission finds no ground to modify its belief that by means of these fire lines fires started from the railroads in our territory can be in large measure controlled. It is not in any sense implied that the fire lines themselves do this. The best that can be expected is that they will check most of the incipient fires, the rest being left to the local firewardens, who invariably look closely after territory protected in this way, and to the operatives of the railroads, especially the section men, many of whom hold it a point of honor to keep their fire lines in good condition and to allow no fire to get beyond them. There is reason to believe it a fact that many fires are set on these fire lines but never reported because they are so quickly extinguished that no one apart from the section crew is allowed to have knowledge of them.

Thus, while fire lines cannot be considered as a positive means of preventing all forest fires, they do unquestionably, either directly or indirectly, work for effective control.

## Report of the State Forester.

ALFRED GASKILL.

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### STATE FOREST RESERVES.

#### SUMMARY.

State reserves not increased but improving rapidly—Area and location—Products are increasing, forest fires decreasing—Little planting necessary though some has been done—Game refuges.

In pursuance of its now established policy the Forest Commission has asked for no new appropriation to purchase land, and is making little effort to acquire more forest reserves. This is not because State reserves are undesirable, or not recognized as a means of proving the practical value of forestry, but because it is considered wisest to establish thoroughly the security of all forests throughout the State, irrespective of ownership, before seeking to increase the State's possessions. The principle that a State is better able than its citizens to control the forests and wait for returns does not apply to this State at this time. When forest fires shall have been so brought under control that any piece of woodland can be said to have positive value the increase of public forests can be considered. This argument does not apply to disconnected tracts of woodland like the Mount Laurel Reserve, which, by reason of their location, are practically safe from fires, and are of value as demonstration forests. The Forest Commission therefore hopes to acquire similar tracts in various parts of the State from time to time. It would be well to have a reserve of this kind in each county. The reserves now owned by the State are as follows:

## LOCATION AND AREA OF FOREST RESERVES.

|  |              |
|--|--------------|
| Bass River Reserve, Burlington County, See Map in Report 1907, .....   | 1,633 acres  |
| Lebanon Reserve, Burlington County, See Map in Report 1907, .....      | 3,498 "      |
| Mays Landing Reserve, Atlantic County, See Map in Report 1907, .....   | 373 "        |
| Mount Laurel Reserve, Burlington County, no Map published, .....       | 20 "         |
| Penn Reserve, Burlington County, See Map in Report 1911, .....         | 2,764 "      |
| Edward C. Stokes Reserve, Sussex County, See Map in Report 1907, ..... | 5,432 "      |
| Total, .....   | 13,720 acres |

## PRODUCT OF THE RESERVES.

As the average cost of these properties was but \$3.30 an acre they naturally held little timber of merchantable size. The time to make them yield a money return is therefore in the future. Nevertheless, as the growth of one kind and another responds to the security from fire which has been given, the value of the properties becomes apparent and small quantities of various products are found to be salable. Thus a beginning has been made in deriving an income from the reserves which, though insignificant in amount now, should, and under normal conditions will, increase steadily from year to year. This income for the year was \$93.80, most of it coming from the sale of cordwood, cedar poles, sphagnum moss and cranberries, chiefly the product of the Lebanon Reserve.

There is a good stand of pine timber on a portion of the Penn Reserve which will be marketed as soon as conditions are right. On the Mount Laurel Reserve, which was acquired through the interest of several people in Moorestown, an improvement felling is now under way. This is expected to return a good part of the original cost of the property, while leaving it in better condition than it was. See Figs. 14, 15. Some complaint of the foresters' work on this reserve has been heard, but only, so far as we know, from those who object to the felling of any tree. The ax and saw are the forester's plow and harrow, as well as his reaping hook; by their intelligent use he brings a forest to maturity, harvests the crop, and often starts the next generation.



Similar cuttings for improvement, however, rather than for revenue, are planned to be made on the Mays Landing and Lebanon Reserves during the current winter. These will be located in the most exposed places, so that neighboring forest owners may learn how to treat their own properties. The cutting on the Stokes Reserve, authorized under the purchase contract, is nearly all done. A few tie choppers will work during the year and a half that remains of the time allowed, but in the main the property is now in the hands of the Forest Commission. Unfortunately, no means of disposing of the excess of cordwood has yet been found. The forest cannot have the treatment it needs until this is possible and efforts are still making to that end. See page 75.

#### FOREST FIRES.

During the year a few fires occurred in the State reserves. Mays Landing, Bass River, Penn and Mount Laurel were entirely free as they have been since they were acquired, while only ten acres were burned on the Stokes and less than twenty acres on the Lebanon. This is a marked gain over 1910, and as a result of the protection afforded, the forest, whether pine, oak or cedar swamp, is shooting upward and filling out, proving conclusively the contention that such property has a real potential value, and that the low esteem in which the woodlands of the State have been held is due almost exclusively to the recurrence of forest fires. See Figs. 6, 7, 8, 9. In particular the pine on the four South Jersey reserves is growing at a rate that promises a fair stand of timber within comparatively few years. None of this timber will be good according to present commercial standards, for the trees have been too frequently burned and the soil too much impoverished by fires, but it will form a crop, and while growing will prepare the ground for a better forest after a while. This hopeful outlook does not extend to the Stokes Reserve, because the forest there contains a large proportion of chestnut which from present indications must be sacrificed within a few years. So far as all other species are concerned, however, the stand is as satisfactory as on the other reserves.



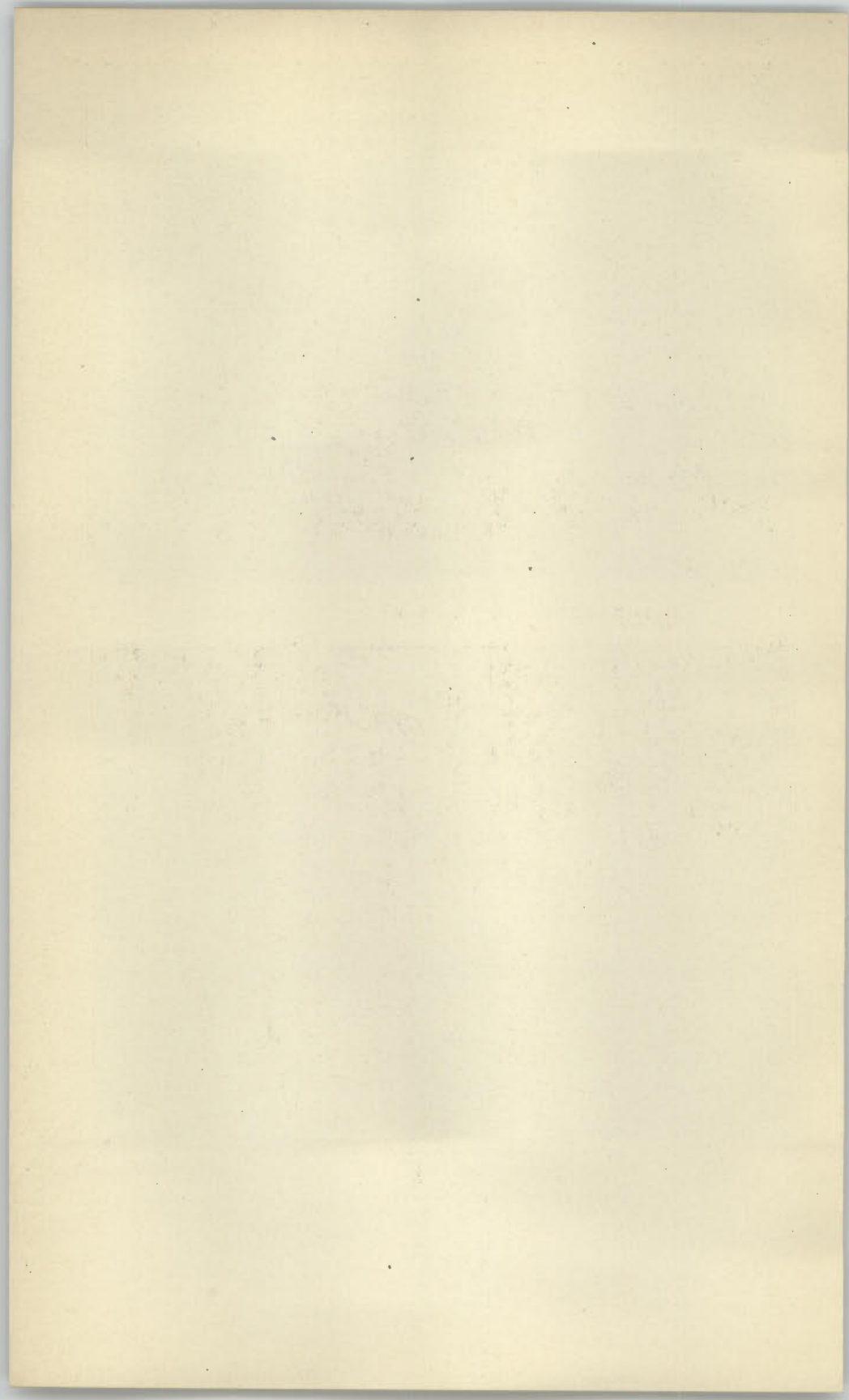
Fig. 14.—Natural Forest with Trees Marked x, x, x, x, for Removal.



Fig. 15.—A Place Similar to that Shown Above with Trees Felled and Material Ready to be Removed. Note: Low, Clean-cut Stumps A, A, A; Electric Poles B, B, B; Cord Wood C, C, C; Fence Posts D; Brush Piled for Burning E, E, E. The Burning Will be Done at Safe Times and Without Injuring the Standing Trees.

#### IMPROVING A WOODLOT—MOUNT LAUREL RESERVE.

The Former Owners Proposed to Cut this Tract Clear for Firewood Only. This Felling will Yield About \$40 an Acre (40 per cent. Poles, Posts and Logs) and Leave the Forest in Better Condition to Grow than it was Before.





The means by which this improved condition has been reached are watchfulness, the maintenance of fire lines, now aggregating about 25 miles on the South Jersey reserves, Fig. 9, and the pursuit and punishment of everyone who starts a fire.

#### PLANTATIONS MADE.

There is little need for forest planting on any of the reserves. Natural reproduction is active and everywhere, except on a few old fields, will take care of the future. These openings will be used for experimental plantings. Thus in the spring 14,000 young pine trees grown in the Bass River Nursery were set out in openings on the Bass River Reserve, and 18,000 from the same source were planted in openings on the Lebanon Reserve. Unfortunately a large part of these trees were killed by the drought which began shortly after the planting and for a long period deprived the roots of necessary moisture. There is a possibility, however, that some of the trees will survive, and the plantations cannot be called failures for at least two years. If any considerable portion of any of the species planted does survive they will have served their purpose, as the plantations were made as much to determine the fitness of certain trees for our soils and climate as to establish forests.

#### GAME REFUGES.

For several years past there has been a strong desire in certain directions to have the forest reserves made game refuges. On the other hand, many people owning property or resident near the reserves oppose the proposition, being fearful of an increase in the fire hazard or jealous of the freedom which they have upon the reserves as public property. This opposition to any restriction on the use of wild lands is especially strong since so much private land has been posted or enclosed.

While the Forest Commission is prepared to permit any use of the reserves that will not endanger the well-being of the forests, it is obliged as trustee of the State forest

lands to consider that well-being above all else. And it is convinced that the multiplication of game animals, especially deer and rabbits, would do a positive damage to the small trees. Furthermore, the prohibition of gunning where game was unusually plentiful would surely attract many non-resident hunters to the lands immediately adjacent, and thereby aggravate the risk of fire. It would also be extremely difficult to enforce such a law or regulation, because the reserves have no physical boundaries or fences and are traversed by public roads on which anyone may lawfully carry a gun. In view of all the circumstances—the risk of arousing antagonism in sections where it is desirable to gain support for its work, the greatly increased danger of forest fires, the probable damage to young tree growth—the Forest Commission decided that the reserves in general should not be closed; but, in order to give the proposition a fair trial, it has offered to set apart 500 acres of the Lebanon Reserve and 2,000 acres of the Stokes Reserve if the Fish and Game Commission will clearly mark the boundaries and undertake to guard the sanctuaries. It is expected that an agreement along these lines will soon be made.

## PRIVATE FORESTRY.

## SUMMARY.

Owners with an interest even greater than that of the State are practicing forestry—200,000 trees a year being planted—Wood-using industries needed—The Forest Commission will help owners develop their woodlands.

To bring about the practice of forestry by woodland owners is the ultimate object of the Forest Commission. With about 2,000,000 acres of land classified as forest the State has only an insignificant lumber industry. That is, insignificant by comparison with the industry as it is found in many other States. Still our situation may be considered promising rather than otherwise, for while practically without the virgin forests which at present form the chief support of the lumbermen in this country, we have an opportunity to establish new forests that in time are sure to prove one of our most valuable assets. But having long passed from public to private ownership our forest land is likely to remain there. This is especially true of North Jersey, where the establishment of estates, and the development of communities in which the space devoted to each individual is unusually large, tend toward the retention of the forests in private possession against any effort that the State might make to acquire them. And from the silvicultural point of view it matters little whether a forest is publicly owned or privately owned so long as it is rightly managed.

From this standpoint the present situation is highly satisfactory for it is possible to show that properties ranging in size from 50 acres to 20,000 acres, and aggregating perhaps 200,000 acres, have been brought under forest management, while there are many indications that the actual area under development, or perhaps only under protection, is several times that total. This is because many small properties in all parts of the State, and



some large ones with which the commission has had no concern, are taking a practical part in the new movement and practicing forestry.

This is another way of saying that the public speaking which the State Forester has done, the material furnished to the press, and the specific advice given many property owners, all supported by a fire service which gives security to the forests, is steadily bringing the woodlands of New Jersey into better condition.

#### FOREST PLANTING.

The number of trees planted during the year has apparently been upwards of 200,000, although here again it has been impossible to get definite figures. But even at the rate of 200,000 trees a year it will not be long before North Jersey, where most of the planting is being done, will present an altered aspect. The recommendation of the State Forester in practically every case that planting be confined to evergreen trees is generally accepted, and patches of dark green now show through the snow or amongst the lighter green of the deciduous trees on the hill-sides in many directions. Some of the most successful plantations have been made on the property of the Newark Water Board near Newfoundland in Passaic county, on the Water Reserve of the city of East Orange in Essex county, in the Essex county parks, and on two private properties near Allamuchy in Warren county. A considerable aggregate, mainly for landscape effect, however, has also been planted in the Bernardsville and Morristown sections. No reproach attaches to South Jersey because tree planting has been resorted to in only a few instances for the reason that there tree planting is less necessary. Property owners in any part of South Jersey can usually be assured of a new forest through natural regeneration wherever immunity from fires is secured.

#### FOREST MANAGEMENT.

Work in forest management can also be found on many properties in the State, although it must be admitted that thus far



Fig. 16.—Trees Left Above Grade. If Others are Planted at x, x, x, the Old Ones can be Removed in a Few Years Without Injuring the Property.



Fig. 17.—Street Grade Raised Two Feet Without Changing Sidewalk or Injuring Trees. Practicable Only on a Side Street.







These numbers are altogether too small, for there are at least a hundred communities in the State which have shade trees to be looked after. The effort of the members of the Federation, and of the Forest Commission, is to increase the membership of the former and thereby extend its usefulness. The advantages that membership offers are, an opportunity to discuss problems, needs and possibilities with others who have to deal with similar situations, and, through concerted action, to reach desired ends. One of the tasks that the Federation has set itself is to secure a revision of the State shade tree laws, by which the difficulties that have been encountered by some communities in applying the present acts may be overcome and the tried-out principles of the law of 1893 made universally applicable. The Secretary of the Federation is Mr. William Solotaroff, East Orange.

The greatest difficulty that a local Shade Tree Commission finds at the beginning of its work is to get the necessary money. No great sum is needed in any case, but it is important to recognize that very little can be done in a work of this kind without some money. To their credit and advantage many of the communities represented in the Shade Tree Federation have made provision for maintaining an effective organization by the appointment of capable men to conduct the work. In some instances these officials are named as superintendents or secretaries, in others they are called foresters, an unfortunate misnomer. I venture to use this opportunity to suggest that the title of any such city or park official be "Arborist." It is a good English word indicative of what is done.

#### STATE AID IN SHADE TREE WORK.

By the legislation of last winter the Forest Commission is now specifically authorized to give attention, and a part of its appropriation, to shade tree interests. It is accordingly prepared to detail a forester experienced in shade tree work to the service of any community that asks for such help. This service will ordinarily be limited as to time and free of cost, though special

arrangements may be made in a given case. Similar assistance will be given individuals or corporations, and correspondence regarding their needs is invited, but they will be required to pay the actual expenses of the visiting forester, or arborist, while away from Trenton. Justification for this policy is found in the many appeals that now come to the Forest Commission, and in the Commission's belief that the object of its creation will be served by taking advantage of every opportunity to help conserve any body of trees in the State through co-operation with those in interest.

#### TREES INJURED BY GAS.

This co-operative idea has recently been applied to the adjustment of differences between owners of shade trees claimed to have been killed or injured by illuminating gas and the gas companies. In all such cases the sole aim of the Forest Commission is to establish the facts, and no case is considered except at the joint request, and in the presence of representatives, of both parties.

In four instances during the year the request for an examination has been made by, or at the instance of, a gas company. Every case, so far as we know, has been amicably settled on the basis of the opinion rendered, and both tree owners and gas superintendents have acknowledged the value of suggestions made regarding the avoidance of such difficulties.

#### STREET IMPROVEMENTS.

In one direction the Forest Commission has found it difficult to satisfy some shade tree interests. In a number of instances the State Forester has been called upon to prevent the destruction of trees by street improvements. With every disposition to be helpful it has been necessary to say that neither he nor the Forest Commission has the least power in such cases and can only make suggestions. Unfortunately difficulties of this kind are rarely thought of until the changes are actually under way

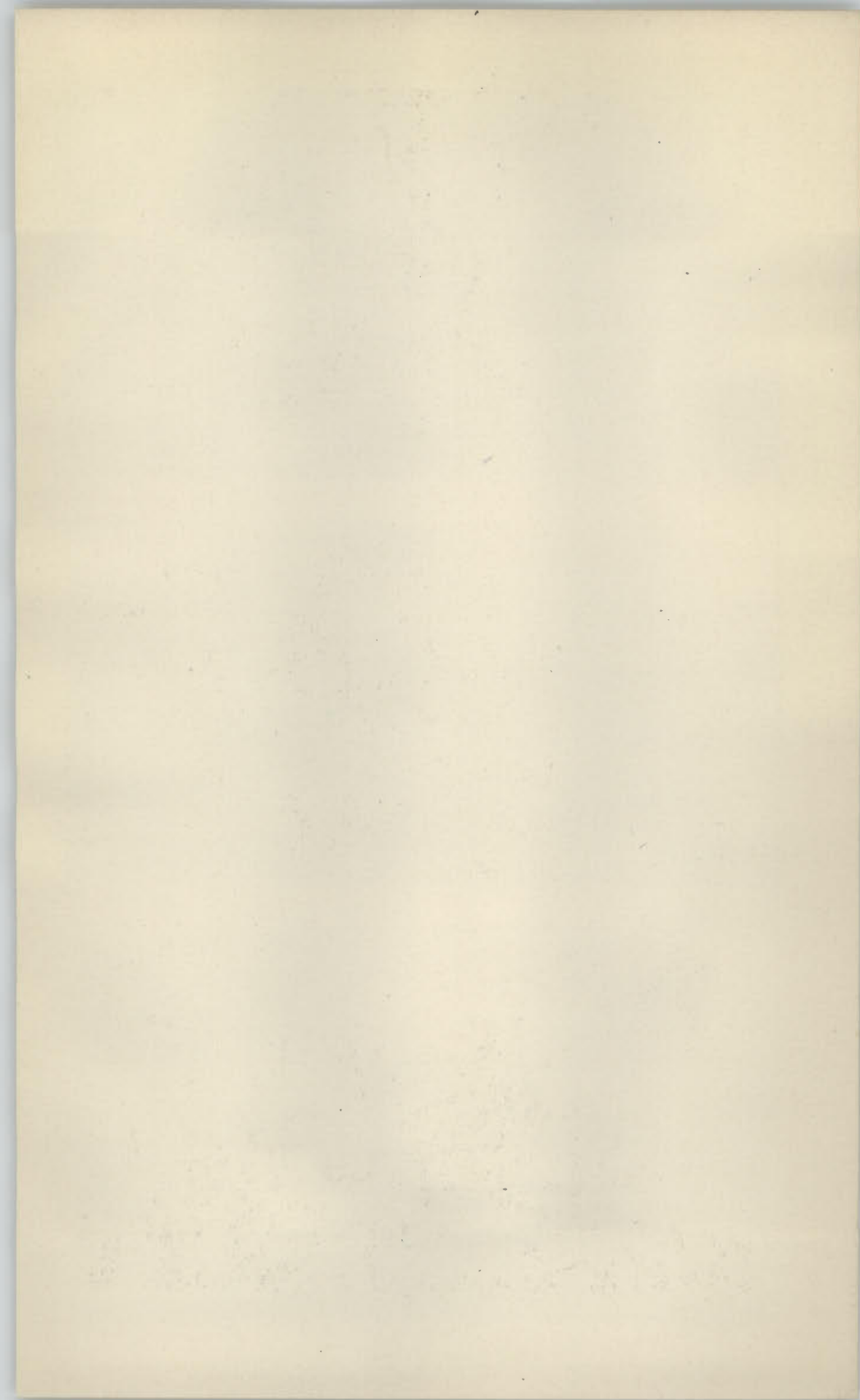






Fig. 19.—See Opposite Page.

and everyone concerned is indisposed to alter the plans. And not infrequently the complaint is made in a way that arouses local antagonisms. The Forest Commission can have no part in such controversies, but it will gladly consider any problem that is brought to it by the authorities having jurisdiction, or by individuals when the object is not to defeat official action. It is not always possible to convert a country road to a town street, with curbing and sidewalks, and this is the commonest form of the difficulty, without injuring or destroying trees, but often a compromise can be made. If therefore unnecessary loss is to be avoided the situation must be studied before, not after, the improvement plans are adopted; most certainly before lines and levels are established, the contract let and work begun. See Figs. 16-22. Where State-aid road improvements are involved the Forest Commission is assured of the co-operation of the Commissioner of Public Roads.

*Fig. 19.—How a Street Grade May Be Lowered Without Destroying Established Shade Trees.*

The upper picture shows a row of fine trees where the level of the road and of the sidewalk has been lowered. At *A* the curb is abruptly raised eight inches above the normal level; the base of the tree at *B* is 30 inches above the gutter. Though the mounds about the bases of the trees are objectionable they sufficiently protect the roots.

The middle picture shows the base of a large maple tree with a bad exposure of roots and a break in the curb. Though this is objectionable it is to be preferred to the sacrifice of any reasonably well developed, healthy tree. In this case the situation can be tolerated until new trees planted on either side of the old one are grown enough to replace it.

In the lower picture are seen two devices for saving sidewalk trees: First, the provision as at *C* and *D* for retaining the soil about the roots of trees left above grade. This is objectionable, and cannot be permanent, but if new trees are set out at *x, x, x*, the tree *E* as well as *C* and *D* may ultimately be removed without disadvantage either to the shade tree plan, or to the adjoining properties. The second feature is that necessary electric wires are cabled and carried through the line of trees without injuring any. This is always a practical means of stringing telephone wires where trees are well grown.



## ROADSIDE TREES.

In rather striking contrast with the general activity in behalf of street trees goes a common indifference to the shadeless condition of most country roads. This should not be for a tree-bordered road is more comfortable and more practical than one that is exposed to sun, wind and the untidiness that is almost universal. The borders of all main highways should have some of the same care that is bestowed upon the roadbed. It is therefore recommended that the State Road Commissioner be authorized to require that all roads built or improved with State aid be provided with lines of suitable shade trees. Many country roads should have the same provision, but that may be expected to follow if the State-aid roads are used as an example. The initial cost need in no case be more than \$500 a mile, it would usually be much less through the utilization of trees already standing. Provision for the care of the trees would be an item in the upkeep of the road itself. The Forest Commission is prepared to furnish all necessary technical assistance. Any fear of excessive shading and consequent muddiness in a road may be set aside, for the duty of the arborist, as well as of the road engineer, would provide for trees, in kind and arrangement, suitable for each situation.

## DAMAGE BY DROUGHT.

During the late spring and summer quite a number of owners appealed for help to avert the loss of valued trees by a blight that was evident enough, but traceable to no cause. Street trees, lawn trees, even some beside water courses, withered and looked distressed. Beeches, pin oaks, sycamores and red cedars were most affected. It was finally established beyond all doubt that the trouble was due to an accumulated deficiency of water by which the under soil, rather than the surface, was depleted. In some cases newly planted trees failed because the water applied drained off quickly to the lower levels and left none to nourish the restricted, superficial root body. This happened in Newark



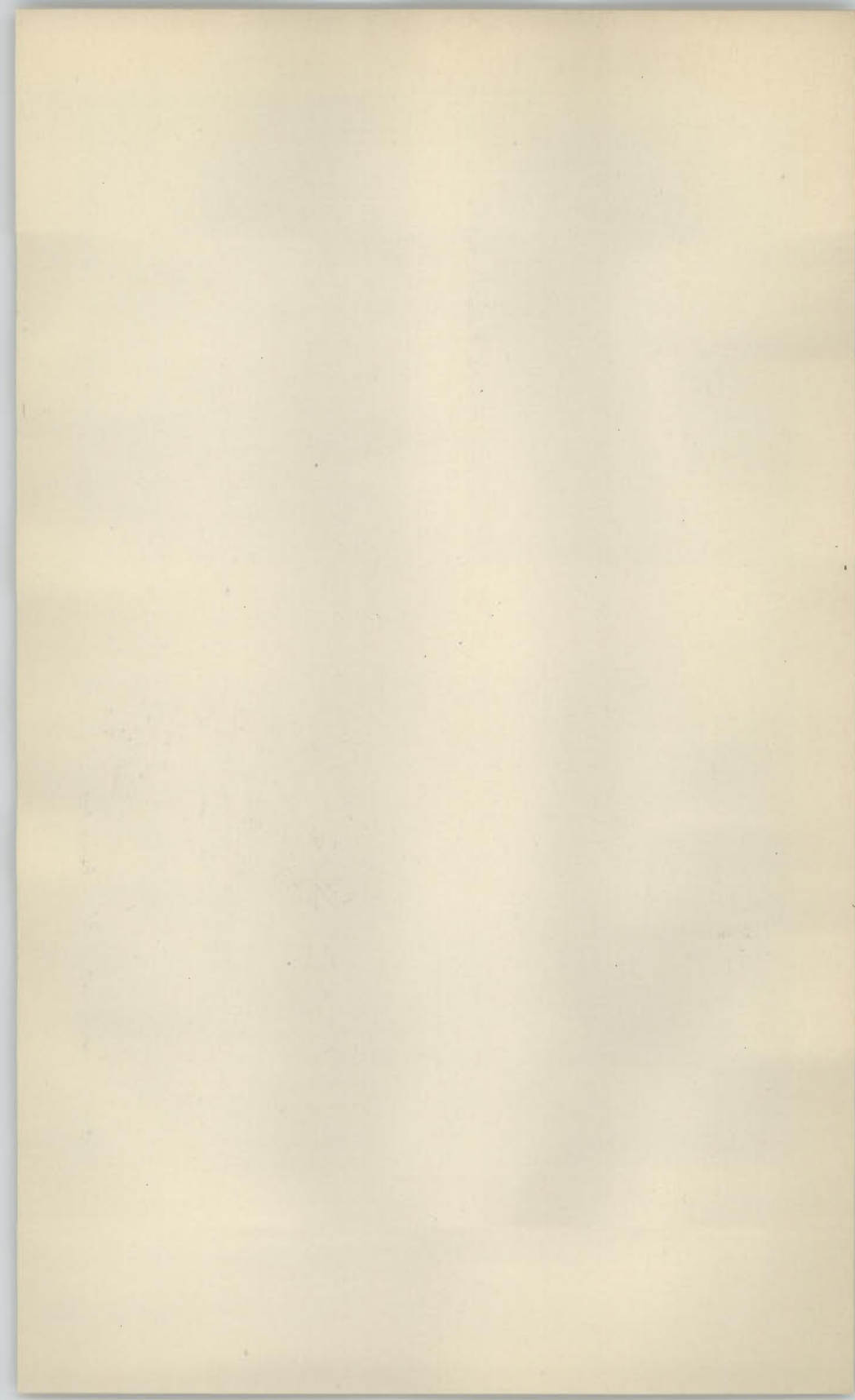




Fig. 20.—Neither New Road nor New Trees Require the Sacrifice of a Fine Old Elm.

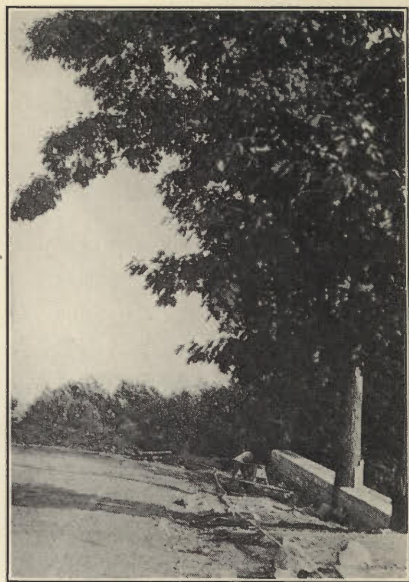


Fig. 21.—Even a Bridge May be Built About a Big Tree.



Fig. 22.—Tree A Stands in the Gutter, Tree B in the Curb Line, Tree C is Partly on the Sidewalk.

Streets and sidewalks can be made or altered without losing valuable trees.

and other cities. In other instances pin oaks, arborvitae, etc., that had been transplanted several years, and were thought to be established, weakened, and some died, though many revived after the rains of June and July. Many wild cedars on the hillsides failed in the spring drough, but in several ways the most interesting, and alarming, case was that of the beeches. In dry weather one of these trees will transpire really an immense quantity of water. If that is not replaced by a sufficient supply through a considerable depth of soil, leaf wilt appears and death may follow. This situation caused much concern in the Essex county parks and a few trees died, though most of them have set normal winter buds and are apparently safe. In other places, including several private properties, valued trees were lost.

#### TREE WOUNDS.

So many people have been led to believe that the chief need of a tree out of condition is to fill it full of cement that a word on the subject of tree wounds and tree cavities is in place. It will be understood that this is but one feature in tree culture.

When the bark of a tree is broken, be it by accident or by design, it is necessary to guard the exposed wood against decay. The many diseased spots on our shade trees are due chiefly to neglect of this precaution. If a limb is cut off the stub should be immediately covered with tar or oil paint to prevent decay. Where a serious wound has been suffered, or where decay has set in, the best treatment in most cases is to clean the cavity and expose a smooth surface of sound wood. Coat that with coal tar, taking care not to touch the cambium—the growing tissue between the wood and bark—and leave the rest to nature. Unless the cavity be very large, or is so located that water will collect in it, there is no need for a cement filling. Fig. 23 illustrates how tree wounds are healed better with no treatment at all than when cement is used where it is not needed.



*Fig. 23.—Tree Wounds Healing Without, and in Spite of, Filling.*

- A: A bad scar on a fine elm healing perfectly without cement.
- B: New growth on a wounded elm which has forced out a cement filling.
- C: New growth closing another wound on the same tree and confining some of the cement.
- D: Strong new growth closing a bad scar that would have been better left without brick or cement.
- E: A fine callus closing a bad wound on a hemlock that has had no treatment. The decayed wood in center should be removed and the sound core tarred.

#### SHADE TREE BULLETIN.

The Commission is still distributing to all who ask for it its fourth annual report, which contains a bulletin on The Planting and Care of Shade Trees. As the call for this bulletin promises to keep up, it is proposed thoroughly to revise it and issue a new edition.

#### FOREST PARKS.

It has been repeatedly urged that New Jersey's forests, though devoted primarily to the production of timber, should be regarded and treated also as parks. This is common practice in all parts of Europe where the population needs outing grounds. It is proper and possible in this State for the same reason.

That a piece of woodland serve as a park it is not at all necessary to put it under the care of a landscapist, or to maintain flower beds and lawns. In many ways and to many people a true wildwood is more attractive than the typical park. We can, therefore, have in all parts of the State bits of woodland that will serve every need of the people at little or no tax upon local treasuries. Of course city parks have become necessities, and it is desirable for each city and town to have at least one. The example of Essex county in creating a county park of nearly 3,000 acres on the Orange mountain is also worthy of imitation in other parts of the State. See Figs. 1, 2, 3, 4, 5. A community should be owner if possible, though that is not always essential.

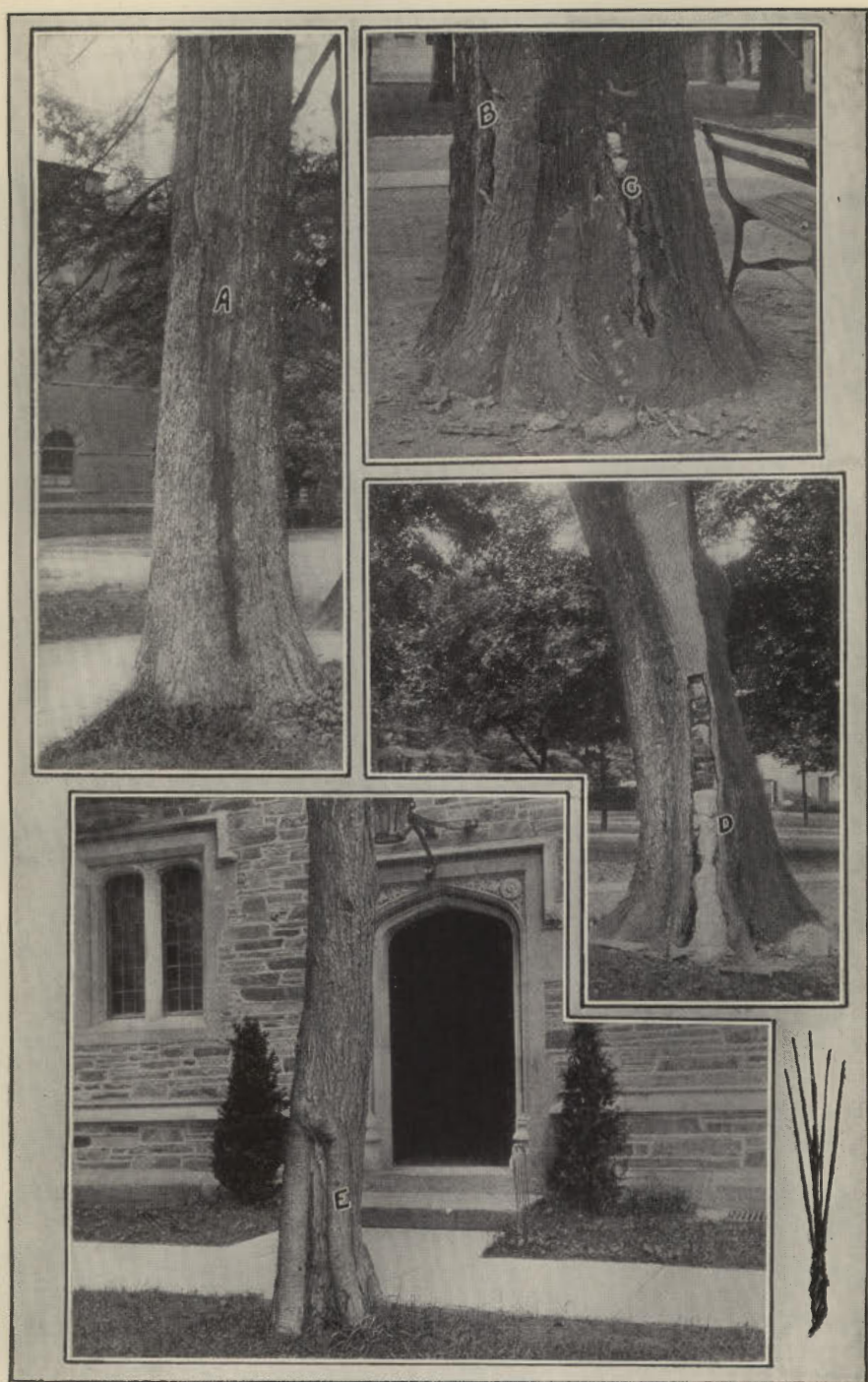
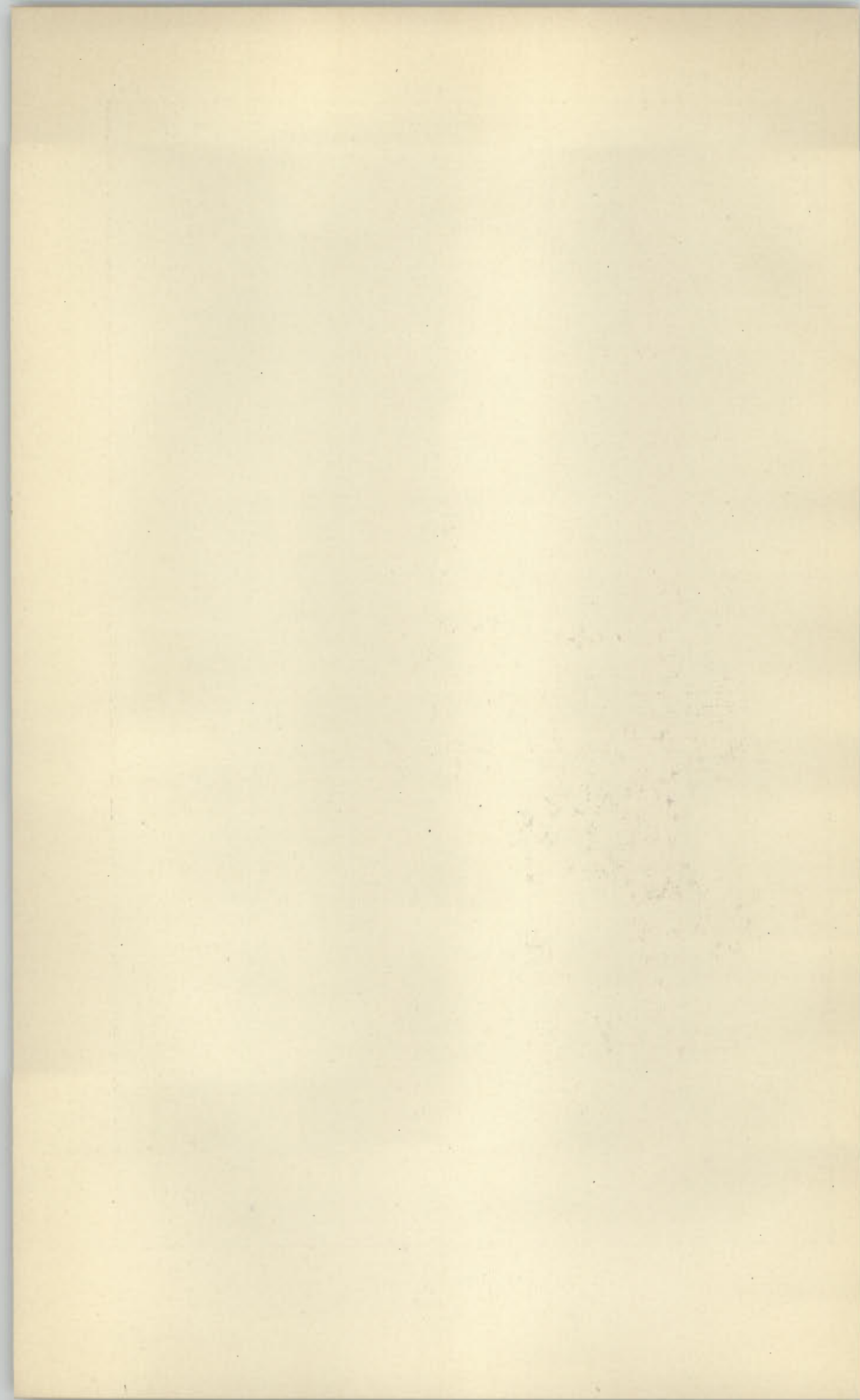


Fig. 23.—See Opposite Page.





But the argument here is to make every tract of accessible forest a part of a State park system. The way to accomplish this is simple. Comparatively few forest owners exclude the public from their property, though many do complain, often with reason, of the depredations that are committed. If any community, therefore, will give the owner of one of these properties a reasonable assurance that his interest will not be destroyed by vandalism the public enjoyment of it need not be curtailed. If the community go a step further and definitely agree to police the property and guard it against fires and lesser injuries, the fullest privileges to the public may be secured. Or a community might acquire a right of usage in a piece of woodland by exempting the property from taxation so long as it was made available to the public. And several small tracts would be preferable to one large one, for the value of any park is in direct proportion to its accessibility.

It is the desire of the Forest Commission to have the State forest reserves used as parks as largely as possible. This can not now be done to any great extent, because the properties are too remote from population centers. Nevertheless, the reserves will be made more and more available as the improved condition of the forest on them increases their fitness as parks. Few will deny that in a community like ours every acre of woodland should form a part of the people's playgrounds. This ideal is attainable through protection and reasonable consideration of the owners. Public possession is the last, not the first, necessity.

## TREE PESTS.

## SUMMARY.

Situation now better in hand under authority given State Entomologist and State Plant Pathologist, though danger still great through lack of National quarantine—Chestnut blight the most serious evil, no hope that any chestnut tree in the State will survive—Elm beetle still active, but neither Gypsy nor Brown-tail moth are yet here—Beware of fake tree doctors.

The year has again been unusually favorable for the development of many kinds of tree enemies. Complaints and inquiries from all parts of the State evidence at once the interest of tree owners, and the growing dependence of the people upon the Forest Commission.

Fortunately the actual situation is less serious than the average citizen imagines, for practically all the dangerous insects, and some of the diseases, are capable of control. The Legislature last year listened to the appeals of the Forest Commission, of the State Board of Agriculture, and of other interested bodies and citizens, and provided for more complete control both of insect pests and plant diseases. The insect problem is looked after necessarily and most efficiently by the State Entomologist, who now feels that with the enlarged powers and increased appropriations given him he can meet any emergency that is likely to arise. Plant diseases will be attended to by the State Plant Pathologist, an official authorized by the last Legislature, but only recently appointed because it was found most difficult to secure a competent man.

The Forest Commission is working in entire harmony with both these specialists. Ordinarily the Commission's foresters are able to satisfy inquirers from their own knowledge, though whenever there is doubt the question is referred to one or the other expert. The people of the State may, therefore, be as-

sured that provision is made for every trouble connected with their trees and woodlands. Inquiries are invited to the end that the injury and loss which unquestionably still goes on may be avoided.

The effort to secure a National law to control the importation and distribution of diseased and insect infested plants has thus far been unsuccessful. It is perfectly clear that no State can fully protect itself against this danger on account of the operation of Federal laws regarding interstate traffic. We must, therefore, depend upon the National Government to do what is required. From its position New Jersey is constantly exposed to the danger of infection from abroad, and the best efforts of its State Entomologist and State Plant Pathologist can be only measureably successful so long as the present laws are unaltered. The need for immediate action by Congress is shown in a paper prepared by Mr. C. L. Marlatt, Assistant Entomologist in the United States Department of Agriculture, and published as a part of the report of the Committee on Agriculture to the House of Representatives.\* In this paper it is said:

"Fully 50 per cent. of the important injurious insect pests in this country are of foreign origin. Many, if not all, of these pests could have been kept out, or their spread much checked, if proper quarantine legislation had been available. The gypsy moth and brown-tail moth in Massachusetts and portions of other New England States are now costing those States, in expenditures merely in efforts at control, not counting damage at all, upward of a million dollars a year. In addition to this the National Government is appropriating \$300,000 a year in controlling these pests along the highways. In spite of these efforts and this enormous expenditure, these insects are still slowly spreading and great damage is done yearly to woodlands, private grounds, and orchards. The dissemination of these two pests over the whole United States, as is extremely likely under present conditions, would entail a like cost throughout the country.

In addition to the danger of importing these insect pests is the risk of bringing in new and dangerous plant diseases. Two illustrations of this danger only will be mentioned, but there are many others equally important. First may be noted a new disease of the potato known as the 'potato wart,' which there is grave risk of establishing in this country. The other disease is the 'white pine blister rust,' which has caused enormous losses in Europe, particularly to nursery stock. Both of these diseases are examples of dangers which can be prevented only by an absolute quarantining of the infested foreign districts so far as importations therefrom to this country of these particular products are concerned. The actual value of the importations of nursery stock which are thus jeopardizing the entire fruit and forest interests of this country is comparatively small although doubtless important from the standpoint of the nurserymen."

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\* Report No. 1858, Sixty-first Congress, Third Session, pages 7-12.



The same author in Farmers' Bulletin No. 453 of the United States Department of Agriculture, says further :

"In addition to the great monetary loss, the brown-tail moth exercises a very deleterious effect on health. The hairs which cover the caterpillars of this moth are strongly nettling, and not only are they so from accidental contact with a caterpillar, but also from the myriads of hairs which are shed by these caterpillars when they transform to the chrysalis state. The latter frequently cause very disagreeable and extensive nettling, the effects of which may last for months. Breathed into the lungs they may cause inflammation and become productive of tuberculosis. The brown-tail rash is well known throughout the regions infested in New England and thousands have suffered from it."

Neither of these insects (see p. 88) has been established in New Jersey, but the danger makes the State's duty very clear, namely, to prevent absolutely the introduction into the State of all dangerous pests, and provide for the immediate extermination of any that may by accident be located here.

To satisfy the public with respect to the more common and serious tree pests the following specific references are made :

#### CHESTNUT BLIGHT.

No ray of hope that this disease will be checked before practically every chestnut tree in the State is dead can be held out. New Jersey is especially unfortunate in having had to take the brunt of the attack, and the whole of our territory, with the exception of Salem and Cape May counties, is infected. The disease is now progressing north and east in New York, Connecticut and Massachusetts, westward through New York and Pennsylvania, and southward through Maryland and Virginia. In the States where the situation is not so hopeless as with us active measures are under way to check the progress of the disease. With what success the future only can tell. For the information of those who are interested, and to offset the unwarranted and misleading statements that are frequently published, it may be said that the chestnut blight is not due to the attack of any insect but is caused by a fungus disease whose life history has been well worked out. There is no mystery about it. The disease works in the inner bark, out of sight for the

most part, though easily recognizable by one who is instructed. There has yet been found no practicable means to control it.

Owners of chestnut trees in New Jersey, who deem them valuable enough to warrant some expense in an effort to prolong their lives, may resort to pruning. Nothing else will avail, and specific directions will be sent upon request. In all other cases, and this applies to practically every body of forest, it will be wisest to let the trees go, remove them as they die and fill their places by planting other species. There is not the slightest use anticipating the actual death of a tree, though when dead it should be promptly removed lest it provide breeding places for harmful insects or lodgment for the germs of other diseases. The possibility of a new pest following the wake of the chestnut blight is by no means remote. The disease is not known to attack any other species than chestnut.

Chestnut wood from trees killed by the blight is as sound and as good for ordinary purposes as chestnut wood from trees that have been felled while in health. It is important, however, to see that no unbarked wood of any kind is transported into territory unaffected with the blight. If logs, lumber or cordwood therefore are to be sent out of the State, or into the southern counties, they should be completely barked. This measure is advisable in the section south of the Camden and Atlantic Railroad as the disease is not yet fully established there. In this territory also the prompt treatment of trees that may be attacked is recommended. The affected tree or branch should be promptly cut and the wound treated as indicated in the special circular above referred to. This may check the progress of the disease, though no assurance can be given that the measure will be permanently effective.

#### ELM LEAF BEETLE.

It is unfortunate that so many fine elm trees have been sacrificed to this beetle when a little care would have prevented it all. All the prophecies made a year ago with respect to the ravages of this insect have been fully justified. It has come in hordes and left behind a trail of dead elm trees which generations will not

replace. The ravages of the beetle and its larvae may be absolutely prevented by spraying the trees soon after the leaves unfold with a solution of arsenate of lead. The effect of this treatment can be seen almost anywhere in the northern part of the State, where sprayed trees in perfect health stand side by side with dead or dying trees which have not been sprayed. The insect attacks elm trees only. Specific instructions for spraying will be given by the Forest Commission, or by the State Entomologist, though tree owners are recommended to turn first to their local shade tree commission, or if one is not organized to get it established. Through such concerted action as a shade tree commission offers the spraying of the trees, and every other thing needful for the welfare of ornamental trees, can be best and most cheaply accomplished. The cost of spraying a single large elm may be anywhere from \$5 to \$20. If the owners of fifty or more trees unite the cost may be \$2 or less.

#### BROWN-TAIL MOTH AND GYPSY MOTH.

The danger that threatens from these two insects is made evident on pp. 85 and 86. Neither has yet obtained a foothold in New Jersey, and the State Entomologist believes that his inspections will serve to keep them from establishing themselves unless the influx of infested plant material from abroad shall become too great. A strict National and State quarantine is our only safeguard. A reference to the bills that New England is now paying will justify any reasonable expenditure.

#### WHITE PINE BLISTER RUST.

One case of this most dangerous disease (see p. 85) was discovered last spring in a plantation made in 1909. Fortunately the owners recognized the danger and promptly pulled up and burned the whole 10,000 trees, those that were still apparently clean as well as those that were diseased. This source of infection is therefore removed, but constant watchfulness will be necessary, as many young white pines are being planted in this



State. The disease is limited to pine trees with five needles, and thus far has been discovered only on stock grown in German or French nurseries. Home-grown planting material may therefore be depended upon. Nothing need be feared from this disease on any pine bearing two or three needles in a sheath.

#### HICKORY BARK BEETLE.

Only a few instances of serious damage by this insect have been reported of late. It will undoubtedly be found here and there where hickory trees have been weakened by fire, changes in grade, sudden exposures, etc. If a tree is badly infested, that is, if the borers are actively at work in the body, it should be cut down and the wood burned. If the attack is in the twigs alone, and the tree is valuable, the insects may be killed in their burrows by being followed up with wires or destroyed by cutting off and burning the twigs. It is not likely that the beetle will do much harm except where the trees have been previously weakened.

#### OTHER INSECTS.

In consequence of the long dry summer many insects, such as the maple louse, the tussock moth and the locust leaf miner, which ordinarily do not appear in great numbers, have become apparent. None of these is apt to do serious or permanent harm, yet where the infestation is noticeable practicable remedies may be applied. These will be recommended in each case upon request.

In various parts of the State the so-called seventeen-year locust has done some damage. As a rule, however, the loss of a few twigs through the scarifying of the bark by the female in ovipositing does no particular harm. No serious permanent injury has been observed.

#### A WARNING.

Ignorant or unscrupulous men who advertise themselves as tree doctors, or who are interested in getting material for saw-

mills, are still preying upon tree owners. The fact that many trees need spraying, pruning or filling, that many chestnuts are dead of the blight and must be removed, induces property owners to listen to these men. There are, however, entirely reputable parties to be found to do any necessary work of this kind. Tree owners are warned against men who promise to cure a tree of any ill, and who come without recognized credentials. No chestnut tree can be cured of the blight; a wound badly filled or unnecessarily filled would be better left open (Fig. 23), and a tree that is sprayed carelessly or with wrong material will not be benefited any more than a tree that is butchered under a pretence of being pruned. In short, it is a waste of money to pay unknown men for any work of this kind. And if dead trees are to be sold it is well to remember that the wood is not useless, but that in most cases it has a value much greater than is represented by the cost of removing it. Those who have work of this kind to do are advised to seek assistance from the local shade tree commission, or if help cannot be secured in that way to apply to the Forest Commission, to the State Entomologist or to the State Plant Pathologist.

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