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# First Biennial Report

OF THE

## STATE FORESTER

OF THE

## State of Colorado



Fort Collins, Colorado

1912



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State of Colorado.



Fort Collins, Colorado  
1912

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Fort Collins, Colo., Nov. 30, 1912.

*To His Excellency, Honorable John F. Shafroth, Governor of  
Colorado*

Sir:

I have the honor to transmit to you this first public report reviewing the transactions of the office of State Forester under the Act approved May 27, 1911 said Act being herein reprinted in full.

Respectfully submitted,

B. O. LONGYEAR,  
State Forester.



## FORESTRY IN COLORADO

The existence of a forestry problem in this state was recognized at a comparatively early date. The first steps taken in a legislative way were those to encourage the planting of trees for protection from wind, and for shade and timber on our western prairies. The so-called "timber culture act," passed by the United States Congress in March, 1873, was the first of those laws enacted for the purpose of inducing homesteaders to take an interest in the great work of afforestation of our vast wind-swept, semi-arid plains.

Under the provisions of this act, the settler by planting forty acres of timber trees could secure title to 160 acres of land. In the following year, this act was amended, making it somewhat more favorable by allowing a person to plant a smaller area and secure a proportionate number of acres of the public domain. Whatever may have been the hopes of the promoters of this act, it is certain that it did not yield the results which might have been expected. Among the things which worked adversely to this law were unfavorable climate, lack of suitable nursery stock, and lack of knowledge as to the proper methods of planting and care of the trees.

In some cases, railroad companies planted timber groves along their rights of way, for the sake of demonstrating that the growing of timber trees on the treeless prairies was practicable. A considerable number of windbreaks and groves were planted at about this time on homesteads in the eastern, or plains, portion of the state. Some of these old timber claim plantations have persisted in spite of adverse conditions, depending largely upon the species of trees originally used and the care which was given them during the earlier years of their growth. It was thought at one time that if plantations of this kind became sufficiently numerous certain climatic changes might be brought about through the influence of these trees. Whatever the possibilities are along this line, however, it is evident that the plantings of this nature were infinitesimal as compared with those necessary to appreciably affect our climatic conditions. The failure of this law to bring about extensive planting of trees in this portion of the country led to the repeal of this act in 1891. This was partly due to the lack of proper supervision through which abuses arose and frauds were perpetrated in obtaining title to lands under false pretenses.

INCEPTION OF ARBOR DAY.—At about this time an effort was made to bring about a greater interest in tree planting generally throughout the country by the setting aside of one day in the year which should be recognized by the public schools as a day for tree planting. While the establishment of Arbor Day has become widespread and is observed in nearly every state in the union, in a great



many cases it has degenerated into a mere program in which trees are the subject for recitations, essays, or other subjects of like nature. It is doubtful if at the present time the observance of this day is doing what it ought in the stimulation of an interest in the economic side of the question for which it was originated.

Further recognition of a forestry\* problem in Colorado is shown by the provisions in our State constitution: (1) for the protection of the forests upon state lands; and (2) the encouraging of tree planting on private lands through tax exemption laws.

1. PRESERVATION OF FORESTS.—The general assembly shall enact laws in order to prevent the destruction of, and to keep in good preservation, the forests upon the lands of the state, or upon lands of the public domain, the control of which shall be conferred by congress upon the state. (Constitution, Art. XVIII., Sec. 6).

2. LAND EXEMPT FROM INCREASE TAX.—The general assembly may provide that the increase in the value of private lands caused by the planting of hedges, orchards and forests thereon, shall not, for a limited time to be fixed by law, be taken into account in assessing such lands for taxation. (Constitution, Art. XVIII., Sec. 7).

STATE FORESTRY ASSOCIATION ORGANIZED.—The importance of the forests at the head waters of our mountain streams in conserving and regulating the stream flow and the bearing which this was believed to have upon the supply of water for irrigation was recognized at an early date. Serious inroads had already been made upon the forest resources of the state through the practice of destructive lumbering and especially by the ravages of fire. Not only were the forests themselves in grave danger of extermination, but it seemed that one of the most important and rapidly growing industries of the state, that of agriculture by irrigation, was likely to suffer from the destruction of these forests.

In the fall of 1884 The State Forestry Association was organized, composed of men who were not merely interested in the present welfare of the state, but were looking forward to the perpetuation of our native resources. This Association at once became active in securing State Legislation for the care and protection of the forests growing on State lands. It was largely, if not wholly, due to the efforts of this organization that the following law was enacted:

On April 4, 1885, a law was enacted creating the office of State Forest Commissioner. Under the provisions of this act all lands which were covered with forest growth or in any way devoted to forest uses belonging to or controlled by the state were declared to be woodlands. A Forest Commissioner who should have



the supervision and care of such woodlands was also provided for. This officer was appointed by the Governor of the State and an appropriation was made for a nominal salary and the traveling expenses of the Commissioner while engaged in his official duties. This act provided that the County Commissioners and road overseers in each county were to act as conservators of woodlands in their respective localities, under the direction of the State Forest Commissioner. These officers were delegated with the power to enforce the laws and regulations for the protection of such woodlands and were also enjoined to encourage tree planting along water courses and irrigating ditches to the extent of their power. One of the most important duties devolving upon these forest officers was the prevention and control of forest fires which were recognized then, as now, the greatest enemy of the forests.

In the same year, another act was passed, which provided for the punishing of persons guilty of setting forest fires, either wilfully or negligently. Camp fires left burning were considered a special menace to the conservation of the forests and this matter was particularly dealt with in this act. Enactment was also made concerning the posting along public highways of fire notices containing a warning as to the extinguishing of all camp fires before breaking camp. In these notices we see the fore-runner of our present forest fire warnings used by the Government Forest Service on the National Reserves. Mr. Edgar T. Ensign was the first appointee to the office of State Forest Commissioner of this state. Considering the undeveloped state of forestry as a profession in this country, at that time, the work which Mr. Ensign did in the matter of securing data, publishing valuable information about our forests, and lending encouragement to the progress of tree planting and of conservative forestry is indeed surprising. During the year 1888, The State Forestry Association was combined with The State Horticultural Society and this union continued for about three years and was then dissolved. While The State Forestry Association is still continued as a separate organization no other person has occupied the office of State Forest Commissioner since its occupancy by Mr. Ensign, who resigned the office due to lack of financial support by the state.

Under an act of 1897 the office of the Forest Commissioner was combined with that of the State Commissioner of Fish and Game. This arrangement lasted but two years, after which the forestry part seems to have been lost sight of entirely, as a separate department, by being transferred to the jurisdiction of the State Board of Land Commissioners. The State Board of Land Commissioners was given charge of all matters relating to the sale and cutting of timber, the posting of fire notices and the control of forest fires.



In 1903 an act was passed making the sheriff and his deputies in each county forest fire wardens, in addition to their other duties. During the early period of Mr. Ensign's incumbency to the office of State Forest Commissioner it is interesting to learn that recommendations from the Commissioners of the General Land Office, supplemented by those from California, Colorado, and several other states, were made toward the segregation of all exclusively timber lands belonging to the general government and the formation of permanent forest reservations. A bill was introduced into the United States Congress which provided for the withdrawal from sale or entry of the public forest lands and their classification. It instituted in the Department of the Interior the offices of Commissioner of Forests and four assistant commissioners, authorized the appointment of necessary forest inspectors and rangers, and sought to establish an effective and reasonably complete forest administration. By a system of licenses for the cutting of public timber it provided for the needs of settlers and others. Five hundred thousand dollars was named as the amount necessary to carry out the provisions of the act. This bill, which was introduced in both branches of the 1887-8 Congress, seems to have made but little, if any, progress, beyond the committees to which it was referred.

In commenting on this bill, Mr. Ensign further states that a new bill "differing in some important particulars from the old one will be prepared and introduced at the next session of Congress." Just what was the fate of this second bill, however, has not been learned. In this bill is foreshadowed the later enactments by the general government creating our present forest reserves and the organization of the National Forest Service to care for and manage them. In 1891 the timber culture act was repealed and in the same enactment a clause was inserted giving authority to the President of the United States to set aside forest areas from the public domain to serve as forest reservations. Acting under this authority, Presidents Cleveland and Harrison had, previous to 1894, proclaimed seventeen forest reservations with a total estimated area of 17,500,000 acres in the whole United States.

Since that year, additional forest areas have been reserved until at the present time Colorado stands fifth in the area of its forest reserves, with a total area of 14,761,900 acres.

Each forest is under the supervision of a forest supervisor who has under him a force of forest rangers who police the timber lands for the purpose of fire protection, prevention of timber thieving, and who also look after the issuing of grazing and timber cutting permits. The rules and regulations governing the conduct of all forest officers are fully outlined in the Use Book, published by the U. S. Dept. of Agriculture.



STATE CONSERVATION COMMISSION APPOINTED.—In 1908, during the administration of President Roosevelt, Governor Buchtel was directed to appoint a commission on the conservation of natural resources in Colorado. The forestry problem constituted one of the most important matters considered by this body.

A NEW FOREST LAW.—Through the efforts of the Colorado Conservation Commission and the officers of The State Forestry Association, a bill creating the office of State Forester was passed by the last general assembly, 1910-11 of this state. This act in full reads as follows:

1. BOARD OF AGRICULTURE BE BOARD OF FORESTRY—APPOINT STATE FORESTER.—That the State Board of Agriculture shall have, and hereby is vested with authority, in addition to and in connection with its duties heretofore provided, as a State Board of Forestry, and the said The State Board of Agriculture is hereby given authority to appoint an officer to be known as the State Forester. The incumbent in said office to be the professor or instructor of forestry at The State Agricultural College, said State Forester to hold office at the will of the State Board of Agriculture and except as hereinafter provided, to be under the control of The State Board of Agriculture. The State Board of Agriculture is further hereby authorized to furnish the necessary office, furniture, office supplies, stamps and postage, and office and field equipment, and such necessary assistance as may be required for the proper conduct of the office of the State Forester. (Laws 1911, page 419, Sec. 1.)

2. SALARY OF STATE FORESTER.—The State Forester shall receive a reasonable salary, to be fixed by The State Board of Agriculture, not to exceed \$2,500 per year, which sum shall include his salary as professor or instructor of Forestry at the State Agricultural College, and shall be paid out of the money hereby appropriated. (Laws 1911, page 420, Sec. 2.)

3. STATE FORESTER—GENERAL DUTIES.—It shall be the duty of the State Forester to direct the management of State Forest Reserves, if any; to collect and publish all data relative to the forests and other timber growing in the State, to co-operate, so far as is practical, with the Department of Forestry of the United States Government; to promulgate and publish rules for the prevention of forest fires and to cause the same to be posted in the forests upon State lands; to study the best conditions for preserving and growing of trees and forests. (Laws 1911, page 420, Sec. 3.)

4. STATE FORESTER CO-OPERATE WITH LAND COMMISSIONERS.—The State Forester shall co-operate with the State Board of



Land Commissioners in the matter of granting of permits for cutting timber upon State lands, giving them data concerning the proper timber to be cut and the proper method of cutting and removing the timber and the removal of the strippings and advising the State Board of Land Commissioners concerning any matters of importance relative to the removal of the timber and the replanting and reforestation of State lands, but nothing herein contained shall be construed as amending the law at present existing giving the State Board of Land Commissioners authority in said matter. (Laws 1911, page 420, Sec. 4.)

5. STATE FORESTER AID IN EXTINGUISHING FOREST FIRES.—The State Forester shall advise, aid and assist in preventing and extinguishing forest fires on State lands and private lands and in the National Forests in the State, but nothing herein contained shall be construed as amending the law making it the duty of the Sheriffs of the various Counties of the State to prevent and extinguish forest fires. (Laws 1911, page 420, Sec. 5.)

6. STATE FORESTER ASSIST IN TREE CULTURE.—The State Forester may advise or assist any individual, individuals, association or corporations, towns or cities, and examine any tract of land that it may be desired to devote to the growing of trees or forests, to advise as to the planting thereof and the protection, preservation or reforestation of any private lands under an agreement with the owners of such land, whereby the owner or owners of such land shall pay to the State Board of Agriculture a sum equal to the total expense of the State Forester or such assistants as may be appointed for said purpose. (Laws 1911, page 420, Sec. 6.)

7. SHERIFFS REPORT FOREST FIRES.—It shall be the duty of the Sheriffs of the various Counties of the State to report as soon as practical the occurrence of any fire in any forest or forests in the State, either on private or public lands, and upon receiving notice from any source of a fire or fires in any forest, it shall be the duty of the State Forester to aid and assist in extinguishing the same. (Laws 1911, page 421, Sec. 7.)

8. STATE FORESTER LEARN CAUSE OF FOREST FIRES.—It shall be the duty of the State Forester to examine and inquire into the cause of fires occurring in the forests of the State, either on private or public lands, to prosecute violation of all laws pertaining to fires or the cutting or destruction of timber in the State, and report to the proper authority, any violation or dereliction on the part of any officer or officers of the State with relation to fires and in relation to the timber or forests in the State. (Laws 1911, page 421, Sec. 8.)



9. COMMISSIONER OF GAME AND FISH POST NOTICES.—It shall be the duty of the Commissioner of Game and Fish to have posted, in manner as required by the State Forester all notices prepared by the State Forester concerning the prevention and extinguishing of forest fires. (Laws 1911, page 421, Sec. 9.)

10. PENALTY FOR REMOVING NOTICES.—Any person who removes, injures or defaces any sign or signs placed or maintained in pursuance of Section 9, shall be deemed guilty of a misdemeanor, and upon conviction, shall be fined not to exceed \$25.00 and costs of prosecution, or imprisonment, not to exceed thirty days in the county jail, or both, at the discretion of Court. (Laws 1911, page 421, Sec. 10.)

11. STATE FORESTER REPORT TO GOVERNOR.—Said State Forester shall, biennially, make to the Governor, a report of the transactions of his office, and shall make such recommendations as he shall deem necessary with a view toward prescribing laws necessary to make his office an effective factor for the purposes for which it is created. (Laws 1911, page 421, Sec. 11).

12. There is hereby appropriated, for the biennial period of 1911 and 1912, out of any funds in the State Treasury not otherwise appropriated, the sum of Ten Thousand Dollars (\$10,000.00) for the purpose of carrying into effect the provisions of this act, and there is hereby appropriated, for each successive biennial period, the said sum of Ten Thousand Dollars (\$10,000.00) for such purposes, and the Auditor of State is hereby authorized to draw his warrants upon said funds, upon the order of The State Board of Agriculture, signed by its President and countersigned by its Secretary. (Laws 1911, page 421, Sec. 12.)

This act, which makes the Professor of Forestry of the State Agricultural College ex-officio State Forester, resembles in this respect the previous enactments concerning the officers of State Entomologist, State Geologist, State Mining Engineer, and State Chemist, in the fact that this officer is, like the others, connected with one of the various state institutions.

While this is not a complete record of the forestry legislation in Colorado, it traces the main features of the matter up to the present time. The problem which now confronts the official in this new office of State Forester is hardly less difficult than that with which the earlier Forest Commissioner had to contend with this exception, that the forest areas belonging to the state are much smaller than the timbered lands under the supervision of the Forest Commissioner. Then, too, the work which the National Forest Service has inaugurated upon government lands has helped to educate the people to the idea of forest conservation. The example set by other



states in the handling of their forest resources has also furnished examples which may prove suggestive of the work which Colorado should undertake.

### **Organization and Lines of Work Followed Since the New Law**

Following the passage of this law and the coming into office of the present incumbent, Mr. W. W. Robbins, instructor of Botany and Forestry, was appointed deputy. The first apportionment of the appropriation for carrying on the work of this office was not received until during January, 1912. Believing that the protection of our forests from fires was the most important thing to be taken up, work was at once started in the organizing of the county officers concerned in the control of forest fires under previous enactment. The services of two special deputies, who were men of wide acquaintance and considerable experience in public affairs, were secured as special deputies. Mr. I. W. Bennett, of Fort Collins, and Mr. James F. Kyle, of Montrose, were appointed to assist in this work. The matter was first taken up with the County Commissioners and the sheriff of Larimer County and the following set of resolutions was duly passed by the Board of County Commissioners:

Fort Collins, Colo., Apr. 15, 1912.

#### *To Whom It May Concern:*

This is to certify that the foregoing resolution was adopted by the Board of County Commissioners of Larimer County, Colorado, in regular session on the 12th day of April, 1912.

A. P. GREENACRE, County Clerk.

By T. H. GARRETT, Deputy Clerk.

(Seal)

Whereas, on the 10th day of April, 1912, the Board of County Commissioners of Larimer County met in consultation with a committee from the State Board of Agriculture, consisting of A. A. Edwards, President of the Board; B. O. Longyear, State Forester; I. W. Bennett, and J. F. Farrar, Attorney for the Board of Agriculture, together with Harold A. E. Marshall, Supervisor of the Colorado National Forest, for the discussion of a plan for the prevention and control of forest fires; and

Whereas, the law of the State of Colorado, Revised Statutes of 1908, Sec. 1280 and 1281, provides that the Sheriffs of the respective Counties of the State shall act as fire wardens in cases of prairie or forest fires, and authorizes the sheriff, under-sheriff or deputies,



to require the aid of such persons of their respective counties as may be necessary for controlling and extinguishing any forest or prairie fire, the expense thereof to be borne by the County of Larimer; and

Whereas, The Statutes of the State of Colorado further vest in the Board of Agriculture, authority as a Forestry Board, Laws of 1911, Chapter 138, pursuant to which authority the said State Board of Agriculture has appointed B. O. Longyear as State Forester; and

Whereas, the State Board of Agriculture, through its department of forestry, is desirous of securing a definite agreement between the boards of county commissioners of the various counties of the State of Colorado, and the Forest Service of the United States Government, wherein the Counties and the Forest Service, through its various officials, may act in harmony in the matter of the prevention and control of forest fires, with a definite agreement as to the payment of any expense incurred; and

Whereas, the Supervisor of the Colorado National Forest has heretofore cooperated with the officials of Larimer County in the matter of forest fires, and the present supervisor, Harold A. E. Marshall, expressly states that in-so-far as he has jurisdiction, he will co-operate with the authorities of the State where any fire occurs in or threatens any portion of the Colorado National Forest; and

Whereas, the State Forester of Colorado is endeavoring to secure a general agreement with the Forest Service of the United States Government which will cover the question of the prevention and control of forest fires throughout the whole state of Colorado; and

Whereas, this Board realizes the necessity of the people of this County in the preservation of the timber upon the water-sheds tributary to the streams which supply water for irrigation and the necessity of thorough organization of all persons or institutions interested, and recognizes the duty of the officials of this County for that reason, to prevent and control any forest fires which may occur within the County:

Now therefore, Be It Resolved:—That the Board of County Commissioners of Larimer County desires to encourage the prevention and control of forest fires, and it hereby heartily recommends unto the Sheriff of this County, the exercise of all reasonable care and diligence in the prevention and control of forest fires, and hereby agrees that any and all legitimate expense incurred by the sheriff, under-sheriff, or deputies, pursuant to the laws of the State of Colorado, will be properly allowed, if presented in due time, as a bill or bills against the County; nothing herein contained to be understood that this Board will waive its duty of properly investi-



gating the necessity, reasonableness and legality of such bills.

Resolved further, That this Board desires to co-operate, in-so-far as it legally can do so, with the officers of the United States Government in the control of fires upon the Colorado National Forest, in-so-far as that forest lies within Larimer County, Colorado, and will be glad to receive the aid and assistance, financially and otherwise, of said United States Government officials.

Resolved, further, That if a definite agreement can be reached by the State Forester with the Forest Service of the United States Government this Board will enter into such agreement in-so-far as their jurisdiction lies, provided the same be equitable and in accordance with law.

The counties of the state which contain forest lands, forty-two in number, were equally divided between these two deputies. The principal work of these deputies consists in visiting the county seats of the counties, placing the matter before the sheriff and County Commissioners, and securing, if possible, a favorable set of resolutions concerning the financing of the work of fire control. In most cases, no active opposition to the carrying out of the law has been met after its meaning was made clear and in the majority of cases where resolutions have been passed they are the same as those passed by the County Commissioners of Larimer county.

The counties in which this organization work is being carried on are given in the following list which also shows the number of deputy sheriffs that have been named for appointment. Those counties in which the boards of commissioners have, up to this time, passed resolutions favoring forest fire control by the county fire wardens are marked with an \*:

Name of County.	Number of Deputies Named
Archuleta .....	.....
Boulder* .....	11
Chaffee .....	18
Clear Creek .....	17
Conejos .....	.....
Costilla .....	.....
Custer .....	.....
Delta .....	7
Dolores .....	.....
Douglas* .....	13
Eagle .....	.....
El Paso .....	.....
Fremont .....	9
Garfield* .....	21



Gilpin .....	7
Grand .....	15
Gunnison .....	16
Hinsdale .....	12
Huerfano* .....	25
Jackson .....	.....
Jefferson* .....	3
Larimer* .....	23
Lake .....	18
La Plata .....	.....
Las Animas .....	23
Mesa .....	8
Mineral .....	.....
Moffat .....	17
Montrose .....	10
Montezuma .....	.....
Ouray .....	15
Park .....	18
Pitkin* .....	23
Pueblo* .....	5
Rio Blanca .....	16
Rio Grande .....	.....
Routt .....	16
Saguache .....	.....
San Miguel .....	.....
Summit .....	7
Teller .....	19

392

APPOINTMENT OF SPECIAL FOREST FIRE WARDENS.—After several conferences with the State Fish and Game Commissioner, 197 special forest fire wardens were commissioned from the list of special deputy game wardens. These wardens were selected on account of their location and other desirable qualities to serve in such a capacity. These appointments were made on a blank form, which was accompanied in each case with a copy of the compiled forest laws of the state and a set of special instructions. These appointments expire March 31, 1913.

BADGES OF DEPUTY FIRE WARDENS.—It was believed desirable to furnish a badge to each deputy selected by the sheriff to serve as a deputy fire warden. These badges are in the form of a nickel star and bear the following inscription:



COLORADO  
FOREST SERVICE  
DEPUTY SHERIFF

They are supplied to the sheriffs of those counties where forests exist, and a receipt is taken by the State Forester for the number of badges, which remain the property of the Department of State Forestry.

**FIRE REPORTS.**—Special fire report blanks are furnished to the chief fire warden of each county with the request that they be used in reporting the occurrence of fires. These blanks call for data as to location and extent of the fire; cause of the fire; estimated damage, and the cost of fighting the fire. During the past season the moisture conditions generally have been such as to reduce the fire danger to a great degree, and only a few fires have been reported. Of those reported, one was apparently started by fishermen, while the other four were started in the dry grass along a railroad, evidently from locomotives. The first fire was reported to this department by the Forest Service. It burned over about seven acres in a timber slash following a timber sale on state lands. The latter fires were all put out before any timber was burned.

**COMPILATION OF STATE FORESTRY LAWS.**—The large number of laws dealing with forestry which have been enacted in the State of Colorado made it desirable to have these laws compiled in a convenient form for use and for distribution among persons concerned in the carrying out of these laws. In a number of cases these laws appear to cover much the same ground and in others apparent conflicts appear. All the laws concerning forestry, however, have been included in this compilation, which has been issued in the form of a bulletin of twenty-four pages. A 2,000 edition has been issued. It is expected that wide use will be made of this publication and numerous calls have been made for it by people living outside our own state.

**CO-OPERATIVE AGREEMENT WITH FOREST SERVICE.**—Early in the work of organizing county fire wardens it was found desirable to have some definite understanding with the officers of the Forest Service in order to avoid possible conflicts of authority and to further the work of controlling forest fires. After numerous conferences with the District Forester, an agreement was drawn up which seemed to cover the ground in a manner satisfactory to both the forest service and State. This agreement, when finally submitted to the Bureau of Forestry at Washington, was found to be acceptable in the main and after some minor changes, the execution of



the contract was closed by the signature of the Secretary of Agriculture.

*Co-operative Agreement Between Colorado State Board of Forestry and the Forest Service of the United States Department of Agriculture:*

This agreement, entered into this seventh day of October, 1912, by and between the State of Colorado, by and through the State Board of Agriculture, party of the first part, and the United States of America, by and through the Secretary of Agriculture, party of the second part, WITNESSETH:

WHEREAS, It is believed that a more efficient protection of public, State, and private property against forest fires can be had through co-operation by the State and Federal governments,

NOW, THEREFORE, in order that a plan of co-operation between the officers of the State and the officers of the United States Forest Service may be more clearly outlined and defined, it is hereby mutually agreed as follows:

FIRST.—That this agreement is in no way intended to restrict the officers of the State or of the Forest Service in, or relieve them of, the performance of any of their duties imposed upon them by law with respect to the prevention and extinguishment of forest fires.

SECOND.—That this agreement relates to all lands within the State of Colorado, including lands held in private ownership, lands owned by the State, and lands of the United States, both reserved and unreserved.

THIRD.—The use of the term "fire warden" throughout this agreement is for the sake of convenience in designating the officers of the State, and includes county sheriffs, under-sheriffs, and deputies, and all other state and county officers whose duty it is under the laws of the State of Colorado, to prevent and extinguish forest fires.

FOURTH.—Whenever any fire warden discovers a forest fire, he shall, if possible, proceed at once to extinguish it, and shall, thereafter, as soon as possible, report the occurrence of the fire to the nearest officer of the Forest Service and to the State Forester. If, however, he is unable to control the fire without assistance he shall immediately report the fact to the nearest officer of the Forest Service and to the county sheriff. In like manner any officer of the Forest Service discovering a fire, whether on National Forest land or not, shall extinguish it, if possible, and thereafter, as soon as possible, report the occurrence of the fire to the county sheriff. If he be unable, however, to control the fire without assistance, he shall immediately report the fact to the sheriff of the County where the fire occurs.



FIFTH.—Whenever a forest fire is discovered by a fire warden upon National Forest land, the extinguishment of such fire shall be in charge of the fire warden until an officer of the Forest Service arrives, whereupon the said Forest officer shall assume charge and may call on the fire warden for assistance, and in such case the fire warden shall render all assistance possible to the said officers of the Forest Service, and a like procedure shall be followed where the fire is upon lands other than National Forest land and threatens National Forest land. The officers of the Forest Service shall determine whether or not the fire threatens National Forest land.

SIXTH.—All forest fires upon lands other than National Forest land shall be in charge of the fire wardens except as provided in the preceding paragraph. However, whenever a fire is discovered by a Forest Officer on lands other than Forest lands which does not threaten National Forest land, he shall assume charge of such fire until the arrival of the fire warden, whereupon said fire warden shall assume charge, and thereafter Forest officers shall render no further assistance unless in the opinion of the Forest officer his assistance is necessary, and whenever such fires are discovered by a fire warden the officers of the Forest Service shall upon request of the fire warden render assistance whenever the performance of their official duties will permit; Provided, whenever such assistance is rendered by Forest officers the expenses, exclusive of salary, incurred by them, shall be defrayed by the county or counties in which the fire is located.

SEVENTH.—Whenever fire wardens aid or assist in the extinguishment of fires upon a National Forest, they shall be paid directly by the Forest Service at the rate of not less than 35 cents per hour, except the County Sheriff, who shall be paid at the rate of 50 cents per hour, for such time as they may be engaged in fighting said fires.

EIGHTH.—Whenever fire wardens aid or assist the officers of the Forest Service in the control or extinguishment of fires upon land other than National Forest lands, and which threaten National Forest lands, they shall be paid by the Forest Service at the rate prescribed in the preceding paragraph, unless the fire is located upon the unreserved public domain and arrangements can be made with the United States General Land Office to defray the expenses, or unless such fire is located upon state or private lands and arrangements can be made with the proper officials of the state or of the county or counties within which the fire is located, or the private owner or owners of said lands, to defray the expenses or any part thereof.

NINTH.—Whenever a fire on National Forest land or threatening National Forest land is discovered by a fire warden he shall,



before incurring any expense to be paid by the United States for the purpose of extinguishing the fire, report the fire to a properly authorized Forest officer, who will authorize such expenditure as is necessary to control the fire; not exceeding, however, the amount which may be available from any appropriation then subsisting made by Congress for that purpose.

TENTH.—It is further agreed and understood that for the purpose of this agreement all Forest officers who have been or may hereafter be appointed fire wardens by the Governor of the State of Colorado, as provided for in the laws of 1909, Section 1, page 394, shall be considered officers of the Forest Service and not officers of the State of Colorado, and all provisions of this agreement applying to other Forest officers shall apply equally to them.

ELEVENTH.—It is further understood and agreed that the responsibility of the respective parties hereto shall not in any wise be extended beyond the express or necessarily implied provisions of the laws of the State of Colorado and of the United States of America, and the respective rules and regulations made pursuant thereto.

IN WITNESS WHEREOF, the hand and seal of the party of the first part, on the date first hereinbefore written, and the signature and seal of the Secretary of Agriculture, are hereunto affixed this, the 12th day of November, 1912.

STATE OF COLORADO,

By B. O. LONGYEAR,

State Forester and State Board of Agriculture.

UNITED STATES OF AMERICA,

By JAMES WILSON,

Secretary of Agriculture.

The securing of this agreement is considered as one of the most important results of the work in this office during the year. It is believed that it will not only facilitate the matter of protecting our forests from fires by establishing a basis for harmonious working of the Forest Service and the county wardens, but will also greatly increase the interest in forest fire protection among all the county authorities.

A four-page pamphlet of instructions for county and state fire wardens has been compiled. This pamphlet includes the co-operative agreement with the Government Forest Service, together with some special instructions.

An effort has been made to secure a similar agreement with the Department of the Interior concerning the public lands in this state, but such an agreement has not yet been reached. An arrangement has been made, however, with the Denver office whereby the



following form of telegram may be sent to the Chief Field Division at Denver in case of forest fires on such lands:

Vacant public lands.

*Telegram, Govt. Rates.*

....., Colorado.

P. O.

Date.....

U. S. General Land Office,  
Ernest and Cranmer Building,  
Denver, Colorado.

Forest fire burning on Section....., Township .....

Range ..... miles distant from .....

railroad station. Origin of fire ..... area

burned over ..... acres. Remarks: .....

.....Signature.

### CO-OPERATIVE TIMBER PRESERVING PLANT.

During October, 1911, the Forest Service, through its officers of District No. 2, decided to establish a co-operative timber preserving plant at the State Agricultural College. Later in the same year, The State Board of Agriculture and Forestry placed the matter in the hands of the State Forester to carry out the arrangements relative to the establishment of this work. A very complete timber preserving plant is now in use under the direction of the State Forester. It consists of a separate building containing one 7-horse power upright boiler, a creosote pump operated by steam, one receiving tank, one dipping tank, one storage tank. These tanks are so arranged that the preservative material can be heated by means of steam from the boiler which is passed through coils of pipe in the bottom of each tank. The preservative fluid is first drawn from the storage tank into the dipping tank, where the posts, shingles, or other timbers are placed for treatment. Here the temperature is raised to the desired point for a specified length of time, after which it is drawn off into the receiving tank which is situated below the floor for this purpose. From this tank the material is then pumped back into the storage tank by means of the steam pump.

This plant is adapted to the open tank process of treating such timbers as fence posts, shingles, and other small pieces of timber. Under the agreement, the Forest Service supplied the boiler and



two tanks and the rest of the equipment was purchased from State Forestry funds. The understanding between the Forest Service and the State Forester allows the Forest Service to make use of this plant whenever it will not interfere with its use by the department. Results of co-operative experiments shall be published only by mutual consent of both parties.

The following project has been outlined by the Forest Service:

UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE

Forest Products Laboratory  
Rocky Mountain Division  
Project L-39

In Co-operation with the Colorado State Forestry Department,  
Fort Collins

Experiments with Engelmann Spruce, Lodge-pole Pine, and Alpine  
Fir Fence Posts.

WORKING PLAN

PURPOSE.—Reliable data are lacking concerning the durability, both treated and untreated, of the timbers of the Rocky Mountain region suitable for posts when set under conditions of actual service in the farming districts. Furthermore, there are no experiments now under way which will yield the data needed for the Plains region where nearly all the farming is carried on. Material is now needed for a few trial runs at the plant erected at the Agricultural College at Fort Collins as a co-operative undertaking between the College and the Forest Service. The opportunity of making the trial runs on material secured on the National Forests under conditions that allow full information as to its origin, and placed so as to afford means for careful future inspections, is thus presented. The purpose in making the experiments will be:

- (1) To determine the relative absorption of creosote in an open tank treatment of Englemann spruce, lodgepole pine, and alpine fir in the round form.
- (2) To determine a definite time of treatment that can be recommended for lodgepole pine posts for use with a single treating tank.
- (3) To determine the absorption of Engelmann spruce, lodgepole pine, and alpine fir when given a brush treatment of creosote and of crude oil.
- (4) To determine the life of untreated, brush-treated, and open tank treated fence posts of Engelmann spruce, lodgepole pine, and alpine fir, when set in the Plains region under typical farm conditions.



(5) To determine the value of beveling the tops of fence posts in a dry climate.

**MATERIAL.**—The material will consist of sound fire-killed posts approximately 7-ft. long and with 5-in tops. They will be cut on the Colorado National Forest near Ward, and shipped to the plant at Fort Collins on Government bill of lading. They will consist of approximately the following number by species:

120 Lodgepole pine.

120 Engelmann spruce.

50 Alpine fir.

The cost of the posts will be a little more than twenty cents apiece at the plant (10 cents apiece for cutting and delivering on car at Ward, and from 10 to 12 cents for freight).

The preservative will be furnished by the College and also any labor necessary in treating the posts.

### METHODS

**DIVISION OF MATERIAL.**—The material will be carefully inspected at the plant and numbered with brass tags, and in addition stamped with steel dies. A card form will be numbered to correspond with each post and its complete history will be kept on that card which will be filed at the State Forester's office, and constitute the permanent record for the Agricultural College. The Forest Service will keep its records on the standard forms for experimental post records.

One-half of the material for each type of treatment will be beveled in order that the value of this practice in a dry climate may be determined.

The material will be divided as follows for treatment:

Set untreated .....	{	20 posts lodgepole pine
		20 posts Engelmann spruce
		15 posts Alpine fir
Set after brush treating with	{	20 posts lodgepole pine
"creosote" .....		20 posts Engelmann spruce
		15 posts Alpine fir
Set after brush treating with	{	20 posts lodgepole pine
crude oil .....		20 posts Engelmann spruce
Set after open tank treatment	{	20 posts lodgepole pine
No. 1 .....		20 posts Engelmann spruce
		20 posts Alpine fir
Set after open tank treatment	{	20 posts lodgepole pine
No. 2 .....		20 posts Engelmann spruce
Set after open tank treatment	{	20 posts lodgepole pine
No. 3 .....		20 posts Engelmann spruce



**TREATMENT.**—In the brush treatments two coats will be applied at periods at least twenty-four hours apart. The oil will be applied at a temperature as close to 200° F as possible with wire-bound brushes. The weight of each post will be taken before and after treatment to determine the absorption. The total amount of oil used will also be obtained from the weights of the vessel used to hold the preservative, the latter figure including the losses due to evaporation and dripping. The creosote used will be furnished by the College and will be obtained from a local water-gas plant. (A sample from this concern has already been submitted to the Forest Products Laboratory for examination.) The crude oil will be obtained from the Boulder oil fields. Samples of both oils used will be taken at the time of the experiments.

In the open tank treatments, three runs will be made. The principal objects in these runs will be, (1) to determine the relative absorption of the different species when given the same treatment in the round form; (2) to determine a definite time of treatment for lodgepole pine and if possible for Engelmann spruce that can be recommended as efficient (without change of oil bath) for say a five-pound per post absorption; and (3) to furnish posts with a thorough butt treatment of some preservative available for future use for comparison in durability with untreated and brush-treated posts. The preservative will be furnished by the College and will be the same as that used in the brush treatments. The runs will be approximately as follows, though the length of time may be varied during the tests if necessary to obtain the results desired:

No. 1	2 hours hot	0 hours cooling
No. 2	1 hour hot	0 hours cooling
No. 3	1 hour hot	6 hours cooling to about 100° F.

**FUTURE WORK.**—The posts will be set on the College farm by the College authorities in the regular course of their operations. Reasonable care will be taken to see that the posts treated in different ways shall be set in comparable sites and none should be placed near pig styes, chicken yards, barn yards, etc., where they would be subjected to abnormal conditions as compared with the posts set in the open fields.

Inspections will be made by representatives of the Forest Service. Notice of the time when the inspection will be made will be sent to the Forestry Department of the Agricultural College. Also, should the Forestry Department desire to make an inspection of the posts, notice should be sent to the Director of the Forest Products Laboratory at Madison, Wisconsin. A copy of the results of an inspection by either party should be sent to the co-operator not present.

In accordance with the regular policy of the Forest Service



in its co-operative agreements of this kind, the right to first publication of data resulting from the posts described in this working plan is reserved to the United States Department of Agriculture. This right may be waived by the Director of the Forest Products Laboratory if the Forestry Department of the State Agricultural College desires to use the data before the U. S. Forest Service has published the results.

During August of the present year the first experimental post treating was done, in which 270 posts of the three species mentioned were treated, some with coal tar, some with creosote oil, by the open tank process, while others were given brush treatment with these two materials. A number of posts were left without treatment to be set in that condition as checks upon the effects of the preservative treatment. These posts are now being set upon the college farm and will be inspected at intervals during their life.

### STATE FORESTRY PROJECTS.

Several lines of work concerning the growing of trees for timber, and other purposes apart from fruit growing, which seem to call for study and investigation have been outlined as projects to be carried on as time and money permit. The following projects have been outlined in detail and some work has been done in connection with each of them.

#### PRESERVATIVE TREATMENT OF FENCE POSTS.

(State Forestry Investigation).

##### PROJECT I.

The co-operative timber treating plant, which is now installed on the College grounds and which has been put in charge of the State Forester, makes it possible to take up the investigation of treating cheap and rapid growing species of timber for fence posts. The office of the Forest Products Laboratory, at Boulder, has offered a suggestive outline for carrying on this work on which the following is based:

SCOPE OF THE WORK.—This investigation is undertaken primarily to demonstrate ways and secure data on prolonging the service period of fence posts by means of one or more principal methods of preservative treatment. The cheap and rapid growing species such as can be readily grown on the farms of Colorado are to be most extensively used.

The investigation should extend over a period of twenty-five



years, or longer, if necessary, in order to furnish the required information.

Most of the posts used in this work are to be set on the College farm or other lands under the control of the State Board of Agriculture.

Co-operative work with farmers and corporations in the treatment and setting of posts and the preservative treating of shingles may also be undertaken. In such cases, the proper records should be made and data secured as in the other work.

The results are to form the basis for reports and recommendations in regard to fence post preservation.

A. GATHERING STATISTICS ON PRESENT CONDITIONS.—Make a study of typical fencing conditions in the following districts of the State:

- a. South Platte district;
- b. Arkansas Valley district;
- c. Western Slope Fruit District;
- d. Plains district.

Gather statistics on the following points:

1. Amount of fencing, number of posts used annually, total cost of posts and of setting;
2. Present source of fence posts;
3. Kind of posts:—species, size, length of service, cost of posts and of setting.....

total  
annual

4. Means of lengthening the life of posts commonly used;

B. WORKING PLAN.—A working plan in sufficient detail to enable different men to carry on the work to its completion is necessary. This in order to perpetuate the results of the investigation should any change in its supervision occur.

TREATMENT OF POSTS.—In order to secure reliable data for comparison with treated posts, the usual methods of setting posts without any preservative treatment are to be used. The different species of timber commonly used for posts in this state are to be tried in the various ways mentioned, except perhaps in the case of long-lived timbers, such as cedar, catalpa, and Black-locust. In such cases, the preservative treatment alone may be omitted.

TREATMENT.—The following methods of treatment are to be followed with a sufficient number of posts, not less than ten, to give reliable results.

1. Set green, with bark on; not treated.
2. Set green, peeled; not treated.
3. Set green, with bark on; butts treated.
4. Set green, peeled; butts treated.



5. Seasoned, not treated.
6. Green, butts charred.
7. Seasoned, butts charred.
8. Seasoned, butts brush treated with creosote.
9. Seasoned, butts treated with creosote, open tank.
10. Other preservative treatments, crude oil, copper sulphate,

Etc.

SOURCE AND COST OF PRESERVATIVES.—In connection with the matter of treating the posts, some study should be given to the securing of creosote at the lowest possible cost.

By products of this nature, produced by our local gas plants in the state, should therefore be given a thorough trial.

RECORDS.—Carefully kept records form an essential part of this work and make it possible to continue it without confusion or loss of information. The card-filing system of keeping all records of treating, setting and inspecting the posts, will be used.

Each method of treatment used shall be described on a numbered card, with date; kind of material used; source of material; cost of material; a detailed description of the process, length of time, amount of material used, penetration and absorption per post, and any other information of importance.

Each post is to be numbered in such a way as to be easily identified any time during its period of service.

A record card is to be kept for each individual post. This card shall bear the following data:

Number of post; species of timber; size and form; source of the timber; date when cut; number of the treatment given; condition of the timber when treated; date of setting the post; locality where set; soil conditions where set; itemized costs of post; treatment, setting, total cost of post set. The card shall also bear an inspection record showing each inspection period, and the estimated condition of the post at each inspection.

Inspection of the post should be made each year, for untreated posts, and for treated posts as often as necessary to know their condition. As decay is usually most rapid close to the ground surface, the post may be examined quite readily by removing the soil to a depth of four or five inches at one side.

C. GROWING CHEAP FENCE POST TIMBER ON COLORADO FARMS.—A study should be made of the production of cheap timber suited for fence posts, to be treated with some inexpensive and efficient preservative.

a. Study the trees now growing on the farms, along ditch banks, in timber plantations, and the native second growth along rivers and streams;

b. Determine the rate of growth of each species under the



different conditions; the length of time required to produce post-size trees, and the number of posts produced per acre.

c. Estimate the cost of production and determine which species lead in cheapness under various conditions.

d. Plant various species experimentally on the College farm, and on co-operative land in other districts, for the purpose of determining the best system of management under average conditions.

## SHADE AND TIMBER TREE SURVEY OF COLORADO

### STATE FORESTRY PROJECT II.

For more than thirty years, tree planting for shade and timber purposes has been carried on in Colorado, both on private and on municipal lands. At first, our native cottonwoods were used for planting on account of their being most available and because they were known to be adapted to the soil and the climatic conditions. Numerous other species of trees, however, have been introduced during this period and many of these are now growing in door-yards, along the streets of the older towns and cities or in plantations upon the farms of our State.

The results of these efforts in tree planting, which were sometimes failures as well as successes, have been in a measure experimental. The varied conditions of soil and climate which are to be met with in this State call for a study of the species best suited to each principal region. The trees now growing here offer valuable data for prospective tree planting and this information should be made available to any who desire it.

**OBJECT OF SURVEY.**—This survey contemplates the securing of all such data from the trees now growing within our borders, and which have been planted for shade, ornament or timber purposes, as will enable the office of State Forester to make recommendations along these and similar lines.

**DISTRICTS COVERED.**—The various districts covered by this survey may be the same as outlined in the Fence Post Investigation and include the following:

- a. South Platte district;
- b. Arkansas Valley district;
- c. Western Slope Fruit district;
- d. Plains district.

The shade tree surveys are to be confined to the principal cities and towns of each district, providing they offer some considerable data.

The timber claim plantings, which are to be found in each region visited, should be surveyed for such data as they may offer along these lines.



## WORKING PLANS.

## A. Shade and ornamental trees.

1. Make a census of the species of trees on at least the principal streets where planting has been done over a sufficient period of time to furnish reliable data.
2. Adaptability to soil conditions, such as kind of soil, moisture in soil, alkaline soils.
3. Note the degree of adaptability to the climatic conditions, such as relation to early and late frosts, winds, hail, sleet and snow, and sunburn.
4. Liability to injuries from insects, fungi, smelter fumes and other gases.
5. Rate of growth and period of maturity.
6. Objectionable features in habit of growth, tendency to litter, and unpleasing esthetic qualities.
7. General observations concerning the planting methods employed; spacing of trees, pruning, beheading or other form of mutilation and other features, desirable and undesirable.
8. Photographs should be taken of the best types of trees and the best planted streets and private places, together with pictures illustrating the common mistakes in planting, pruning, lack of care, or other features.

## B. Timber and Windbreak Plantings.

A careful study should be made of the principal timber plantations in each district, especially where these are of considerable age, as follows:

1. Species of trees planted; purpose of plantation; form and area of plantation; soil conditions.
2. History of planting:—Date of planting, source of the stock; how planted; care as to cultivation, irrigation, pruning, protection from stock and fire.
3. Measurements:—These should comprise the height, trunk diameters, rate of growth; present volume per acre in cordwood, posts, poles, and lumber.
4. Financial estimates, expenses:—Cost of land, taxes, nursery stock, labor, interest.

Revenues:—Fuel or other timber, nuts or other tree products; windbreak service; present value of stand.

RECORDS.—Permanent records should be compiled in a form suitable for filing.

In the Shade Tree Survey, the town or city may constitute the filing unit. Each record should bear the altitude, range of temperature, and other features affecting the climate, together with the other data given under each topic of study.



The Timber Planting records should show the full history of each plantation examined, as far as obtainable. In addition to the data secured under each head, may be added remarks concerning improved methods of management, suggested by present conditions, which might be used to advantage.

### EXPERIMENTAL TREE PLANTING.

During the spring of 1912, 45 species of trees, mostly foreign to the state, were planted experimentally in the College nursery. The stock consisted mainly of seedlings and comprised over 1,500 individual trees. Additional nursery stock has been purchased for further planting and consists mainly of such conifers as it is believed may prove valuable for ornamental and forest plantations in this state. These trees are to be watched carefully during several years to determine their hardiness and adaptability to this climate. Observations will also be made concerning the best methods of cultivation, irrigation, and pruning of trees.

### CO-OPERATIVE BASKET WILLOW PLANTING.

Basket willow growing in this country is becoming a matter of considerable interest and several inquiries from persons living in this state have been received concerning the possibilities of carrying on this industry here. To test out this matter on a small scale, the Forest Service has supplied a number of varieties of the commoner species of basket willows for experimental planting. These have been set on the College land and certain varieties are already showing excellent growth. It is believed that it will be possible in another season to supply enough cuttings from our own holt to establish a few small experimental plats on river bottom or other wet land, in co-operation with farmers.

### EDUCATIONAL EXTENSION WORK.

The lines of work of an educational nature that have been carried on have consisted in the answering of correspondence in relation to tree planting and other forestry matters.

Several addresses have been delivered at farmers' institutes, teachers' associations, and women's clubs upon various subjects that pertain to forestry.

The following is part of an address delivered before the Annual Meeting of The Colorado State Forestry Association in Denver, February 15, 1912.



## THE NEW FORESTRY LAW.

In discussing the new forestry law it may not be out of place to briefly review the enactments that have gone before this and which sought to deal with the forestry problem in our State.

Our State constitution is unique in that it calls for the enactment of laws to conserve the forests.

In 1884 The State Forestry Association was organized.

In 1885 a Forest Commissioner "soon without a salary," Mr. E. T. Ensign, was the first and only person to fill this position. The reports which he made while acting in the capacity of Forest Commissioner were equal to any and superior to many that are now being published in other states. Had Mr. Ensign received the financial support in his work which its importance warranted, the history of forestry in Colorado would certainly read differently from what it now does. Under this law, the County Commissioners and the road overseers were to act as conservators of woodlands in their respective localities.

In 1897, State forests placed under supervision of a department of Forestry, Fish, and Game. Inside of two years, the forestry part of this arrangement had been lost from view.

In 1901 a law was passed relative to campers' and hunters' licenses, for all persons outside their home county.

In 1903, an Act was passed making the sheriffs and deputies forest fire wardens in each respective county.

In 1904, two political platforms are said to have contained planks on State Forestry.

In 1905, The State Board of Land Commissioners was entrusted with the sale of timber from State lands.

In 1908, the Governor, upon request of the President of the United States, appointed the members of the Colorado Conservation Commission.

It has been largely through the efforts of this Commission that the present forestry bill has been framed and enacted. This in itself is, I feel, a sufficient guarantee that the men who are truly concerned with conservation in our State are behind the matter and will not see it come to naught.

(Brief Abstract of the Law—See page 7).

## THE WORK AT PRESENT OUTLINED.

A. FIRE CONTROL.—Pre-eminent among the duties imposed upon the State Forester by this Act is the protection of the State's forests from the fire menace.

Although the law of 1903 makes it the duty of the sheriffs of each county to fight the forest fires within their jurisdiction,



there has never been any organized effort to carry on this work. The Federal Forest Service will undoubtedly welcome any serious efforts on the part of the State to control the fires that start upon its own lands. The prime consideration, therefore, is the organizing of this fire control force so as to make it as effective as possible.

B. TREE STUDIES.—Shade and Timber Tree Surveys. See page 25.

Co-operative Timber Preserving Project. See page 22.

#### MATTERS FOR POSSIBLE FUTURE CONSIDERATION

STATE FORESTRY NURSERY.—Several states have established forest nurseries which supply trees at cost or even donate them in some cases to parties who show sufficient interest and appreciation. This could be made a valuable means of encouraging not only more extensive tree planting, but the planting of the best adapted species and those which have been grown from seed within our own state.

#### SOME ADVANTAGES OF THE PRÉSENT ARRANGEMENT.

Every system is apt to have some disadvantages which hamper the efficiency of its workings. Possibly the present case is no exception.

Other methods which have been tried in this state have appar-

The following states have state foresters or forest commissioners:—Alabama, California, Connecticut, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Rhode Island, Vermont, Wisconsin. In some of the states not named the forestry problem has been turned over to a Commission not been so successful as their promoters desired and expected. But should this fact be a sufficient reason why the State of Colorado should let her hands hang in helpless dejection by her sides while the forest lands of the State are being left unguarded from the fire menace?

The Federal Forest Service has its hands full to overflowing with its own problems and the indications at present are not such that we can expect much aid from an already heavily worked force of men..

The present arrangement, as provided for in the new Forestry bill, is not new to this country as a whole nor even to this State.



sion or State board of Forestry, but without a state official in full charge.

In at least the States of Connecticut, Kansas, Massachusetts, and Vermont, the State Forester is connected with the State Agricultural Colleges or both.

In Colorado, we have a State Entomologist who is also Director of the State Agricultural Experiment Station and a Professor in charge of a Department in the State College of Agriculture.

We have a State Geologist who is also a member of the State University faculty and in charge of a Department, while the State Chemist is in like relation to the same institution.

If precedent is needed to justify the placing of the Office of State Forester in that State institution with which its work is most closely affiliated, such precedent is not wanting. The handling of the forests is akin to that of other crops. The conserving influences of the forests upon our water supply directly affect the great agricultural interests of the state, which are coming more and more to look to the Agricultural College and the State Experiment Station for inspiration and guidance in their industries.

Our College and Experiment Station are well equipped to offer their aid in this work, not alone with tools and apparatus, but with men who possess the agricultural instinct and training. We have splendid opportunity, moreover, to come into touch with the farming communities, the schools, and the towns of the State through our Extension Department.

By this means, the findings which are made, the results of experiments, the teaching of principles, the education in forest conservation and extension can be taken directly to the people of the State as in no other way.

We have the necessary laws to carry on State Forest Conservation; the system is apparently adapted to the case; the carrying out of the policy as outlined now devolves upon the machinery of the organization.

While the quality of the work ultimately produced by this plant will depend upon the excellence of the tools, the work itself can progress only while the power is on.

No matter how good and complete may be the organization, there must also be a steady and sufficient supply of financial energy to produce results.

A need has been recognized and provision made to meet it. But something further is required for the greatest success of this work—that is the whole-hearted support of the State Forestry Association.

There may be those who sincerely believe in some other policy than the one which this law provides. Even so, they will not, I



trust, withdraw their support but will help in making it more effective. A policy that is deficient may sometimes accomplish much good when it is wisely carried out and consistently maintained. The best policy is already a failure when deserted by those who should be the first to lend aid toward making its workings efficient.

The Spruce and the Pine, the Cedar and Fir, which still remain upon the lands belonging to the State are looking to us for protection and care. This is not a one-man proposition. The whole people of the State are interested in this work, or should be. May we, then, not as self-seeking individuals, but as patriotic conservators of the great natural resources of our State, do our plain duty by this cause.

### FINANCIAL STATEMENT.

#### STATE FORESTER.

Apparatus and supplies for timber treating plant	\$647.34
Repairs for timber treating plant	31.50
	<hr/>
	\$678.84
Freight and express	164.44
Furniture and fixtures	123.20
Labor	911.02
Permanent Improvements	141.38
Postage and stationery	155.41
Publications	285.62
Salaries	1,715.96
Seeds and plants	268.98
Telephone and telegraph	10.85
Tools, implements and machinery	47.45
Traveling expense	486.85
Contingent expense	10.00
	<hr/>
	\$5,000.00

### RECOMMENDATIONS.

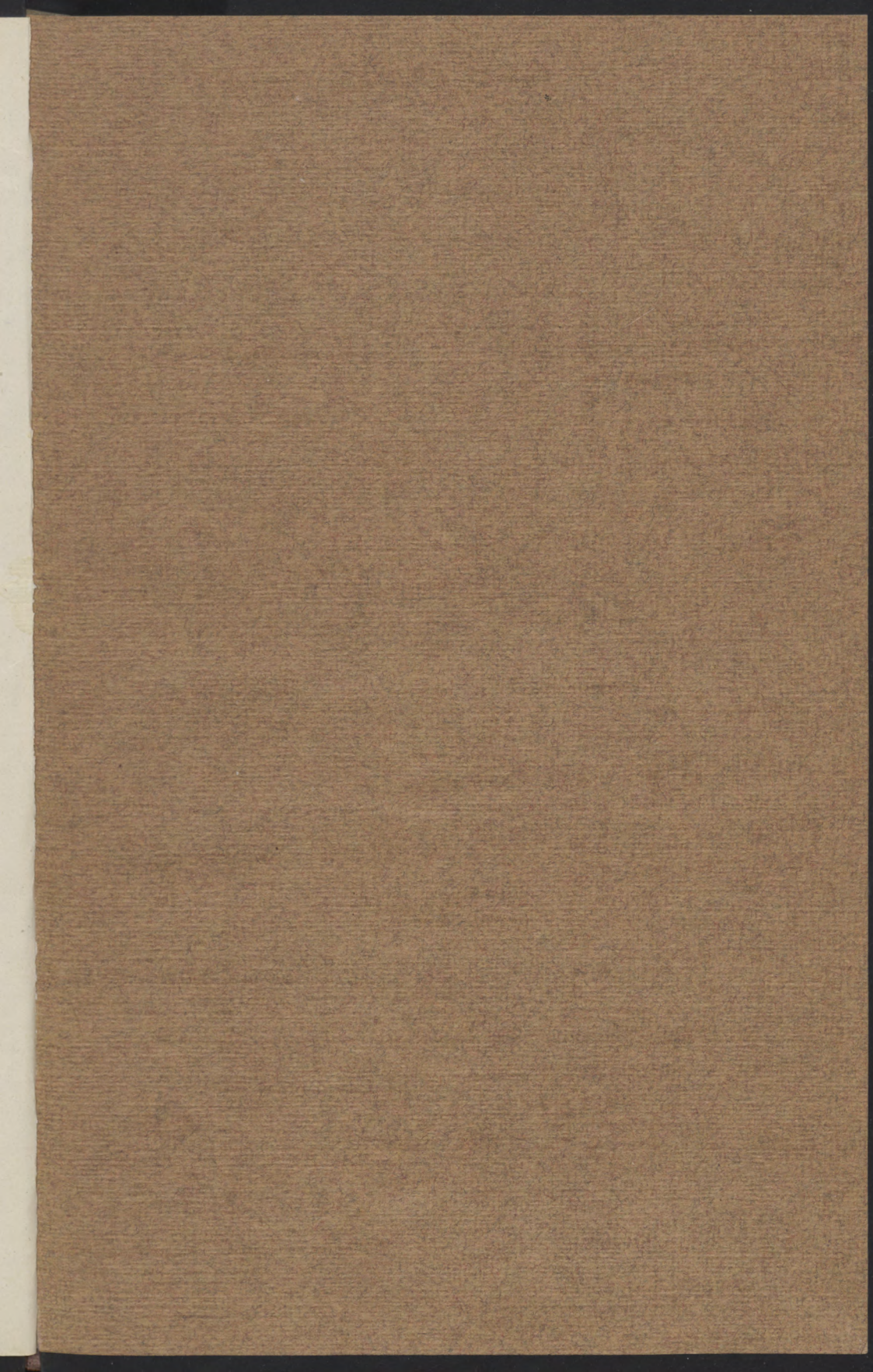
In this first biennial report of the State Forester under the new law, I have no special recommendations to make calling for any new legislation. I feel that it is still too early in the work of the department to offer any such recommendations, and believe that the law needs to be tried out first during at least two biennial periods. This should enable us to see where improvements are needed, but for the present the main thing seems to me to be the



carrying into effect of the laws we now have. It is hoped that the appropriation for this line of work during the coming biennial period will be available much earlier than it has been in the one just closed. This would enable the State Forester to make some headway in the projects now outlined besides completing the work among the county officers. The latter work will undoubtedly need to be followed up in many portions of the state each year until the organization is thoroughly understood among those who have to do with carrying out the provisions of the law.



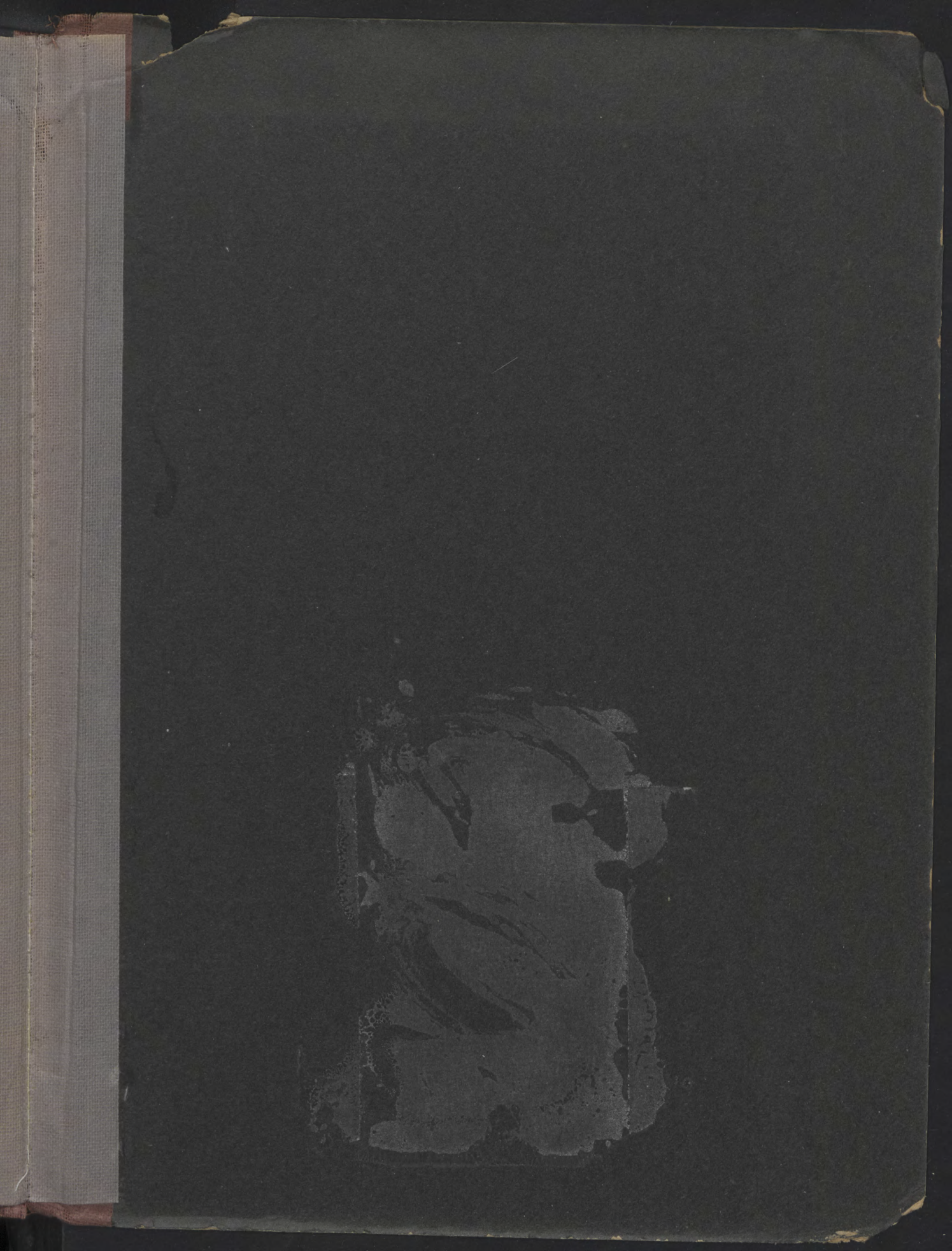






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