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Proceedings of
STATE FORESTERS' CONFERENCE.

SENATE CHAMBER, HARRISBURG, PA.

DECEMBER 8 AND 9, 1920.

PENNSYLVANIA DEPARTMENT OF FORESTRY

GIFFORD PINCHOT, COMMISSIONER,

Bulletin No. 23

1922.

PENNSYLVANIA DEPARTMENT OF FORESTRY

STATE FOREST COMMISSION

Gifford Pinchot, Commissioner of Forestry.

Edward Bailey.

Henry W. Shoemaker.

Mrs. John L. Lawrence.

(Mary Flynn Lawrence.)

Robert Y. Stuart, Deputy Commissioner of Forestry.

A. E. Rupp, Chief, Bureau of Lands.

Lewis E. Staley, Chief, Bureau of Operation.

George H. Wirt, Chief, Bureau of Protection.

John W. Keller, Chief, Bureau of Silviculture.

W. E. Montgomery, Chief, Office of Maintenance.

A. O. Vorse, Chief, Office of Information.

Joseph S. Illick, Chief, Office of Research.

E. A. Ziegler, Director, State Forest Academy.

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Senate Chamber,

Harrisburg, Pa., Wednesday morning,

December 8, 1920.

STATE FORESTERS' CONFERENCE.

The Honorable Gifford Pinchot presiding.

Mr. PINCHOT. The conference will please come to order.

I take very great pleasure, indeed, in presenting to you as the first speaker, and as the representative of the state of Pennsylvania, our governor. As you gentlemen doubtless all know, the recent progress of forestry in this state is directly due to the position Governor Sproul has taken in the matter, and the interest that he has shown. Consequently I present him to you, not only as the executive of our state, but as one first-class forester. (Applause.)

GOVERNOR WILLIAM C. SPROUL. Mr. Chairman and gentlemen: I am very glad to welcome you to Pennsylvania, and especially into this chamber of the senate. I feel that I have much more of a right to welcome people here after having served in this body for twenty-two years, than I have anywhere else in the state. I am glad that you are here and glad that you are here on the particular business for which you have come together. I regard it as one of the most important propositions that we have before us, and one so vital to the country that unless we give prompt attention, real attention, devoted attention to the problems surrounding it, we will find ourselves before long in a position that we will not only be uncomfortable, but will be really reprehensible and a great reflection upon the efficacy of a democratic government. Pennsylvania, as you all know, you know very much more about this subject than I do, Pennsylvania used to be a great lumber-producing state. Along in the fifties it led the entire country in the production of wood products; today it produces only a very small proportion of the amount that it uses, and that in spite of the fact that we have here in the center of the state and scattered throughout the state an area larger than the entire state of New Jersey, which is only valuable and only available for growing trees.

This state started a program of forest conservation quite early under Doctor Rothrock, who, bless his heart, is still here to see the progress of the work that he started. We began with a program in Pennsylvania many years ago, and we have made some progress. The state owns something over a million acres of land, and we have five or six million other acres which we have and which we propose to acquire just as soon as we possibly can. We reorganized our Department of Forestry and we were fortunate enough here in Pennsylvania to get a man who had the vision, and the energy, and the ambition, and desire to serve. It impels him to sacrifice his own leisure, which he is amply able to enjoy, and to come back into

the public service and to give it his time and attention as he is doing. We were fortunately able to commandeer the services of Mr. Pinchot. (Applause.) I had to argue with him a little. There was not much that I could offer him in the way of attractiveness except in holding out to him the opportunity and the vision and let him see through my own eyes the vision that I had and to assure him of the hearty support and the cooperation of the state administration, something he did not believe he would get at the beginning, although he had no doubt regarding my own position; but he did not believe that the state was sufficiently aroused to the importance of the subject to make the things which he had in mind practicable or possible within a reasonable time limit. We have nine million people in Pennsylvania. We have big problems. We have a bigger country population, that is if you take out the one great city, or even taking out the two foremost, a greater population than any other state. New York has a population of ten million six hundred thousand, and of that number six million are in their great metropolis, leaving four million six hundred thousand in the state outside. We have over seven million in Pennsylvania outside of our great city. We have one hundred and sixty-five towns in the state of over five thousand population, and these places require help in this particular line.

This stream here in Harrisburg used to be the greatest rafting stream that the world ever knew. The amount of lumber that would come down, the amount that has been floated out of the Susquehanna would amaze us all if the real figures were presented. One of my predecessors, Governor Bigler, came down from Clearfield County, his home, to his duties at Harrisburg upon his own raft of logs, time and again, the easiest means of transportation over the hills and through the valleys of Pennsylvania I guess at that time. We are trying to make rural transportation easier. We are trying to make it possible for the people to get to these forests that we have. We have two hundred and sixty-five thousand acres of forest in one block up in the northern part of the state, and where within my recollection the bald hills were devastated by forest fires are now really creditable growths of new timber, which we are trying to protect. We are paying particular attention to this fire problem. In the past we have only played around the edges of that situation. The state would buy land and try to do something on it, and then either by carelessness or accident a forest-fire would come along and destroy not only all that had been done but render the ground fruitless for some time to come. We are going to battle with that problem in a better-organized way.

One of the things that I think is most important, and especially in view of the fact that all of our states are not so fortunate as Pennsylvania is in having land which is available for timber-growing in such large quantities as we have, one of the important things is that we have got a national forest program of some sort, a program which will not invade our rights or prerogatives. Goodness knows, we have had enough of that kind of business. The states have been ridden over considerably by various programs of national intervention in the past, but we can get a cooperative plan whereby the nation can help the states, and then we can help the national policy. If we do this we can help not only those states which are fortunate in having lumber, in having timber to preserve and protect, and conserve that which they have. I mean by conservation in that case, by providing a plan by which timber may be cut without destroying everything that there is for the present and for the future as well, that we may help those things which are not so located or have not the soil or conditions which will make them forest-growing states, and also help those states which are capable of reforestation to carry out their program and make them a great reservoir for timber in the future.

I hope that your deliberations here will be entirely successful and that much good will come of them. We are planning to do some real constructive things in our forests here in Pennsylvania, and I hope that the whole country will awaken to the necessity of doing this. We do not want this country to look like some of those lands over in the Orient, over in Asia, where the destruction of the forest has really meant the destruction of living conditions throughout those countries, the elimination of civilization almost. I believe it is almost that important. We want to go on here and take care of the state and make a great policy by which those who come after us may benefit by our foresight and our patriotic planning for the future. I really believe that it will have a great effect upon the whole life and development of our people. I am sure that we want to continue here to be real fine, clean-cut people, and not resolve ourselves into a nation of knotty butt-cuts. I thank you. (Applause.)

Mr. PINCHOT. I told you he was a good forester, didn't I?

There is going to be up in the Department of Forestry tonight an informal smoker and we are going to have baked apples and ginger bread. If you find it possible to come over there and talk to these fellows I know they would enjoy it.

GOVERNOR SPROUL. Baked apples and ginger bread, why that sounds almost like old times.

Mr. PINCHOT. We should be very glad to have you come over.

GOVERNOR SPROUL. Well, if I do not get a better invitation in the meantime I will probably be around. (Laughter.)

Mr. PINCHOT. Gentlemen, I should like to hold the chair long enough to ask for nominations for a permanent chairman of this conference.

Mr. ALFRED GASKILL, State Forester, New Jersey. I believe that this group of foresters is very highly honored by the presence of the governor of one of the far western states. He has evidenced his interest in the forestry question by staying over from another weighty gathering to take part in this. I should like to name Governor Benjamin W. Olcott, of Oregon, as chairman.

Mr. PINCHOT. The chair declares the nominations closed.

Governor Benjamin W. Olcott was unanimously elected as chairman of the conference.

Mr. PINCHOT. Governor Olcott, will you kindly take the chair?

GOVERNOR BEN W. OLCOTT presiding.

The CHAIRMAN. I feel highly honored in being made your chairman. I feel, however, that an apology is rather due you on the arbitrary manner in which I was forced upon you by Mr. Pinchot. It is rather a misnomer to call me a forester, although there is no one in this room that is more interested in forestry than I. Out in our state the governor is ex-officio chairman of the state board of forestry, and in that manner I am a forester. We have seven members on that board; two of them are ex-officio, the chief executive and the dean of the state school of forestry.

Oregon, as you know, is one of the big timber states of the Union. I understand, at least we claim it, that Oregon today has more standing timber than any other state in the Union. It has one-fifth of the standing timber of the United States. It now stands third in the production of timber, and large manufacturers of timber products inform me that in their opinion it will soon occupy first place in the production of timber.

I came here to attend in a dual capacity, first the Governors' Conference which was held here December 1st, 2nd and 3rd, and to attend on behalf of the State Board of Forestry of Oregon this conference of state foresters. I am very frank to admit that I know little of forestry in its practical application, but I am very greatly interested in it. I might say that we are trying a little innovation out there in the way of patrolling forest property, perhaps some of you have heard of it, which was inaugurated in 1919, and came about in a peculiar manner. With your permission I will just take a moment to tell of its origin.

We have an annual celebration out in Oregon, which is called the Rose Festival. To add a little pep to the occasion in 1919 the Air Service at San Francisco, under the control of Colonel H. H. Arnold, was requested to send up some planes, or "ships" as the aviators call them, to attend that festival. Airplanes at that time were not as common as they are now, hardly any one now looks up at an airplane, but at that time they aroused great interest, particularly in the northwest. We have large training fields in the west, particularly in California, for training aviators for war purposes, and their personnel remained intact. These planes came up from Mather field, which is twelve miles out of Sacramento, and for practically the first time crossed the Siskiyou Mountains, the Chinese wall which looms five thousand feet high between the states of California and Oregon, forming the northern boundary of California and the southern boundary of Oregon. The Rose Festival had extended me an invitation to ride with that caravan of ships from Salem to Portland, a distance of fifty miles. I had never ridden in an airplane, had no desire to ride in an airplane; I have three little babies at home, and two of them are twins, and that aspect loomed high on the horizon. The newspaper boys around the Capitol were continually asking me, "Mr. Olcott, what are you going to do with that invitation?" I always passed the buck. I made no definite answer. So the night before the planes were due to land in Salem, I had been out to a little party, and coming in about one o'clock, found a note on the telephone from one of the local newspaper boys, a good friend of mine, asking me to call him up, which I did. I might have known better, as he said, "What are you going to do about that airplane invitation? These people are due here tomorrow." This young lad had been a service boy. I said, "Dick, what would you do?" "What would I do? Why I would give my right arm and one hundred dollars in cash for your opportunity to ride tomorrow." I said, "Well, then, I guess I have got to be a good sport and go through with it. You can say I will accept it." When the planes landed I was there with my little family. They put me into a powerful plane and I thought that that was the last time I would ever greet my family. I arrived in Portland unharmed. I became well acquainted with the commanding officer, Colonel Watson, and the boys in charge during their few days' stay there. Colonel Watson, the last day of his stay, said, "Mr. Olcott, I think you rather enjoy flying. Let me take you back with me to Salem." I said, "Mrs. Olcott is the boss. I will ask her." Her reply was, "You can fly any place with Colonel Watson." So we started next morning for Salem. He didn't stop there but went on to Albany for lunch. Then he said, "You might as well go on down to Cottage Grove. We are going to stay there tonight." Arriving there he said, "Come on down to the California line." I was interested and went down.

That night in the hotel, he said, "I have a good scheme to suggest to you. Come on down and see Colonel Arnold, our boss. We have a little plan to propose to you." I said, "All right, if I can get out of the state without a telegram reaching me from Mrs. Olcott." When we reached Ashland we had to wait there because of the clouds and fog that enshrouded, surmounted the mountains. We had to lay over until noon to get over. I got out of the state all right. We landed at Mather field, and Colonel Arnold flew up from San Francisco to meet us. We there arranged to install if possible an airplane service for the fire protection of Oregon forests through the airplane system. As the result of that conference they sent up machines which operated in 1919. For 1920 we made extensive preparations. The government defrayed the expenses of this. The state was ready however to defray a certain amount, and as the result we got ten planes with headquarters in three points in Oregon. Last year the whole state was charted and cross-sectioned. The planes were rigged with wireless radio, and the moment the observer sighted a fire it was immediately wired into headquarters. The forest service now has the forests of Oregon pretty well lined with patrols, so it is not a hard task to at once see and reach the scenes of these fires. The airplane service in Oregon has been a success.

Mr. JOHN H. WALLACE, Jr., of Alabama. Mr. Chairman: I suggest that we proceed to elect a secretary of the conference, and I place in nomination the name of J. S. Holmes, of North Carolina.

Mr. J. S. HOLMES, State Forester of North Carolina. Mr. Chairman, I should prefer to see Mr. Stuart made secretary, he is more closely associated with the organization. I would like to nominate Mr. Stuart, of Pennsylvania.

Mr. WALLACE. I want to say the many qualifications of Dr. Holmes have been elaborately discussed and he has been agreed upon as the ideal man for the job.

Mr. STUART. If I may I should like to withdraw in favor of Mr. Holmes.

Mr. WALLACE. The name of Dr. Holmes, of North Carolina, is the only name before the house, and I move that nominations be closed and that Dr. Holmes be unanimously elected as secretary of the conference.

The motion was seconded and unanimously adopted.

The CHAIRMAN. In the organization, gentlemen, is there anything else that you feel needs attention at this time?

The next number on the program will be an address by Dr. J. T. Rothrock, of the Pennsylvania State Forest Commission. (Applause.)

Dr. J. T. ROTHROCK. To the gentlemen representing the forestry interests of other states: We are glad to welcome you here in order that we may receive from you the benefits of your experience in forest restoration, and also to offer you some facts which may have grown out of our efforts and which may be equally helpful to you.

In 1855 approximately large portions of the northern and northwestern counties of the state were in what might be called a forest condition. Splendid white pine and hemlock predominated in our evergreen silva, and in our hardwoods we had

the oaks, the hickories, the beeches, the birches and the maples. I know that I am speaking the truth when I say to you that white pine, the old-fashioned cork white pine, sometimes attained a diameter of six feet or over. This I know from personal observation and measurement. That land had been sold out by the state originally, with all its wealth of timber upon it, for twenty-six and two-third cents an acre; and the state is glad today to purchase that same area back, deprived of its timber, at an average price of two dollars and forty cents an acre, in order that at least six million acres of land may be prevented from going into a desert condition. There are men living today who remember when the revenue to the state from those forests reached up almost to thirty million dollars annually, exclusive of the wages paid to the workmen. From the town of Clearfield north to the New York state line, a distance of about seventy miles, and from the mouth of the Sinnemahoning west to Warren, a distance of one hundred miles as the crow flies, was an almost unbroken wilderness of pine and hemlock. They have seen one-seventh of the state pass from a productive to an unproductive condition, and began to ask themselves "What is to be the ultimate outcome from such a policy?" In 1886 the Pennsylvania Forestry Association began its useful life. The act of 1893 called for the appointment of a commission to examine into and report upon the forest conditions of the state. The report of that commission was printed in 1895, and from that report grew a division of forestry in 1895 which was associated with the Department of Agriculture. That division of forestry, by legislative exactment, was subsequently elevated to the rank of a department, with equal and coordinate powers with the other established departments of the state. And it may be said that the first real progress in forestry in this state dated from the period when forestry was elevated to the rank of a department.

Whatever may be the relation of forestry to other states, it is clear that to this state it is of the first importance. It is second to no other interest here, a fact which is now being slowly recognized. It is safe to say that there are five hundred thousand acres of land which either are already abandoned or ought to be abandoned as farms on which agriculture has been, under old conditions, attempted and failed. That land should at once be returned to forests until increase of population and of fertility would restore it to production of food, for that demand will surely come. It is inevitable. Then in addition to this we have at least six or seven million acres with no known mineral contents, suited only to production of timber. On these facts I base my claim that forestry in Pennsylvania is a foundation interest on which our permanent prosperity must rest. I insist upon this claim because I think it is high time to call a halt upon the reckless appropriations of public moneys for purposes which are purely ornamental. I wish to offend no sensibilities, but I can not refrain, in order to give point to my statement, from saying that in this splendid building untold thousands of dollars have been expended upon gilt and glitter which might have been better spent in preventing the annual forest fires which burn up the wealth and productive power of the commonwealth. You can not rear a solid superstructure upon an insufficient foundation. The friends of forestry during a long period of agitation have been pleading for the very life of the state. Fortunately, the reaction has come, for the first time we have a governor who has in clarion tones told the people that forestry is to be one of the issues upon which he means to give character to his administration, and I say this without disparagement to the administrations that have within recent years gone before him.

There are counties in Pennsylvania that stand on the brink of bankruptcy because their only sources of wealth went with the timber which in imprudent haste they tore from their steep, poor hillsides. I commend this statement to the attention of those from other states who may have just such issues before them.

But there are other issues. Two legislatures turned down applications for small sums asked to clear up small, healthful areas on the state lands in order that a start might be made in inducing those of our population who were breaking down but not yet ill to go out and camp. It required no particular vision to recognize that the time was ripe for the movement. Of all the health-restoring resources at our command, pure, fresh air is not only the most effective, but it is also the cheapest and the most abundant. Permit me, gentlemen, to remind you that in the changes which are now shaping themselves in the public mind this is one of the things you must face and connect with your forestry issues. Grasping large areas by clubs and persons of wealth for exclusive purposes is near its limit. There must be outing grounds for the masses. Already there are thousands of camping permits given annually upon our state lands.

They are not only a help to the campers, but they make friends for the forestry movement. They become guardians of the public domain.

Upon our higher hills and mountain ranges there remains a vast water power unutilized. Growing scarcity of fuel is sure to call attention to it. Some of our important towns receive from these streams an abundant supply of pure water for the purpose of daily life, water which is above reproach, for there is no pollution above the heads.

But back of every proposition which I have stated in this conservative movement is the one source of all—the restoration and wise utilization of living, healthful productive forests on every acre of land which can not produce a better crop. There never will come a time when this statement can be denied.

We believe that state forestry here is in good condition. More than a million acres have been purchased by the state. We have a loyal band of workers in our forestry department and a human dynamo at the head of it. Our united efforts are heading straight toward the unpurchased acres which have not yet been placed under state control.

I should be unjust if I did not also call special attention to the morale and efficiency of our band of foresters, educated by the state for the care of state forests. If there exists anywhere a finer body of young public servants, I have not seen them. There is something in the idea of setting apart for state service a body of young men and educating them specifically for that. The idea was grasped by our government in founding its military and naval academies. A sort of fraternal relation grows up among those students which binds them firmly in the public interest. (Applause.)

The CHAIRMAN. We will now have an address by Colonel W. D. Greeley, of the United States Forest Service, on "The Nation in the National Forest Policy."

COLONEL W. B. GREELEY. Gentlemen of the conference: There is little argument among thoughtful men that provision for a continuous and sufficient supply of timber in the United States is one of the real economic problems which must be worked out by the present generation. Nor can there be much debate that sufficient timber for the future can be assured only by general reforestation of logged-off land. Three-fourths of our primeval forests are gone; and the United

States, like the nations of the Old World before it, must pass from the mining of virgin forests to the harvesting of grown timber crops. We are a people of timber users, and by one means or another we must become a people of timber growers.

Never before in the history of the United States has the need for reforestation been so widely recognized. It has been brought home to many American manufacturers by real shortages, not merely fluctuations of the market, in the valuable woods essential to their industries. It has been brought home to the newspaper publishers of the country through the shortage and high cost of print paper. It has been brought home, perhaps most acutely of all, to the million or more average citizens who want to build their own homes but have been unable to afford it. It has been brought home, no less, to forest industries which look ahead for a supply of raw material which will justify their investments in manufacturing plants and who realize that virgin timber is not much longer to be had. I have recently visited a large corporation in the south which has definitely embarked upon the reforestation of some three hundred thousand acres of southern pine lands, as they are cut, to afford a permanent supply of pulpwood for large paper plants after the virgin timber has been used up.

As a matter of fact, we are already using large quantities of second-growth timber. There are considerable areas in the South Atlantic states which are now yielding their third cutting of pine lumber. In our northern coniferous forests, holdings are not infrequent from which logs or pulpwood have been cut during three generations and which are still well-stocked timber lands. But the critical point in the whole situation is that, notwithstanding such instances as I have cited, the United States is taking timber from its forests three or four times as fast as timber is being grown. These few words put the problem in a nutshell. As against a steady shrinkage in the stocks of virgin timber, there are enormous acres of idle, logged-off land which are increasing by the millions of acres every year. Instead of haphazard second growth or no second growth at all, the nation must find some way to bring about plan-wise reforestation on all cut-over lands suited to timber growth, if its economic necessities are to be supplied adequately.

How shall this end be accomplished? Shall it be left entirely to economic forces, as many suggest,—to the law of supply and demand, to the enlightened self-interest of the forest owner who sees a profit or commercial advantage in reforestation; or shall reforestation be assured by recognizing squarely that forest lands have the nature of public utilities and hence that the public shall exercise a voice in their management and use?

The every-day incentives of business or personal interest will undoubtedly go part way in growing the timber which must be had to supply the requirements of this country. But they will only go part way. In the weighing of profits, enormous areas of timber-growing land would still be left idle. Furthermore, in many portions of the United States general reforestation is not possible without a large degree of public cooperation, indeed of public participation. Public aid must be had by the forest owners in controlling the high fire hazard attendant upon an inflammable investment which must be carried over a long period of time. Public aid must usually be had through an adjustment of taxation to the nature and growing period of forest crops. Farm crops would not be grown if they were taxed twice a week during the growing season. Nor can forest crops be generally grown if subject to the full burden of taxation thirty or forty times before they become marketable.

In the nature of things, therefore, reforestation can not be left wholly to private initiative, although every just and reasonable encouragement should be given the forest owner to utilize it as a business opportunity. The public must, from the very nature of forest properties, be an active participant. The public must put around forest lands the conditions which, by and large, will permit their owners to grow successive crops of trees, namely, reasonable security from forest fires, and taxation of the product when grown rather than of the product while growing. But the public should not and will not create those conditions favorable to reforestation unless it is assured that the forest owner makes good on his part, and that the land will actually be kept in the continuous production of timber which the public interest requires.

In other words, I am convinced that to get general, plan-wise reforestation we must recognize that forest lands are public utilities, that they are subject to such forms and degrees of public control as needed to keep them continuously in timber crops, and that under the broad theory of equitable compensation applicable to public utilities generally, forest lands must receive such just and special considerations as will enable their owner to obtain a reasonable return while complying with the requirements put upon him in the public interest. This give-and-take principle, I believe, must inspire our national forestry policy.

At the same time the public should approach the forest owner as far as possible in the spirit of assistance rather than of regulation. Every encouragement should be given to the forest owner, by education and practical demonstration, to reforest his land by the ways and means suited to his timber and his requirements. The well-tried incentives of competition and self-interest will accomplish much in reforestation, as in most economic movements. If any one doubts this, let him go to Upronia, Louisiana, and see the splendid demonstration of reforestation on forty-five thousand acres, brought about through the foresightedness of a lumberman. Other examples could be cited a plenty in many different states. It should be the effort of the public to encourage just this sort of initiative, to give it wider opportunity and greater certainty of success, and to spread the gospel of reforestation by effective demonstration of its value. At the same time I believe that the public must clothe itself with the power and must exercise that power as need arises to see to it that no forest owner fails in keeping his land at work growing trees, once conditions are established which make that a reasonable undertaking on his part.

What role should the nation itself, through the federal government, play in reforestation? There is every reason why the federal government should do everything that it can do effectively. The timber supply problem is a national one. It can no more be restricted to the limits of a state or any other locality than our food supply, our coal supply, our railroads, or our marine transport. Our most densely populated industrial states are dependent upon other parts of the country for from sixty to ninety per cent of the forest products which they consume. The farmers of the prairie states, who require on an average two thousand feet of lumber per year on each farm for normal improvements and upkeep, are totally dependent upon sources of supply outside of their own states. Nor, is it a national problem solely because a small percentage of our forest products are consumed within the state where they are grown.

An assured supply of timber is a matter of national concern because it is vital to the standards and traditions of American life. Without it the homes we

need to maintain the family life and environment, which is one of the most sacred of American institutions, can not be built. Without it the extension and improvements of our basic national industry, agriculture, will be critically handicapped. Without it many of our most distinctive manufacturing industries, like furniture making, and other industries of the most vital consequence, like our railroads, will sooner or later be seriously impaired. Reforestation is distinctly a matter of national concern, and the national government should do everything it can to accomplish it.

Through the vision of our leaders in conservation, chief among whom stand President Roosevelt and present Forest Commissioner of Pennsylvania, Gifford Pinchot, the federal government took the first definite step toward an assured supply of timber adequate for the needs of the country through the creation of National Forests. Every day demonstrates more clearly the wisdom of this step and the need for National Forest ownership on a much larger scale. For nearly twenty years the National Forests have represented the only large element of stability in the whole timber situation. They have been administered through successive political changes with unwavering adherence to the principles of continuous productivity of forest lands, a sustained yield of timber, and the protection of streamflow and other public interests. Furthermore, every National Forest is like a settlement house in a tenement district. It becomes a center of demonstration and practical education in forestry methods. Cooperative efforts among timberland owners for the prevention of forest fires grow up around it. In its demonstration of methods of cutting and growing timber, of disposing of fire-breeding slash, and of the actual costs and results of forest practice it carries conviction to the forest owners round about, where mere argument would be fruitless. It will be true in the United States as it has been in France and Sweden that a corps of publicly owned forests under technical public administration is the pivotal point in national progress toward the right use of forest lands.

As the virgin forests in private ownership are more and more widely depleted, the timbers of high quality like our old-growth white oak and yellow poplar, like the ship timbers sawn from virgin longleaf pine or Douglas fir, will become increasingly scarce and dear. The length of time required to produce such material by reforestation will largely preclude it as a feasible undertaking for the owner of private forest lands. This is an obligation to the industries of the country which the national government and the states may well assume, the production of highclass forest products requiring long periods of time, as it has been assumed by most of the governments of Europe. I know, for example, of no solution of our waning supply of old-growth hardwoods, which has become such a critical matter for many wood-using industries, so effective as large extension of publicly-owned forests in the hardwood region.

Every encouragement should be given to public forest ownership by our states, in line with the admirable steps already taken by such states as Pennsylvania, New York and Massachusetts. The field for public forest ownership is so vast that there is abundant opportunity for the maximum that both the states and the federal government can do. The United States contains eighty-odd million acres of idle forest land, whose original growth has been destroyed by logging or fire. Many of these areas can be restored to productive forests only by costly and artificial methods. We still have many watersheds upon which manufacturing centers depend for sources of power, or large communities for domestic water, or agricultural regions for irrigation, or inland waterways for navigability, upon which the

protection of water sources is still left almost wholly to chance. There is no more well-trying, clear-cut responsibility which should be discharged by the federal government than the extension of the National Forests. I wish today that there were National Forests in the pineries of every one of our southern states. I doubt if any other single thing would more readily crystallize and carry forward the reforestation of that region, with its wonderful possibilities, or more **effectively** encourage the development of forestry work by the states themselves. I wish that we might have National Forests in every distinctive forest region of the country, in order that the federal government might, through the real test of local forest ownership, exert direct leadership in the reforestation of that region.

It is impossible for the public to acquire all of the forest land in the United States. Four-fifths of our forests are in private ownership; and we must reckon definitely that the major part of our forest-growing lands will remain in private ownership. What is the responsibility of the national government as to these lands? Here as well the federal government should recognize its responsibility for doing everything in its power to meet the national need for timber; but we must recognize the practical limitations which determine what it can do effectively. As I have said before, we can not bring about general reforestation without recognizing that forest lands have the character of public utilities. That means two things: first, that the owner of the land must comply with certain standards fixed by public agencies for keeping his land in continuous production; and second, that the public shall create the conditions surrounding forest ownership which will make the discharge of its obligation to the public fair and equitable. The two must go together. Regulation and equitable assistance to forest owners must emanate from the same authority. Else the risk will be incurred either of a public gratuity to a certain class of land owners without compensating return or of public confiscation of their property.

To produce an adequate crop of timber on the average tract of forest land in the United States, three things must be done. First, the owner must be given an opportunity to obtain the benefit of a moderate tax while his crop of timber is being grown. Secondly, the owner must be protected from forest fires due to the negligence of his neighbor, either in leaving dangerous accumulations of slash or in failing to guard his land during dangerous seasons. He must be protected from the fire hazard created by railroads, campers or pedestrians, incendiarism, highway traffic, or any other of the thousand and one possible sources of danger. And third, he must in return for these specific measures of public assistance conform with equitable requirements as to cutting, slash disposal, and fire protection on his own land designed to keep it in timber growth. All three of these factors go together and must be administered together.

The power of taxation and the police powers upon which control of the forest fire hazard rests are definitely vested in the several states. It is hard for me to conceive of these powers being acquired or taken over by the federal government. Nor can I conceive of an effective scheme of reforestation under which these three integral and mutually essential functions of taxation, fire protection, and regulation are divided. The owner should not obtain the benefit of special forms of taxing timberland, designed to encourage reforestation, unless certain regulatory requirements are met. Fire protection and forest culture are so inextricably mingled as usually to be simply part and parcel of the same thing. In some sections, control of grazing is another fundamental of reforestation, leading us again into the field of local police authority.

In plain terms, I can not conceive of an effective scheme of reforestation under which its component parts are divided between the federal government and the

states, with the national government, let us say, attempting to exercise regulatory powers while the state controls taxation and protection. Federal regulation of methods of cutting might readily enough be brought to naught unless completely and adequately supplemented by state laws and administration dealing with various phases of the fire hazard; or might readily enough become confiscatory if the laws of the particular state did not give the forest owner an opportunity to obtain an equitable taxation of growing timber crops. As a matter of fact, any authority on the part of the federal government to regulate the use of forest lands is shared by the states, an authority which the states are already exercising in certain instances. We would thus have the definite prospect of two sets of regulations, under state and under national enforcement, and not necessarily in agreement.

I have avoided purposely the constitutional aspects of this question because I am not competent to discuss them. It is my conviction that as a practical question of expediency, of getting results, and of carrying the United States forward to the stage where reforestation is the established order of things, federal control of private forest lands will not work. And I hold to this view particularly at the stage in our progress toward an assured and current supply of timber when, as at the present time, reforestation depends so largely upon a reduction in forest fires.

Let me fix your attention for a moment upon the two hundred and forty-five million acres of forest land in the United States which contain cull or second growth timber or which are more or less completely stocked with young trees. That is nearly double the acreage of our remaining virgin forests. A large part of it lies in our thickly populated industrial states, within a stone's throw of the large centers of timber consumption. These two hundred and forty-five million acres of second growth and young timber may well represent a forest asset of the United States of greater value than our remaining virgin forests, and upon their protection rests very largely our ability to bridge over the gap when virgin timber ceases to be an important factor in the yearly cut of forest products. The protection of these two hundred and forty-five million acres from fire is in my judgment the most important single forestry problem before the United States today.

When you add to that the necessity of protecting our remaining stands of old timber and our enormous areas of land logged-off and now being logged where protection alone will start young growth, it is difficult to place too much emphasis upon the importance of controlling forest fire as the first specific objective we set out to accomplish. Until the fire hazard has been brought under substantial control, regulation of cutting methods at the best will be ineffective and precarious. I am convinced, therefore, that the immediate form which public forestry efforts should take and the authority through which it acts should be such as will most effectively handle the forest fire problem. And this brings me again to the state as the governmental agency under whose authority the work must be done, because it is hard for me to conceive of the federal government assuming and exercising the police functions of our states dealing with the many phases of forest fires; and without such police powers no effort to control the forest fire problem will be successful.

At the same time fire prevention is not an end in itself. It is a means for the reforestation and safety of timber lands; and reforestation is the real objective which must never be lost sight of. We must have the kind of fire protection that will actually restock cutover lands and establish growing forests, as far as keep-

ing out fire will do so. Success will be measured by the acres of growing forests which are actually established; and just as rapidly as the fire hazard is brought under reasonable control in this or that forest region, the steps in addition to keeping out fires which are necessary to put growing trees upon the land must be brought into play to the fullest extent that they are equitable to the forest owner. We must get before us this picture of reforestation as a whole; and we must work for its realization as a whole just as rapidly as each successive step can in the light of equity and common sense be taken. It is for this reason that I am opposed to limiting federal legislation and plans for federal cooperation to fire protection alone. Rather would I put before the nation as a whole, as one agency, and the people of each state, as a second agency, the goal of complete reforestation of lands not needed for other purposes with woods of economic value, and work toward that complete goal, step by step, as rapidly as we can.

I have said that it does not seem to me possible for the federal government to assume the regulation of private lands. I believe that this must be done by the states, as a practical matter of getting results, because the states control the other essential factors in the whole problem. What then should be the part of the national government in bringing about the reforestation of private lands? I believe that the nation can best lead this great movement, not by mandate, but by cooperation, by education, by fixing the requirements essential to reforestation in each region, and by encouraging their adoption. The federal government should be prepared to give general financial assistance to any state in protecting all sorts and conditions of its forest land from fire, once the state puts into effect the requirements upon forest owners which will make the joint protective effort effective. These should include fire-proofing logged-off lands or some effective control of the slash hazard. In other words, the states must adopt such regulatory measures as will make the federal funds expended a genuine investment in growing timber. I know of no better way to insure a future supply of timber for the prairie and industrial states than to invest federal funds in the protection of growing forests, north, south, and west, with such safeguards in the use of these funds as will actually make the protection effective.

The national government should not stop with fire protection. It should define and recommend to each state all of the steps essential to reforestation, including methods of cutting or extracting forest products, the equitable taxation of growing forests, and any other factors bearing upon the actual establishment of timber crops on all forest lands. It should make continued federal cooperation, from time to time, conditional upon the adoption of such regulations of private forest lands as are shown to be necessary and equitable under the conditions existing in that state. And it should aid the states liberally in the education of forest owners, in the demonstration of good forest practice, in reforestation, and in any special phases of the entire movement which the particular needs of any state call for.

It is far from my thought to assert that such a plan as I have outlined is the last word in our national forest policy. To me it is the most direct and practicable road to immediate results as represented by acres of growing forests. But whether state rather than federal control of private forest lands is the final word or not, I can see no reason why our states should not be encouraged to go just as far as they will in reforestation, or why any state that is prepared to impose restrictions upon its forest owner should not be given a clear field with the cooperation and advice of the federal government in doing so. Every local interest that can be aroused, every real development toward better forest practice that can be brought about through local agencies and local action, represents so much ground gained. Many

of the states have established forest organizations which are accomplishing real results in reforestation. I do not believe that our national policy should discard these organizations, in preventing forest devastation or bringing about reforestation through any step which it may be possible for them to take. Nor, should our national policy discard co-operation with forest owners and forest industries in working out the practical problems of reforestation in each region. A policy of national cooperation with local agencies, working with and through our several states, will stimulate, in my judgment, the interest and support of all elements in the country which should take an active part in this movement, to the most effective degree.

Let me say further, that while I do not advocate federal control of private forest lands, because I question its practicability, I can not see that there is any inconsistency between federal control and the exercise of state jurisdiction in the same field; nor can I see how any plan of federal control that might ever be adopted could prevent the states from exercising such jurisdiction as they choose over their forest owners in the same particulars. We have got to recognize the right of each state at least to exercise jurisdiction over the lands within its own borders not inconsistent with federal law. Why not build that right with all of the local sentiment, the traditions of local self-government, the pride of local initiative which lie behind it, right into our national forest policy? Why not let the states go just as far as they will; and if federal control of forest lands is the ultimate answer, let it apply in those states which do not adequately handle the situation themselves. (Applause.)

Mr. PINCHOT. Just before the governor left he expressed his strong desire to meet all the members of the conference. Upon adjourning here we will pass over to his office at the other end of the building and give him that opportunity.

The CHAIRMAN. Everybody, I know, will be glad to meet Governor Sproul. I want to say just a word about Governor Sproul, and it comes from the heart. I first met him at the Salt Lake City conference last year. I spent ten days later with him going through the Yellowstone National Park. Mrs. Olcott and I fell in love with Mr. and Mrs. Sproul, as did every member of the Governors' conference. I consider Governor Sproul one of the very big men of this country, and I look forward to the day perhaps when Governor Sproul will be President of the United States. I want to say that he is a great big-hearted, whole-souled, capable, honest and sincere gentlemen, and I will carry back to Oregon only the most pleasant memories of Pennsylvania and of Governor and Mrs. Sproul, and of the fine complement of state officials that I have met in this beautiful city of Harrisburg.

At 12:10 o'clock P. M., the conference recessed until 2:00 o'clock P. M.

Senate Chamber,

Harrisburg, Pa., Wednesday afternoon.

December 8, 1920.

GOVERNOR BENJAMIN W. OLCOTT presiding.

The CHAIRMAN. We will now hear from Mr. J. G. Peters, of the United States Forest Service. (Applause.)

Mr. J. G. PETERS. Mr. Chairman and gentlemen: I don't know what Mr. Pinchot had against me that he should wish on me this subject of the organization of state forest work. It is just about as dry a subject as could be encountered; so if I do not succeed in making it interesting I want to engage in the popular American pastime of "passing the buck," and throw some of the blame on his shoulders.

Much has been said and written about the organization of state forest work. Perhaps too much has been said about mere organization and too little about forestry. By that I mean that possibly if we had kept forestry and all it stands for in the foreground we might be still farther advanced than we now are. Nevertheless it is far from my mind to minimize the progress which has been made during the scarcely twenty-five years' movement for the establishment of state forestry departments. But we must not lose sight of the fact that the departments and the legislation creating them are only means to an end, and that end is the woods part of the job of keeping forest lands productive, whether real forest lands or lands upon which it is not now economically possible to grow anything else but forests. Maybe if the public had been made to realize this to a greater extent than has been the case thus far, the proposal for federal control of private forest lands would not have been thought necessary by those who are advocating it. I think it was said by one of the governors who were meeting in this city last week that the reason for the tendency to turn to federal control of numerous activities usually handled by the states was because the state legislatures did not give the people what they wanted. On the other hand, is there not the possibility of the states resenting a wide expansion of federal control and of a reaction setting in towards the opposite extreme which might threaten the existence of well-established federal institutions as, for example, the National Forests themselves,

Be that as it may, there never was a time when strong state forestry departments were more needed than now. There never has been a better time than right now for the consummation of this desire. It is the public's fault where these departments are weak or entirely lacking. The public has been asleep, feeling secure as regards our timber supply in the thought that it was inexhaustible. Why worry ourselves about a state forestry department? Why add another penny to our mounting taxes? But during this period of inaction the sound of the ax has increased and the timber-supply bubble has burst as a result of high lumber prices and the publishing of information by the government and states on the inadequacy of our timber supplies, which culminated last June in the issuing of the so-called Capper report.

Evidences of an awakening are constantly being reported. In some states forest-land owners and lumbermen are willing to be taxed for the support of forestry work provided the forestry department is strengthened and made non-political; in some states, there is a desire to extend the department's work; in others, where no departments exist, there are strong manifestations of interest in their establishment along sound and efficient lines.

Forest organization has been adopted by no less than thirty-four of the states, and in a variety of forms. Seven states have selected the separate board or commission form, as in California, Maryland, Minnesota, New Hampshire, Oregon, Pennsylvania and Washington. Delaware also might be given credit for providing by law for a board of forestry, but with no funds to operate it. Seven states have combined forestry with a number of other activities under a conservation commission, as in Alabama, Indiana, Louisiana, Massachusetts, New Jersey, New York and Wisconsin: to this list might also be added Illinois, with its department of registration and education. Five have put forestry under the land department, as

in Idaho, Maine, Michigan, Montana and South Dakota. Three states have placed forestry with or under the agricultural department, viz: Colorado, Kentucky and Vermont; three have located the state forester at the agricultural college, as in Kansas, North Dakota and Texas; two have provided for a state forester at the agricultural experimental station, as in Connecticut and Ohio. Three states have given their geological surveys state foresters, viz: North Carolina, Tennessee and Virginia; two have lodged full power in an individual forest commissioner, as in Iowa and Rhode Island; and one, West Virginia, has put forestry under the game and fish department.

In some instances it would seem as though, in a haste to have forestry recognized by the states; it has been disadvantageously placed in departments already established, perhaps of long standing, with the result almost invariably that it has failed of proper consideration and has become pocketed by reason of being overshadowed by other and older activities. Under such conditions it is extremely difficult to secure any appropriations beyond those for the barest necessities. I recall that in one state where the legislature was attacking the department as a whole, the state forester fought a lone fight for forestry without one bit of assistance from his chief, who claimed to be too much engaged in defending the other and longer-established work of the department. Could anything be more disheartening? Maine has proved the exception, for there forestry holds the distinction of having been attached in a very minor way in the beginning to the state land department, but by steady growth it now is by far the major activity.

Many states have objected to the establishment of additional boards or commissions so that it has become necessary to place forestry in an established department. This was the case in Texas, for example, and the legislature selected the agricultural and mechanical college as the place for the work. While an ideal location in many respects, including particularly the absence of politics, it has at the same time the disadvantage of offering obstacles to adequate appropriations for forestry, because of the large number of activities at the college for which funds are needed, so that forestry must take its chance, and sometimes a slim chance, along with the rest.

As an example of the vicissitudes of state forest organization, one has but to consider the action taken by Kentucky. In 1906 the Board of Agriculture, Forestry and Immigration was empowered to act as a forestry commission to further the interests of forestry and cooperate with federal forest officials; in 1912 the commission was superseded by a Board of Forestry which had authority to appoint a state forester, establish a forest fire protective system, and engage in other forest activities; six years later, this board with all its powers was consolidated with the geological board as a single-headed commission, and the state forester appointed commissioner of geology and forestry; and two years after that, in 1920, the commissioner was legislated out of office and forestry scrapped, except that as an afterthought the legislature of that great forest-producing commonwealth, realizing that there was some property left from the wreck which should be cared for, took the necessary steps to transfer this property to the custody of the Bureau of Agriculture, Labor and Statistics, and as an additional afterthought recreated the position of state forester and placed it also under that bureau. Is it, therefore, any surprise that the head of the bureau has not succeeded in filling the place after nearly a year, although the position pays a salary of three thousand dollars? Thus, since this bureau succeeded to the authority of the first-named Board of Agriculture, Forestry and Immigration, the merry-go-round was completed.

The last few years there has been a general tendency to combine forestry with other activities on the grounds chiefly of economy and of reducing the number of state department so as to bring them in closer touch with the executive. Thus,

among the states which have effected the larger combinations are Alabama, which has combined forestry with the protection of game and fish, oysters and other shell-fish, and, as the law prescribes, "all other natural resources within the state, which have not been reduced to private ownership"; Illinois, where the state forester is placed under the department of registration and education, one of the nine large state departments; Indiana, which discontinued its board of forestry and combined forestry with geology, entomology, lands and waters, and fish and game; Kentucky, where, as mentioned above, the forestry board was discontinued and forestry placed with geology and later with agriculture; Louisiana, where forestry is combined with minerals, fish and game, and oysters and waterbottoms; Massachusetts, which has recently put forestry with fish and game, and animal husbandry, in one of the twenty state departments; Michigan, which abolished its forestry commission and created a public domain commission, with charge over public lands, forestry, fish and game, and immigration; New Jersey, where the forestry board was discontinued and forestry combined with geology, water resources, land registry, state parks, and the state museum; New York, which was among the first to change from a forest commission to a forest, fish and game commission, and later to a single-headed conservation commission having charge of forestry, water resources, and fish and game, in addition to one of the state parks; and Wisconsin, which did away with its forestry board and combined forestry with fish and game, and state parks. I have given these combinations in detail because it is interesting to see the variety of activities which have been brought together.

Entirely aside from the point of whether such combinations are the best in the interest of forestry, they have undoubtedly come to stay, and there will be similar combinations effected in other states. Therefore, it is well to recognize this and endeavor where the trend to consolidate seems inevitable to work out a satisfactory combination of departments dealing with the conservation of the state's natural resources. I remember a state forester once saying that he anticipated the movement in his state, and went about securing the combination of such departments as would not only merge satisfactorily with forestry, but would not reduce forestry to a condition of unimportance. This is a cue which all of us who are interested in the subject of state forest organization should take.

The advantages to be gained by combining forestry with other activities are worthy of consideration, but in any combination the interests of each are best served by independent direction. Thus, a combined forestry and game department should have a duly qualified forester in charge of the forestry work and a competent game specialist or biologist—a technical man—in charge of the game work, both directly responsible to an impartial commission or board of control. The mistake which has been made in at least one instance of leaving it to the department heads to settle the relative merits of the various needs, however, should be avoided, as this involves the giving of unbiased consideration to questions in which one's own work conflicts with that of others, which we may as well recognize as impossible. The results are friction and log-rolling.

It would be presumption on anyone's part to prescribe a single hard and fast formula for the states to follow in organizing their forestry departments. Moreover, it would not work. Nevertheless, I think you will agree with me that there is need for an ideal with which as a basis we can feel that we are traveling in the right direction. While we might differ as to details, we might agree as to the fundamental requirements of an effective forestry law, namely, that in a workable plan

of organization provision must be made that will properly safeguard the work from political interference, and impose rigid requirements as to the qualifications of the man in charge. These can be most readily accomplished, certainly, by placing forestry in the hands of a department protected from outside interference by means of a continuing, non-partisan board or commission; that is to say, a body so organized that the terms of a majority of its members will not end in any one administration, and so constituted that those private interests which are more or less related to forestry should be represented, as well as the public, and that where necessary to include ex-officio members they should be limited to those who by reason of their positions can be counted upon to take interest in the board's activities.

Next in importance to effective organization and the elimination of politics is an adequate guarantee that the man appointed to direct the forestry work will be properly qualified. By all means he should be a technically trained forester, preferable a graduate of a forest school of recognized standing. In addition, he should have had sufficient experience in the practice of forestry to demonstrate his ability to handle the job. In this connection, the Texas law, for example, provides that the state forester "shall be a technically trained forester of not less than two years' experience in professional forestry work". If forestry is really to be undertaken, the natural and practical thing to do is to employ a forester to direct the work, and not a man whose training and experience have been along other lines. This does not mean that the executive in charge of administering the department of which forestry is a part need be a trained forester; in fact, it is better that he should not be a technical man at all, as experience both in our national and state governments has demonstrated.

But no matter how fine an organization may be provided, however, without funds it will not function. And this brings us to the matter of appropriations. The success of state forestry departments has generally varied directly with the amount of appropriation received. It is difficult to conceive of some of them ever receiving adequate funds as constituted or located at present. While the states' general treasuries are the source from which funds are usually obtained, the exceptions are worthy of note, viz: Louisiana, which levies a severance tax on the value of the stumpage cut; Maine, in the so-called forestry district in the northern part of the state, where a tax is placed on the value of the forest-land; and Oregon and Washington, which require the participation of private funds in the form of a patrol tax.

In conclusion, I wish to repeat with emphasis that the perfection of organization and the adequacy of funds are only the means to an end, namely, the practice of forestry in the woods. (Applause.)

The CHAIRMAN. It has been suggested that it would be a good idea to have a discussion of each paper as it comes up. Does anyone wish to discuss anything that Mr. Peters has referred to? I suppose you will answer questions, Mr. Peters?

Mr. PETERS. Yes, sir; if I can.

Mr. WILLIAM T. COX, State Forester, Minnesota. How many states now have what you would consider non-political forestry boards?

Mr. PETERS. By far the majority. The trend is decidedly away from political influence.

Mr. PINCHOT. I would like to ask a mean question. Would it be a fair thing to ask the men who are here whose work is free from political interference to hold up their hands, do you think?

About twelve members of the conference raised their hands.

Mr. PINCHOT. That is a fine showing.

Mr. JOHN H. WALLACE. The commissioner of conservation of Alabama enjoys the unique distinction of being the only officer of similar character in the United States who is elected by the people. It has been that way from the beginning, and permit me to throw a bouquet at myself, I have just been re-elected for the fifth time for a term of four years.

Mr. W. A. GUTHRIE, of Indiana. Mr. Chairman, I think Mr. Peters was a little misleading with reference to Indiana. To give a little history, in 1901 we passed the first forestry law. Governor Durbin appointed a board, and they elected a secretary. They functioned only as a political machine. I am sorry to say that happened under a Republican administration. The next four years Governor Hanly was elected, and he appointed the same secretary with the same results. When Governor Marshall came in he wanted a man that was efficient. He said if I would get the salary raised so Professor Thomas could afford to accept the place, also a Republican, but who was a qualified man. Some of you know him as having been connected with Wabash College. Thomas did not like to undertake the work of having the salary raised and the rest of us did not like to go before the Legislature to raise one's salary without his assistance. Governor Marshall then appointed a man who was a botanist and scientist, who devoted his time and energy to the forestry question. When Governor Ralston was elected, another Democrat, Governor Marshall said to him, "I do not care whom you appoint of my appointees; or whether you appoint them all, but there is one man I want you to retain and that is the man who is secretary of forestry, Mr. Deam." Governor Ralston said he would appoint Mr. Deam but the politicians played a trick on him. Mr. Deam was not a politician and did not care for the work anyway, so he was not re-appointed. When Governor Goodrich came into office he asked me to help him to form the forestry board. "Do you want efficiency or political service? I know of but one man in the state who would accept the office for the salary it carries and he happens to be of a different political faith than we are. I know he would be a very efficient man in this line. He loves the work, not for the salary but for the work he can accomplish." He said, "Well, name him and I will appoint him." That is my friend, Mr. Deam. He has been very competent and has done good work for the state, on forestry.

Two years ago the Legislature passed a law creating a Department of Conservation. In that department we have an efficient organization, but the forestry department is just as independent and more so than it ever was. We have a commissioner of forestry, who is Mr. Deam here, and who has full charge of all that work. He makes a written report and turns it over to our executive officers. Our director, four or five days before our meeting, goes over in detail his report and makes any suggestions that he feels like. Then the report with the director's recommendation is turned over to us. This commission is non-partisan. It is composed of two Democrats and two Republicans. It is made up of men in different lines of work. While, it has been less than two years, we are the only department, the only one in the state that never got any criticism during the heated campaign that we had this year. We were commended for the amount of

work that we had done and for the amount of money that we have saved the state. Why? Because we have appointed some Democrats and some Republicans and there is no politics in it. They did work, they were efficient, and they delivered the goods and accomplished more than we had ever accomplished. The one thing that I want to correct Mr. Peters in, is that the department of forestry is as independent as it ever was.

The CHAIRMAN. If there are no further inquiries, we shall proceed with the next paper.

For the reason that a good many of the gentlemen will be going away tomorrow, it has been suggested that Mr. Pinchot's paper be presented now, rather than the last on the program tomorrow afternoon. So in accordance with that I will ask that Mr. Pinchot give his paper on "The States in the National Forest Policy."

HON. GIFFORD PINCHOT, Commissioner of Forestry, Harrisburg. Gentlemen, I do not know whether it has been as much satisfaction to all of you to see the old faces together again as it has been to me, but certainly it has carried me back very, very much to the old time. I want to say to begin with that if you other state foresters are enjoying your work and having as much fun out of it as I am, I think you are to be congratulated. I have had more fun in the last nine months than I have had since the year 1910, when I was removed from public office for the public good. It is great fun to get back into the harness and bite down again on the kind of work that I am good for, if I am good for anything.

I think perhaps the best thing I could do to begin with would be to run over very rapidly only the experiences that we have had in Pennsylvania recently in this forest matter. I will give you, as far as I understand them, the reasons which I think have led to the promise of success which faces us now.

Dr. Rothrock gave you this morning a brief resume of the history of forestry in Pennsylvania. What he did not tell you, and what I am mighty glad to be able to say in the presence of you state foresters, is that there is no other man in any state of the Union who has ever done for forestry in that state what Dr. Rothrock has done for forestry in this state of Pennsylvania. I think he is getting part of his reward on this earth, for a man over eighty years old who can come back and give the speech that he gave this morning, after having killed two deer in the state of Maine, this fall, deserves congratulation.

Dr. Rothrock is the father of forestry in Pennsylvania, but, for reasons which were not entirely separate from political consideration, Dr. Rothrock was unable to carry out and complete the work which he began. While he has always been associated with our forest department, there were many things which took place for which he was not responsible.

It is fair to say that the department is absolutely free from political influence. I know that in the only case where there was an effort made to bring political pressure to bear, the answer from the department was sufficiently direct and vigorous so that it has not been repeated. There is no politics in the Pennsylvania Department of Forestry whatever, but we do have the hearty support not only of the governor, but of the whole state organization, and that, of course, is one of the first reasons why things are going well.

When Major Stuart and I took charge of this work we found several essentials of success present. In the first place the Forest Commission, willing and able to

understand the situation and to give us the support without which we could have done nothing. Secondly, a body of men in the forest department, such as, Mr. Rothrock said this morning, could not be surpassed, I think, by any similar body of public servants anywhere.

But we also found very serious deficiencies which amounted to giving us substantially a clean slate upon which our work could be written. For example, among the first things we had to do was to establish a system of accounts. There was no budget in the department. One of the next things was to establish a system of inspection. There was no inspection. One of the next things was to get ready to prepare fire plans for the individual forests. Others were to make a complete reorganization of the department so that responsibility was definitely assigned to men and to subjects; to bring forestry into the timber-cuttings; to establish a line of demarcation in timber sales between what the men in the field could do and what the men at Harrisburg had to do; and to arrange for practical advice in forestry to private owners, to enforce for the first time the law of 1915, which gives full power to compel protection against fire on private lands; and so on, and so on, and so on.

We had the opportunity, under laws, not in all respects satisfactory but still abundantly sufficient, and with appropriations sufficient at least in part for the work of this first year, we had the opportunity and the power to reconstruct the organization of the department and make it lean toward the side of efficiency, to lay down clear lines of responsibility, and so on, and especially give the men in the field the kind of responsibility without which no good work is ever possible, the kind of responsibility which gives a man the chance to exercise the powers that are in him and secure recognition for the accomplishment when it is done.

That is the nearest outline of the foundation that had to be laid. You can not get anywhere, of course, without a sound and effective organization, or without men who know their business, unless you have that you are still in a situation where state work or national forest work must fail. So when we had gotten our department reorganized, divided up into definite bureaus, with definite duties for each, when we had succeeded in giving the men at least those who remained, (for we were obliged to get rid of some, in order to give a living salary to others), something approaching a living compensation, we had to give each man a man's-sized job so that he would be obliged to stretch himself to fill it. After we had given him good business methods to work with and a chance to show what was in him, still the success of the movement was not altogether insured. You cannot do anything without good work, but good work done does not always give you everything that you have got to have to win.

Beyond the work in the Department, we had to convince the state of Pennsylvania that the forest question was a big question instead of a little question. What little I know of work in forestry, either in the nation or in the state, leads me to believe that at the present stage of the development of public opinion here is the key to the whole situation. Forestry in Pennsylvania has not been moving ahead fast enough. When Dr. Rothrock tried and tried and tried for years in the most self-denying and unremittent way to get the people of the state of Pennsylvania to realize that it was a big question, he lacked the support from the outside which made it possible fully for him to succeed. He laid the foundation without which we could not be doing anything today. But his great work did not come at a time when it was possible for him or any other man to put over the conception of

forestry which is now being instilled in the people of the state of Pennsylvania. In other words, if he did not do what now we hope to do with it, if he did not do alone what we now hope he will help us to do, it is well to remember that he did everything that could have been done under the circumstances, and more than seemed possible.

Now then, let me emphasize that again. Forestry in Pennsylvania was seen in the public eye as a small thing. The size of it was not understood, the effect of it on the welfare of the state was not understood. Pennsylvania was dealing with forestry on a dollar plane instead of on a hundred million dollar plane. That is an exaggeration of course, and yet that was the general point of view that the average citizen of Pennsylvania had of forestry. Am I not right, Doctor?

Dr. ROTHROCK. Yes, sir.

Mr. PINCHOT. It had to be taken away from that small conception and had to be put on a one-hundred-million-dollar basis, to use round figures. If we figure out what forest devastation in the state costs in money, we find something in the neighborhood of one hundred million dollars a year, which is almost twice what it costs to run the state government. It had to be taken out of the little and put into the big. As far as I am able to understand it, the common success at this present time in forestry, national and in the states, is due to the recognition of needs that are basic essentials. A man can not be a good citizen unless he has foresight and has courage. Forestry can not succeed unless we have a good organization and good men, but beyond that we must have a conception in the public mind that warrants a forester, in the public mind, in asking for big things because he is dealing with a big subject. Then having established (we have not done it in Pennsylvania, but we are making progress)—having established the idea that forestry is a really big question, not a part of the fish and game question, not a part of the water question, not a part of the land question, but one of the major divisions of the state's activities, supplying some of the major needs of the state's agriculture and industry, we have got to go ahead and present to the people of the state a perfectly concrete and definite plan. I am doubtless talking things that you gentlemen have all known for years, but the best I can do is to give you the way in which the thing has struck us and is being worked out here in the state of Pennsylvania.

The next thing then is a concrete plan. We have a concrete plan here which has been adopted by the governor, which is known as the governor's plan, and which goes at once back to what is our particular problem here, and asks for money to meet the situation. That is the first big question in forestry in Pennsylvania.

Pennsylvania is a deforested state. The Pittsburgh district alone is using more wood than is produced in the whole of Pennsylvania every year. Yet the natural reproduction is abundant. We do not need to plant on any considerable scale, but we have got to stop fires if there are to be any future forests in our state. Consequently the first item of our plan is to equip the forests of Pennsylvania against fire; that means, of course, as you know, not merely annual expenditures for fighting fire, but it means fire-control, fire-towers, telephones, roads, tools, organizations of citizens, volunteer fire-fighting organizations in the forest towns, complete fire-fighting plans for the various forests. For all that we are asking for one million dollars for the next two years. That is the first item of our policy.

The second, which was so well discussed by the governor this morning, is the acquisition of additional forest lands. We have now about one million one hundred

thousand acres of state forests, and we want five million acres more. There is in the proposed new constitution authority for the issuance of bonds to the extent of twenty-five million dollars for the purchase of land. But that constitution may never pass, and if it does it will be years before it comes into effect. We can not wait for that; consequently we shall ask from the legislature such a sum of money for the purchase of land as the government can be made willing to approve.

How much that will be I do not know. I would like to make it five million dollars. That is what we ought to have, and especially because under Judge Woodruff's leadership we have succeeded in gathering together more data than has ever been collected before as to the remaining forest-lands of the state, as to what they can be bought for, as to where they are, and the rest of it.

We are ready to go ahead with these two plans for just as much money as the Legislature can be induced to give us. We hope for excellent results, and shall be greatly disappointed if we do not get a good deal more money for fire this year. If they do not give us that million dollars then we must persuade the people of the state, not merely that this is a big question, but that we have a definite plan to carry it out. We must persuade them that we are capable of handling the plan, of handling the money that will be given to us, that we have an organization that is efficient and progressive enough to make good in case the confidence of the Legislature and the opportunity to do the work is given to us.

Now, how are you going to get this ideal, this plan and this conviction of ability to handle the proposition to the people? There are two big ways, of course. The first that will occur to everyone is the press. We must approach the people of our state through the only available rapid means of reaching them, the newspapers: tell them what the situation is, and how big the thing is, and how much depends upon it. I think it is a fair thing to say that in the last nine months there have been more stories about forestry in the papers of Pennsylvania than in the previous nine years, and perhaps than in the whole previous history of the state. There has been a mass of it, and it has had an excellent effect.

The point that I want now to make to you is as to the method of getting publicity. You can give out, gentlemen, all the formal stories you like, and some of them will be printed in some of the metropolitan newspapers. Thus you get a certain amount of public attention. But the thing that will do most to put you where you ought to be in the public mind, with the proper amount of public spirit behind you, is the little bit of an item in the local paper. It is the little story that applies to the county or the town that counts. The localization of news, at any rate in a state like ours, is the secret of public support. Take this illustration: Mr. Vorse, a graduate of the Yale Forest School, who has charge of our publicity work, had handed to him one day a letter which went out from this department to all of the county commissioners of the state of Pennsylvania, to sixty-seven counties. That could have been handled in either one of two ways. It could have been given to the big newspapers as a letter written to all of the county commissioners, in which case none of the papers would have printed it, or practically none. Instead of that it was sent to the individual papers in the individual counties, and the caption was, "The Commissioner of Forestry writes a letter to the Commissioners of Lackawanna County," or Snyder County, or Washington County, and there was hardly a paper in the state of Pennsylvania that did not print it.

There is just the difference. One of the things that I have learned in this work, one of the things that I wanted to hand over to you most, was the value of this localization of your news. If it works with you as it works here in Pennsylvania you won't merely double, you will quintuple, or multiply fifteen times the amount of information that gets into the hands of the fellow that takes his shoes off and puts his feet on the other chair and reads his paper by the stove in the evening when his day's work is done. He is the fellow we want to reach. That is one way of putting the thing over.

The second way and one which is of enormous value also, it seems to me, in the formation of public sentiment and in the actual cooperation that you get, is in the method of dealing with the big commercial interests of the state. For example, not long ago, after I came in here, I called together the representatives of all the railroads of Pennsylvania, and laid my case before them. I said, "I have no law that will compel you fellows to build fire-lines, burn strips along your railroads, but it ought to be done, and here are the reasons." The result of it after an afternoon's conference, was that they agreed, wherever a railroad runs through a forest, to burn a strip one hundred feet wide from the outside rail along their tracks whenever they could first get the permission of the private owners to do it. They actually did it, and actually are doing it, and each spring that agreement will bring us nearer to the elimination of the greatest single cause of forest fires.

That simple move gave us not only the cooperation of the railroads but it immediately had this other effect, that of persuading the railroad organizations that this forest question is worth their attention. The railroad corporations consider it a big thing instead of a little thing, and this same method has been used to persuade a great many owners, or organizations of timber-land owners, and so on.

We have succeeded in establishing in Pennsylvania among the Boy Scouts an organization known as the Forest Guides. Solon Parkes, of Reading, must be given the credit of being the inventor of this idea. These boys enlist, they are given a button by the department, they sign a pledge-card to prevent and put out forest-fires; to protect wild life; and get other people to do the same. We will have by spring ten thousand of them out of the twenty-odd thousand Boy Scouts of Pennsylvania. We will have whatever number it may be of boys scattered all over the state who understand, (and their fathers and mothers will come to understand also) that the forest fire question is really big.

This effort toward general public education has worked out, not only in the Legislature, but also in the woods. I do not know how it is with you, but with us a majority of the fires that are set, so far as I am able to estimate, are set on purpose. I can not prove that statement, but if it is not true it is pretty nearly true. The only way in which that can be reached effectively is not by prosecutions, but by creating such a public sentiment as to make public sentiment among the people of the state that will not stand for a man who sets a forest fire any more than it stands for a man who burns down a house.

Gradually from these various methods a public state of mind is going to be created. To a considerable extent it is already created so that it is felt. For example, we had last fall the driest October in twenty-eight years. Out of the one million one hundred thousand acres of state forests only one hundred and twenty-five acres were burned over, and the fires averaged only fifty-four acres in size. That to the smallest area per fire in the history of the department, which means

that men were jumping on the fires more effectively than ever before. You get your response just as much in the woods as you do under a roof, and it pays enormously.

Nearly everybody is susceptible to these methods. Take another example. We have a law in Pennsylvania which was passed in 1915, which makes it a punishable offense for a man to maintain a fire nuisance. After the chief fire warden tells him it is a nuisance, if he does not abate it, he is liable to a one-hundred-dollar fine for every separate day it is maintained after notification. This law was a dead letter. It never had been enforced. We took it up with the big timber-land owners of the state, and it was amazing to see how quickly they came into camp and said: "Whatever you fellows say we ought to do we will do so far as we can."

There has been but one single case of a man coming back and telling us where we could go to before he would carry out our recommendations. In that case, before he could get, almost before I had written the letter which told him what I would do if he would not be good, notice came from his partners that they had, without consultation with him, carried out the instructions of the department.

Now, I have taken a great deal of your time in telling you about what we have tried to do in this state, because I enjoy talking about it, just as I enjoy immensely my association with the men with whom I have been working in this effort of the state of Pennsylvania in forestry. I want to repeat as the last thing, as it was the first thing that I said, that in my judgment the very bottom and foundation and origin of all successful forest movements in any state must be the taking of the forest question out of the class of little things and putting it among the big things. When we have done that it seems to me we have covered more than half of the whole road.

Now, I have taken a great deal more time than I intended, Mr. Chairman, but I would like to take ten minutes more with your permission. I want to take up another question, and like so many of the rest of you, I have a written speech. This is on the specific subject that was assigned to me, the matter of the place of the states in the national forest-policy. So I will read you briefly what I have to say. I have written it down not only because we were all requested to write papers, but because I want to say exactly what I want to say.

Public opinion is just awakening to the vital need for the practice of forestry on private timberlands held for commercial purposes. This awakening, far more purposeful and wide-spread than the similar stirring of public opinion which made it possible to secure the National Forests, offers by far the most promising opportunity for progress in American forestry within my experience. There is clearly before us the chance for greater advance, an advance which may even extend within the next decade to the point of assuring a permanent and sufficient supply of American forest products.

The chance is here, but we have not yet made use of it. We must crystallize this invaluable public opinion behind a policy wide enough and strong enough to make us independent for good and all of timber supplies from other countries. Our success in doing so will depend on two or three essentials in the policy behind which the forces of forest conservation elect to throw their strength. The first of these is that we must work with and not against the underlying trend of the times. The second is that we must present to Congress with which the decision has, a policy which can be passed, and which, when passed, will produce results. The policy we

decide on must be submitted for the approval of Congress, a national body whose members are necessarily governed not only by the interests of the nation at large, but more particularly by the interests of the individual states which they represent.

The essential facts in the lumber situation so far as the selection of a national forest policy is concerned are three—first, the United States is not self-supporting in timber, but is consuming its forest capital four times faster than that capital is being renewed; second, not only timber but the productive capacity of timberlands is being destroyed; third, the great majority of the states are unable to supply their own needs for wood, but must rely upon the forest resources of other states. Therefore, the agriculture and industries of most of the states are dependent for their essential supplies of lumber on forests outside of their own boundaries. As to a majority of our commonwealths, this condition will be permanent.

It may be taken as basic, therefore, that the majority of the states, containing a large majority of the American people, will be permanently dependent for their prosperity on timber supplies produced outside of the boundaries of the states in which they are consumed. That being so, the balance of power in Congress as between the forested and the deforested or unforested states is a consideration of vital importance in the formulation, and still more in the enactment, of a national forest policy.

Entirely apart from partisan consideration, certain facts as to the recent election have great importance in this regard—we have all heard rumors that there was an election not long ago. On March 4th next the weight of power in our government will pass from the states that are predominantly exporters of lumber to the states that are predominantly importers of lumber; from a group of states whose principal business, aside from agriculture, is lumbering to a group of states whose principal business, aside from agriculture, is manufacturing.

Under the new order, therefore, the states whose vital industries depend on lumber grown in other states will hold the balance of power. Of the states which have just gone Republican, more than three-quarters are importers of wood. Moreover, the chairmanships of the committees on agriculture and appropriations in House and Senate are and will be held by men from lumber-importing states—not only so, but the great majority of the members of each committee is and will be from states whose industries would perish without lumber from beyond their own borders.

What is true of the membership of these two committees is true of Congress as a whole. In the consideration of what can or can not, as well as what should or should not, be included in a forest policy for the whole nation, these facts obviously require consideration.

Two forms of national forest policy for preventing forest devastation are before the country for consideration—one that of direct national control—the other that of state control under national persuasion. I want to be considered very thoroughly in what I am about to say now as a state forester, for I am speaking' not only from my interest in forestry in the state of Pennsylvania, and because I want certain help for this state from the federal government.

The Forest Service plan has been embodied in an item to be submitted to the House committee on agriculture as a proposed part of the coming agricultural bill. With all that part of this item which has to do with cooperation between the states and the nation for the control of fire, for the promotion of planting, and for forest-

investigation, we are all agreed. With that part of it which assigns to the states control over forest devastation, some of us profoundly disagree.

Let me make my position entirely clear.

First, I welcome any and every action by an individual state to prevent forest devastation.

Second, I have confidence in the technical and executive capacity of state foresters as a body, and complete reliance upon their devotion to their work.

Third, I am for national control, because in my judgment it is the only form of control that can actually be secured, and the only form that, if secured, can be effectively enforced. Only national control will guarantee uniformity of treatment among all those to whom it is applied, or will assure protection to the vital interests of all the wood-using people of all the states.

Fourth, I am for and shall whole-heartedly support all that part of the proposed Forest Service appropriation item which does not assign control of forest devastation to the states. For that purpose, I have already asked to be heard before the house and senate agricultural committees. By the way, I want to say that under the new order, I did not know it until yesterday, in Washington all the appropriations for the forestry department in the House will come before the appropriation committee instead of before the agriculture committee; therefore I assume that this item will follow that course, but if I find that this is so I shall ask to be heard before the House committee on appropriations, and shall, before those committees and in all other ways, do my best to secure the appropriation of a million dollars for national cooperation with the states in fire-protection, planting, and forest investigation. At the same time, I shall, if necessary, ask to substitute for the few words whose effort is to assign control over forest devastation, and hand over the timber supply of the whole nation, to the individual timber-exporting states, some such wording as the following: "And the secretary of agriculture, where and to the extent necessary to insure a future timber supply to the American people, may, under the rules and regulations to be prescribed by him, require the owners of timber lands held for commercial purposes upon the watersheds of navigable streams, when such lands are valuable only or mainly for timber production, to refrain from destroying the capacity thereof to produce trees." I make this statement with full understanding that an item in an appropriation bill is valid for only one year. But to adopt it might well be taken, and would certainly be claimed, to be the adoption of the state-control policy by the national Congress. The precedent is dangerous. In my opinion, the words which carry state control should be eliminated.

Except that rumors to the contrary have reached me, it would seem unnecessary for me to say that this position of mine is not based on hostility to the Service, or to any part of its policy except state-control. It would seem unnecessary to repeat that no one has a profounder feeling of interest, affection and respect for the Service, or more cause for it, than I. The best years of my life were given to it; I helped it grow from very small beginnings to its present nation-wide importance. Since I left it, no call to defend its interests or promote its welfare has ever gone unanswered so far as I know. A father is not charged with coldness or disloyalty to his child when he points out an erring tendency. No more should I.

As I have said times out of mind, there is no better body of public servants anywhere on earth than the men and women of the Forest Service; no better work has

ever been done for the government and the people of the United States than the Service has performed; no more difficult and delicate task was ever approached with finer spirit, wider knowledge or greater devotion than the task which faced Colonel Graves when he succeeded to the leadership of the Service; the work of Forest Service men in the world war, at home and abroad, is the source of infinite pride and gratitude to every American; under the vigorous and energetic leadership of Colonel Greeley, I wish the Service every success. But I reserve and shall exercise, now and always, the right of independent judgment as to whether or not, in any given case, the policy of the Service is right or wrong. In the present instance I believe it is to the interest of the nation, of the Forest Service, and the forest organization of the various states and very much to the interest of the whole, that the nation rather than a few timber-exporting states should control forest devastation and our future wood supply, and so believing I can do nothing less than give expression to my belief.

Moreover, the reasons given above, together with my own experience with Congress, and a special investigation of the present position of congressional leaders, have convinced me as to the attitude Congress will assume. I have said a good many times in print that in my judgment it would be impossible to secure from this Congress, or from any Congress in the near future, the enactment of the state-control policy either in an appropriation bill or in any other form of bill. In order to be absolutely certain of my ground in this matter, I went to Washington and talked the thing over with a number of the leaders who have been known for a great many years, and satisfied myself as well as I was able in the short time I was there as to what the actual situation was. I talked with Mr. Montell, not directly on this question, but as to the situation in the matter of appropriations, and found him more impressed than I have for a good many years with the absolute necessity for retrenchment. Mr. Montell, who was pretty close to being the father of the reclamation act, told me that he had already notified the men of the west who had come to him on the subject that there would be no direct appropriations for that purpose this year. Talking then with men on the committees of agriculture and appropriations of both House and Senate, I came back entirely convinced.

I came back with definite knowledge where before I only had a conviction that so far as Congress is concerned any effort to secure either in this item or anywhere else, either at this session or any session in the future, a form of words which would authorize the inauguration of a state-control policy would fail. I want to make that thing very clear, because it would have been unfortunate for me to emphasize a statement of that kind and to have found afterwards it was unjustified. All these things together have, I think, given me a clear conception of what the attitude of Congress will be. It is perfectly obvious that an effort to place in the hands of the forested states—which within ten years means in the hands of the Legislatures of Washington, Oregon and California—the decision as to the future timber supply of states more numerous, more populous, and more largely represented in Congress, is foredoomed to fail.

Colonel Greeley himself has told us repeatedly that he does not intend to give immediate effect to that part of the proposed appropriation item which deals with the control of forest devastation. There can be, therefore, no immediate need for that part of the language which some of us can not support and which in any event leaders in Congress will not permit to pass. You gentlemen understand, of course, that any new language in the appropriation bill is subject to a point of order by one man and that the man who makes the point of order is not required to give any reasons for doing so. He simply says, "Mr. Speaker I object," and designates whatever new language he objects to, and that language goes out. There is, therefore, in my judgment no chance of this particular language remaining in this bill.

But even if I am entirely mistaken in my estimate of the facts and their meaning still the question arises whether it would not be wiser for us state foresters as a body to unite behind what we are all for, the million-dollar appropriation for fire, planting and investigation. In that event, the single point upon which we disagree would be left to be settled independently at a time and in a way such that the inevitable objections of Congressmen and Senators from timber-importing states would run no risk of endangering what we are unanimously agreed on.

I want this money for Pennsylvania just as much as any of you fellows want it for your own state. We were saved from a very uncomfortable situation to a considerable extent last spring by the seventy-five hundred dollars that Mr. Peters was finally persuaded, against his better judgment, to put into the state of Pennsylvania, and we are very grateful for it. We want more money, and we want it just as much as any of you, because in relation to the vast forest-area of the state we are probably in a good deal worse situation than any of you. I doubt if there is anybody here that has any more, except possibly Michigan, than five million acres of completely devastated lands within the boundaries of the state. We want our full share of that Federal money for planting, for forest investigation, for fires, and, so far as the Lord lets us, we Pennsylvanians will stand behind the movement as long as the rest of you fellows to get the money for that purpose.

But I have had long enough experience in Congress to know this, that in the final days of the session, and some of you who have had legislative experience will be able to support me in this statement, in the final days of the session, at the time when appropriations go through, the rush is so great that the opportunity for fine distinctions disappears, and the chance that the whole item will go out because some one individual phrase in it is objected to is multiplied many times.

It looks to me, if my estimate of the situation in Congress is right, as if the state foresters were in a position, if the state-control item is insisted on, in which they will automatically prevent the full appropriation in which they are interested. It is always a risky thing to put a new policy into an appropriation bill subject to a point of order. It is merely to invite failure to put it into an appropriation bill subject to a point of order at a time when it is known in advance that influential leaders of both House and Senate will see to it that it goes out. Now, I want the money as much as you do, and if we can all get together behind that part that we all are for, I think we have a chance to get it, and if not we will not get it. (Applause.)

Mr. WALLACE. I am sure I have been highly entertained and edified by the magnificent address of Mr. Pinchot. He and I are old friends and have known each other for twenty years. I want to ask him what would be the effect of the language of which he speaks in the matter of protecting or securing surrounding timber on water-sheds. Now, take the state of Alabama and make it an example. The state of Alabama is a great lumber-producing state, a great yellow-pine belt there. Now, I want to know how that would effect the people of Alabama.

Mr. PINCHOT. As to what the working out of the policy would be?

Mr. WALLACE. How would that affect us.

Mr. PINCHOT. I do not know whether you have seen a report made by the Society of American Foresters. That is precisely what I have in mind.

Mr. WALLACE. Yes, I have read that.

Mr. PINCHOT. As to this language, I know, of course, very well indeed, that no such language will pass in the present appropriation bill. I merely suggest substituting one point of view for another. This matter has been fought out for a number of years. We have just finished, as some of you gentlemen know, a fifteen-year fight to save the coal-lands, to save the oil-lands, and in each case we won. In the last session of Congress the fight was finished to save the water-power. In each case we have passed through the regular series of phases, first, no control; second, state control; third, national control, and in each case national control has won out. There will be no legislation on this subject on either side of the house for several years. It is one of the biggest questions that can come before the people of the United States, and it will have to be threshed out at every stage.

Mr. WALLACE. Mr. Pinchot, would that language which you have suggested there in your admirable address, would that contemplate government control of private property?

Mr. PINCHOT. Yes, it would be exactly analogous, for example, to government control of private property by the Interstate Commerce Commission.

Mr. WALLACE. There would be no such thing as condemnation for public use without adequate compensation?

Mr. PINCHOT. The Interstate Commerce Commission regulates the railroads in Pennsylvania and the state gives them police protection. Under the plan I have in mind the states would protect from fire. The state taxes the railroads of Pennsylvania, and under the plan I have indicated the state would tax forests. The Interstate Commerce Commission, a national body, regulates the use and handling of private property just as under the plan I have in mind the government through the Department of Agriculture and the Forest Service in particular would regulate the use and handling of commercially held timber-land so far as they have correlation to interstate commerce. It would be analogous in both cases, an interference with private property rights for the public good.

The CHAIRMAN. The question is open for discussion. Would anybody like to make any inquiry of Mr. Pinchot regarding the essentials of his paper?

Mr. WOODRUFF. As I listened I heard the word "forest devastation" several times, and for fear that forest devastation might be misunderstood I would ask Mr. Pinchot if by any chance he would include in that, as speaking of devastation, the devastation of forest by fire.

Mr. PINCHOT. My judgment is that forest fires are a state question; taxing is a state question; but the destruction of timber-lands by the cutting of timber is a national question.

Mr. WOODRUFF. When you say forest devastation you refer to timber cutting?

Mr. PINCHOT. I do.

Mr. W. A. GUTHRIE, Chairman Conservation Commission Indiana. May I ask a personal question that pertains to our own State's interest? We have the en-

thusiasm, and I know the outgoing governor is going to recommend it, and I am satisfied the incoming governor will recommend it, an appropriation for buying this cut over timber-land without a survey. How is the best plan for us to buy this? Our state contains 22,400,000 acres of which it is estimated about 800,000 acres in the southern part of the state to be water sheds of the Ohio river. Two to four hundred thousand acres that are suitable for growing timber, but that is all divided up into various farms and small lots. How are we going to buy it? What kind of a law can we pass to reach that, I think that our forester suggested a long time bond proposition, but I am informed by attorneys that we can not do that under our constitution. What kind of appropriations do we need to make available to get this timber for the state?

Mr. PINCHOT. I can not tell you how to do it, but I shall be mighty glad to tell you what we are doing. In the first place, we get once in two years an appropriation from the legislature for the purchase of forest lands. For this present two years it amounts to one hundred and thirty thousand dollars, but in no case are we to pay more than ten dollars an acre. What we do is to ascertain where in the state we can get two things together, land that ought to be in a state forest, and land at a reasonable price.

I do not need to tell you gentlemen that the fact that the state has some money to spend is a perfectly good reason in the minds of a great many why the state ought to pay two prices for what the other fellow has to sell. It all has to be handled with a great deal of care, but can be handled in such a way as to get full value for the state.

Judge Woodruff has sent letters to fifteen hundred land-owners throughout the state of Pennsylvania telling them of what the forest department has in mind, and asking them to send in offers. They make those offers on a regular form, and in a great many cases we take an option.

Mr. GUTHRIE. In small amounts which don't hitch up together?

Mr. PINCHOT. That, of course, is your trouble. What we are doing here is to take up pieces of land wherever they happen to be, even if they are not contiguous to state forests, provided we know in advance that the area in which these particular pieces of land lie is ultimately likely to fall within our five million acres. We are very sure that all these lands that we buy will never be worth any less than they are now, and if the state does not want them, if it holds them for ten years and does not want them, it can sell them and make a large profit on them.

Mr. GUTHRIE. We have the right of eminent domain, but we do not use it.

Mr. PINCHOT. We have the right of eminent domain also, but we do not use it, because it costs too much. We can buy the land cheaper without it. The only place in which we propose to use it is where there are difficulties in the title which can only be cleared up in that way; and in those cases we shall, so far as possible, make a definite agreement with the owners of the land in advance as to the price. I do not know whether I have answered your question at all, sir; but I have tried,

Mr. GUTHRIE. In a way.

The CHAIRMAN. If there is nothing further, we will proceed with the symposium. The subject is, "Our timber needs and supplies." The subject has been divided into five sections, New England, the South, Middle West, the Lake States and the West. The first will be represented by Mr. W. G. Hastings, of Vermont.

Mr. W. G. HASTINGS. State Forester, Vermont. There was no intimation concerning the length of time I should occupy so I have prepared only a two or three-minute paper, feeling that the rest of you probably would do the same, and in that way combined we would occupy perhaps half an hour.

New England is a forest region. Notwithstanding her industrial and agricultural enterprises, her population, her wealth and culture, and her three centuries of development, New England, by the edict of her physical geography, still remains a wild-land region, and will continue to be a region where wild lands predominate until a political, economic and social order has been created in which agriculture is profitable without the use of farm machinery, an impossible time. New England passed her heyday as a rural community sixty years ago, and since then the edge of the woods has drawn nearer and nearer to New York.

Of the slightly less than forty million acres comprising the land surface of New England, fully three-fourths is unsuited to a higher use than timber-production, and of this three-fourths about ninety per cent. is capable of producing forest-growth. The remainder is the natural barrens. Expressed in acres, there are about three and one-half million acres of barrens, including swamp and water; ten and one-half million acres of pasturage or land devoted to higher use, and twenty-eight million acres of wild land capable of supporting timber-growth. We have not twenty-eight million acres of productive forest, however. Estimates made by the several foresters of New England, if I can harmonize their statements correctly, show that this area of twenty-eight million acres may be divided into three equal or nearly equal parts, namely: first, lands supporting a satisfactory stand of timber containing trees of merchantable size in dominating percentages of volume; second, forest lands supporting a satisfactory stand of young timber: and third, forest lands supporting an unsatisfactory stand of timber, either young or old, or no timber at all.

The first class, containing nine million acres of mature, or nearly mature, pulpwood and saw-timber, includes within itself the infinitesimal amount of virgin forest left standing in the region, and includes also all other stands of timber of merchantable size. Except for these virgin stands of a million acres or so, every stand of saw-timber in New England has been more or less heavily culled for the better classes of material. These culled stands are, therefore, made up of inferior species and poor specimens of good species. At best the timber is culled stuff cruising from five to six thousand feet per acre. These nine million acres of culled-over, mature or nearly mature stands occupy twenty-two per cent of the area of New England, or thirty-three per cent of our absolute forest soil capable of producing forest growth, and support all of the pulpwood and saw-timber in New England variously estimated at fifty billion feet. In calling the timber on these nine million acres, a satisfactory stand, there is no desire to convey the idea that the stand is in any respect all that may be desired, and least of all is it satisfactory from the point of view of volume. Such a classification simply means that there is volume enough present to insure that lumbermen will return for another cut.

The second of the three nine-million-acre classes of forest land into which our forests of New England may be divided contains, as expressed above, a satisfactory stand of young growth not yet sufficiently aged to be considered merchantable for

either saw-timber or pulpwood. This second class is the severely cut-over lands which, in spite of fires and other misuse, is restocking to desirable species in varying degrees of perfection. The area contains large quantities of cordwood stumpage as well as reproduction of both hardwood and softwood species. In speaking of the condition of this class as satisfactory there is no desire, as expressed above, to convey the impression that the stand as a whole is entirely satisfactory.

The third class, the nine million acres of land supporting neither timber nor reproduction, or supporting worthless stands of either or both, this third class of forest land is the man-made, desolate wastes, and includes the twice-burned-over hillsides, the rough, remote abandoned farms, and forest lands too recently or too severely cut over to determine what the future stand is to be, if any. These, together with the natural barrens, are the lands which have arrested the attention of the casual observer, and which bear physical evidence of the serious condition our forests are in.

New England contains one-eighth of her original stand of timber; her merchantable forest-area has shrunk to one-fourth of its original acreage; her forests are called upon to supply two and four-tenth billion feet of timber yearly in the form of lumber, pulpwood, ties, posts and cordwood, according to the "Capper Report," while the same report places the yearly increment at one and three-tenth billion feet. A generation ago she was a heavy exporter of timber; today she is an importer of one-third of all timber consumed in her industries and building trades; she is paying more to the already overtaxed railroads in freight rates than it will cost to maintain her forests in a producing state equal to the needs of the region. The forest wealth of New England has shriveled almost to the vanishing point and continues to shrivel. Our forests are at present in a deplorable condition, but the situation, serious as it may be, is not hopeless to those of us who are optimistically inclined. There still is time to repair the havoc that has been wrought in our forests. A regulation period of fifty years, the careful expenditure of a few cents per acre the services of one hundred well-trained foresters and one thousand rangers will bring our forests back to normal.

Dr. ROTHROCK. What about insect depredation in the New England states?

Mr. HASTINGS. Insect depredation in the southern portion of New Hampshire and Vermont, I refer to the southern portion of New England because the spruce belt of Maine extends considerably farther north, and in the southern portion it is not as noticeable as it is farther north. There is depredation both in New Hampshire and Vermont of common knowledge to us all, but the insect trouble that arises in Maine I have not seen, and I can not, therefore, speak authoritatively on it.

Dr. ROTHROCK. I was recently informed by a man in the state of Maine that in four of the townships in northern Maine an examination had been made on the condition of the spruce and fir, and that they had reported that from eighty to ninety per cent in certain districts was absolutely gone. A lumberman of very wide experience in that region made a remark to me that in regard to the spruce so far as the northern part of Maine was concerned, they were at the end of their long timber lumbering.

Mr. HASTINGS. I think it has been stated by those who are in a position to know, surely I am not in a position to contradict, that the spruce bud worm has done more damage in northern New England and Quebec than fire.

Dr. ROTHROCK. In the forest that I saw, practically every good sized spruce tree was dead or dying, it was the most hopeless situation that I ever saw. The young spruce outside where the clearings were made seemed to be in relatively good condition.

The CHAIRMAN. The next speaker is the gentleman from the sunny South, Mr. John H. Wallace, Jr.

Mr. JOHN H. WALLACE, Jr., Commissioner of Conservation, Alabama. Governor Olcott and gentlemen: I am very sure that I voice the sentiment of every gentleman present who is a forester when I say that we are delighted to be in Pennsylvania, and we are especially happy to be in Harrisburg, and we are beatified beyond the scale and bliss of dreams of being in this magnificent capitol which is one the most wonderful pieces of architecture it has ever been my pleasure to gaze upon. We are happy to be in a state which has given to the nation the Honorable Gifford Pinchot, who will go down in history as one of the greatest conservationists of the country.

The subject assigned to me is the timber-supply of the South and its needs. I do not know that I can say much speaking for Virginia or North Carolina, because there are two admirable, estimable gentlemen here who are more familiar with conditions in those states than I am; Mr. Jones, of Virginia, and Dr. Holmes, of North Carolina. I am especially familiar, however, with the pine-belt, the long-leaf or yellow-pine belt. Strange as it might seem to you, the South is still a wilderness, that is with reference to forest lands. There is but a very small percentage of the land cleared. There is still standing in the South a magnificent growth of long-leaf or yellow pine. It is true that some fifty-odd years ago the matter of the exploitation of the timber resources was begun, and that due to this in many sections of that fair and wonderful land desolation and despair has been left in the wake. There is in the south the reserve supply of long-leaf pine of the American continent. The mills during the period of the war worked overtime and produced enormous quantities of lumber which they sold for very handsome prices. Now, since the price has gone off, they are not cutting timber so rapidly. We export from Alabama and from the South, I suspect, ten times as much lumber as we consume. It has been estimated that with the supply of long-leaf pine left in the South and that together with some short-leaf pine or loblolly pine which is left remaining, standing in primeval forests, enough of that pine to last from twelve to fifteen years, and in some of the larger holdings probably from twenty to twenty-five years. Now, there is also in the South large quantities of hardwood like the oaks, for quarter-sawing; they make beautiful furniture out of it, take the hickory and make spokes and handles out of it. There is the cypress, also the gum. There are still considerable quantities of that there, but in the South, just as it has been in New England and New York and Pennsylvania, the crying need of adequate legislation to save the forests from absolute obliteration never appealed to the people until those forests are about to disappear from the face of the earth. It is true with reference to the South as it has been in every part of the country, there is growing in the South millions of acres of second-growth pine. Now, there should be laws passed by various states which contemplate something like this, that is—now just a moment—the men who own that pine-land upon which that second-growth timber is growing do not feel able to hold it for thirty or forty years until it reaches maturity. Now, that is the point here. Now, what has got to be done? We must pass a law providing that the states can enter into a contract with individuals owing such land to grow timber on it and exempt it from taxation until the time that timber is ready to be cut, and then impose a severance tax at the time of cutting, or otherwise participate in the profits to be derived from that timber. Now, that is a practicable and feasible plan. When we do that there

will be millions of acres of land in the South that can be exempted from taxation and upon which timber can be grown. As I see it, that proposition is workable all over the United States. For instance, there was a law passed by the last legislature of Alabama providing for a ten-cent tax on every ton of coal mined in the state. They said it was unconstitutional. They went into court, and the supreme court has upheld it. That is directly in line with the surface tax in the matter of cutting timber trees; but, as Mr. Peters most admirably said in his address this morning, or rather this afternoon, and as Colonel Greeley stated this morning, that the individual who enters into that contract with the state must absolutely agree to grow timber on it, and the state in return must see to it that it is protected from the ravages of forest fire. I can safely say that with the timber in sight in Alabama, the actual existing timber, and the second-growth timber about to ripen and coming on to ripen year after year in the state, that there is still in sight in the South timber to last the people not only of the South, but all other parts of the country as well, at least fifty years.

The CHAIRMAN. Are there any inquiries to be directed to Mr. Wallace?

The middle west will be represented by Mr. Edmond Secrest, of Ohio.

Mr. EDMOND SECREST of Ohio, Gentlemen: Ohio was among the foremost states in the production of hardwood timber. The original stand is estimated to have contained approximately 170 billion feet, which covered some 90% of the total land area. The present forest area of 3,200,000 acres contains approximately 10 billion feet of all classes of timber. Of this amount first quality virgin saw material will not exceed 1 billion feet.

The inherent forest lands of the state located in the south-eastern quarter, approximately 1,000,000 acres contain second growth hardwood stands in large tracts of considerable potential value, but the merchantable saw-timber is of negligible quantity. While this section, will in a large part produce the future forest products of the state, it will require at least 50 years with intensive protection against fire to produce saw-timber, much of which will be of relatively inferior quality, because of the cumulative injury by fire, and other forms of devastation.

The remaining 2,000,000 acres of forest land are more or less a part of the better agricultural districts of the state and they contain the great bulk of the remaining stands of old growth. Many of these farm woodlands exist on soils of greater or less agricultural value. They are not menaced by fire, but 84% are heavily grazed, and the young growth is nil or of inferior quality. The practice of grazing has produced a change in forest conditions which is responsible for the rapid deterioration of the old growth. The total increment in the heavily grazed woodland is small, and since some 1,750,000 acres of Ohio's farm woodlands are grazed the annual growth for the state is low. It probably will not exceed 25 board feet per acre. This not only portends serious consequences in respect to future timber supplies, but we find ourselves in the position where the great bulk of the remaining old growth timber is contained in woodlands which for the most part exist on agricultural soils. This condition will tend to jeopardize the present available reserves, because the woodlands are not only subject to the devastating influences of heavy grazing, but are being cleared for tillage and grazing in a manner which does not take into account the economical utilization of the timber. Up until a few years before the European war, when stumpage values were comparatively low, saw logs of more inferior quality were disposed of by methods much the same as those employed by the early pioneers.

The situation affecting the wood-using industries of Ohio is acute. Owing to the superior quality of oak, poplar, hickory, and walnut the state has been one of the foremost in the number and output of its hardwood manufacturing establishments. For a number of years this industry flourished, and in addition Ohio exported considerable quantities of hardwood lumber. Today the industries remaining, import at least 75% of the raw wood material used. During the past decade many of the smaller plants have gone out of business or moved elsewhere, owing to the exhaustion of the timber within reasonable distances.

There is a distinct feeling of uneasiness among the larger users of wood. The following quotation is from a letter written by the head of a large box company in Ohio, which is quite representative of the attitude of the industries using hardwoods. "We desire to take this opportunity of urging that something definite be done in regard to reforestation in Ohio. We have some very decided opinions upon this subject, and have been in a position to see and appreciate just what the depletion of our woodlands mean to the future generations, and even to those men living in the present.

"This plant will be obliged to close within two years for lack of timber. Basswood is practically extinct. We are today the only factory in Ohio making berry baskets, the third largest in the United States. Next season we shall have to cease the manufacture of basswood berry baskets and use maple. Had the state taken hold of this problem even 20 years ago, berry growers would not have to send to the South next year for berry packages."

The same condition exists in the industries using hickory and ash. Yellow poplar formerly used extensively for house siding is now rarely employed for the purpose. There is little No. 1 poplar standing in Ohio woodlands today.

The stumpage values of Ohio timber have doubled during the past decade. In some cases prices paid in 1917 and 1918 had increased three fold over those of 1913. Instances are on record where ash stumpage was sold for \$75.00 per thousand. Transactions where \$40.00 to \$65.00 were paid were quite common. White oak No. 1 logs brought from \$30.00 to \$55.00 per thousand stumpage. Values have decreased somewhat since 1918 in sympathy with the general slump in the hardwood market. There is at the present time, in fact, very little stumpage moving, but prices have held up remarkably well.

Good roads, accessibility, close proximity to the manufacturing points are responsible for high stumpage prices in Ohio. The annual cut in Ohio is 250,000,000 board feet. We consume annually approximately 1,750,000,000 board feet, or seven times more than we cut.

The CHAIRMAN. The next gentleman is from the Lake States, Mr. C. L. Harrington.

Mr. C. L. HARRINGTON, Commissioner of Conservation, Wisconsin, Gentlemen: I assume that the Lake States include Minnesota, Wisconsin and Michigan. Being personally acquainted with the situation in Wisconsin, I will discuss it first.

Now, what have we by way of a timber supply in Wisconsin at the present time? Wisconsin embraces about thirty-five million acres. About eighteen million acres lie in the southern part of the state, and today it is a large agricultural region. It has a generally rolling topography, becoming somewhat rough in the southwestern part of the state, but can not be considered as any thing but an agricultural

section, where one farm abuts right up against the other. Our timber supply can be found to a certain extent in this eighteen or nineteen million acres in the way of farmers' woodlots, and today we know that there is a considerable supply of very good maple and basswood, some oak, and a considerable amount of walnut, and the general hardwoods cut from the farmers' woodlots in southern Wisconsin.

Northern Wisconsin has about sixteen million acres which include about thirty counties. Of this sixteen million acres ten million acres are cut over for the most part. At the present time about four million acres are in farms and the balance of two to two and a half million acres is in forests. These timber stands would run from five to eight thousand feet, probably average about seven thousand feet. At the present time Wisconsin cuts something over a billion feet of timber a year. We have upwards of three hundred saw mills working in the state; that is, taking the entire state. We have probably fifty mills that would be considered good, big mills located in northern Wisconsin. There is upwards of twenty-five billion feet of lumber standing in Wisconsin at the present time, and there are a number of the larger mills which have cuts of from fifteen to twenty-five years ahead of them. Now, this timber is made up almost entirely of hemlock, birch, maple, elm and the general hardwoods. In other words, the supply of timber at the present time in Wisconsin consists chiefly of mixed hardwoods and hemlock with a certain amount of white pine and Norway pine scattered in here and there. There are very few stands of white pine left in the state.

As to the timber supply of the future it is problematic just where it is coming from, so far as Wisconsin is concerned. We are a flat land state, relatively speaking. In northern Wisconsin and to a certain extent in the central part of the state, we know of approximately three million acres of land which because of low fertility could be classed as forest land. Now, over two million acres of these lands there is a big question mark today as to whether they are going to be agricultural lands or forest lands, and for the remaining two million acres we can say with a good deal of assurance that eventually they are going to be used for timber production. Even in our most highly developed counties along the south Wisconsin border we find from ten to thirty per cent of the land still remaining in timber growth, as farmers' woodlots. When passing by on the train or traveling over these counties by auto one often gets the impression that they are pretty well wooded on account of one woodlot succeeding the other, or one stand of timber succeeding the other right across the country. So, all told, Wisconsin is pretty well provided for at the present time so far as timber is concerned, and the probabilities are that twenty or thirty years from now, unless something unusual happens, and unless the big agriculture momentum which is so pronounced in Wisconsin at the present time is modified, Wisconsin will have to look to other states for the bulk of the forest products she yearly requires.

Concerning the needs of Wisconsin at the present time, let me say we have a great number of wood-using industries within the state. I believe we rank third in the matter of paper and pulp-production in the Union. We have large furniture factories, sash and door establishments and excelsior mills of considerable size, and about ten years ago Wisconsin in her wood-using industries was using up a billion feet of forest products. That does not include saw mills nor does it take into account the stocks and the sales of retail yards located in nearly every settled town and hamlet in the state; nor materials going into mines. Even though we are large users of wood products at the present, I believe that board for board, Wisconsin still cuts enough annually to supply her needs. This situation of course is rapidly changing. As the years go by there is no question in my mind but that a great many of these wood-using industries are going to pass from the state or go out of

business. We know that the big saw mill is going to pass. We know that a considerable number of the short-lived industries, like heading mills, barrel and stave and small box establishments will move out. It will be a considerable number of years before the paper and pulp mills will cease operation. We find them extending out in every direction. At the present time spruce bolts are rafted across Lake Superior from the north shore of Minnesota or over from the Canadian shore, and yet that was unthought of eight or nine years ago.

It is pretty hard to tell just what the ultimate needs of Wisconsin are going to be in regard to forest products. Wisconsin is going to have a big rural population. The large areas of potentially fertile and valuable soils of the undeveloped sections of the state and the great enthusiasm for agricultural development at the present time indicate very clearly as to Wisconsin becoming a great agricultural and industrial state. As such she will need large quantities of forest products in the future and it is my belief that we in Wisconsin have practically passed for all time into the class of timber-importing rather than timber-exporting states. I am not very well acquainted with the general circumstances in Michigan and Minnesota. I think Michigan is a good deal in the same position today as Wisconsin as regarding her timber supplies and needs. I know that there are vast quantities of hemlock and hardwoods in northern Michigan. I think Minnesota is probably more favorably situated than either of the other two states. As far as I know, she is more favorably situated so far as timber supplies are concerned. I think of the three states that Wisconsin has less land that could be classed as forest land. I think that on some of the lands that I have been over in Minnesota there is no question as to its adaptability for forests and nothing else. It seems to me that Minnesota and possibly Michigan—I am not very well acquainted there—are left a much better opportunity in the long run to grow the timber they need than Wisconsin.

The CHAIRMAN. The west will be represented by Mr. W. J. Morrell, State Forester, Colorado.

Mr. W. J. MORRELL, State Forester Colorado. Mr. Chairman and gentlemen: I am from out where the West begins. The chief representative of the West who will respond for the West, our chairman, the governor of Oregon is very much where the West leaves off. The next stopping-point is the Far East. It is only through the courtesy of the old chief, Mr. Pinchot, that I am assigned a place on this program, because the thought came only this afternoon to him, and it is especially fitting that the West should be represented by a governor, especially a governor from Oregon, possibly from the city of which the following story is told. The city council of Salem once wrote to the council of an ancient city in Massachusetts suggesting that it was inconvenient and inadvisable that two important cities in the United States should be named Salem, and the city council of Salem, Oregon, suggested that Salem, Massachusetts, change its name. The West is not noted for modesty, and it is particularly fitting that the response for the West should be given by no less a personage than a governor. It would be a crime for me to mar this flow of eloquence which we have heard here today, and so I think I shall give my time to the Governor of Oregon, unless there are some specific questions which any of you might desire to ask concerning conditions in Colorado, which, by the way, is not a great timber-producing state, for as you know its forests are chiefly valuable as protective forests, maintaining the beauty of our summer resorts, our mountains, and to maintain our supply of irrigation water. However, I am gratified at the honor shown Colorado and to myself for this privilege of giving my time to the governor, who will represent the West.

Mr. ALFRED GASKILL, State Forester, New Jersey, in the chair.

The CHAIRMAN. The conference is waiting, I am sure, to hear from the governor of Oregon.

GOVERNOR OLCOTT. Gentlemen, this takes me unawares. I knew nothing of this, but a little later on I may have something to say about our problems out there and the conditions surrounding, but the gentleman from Colorado's mention of the West's modesty is a true story, and it might interest you to know the facts behind it, if you have not read of it—about the little town of Salem, Oregon, eighteen thousand people, asking the large town of Salem, Massachusetts, to step off the dock and give the Salem of the West the privilege of the sole, exclusive control over that name. The absurdity of it is shown by the fact that Salem, Massachusetts, as everybody knows, is the old witch-craft town of the early history of our country. The inside story is that the Salem, Oregon, Chamber of Commerce, which has for the size of the town quite an active organization, lost their secretary. They temporarily put in a young chap of about eighteen years of age, just graduated from high school and business college, and he, like a good many of us at that age, thought he was some pumpkins. The older I get the more I realize the little I know. I remember when I came out of business college I returned to my home in Illinois and attempted to show my father how to keep his books. He was an old New England business man, and you know how far I got with that. But at any rate this young chap thought it was not more than right that Salem, Oregon, possessing all the beauty claimed for it, should have the exclusive use of the name, so he wrote the Chamber of Commerce of Salem, Massachusetts, asking them to renege absolutely on the name. It got out in the press, but all the city of Salem, Oregon, got was advertising, that, without spending a dollar, was worth thousands of dollars to it. It is a joke with them that it was thought to be an advertising stunt; as a matter of fact it was just a boneheaded play. We heard of it in the New York papers, the Philadelphia papers, the Boston papers, the general tenor of which implied a compliment to the West on its initiative and originality in advertising, in devising a scheme that worked so well. It was just a schoolboy's bone headed play; but it seems to have secured results even if different than that intended.

The CHAIRMAN. Before passing to the next subject on the program, is it advisable to question whether there should not be something like a summary of this symposium, the bringing together of the representations and conditions that have been decided? I ask if it is in the mind of anyone to take up a few moments with that question. If not, having heard from Vermont, let us hear from Massachusetts, the Massachusetts plan for reforestation by Mr. Bazeley.

Mr. W. A. L. BAZLEY, Massachusetts. Mr. Chairman and gentlemen: The bone-head from Salem, Oregon, is not so very far away from me in appearing before you men and talking on forestry. In the first place, I know absolutely nothing about forestry except for my love of the outdoors and the way in which I have played with forestry on my farm in Worcester county. I first got interested in the ways of forestry by being one of the victims of the chestnut blight which struck Massachusetts, and when I had cut down one hundred and fifty acres of seventy-year-old chestnut it was not with a view of continuing the timber supply of the United States, it was with a view of self-gratification, it was my eye for beauty that impelled me to plant that area with white pine, and I rather think I am one of the few men, who have the position of state foresters, who before he knew anything about forestry planted one hundred and fifty acres of land to white pine. Now, when Major Stuart also asked me to say something here on Massachusetts state forests, we were in the position of the secretary from Salem. We have in Massachusetts what we call state forests. It is an absolute misnomer; they should be called state plantations. Before the state undertook anything at all about

fifty years ago a few men in the state down in one pine region, around in Plymouth county, started some plantations of pine which have been very successful, and my chief forester tells me that it has always been with a great deal of doubt that lumber men in the country have heard the stories of the growth that those plantations have made. The first official plantations in Massachusetts, as one might call them, were made by the Metropolitan water board, which board supplies the water for the city of Boston. They conceived the idea of planting the lands which were adjacent to their water supplies, and in the year 1900 began such planting. I believe now they have upwards of three thousand acres of land in very successful plantations. In 1904 the forestry department in Massachusetts was started. It was only started in a small way, and for many years it gave nothing but technical advice, did no forestry business of its own, as we had a very small and rather hazardous beginning. In 1908 the legislature passed our so-called reforestation act. The reforestation act in Massachusetts allows any citizen of Massachusetts to turn over to the state, either by selling or by gift, tracts of land not exceeding eighty acres, which the state can take and replant, and then any time within ten years the former owner of that land has the privilege of repurchasing the same, paying the state the money that has been spent on it for planting, care, and so forth, and in case it was sold to the state in the first place four per cent of the original price. Now, that has been a wonderful educational method of bringing reforestation before the people of Massachusetts. At the present time there are about one hundred and seventy of those lots, reforestation lots, embracing about seven thousand acres, and they are scattered in the various parts of our small state. You must remember that we have only five million acres in the state of Massachusetts. The seven thousand acres are, therefore, scattered along the state in one-hundred-and-seventy-acre lots, and the people in the vicinity of those lots take a great deal of interest in watching them grow. Of course, they are only beginning to show what they can do, and the people are getting interested in them. In 1914 a special commission was created by the legislature, known as the state forest commission, whose duty it was to buy up wild and waste lands, of which we have about one million acres, at a purchase-price of not more than five dollars an acre, forming them into state forests and planting them, and using them not only for forest purposes, but also for park purposes, to enlist the good-will of the people and the encouragement of forestry, and also to try and get the people out in the open air. That commission proceeded very slowly, and in six years they only succeeded in getting altogether fifteen thousand acres of land, divided into five so-called state reservations. In 1919 the department of conservation was formed in the revamping of our whole state government, whereby we reduced the commissions from one hundred and seventeen down to twenty departments, and in the department of conservation was placed the division of forestry, the division of fisheries and game, the division of animal industry, and the authority of the state forest commission was turned over to the state forester. When I was asked by Governor Coolidge to take charge of that department, I might say that I had everything from trees to mad dogs, and wondered why on earth they had done such a thing. Now that I am speaking, and referring to what Mr. Peters has said, in regard to the formation of the department of forestry, it seemed perfectly absurd to me to take hold of a department with the division of animal industry in it. Of course, it is a conservation measure, but it does not belong with forestry, it does not belong with fish and game; it was just a neat play of the man at the head of that division who did not want to get into the agricultural department, and by scouting around beforehand with friends in the legislature and getting an agreement that he should not be abolished, his was the only one of one hundred and seventeen commissions in the state that was not abolished. He was taken up bodily and put into the department of conservation as his department was constituted then. If any of your states con-

template revamping your departments, get busy and pick the units you want to get in with, then make friends with the legislature. Now, they made another mistake in revamping us, and that was that under the law the conservation commissioner had to be the director of one of the divisions, and Governor Coolidge designated me as state forester. It did not take me long to realize that the scheme of the legislature of saving one salary would never work out, and after serving in both capacities for one year and giving my entire attention to the division to which I was assigned, and very little attention to the other two divisions for which I am responsible. I have succeeded in getting the supervisor of administration to recommend that the conservation commissioner shall not be a director of one of the divisions, but should be head of the department, and that there should be a divisional director for each three divisions. I am perfectly sure from your talk that that would be according to your views. Last year we had a very interesting chance to size up the Massachusetts scheme of awakening interest in reforestation. The Massachusetts Forestry Association got the bee in its bonnet that the time had come to try and get a great deal larger scheme of reforestation started in Massachusetts. It was the first year that under the revamping of our constitution we were to act under the initiative and referendum, and they decided that they would try it out. The secretary went over the state, passed circular petitions in various towns, and we found that the returns from the towns that had these small reforestation plots in them had no difficulty in getting signatures for the greater work for the state to do. Everybody signed the paper as soon as it was brought to them. The consequence was that when they brought that petition to the legislature for legislation on reforestation they had thirty-six thousand signatures and it did not cost them a cent to collect them. When the bill came before the legislature it called for the taking of two hundred and fifty thousand acres of the wild and waste lands at a price not to exceed five dollars an acre, the expenses to be borne by a bond issue. That was too new an idea for Massachusetts altogether. In the first place, the legislature did not want to pass the amount of money necessary for two hundred and fifty thousand acres, in the second place they would not look at a bond issue, but in the final analysis they were absolutely scared to death at not passing something as long as it was the first petition brought up from the people on the initiative and referendum. We spent several months trying to figure up some scheme that we could get the legislature to agree to and which would be suitable to the proponents of the legislation. The last week of the legislature they passed a bill directing me to buy one hundred thousand acres of wild and waste land at an average price of five dollars an acre, and to reforest the same, allowing me three million dollars which I could draw on at any time, the only direction being that I must buy the land in fifteen years. We have purchased under that act about fifteen thousand acres since the first of October. Now, this is a case where it may apply to your question about Indiana. I do not believe that in the state of Massachusetts it is a business-like proposition to have less than six or seven thousand acres of contiguous land to administer, but I do believe that the educational value of having a smaller plot of land is of so much more importance at the present time that wherever I can get five hundred acres in one plot I am taking it, and hoping to get in the very immediate vicinity of that five-hundred-acre plot more land, building up my seven or eight-thousand-acre or ten-thousand-acre plantation from that as a nucleus. I believe the educational value to the people, to get them interested to do this reforestation work on their private lands, is worth the extra amount in administration fees. One other thing on the purchase of these lands. Of course, it was contemplated that all the purchases be made from the wild and waste lands which are not producing anything today, but I am going on the theory also that it should be our care not to allow any more wild and waste lands to be manufactured. So I am going to the lumbermen and asking them where they are cutting off timber whether they

will sell me that land when they get through with it, at the same time agree to certain reservations in their cuttings. I have all of ten thousand acres of land, where the lumbermen are simply cutting out the soft wood, which are about twenty-five per cent of the holding, and they are not touching any of the hardwood below ten-inch stumpage at the ground and a six-inch stumpage on the soft wood. I am also getting those men to leave all crooked and seed trees that are practically worthless for lumber no matter how large they are, and they are leaving them on our land; my idea being that instead of having such large tracts to reforest we can get in there early after the lumbermen and reforest just the land that has been cleared by them, in the midst of the hardwoods. The state is getting a very valuable asset which it can afford to hold for a number of years where the lumbermen will not. Whether I shall get caught up on that by some legislative bill I do not know, but I am taking a chance while the going is good.

We have also in Massachusetts seven reservations which have been bought by the state which cover about fifteen thousand acres, and which might be called beauty spots or scenic sights, which cover the mountain tops, and these have been bought by the state in conjunction with the counties, the state paying the purchase price, putting them in the care of special commissioners, the counties paying all the expenses of the administration. Very little work has been done on them except on Mount Wachusett, where they have had a very interesting experiment with prison labor. One particular law in relation to the forest is that wherever possible we shall use prison labor, who are trusted. Lying right outside of the city of Worcester we have drawn very heavily on the county jail there and have been very successful, indeed, in replanting Mount Wachusett with that prison labor. We found they did better work than all the day-labor we could hire. The men took an interest in it and were glad to work there, I was interested in another way. I was on the prison commission at the time that they went in, and they did not have to have any guards on these men. They went out in gangs of thirty-five to forty men, and it was understood in those gangs that if any man escaped from the gang that was working that day the rest of the gang did not go out again. The significant thing that we saw there was one man tried to escape and he was nearly killed by the rest of them, but that was the only escape that was tried in that whole reforestation business. It was a very successful thing. Since the Volstead Act came in we can not call on prison labor so much because we do not have the petty offenders and we can not get any prison labor at all.

We have in Massachusetts three state nurseries at the present time, and the output for the last five years has been one million and a half transplants per year. Last year we put out two million and a half, and we are immediately enlarging now to an output of five million and looking at a ten-million basis just as quick as we can get the nurseries in condition, not only for our planting, but because one man put a nigger in the wood-pile that was gotten through in that forestry bill. There was a joker in that bill that I was compelled to furnish plants to cities and towns free for use in their town forests. We have been making a rather fair income in selling transplants at cost for the last two years and where one city has been taking ten to fifteen thousand trees a year at seven to ten dollars a thousand, we are now receiving requests for next year of one hundred thousand free trees with the expectation of jumping to two hundred and fifty thousand just as quick as I can grow them. It is not altogether a bad joker, it just shows that there is a great interest in Massachusetts in bringing the land back to forest condition.

At the present time our cutting is between three and four million feet a year and we are importing two-thirds of the lumber we use. At the hearing on this big forestry bill last year two of the largest lumbermen in the state made the statement that their freight charges for lumber that they brought into Massachusetts to sell was more than the cost of the lumber. I am glad to say that one of those lumbermen was in the legislature and helped me very much in getting the bill through, and the other one has just come into the legislature and is going to be a chairman I hope of a new committee of conservation which is to be a subdivision of our legislature from now on. So I am looking for a good deal of support in anything we want.

Now, as I have said before, I do not know anything about forestry. When I was put there I told the governor that I went there with the feeling that I did not know anything about forestry, that what I was going to do was to look at it from the outside standpoint and the business man's administration instead of the department. When I took the department I found good men there, splendid men, in the personnel of the department. I found lots of red tape and I found very little responsibility given to the men in charge of the various work. I have always believed in business, (and I do not see why it should not be true in state business) in picking a man out for a job, giving him a single thing to do, and then if he does not do it hold him accountable for it. Don't have two or three men tied up in reforestation work each one not knowing just where his line is, but tell him just exactly where his line comes; then nobody is going to bother him as long as he does his job, and if he does not do his job he is going to get out. I believe we have got more work done this year than has ever been done before, and at less expense, and I think with a great deal less friction between the inside and the outside on that account; the men knew when they said a thing that they were going to be backed up, and they knew that they had authority as to all matters of state policy to take care of everything in their particular end of the job. As I said, this reforestation game with us I do not consider a forest job at present, because save for a few years of planting we have not any such thing as state forest; I therefore put all our so-called state forests into the hands of our state fire warden, because I do not see any sense in reforestation unless your fire control is good, and until he tells me that a certain tract is prepared for planting I am not going to plant it. I am not going to put in half a million trees without any fire protection other than a general fire protection in the future. Where we are getting these plots which I consider call for future growth of forest, they must be protected, especially for experimental purposes, and where those places occur I am going to have fire lines around those reservations and through those reservations and have them properly patrolled before they are planted.

Just one other thing and then I will let up. It might be a help to some others. We have had a great many complaints in the last few years from the devastation that is caused by automobilists. It has increased tremendously since automobiles have come into use generally, the stealing of Christmas greens and the cutting down of trees. Now, it has come forcibly to us because our plantations are getting just to the age when they look like bully Christmas trees, and the automobilist is coming along and filling his car up from anybody's land. He does not care whose it is. They are only wild trees and they take them with them, thereby ruining the plantations, or at any rate carrying off property from another man, where the value is very little in itself, but where it has taken ten or twelve years to bring the tree there and where the man wants it to grow for forty or fifty years more. I have just succeeded in getting an arrangement with our registrar of automobiles, and we have published it in every paper in Massachusetts, that any man convicted for stealing trees or shrubbery from any man's property upon conviction will have his license taken back. Now, a man does not care about five

dollars' fine if he has got one hundred dollars worth of trees on his automobile, but he does not want to lose his license on his automobile. We have worked that in conjunction with our hunting licenses where we found that there was a great deal of complaint from the farmers all around my county. Before I went into office, their fruit, their vegetables and berries were stolen by the hunters; so this year we got the highway department to agree that anybody convicted of stealing from a farmer who had a hunter's license would have that hunter's license revoked. After two convictions this year we had no further complaints from farmers in our department.

Mr. PINCHOT. May I ask a question? I was very deeply interested in Mr. Bazeley's talk on the Volstead law. We are in the same fix in this state. We have arranged with the state institutions to do our tree raising for us, and we have embarked on the program of raising twenty million trees a year at the penitentiaries and insane asylums, and so on. I have laid before the directors of these institutions the statement, as strongly as I knew how, that here was the kind of labor that would fit the men they have. I was particularly interested in what you said in regard to prison labor, and was going to ask if there is any printed account. If you would give me a couple of typewritten pages, I will appreciate it, and will see to it that it gets to the very men in Pennsylvania with whom I am taking that work up.

The CHAIRMAN. Are there any further comments?

If not, the next paper will be on Stock Surveys in the State, by Mr. F. W. Besley, of Maryland.

Mr. F. W. BESLEY. State Forester, Maryland. I am going to tell you very briefly and very simply of the system of forest surveys that was undertaken in Maryland at the time that the forestry work was inaugurated, in 1906. We felt that it was exceedingly important for us at the outset to learn at first-hand just what we had in the way of forest resources, very much as the business man makes an inventory of his stock in order that he may more successfully and more intelligently conduct his business. Fortunately, in Maryland at that time there existed very good base maps. The state geological survey for a number of years in co-operation with the United States geological survey had been preparing topographic maps of the different counties in the state. At the time we began our forest surveys probably three-fourths of the state had been covered in that way. In addition to topographic maps there were geological maps, and soil maps of many of the counties, so that we had a very good framework to begin with. Since these surveys of the minerals and of the soils had been found valuable, it offered a very good suggestion of carrying out the same thing in regard to our forest areas. Maryland has a variety of conditions. We have the coastal plane, the rolling country, the uplands, and the mountains, practically all of the conditions to be found in any other state. So the kind of work that was done there may be carried out equally well in other states no matter what may be the surface conditions. We have found that those surveys are exceedingly important in the first place as giving us a reliable inventory of all our forest resources, and as a basis for an intelligent state forest policy. The forest maps are of great help in preparing fire plans. Knowing where the bulk of the forest lands are situated it is possible to see at a glance where are the greatest fire hazards and better locate fire wardens. We have found them of incalculable value in many ways and use them constantly.

The first requisite in establishing the forest-surveys is a good base-map. Any state that does not have a good topographic map to begin with is very seriously handicapped. I think however that most of the states in the East have their areas very well covered by these maps of the geological surveys, which are very reliable, and that situation is largely met. The second requisite is a good working field force that can make maps and estimate timber. In Maryland the county is the unit so we worked up each county separately. We used men with considerable training in the matter of mapping and some knowledge of timber estimating, sending one in a county, with a base map upon which was projected in outline the various forest areas. In this connection we found that the geological survey in making maps, in the last fifteen years at any rate, had generally outlined the wooded areas. These are in the form of woodland sheets. These sheets have not, many of them, been published, but they are on file in Washington, and we copied them on our topographic base maps where such data was available. We found they were very accurate and helped us enormously in making out forest maps. One of the important considerations in making forest maps is that the work shall be standardized. If it were physically possible for one man to make all the maps so that his ideas of timber stands could be carried out in a very uniform way all over the state, it would give the most uniform results but, of course, this is impossible. When we started out we took about three or four counties at a time. One man was assigned to a county, and then a forester was assigned to supervise, in order to keep all the work up to a certain standard. The mapping included the outlining of the forest areas, and we noted areas of five acres or more in extent; but the data also required the delimiting of forest types. The forest types used were commercial types and not forest types as generally understood. In most of Maryland we have hardwood forests, and we divided the hardwood into three general classes, beginning with the very young stands up to about twenty feet in height, which we put into the sapling class. Then we took the culled forests, which has been cut over, and which generally did not contain a sufficient amount of timber to justify logging operations. We called this the culled class, and in that we had about three different sub-divisions. Then we took the merchantable class, which contained a sufficient stand of timber on the average to justify logging operations, and this was divided into three or more different classes, the class being determined by the average stand of timber per acre. Likewise in the pine forests we divided them into a number of different classes, so that when our map was completed we had not only the exact location of the different wooded areas, but we also had them classified as to the stand of timber. In order to standardize the classification by these individual men the forester worked with them at different times, taking an occasional sample plot in order to check up their estimate. This was done all through the period that they were making the surveys, so that we felt that the results obtained were uniform. In addition to securing the detail surveys or outlines and classifications of forest lands we also gather an immense amount of other information. For example, we found out the uses of the forest in the different sections. We found out very much about the fire damage in the different sections. We found out the number saw mills that were operated and the approximate cut of timber in the county, and in fact all the detailed information of that sort was secured at the time the surveys were made.

The method that was used in taking these surveys depended somewhat on the character of the country. In the very rough sections where roads were very poor, the forester traveled on horseback and worked out from a control point for several days at a time. He would cover approximately fifteen square miles per day; this varied somewhat, but that was about the average. Where the roads were suitable for vehicular travel, which was the case in probably nine-tenths of the state, he used a horse and buggy. He drove over all the roads and a great many of the

private roads, got into the timber a great deal, and in this way he could cover about twenty square miles per day. Then in some sections where the roads were exceptionally good and conditions were very favorable, the automobile was used. Most of our survey work was done some years before the automobile was used as generally as it is now, so that we did not cover very much of the state in that way, but we found that in this way approximately fifty square miles per day could be covered.

In regard to the cost of the work, this I believe would run between forty and sixty cents per square mile for the field work, even under present conditions. At the time we made our surveys the average cost was about thirty-five cents per square mile for the field work. We found that working up the field data and publishing the maps on this large scale was rather expensive, consequently we have published large scale maps of only about one-third of the counties of the state. We have twenty-three counties. Here is a forest map of the agricultural section (exhibiting a map). This county has next to the smallest percentage of woodland of any county in the state. We use two colors on our maps. The red is hardwood, and the green is pine, practically all are hardwood in this particular case (indicating). This represents the forest in one of the heavily forested districts of the state (showing another map). This has 62 per cent of forest land. These maps were made up in this form of approximately a mile to the inch and put inside of one of these forest reports, which gives much information regarding the forests of the county. We found that probably one of the most expensive features of the thing was to publish these maps. These are all lithographed. This map here I think cost us in thousand lots, thirty-five cents each, so that we could not distribute them very generally. Consequently we adopted another plan; the large field maps of the different counties were reduced in scale to three miles to the inch and published in the Report of the Forests of Maryland, giving a small scale forest map, and much detailed information about each county of the state. We use these maps constantly, and have found that even if we did not publish them that it would be well worth while for the amount of detailed information that is acquired in these surveys. We sometimes have men come in who want their wood land examined, and with one of these maps they can very frequently locate their particular wood land.

The question might be raised as to the value of these maps in view of the fact that a great deal of cutting is going on and the commercial types will change. Maryland is a state that has been almost completely cut over. We have a very small percentage of original growth, so that the changes that are taking place are not very radical changes. We find that these maps are quite reliable even where cutting is going on, because it does not change the types very materially.

Maryland, I believe, is the only state that has a complete forest survey. Other states have done some work along this line, and found it practicable. Where good topographic base maps are obtained there is no doubt of its practicability, and I believe is the very best way of showing graphically forest conditions. (Applause.)

The CHAIRMAN. Are there any more remarks on Mr. Besley's description of the work in his state?

If not, the next subject will be "The Acquisition of Lands by the State," by Mr. G. W. Woodruff, of the Pennsylvania Department.

Mr. G. W. WOODRUFF, of the Forestry Department of Pennsylvania. Mr. Chairman and gentlemen: Mr. Pinchot has told you about the value of publicity, and so forth, and his publicity man is becoming so very active under his good tutelage that he hustles me to write out my part on this subject, and while I sat here listening I could have made a very much better talk than I did if I had waited to write it out until afterwards.

I think this question of the acquisition of state forest land divides itself up into such questions as: Why should the state acquire state forest lands? What shall it acquire? How shall it acquire it? And then subordinate questions like title examinations, reservations to be allowed in the deeds, the question of taxes, payments by the state in lieu of taxes, and what use this land will be put to after it is obtained. Now, that is about the way I would have approached this subject if I had the opportunity after listening to the address of the eminent gentleman from Maryland. Nevertheless, I am going to read some of what I did write.

At our present stage of civilization this country tacitly assumes, as a general proposition, that the state should not enter into any business other than the administration of government affairs. However, this rule has broken down, and will continue to break down whenever the public welfare is in material danger. During the last war those who were in business, as I happened to be then, were amazed by the way that the government stepped in and interfered with private business. The company that I was with had some sea-going boats that were commandeered. One of these boats was earning seventy thousand dollars a month. The government took it and said, "Continue to use it in just the same business, and we will let you have twenty-three thousand dollars a month; the rest of it will go into the hands of the Shipping Board." We have heard something lately of the rule that the state will not interfere with matters that are in the hands of private business, but it breaks down, as I say, when the public welfare is in grave or material danger.

The protection, production and reproduction of forest products, up to the point where they are to be manufactured and disposed of outside of the forests themselves, has been unconsciously recognized as one of the matters vitally affecting the public welfare, present and future, and also apparently not safe in the hands of private land owners.

Consequently, as far as I can see, without any open recognition of a revolution in the ideas of proper government activity, the nation has set aside one hundred and fifty-five million acres of land for forest purposes, and Pennsylvania (as an example of state activity in this direction) has already purchased from private owners one million one hundred thousand acres of land for state forest purposes.

Practically all business interests are directly affected by the lessening of timber supply, and all governmental agencies recognize that the nation and the states shall own, protect, reforest and afforest enough of the land not valuable for other purposes than growing forests, so as to meet the principal part of the forest-product needs of the country.

So much for why, as far as I can see, we should acquire forest land, not because the state wants to go into the business, not because the Federal Government wants to go into the business, but because there is a vital economic need to protect the public welfare which has forced itself upon the attention of the state and nation and forced them to break every general rule without hesitation.

In purchasing land for state forest purpose the Pennsylvania Department of Forestry has assumed the following attitude: First, that for the present they can

leave the farmers' woodlots to the good sense of the farmers; second, that for the present any forest land actually valuable now, or in the immediate future, for lumbering purposes should, for the present, be left in the hands of the private owners on the ground that they will not allow valuable property to be destroyed by fire, if they can help it; third, that even the most barren land capable of reproducing any kind of wood-growth, and particularly the land which will require a long period of protection to make it productive, should be acquired by the state as rapidly as funds are available.

Following out these principles, the state is likely to buy cut-over and desolated forest land at two dollars per acre when it is not worth more than that in the open market rather than to buy good forest land worth fifty dollars per acre for, say, twenty dollars per acre. This is not the business viewpoint, but it is the attitude of the state, which is not thinking so much of making an immediate or money profit as of protecting the welfare of its citizens, particularly of posterity.

During the last summer and fall the bureau of lands has with considerable effort secured formal offers of three hundred thousand acres of land, with a promise that, provided our appropriation of this winter requires it, as much more will be offered at low prices. Besides this there are six thousand acres being offered every day, and beside that three hundred thousand acres are apparently in sight if we need them, which means that there will be upwards of a million acres ready before the legislature can pass this appropriation bill, and the object of getting the offers is in order to get competition, if there is a large appropriation, especially to maintain competition amongst those who are willing to sell their land. With an appropriation of two million dollars, and only land enough to take up two-thirds of that, I can readily understand that those who offer their land would try to get a higher price than they would if they knew we had offered worth three million dollars and only two million dollars to pay for it, especially if they understood that the present thought of the Department of Forestry is that, other conditions being the same, the land offered at the lowest price per acre will be given first consideration. The "other conditions" would be particularly the advantage of the land in rounding out or completing our present state forests, and possibly the presence of a house or other buildings valuable for use in administration purposes, which would be a small factor even in acquiring as little as three or four hundred thousand acres of land.

If enough appropriations can be secured this winter there will probably be one or more new state forests started, particularly in Sullivan county, where a compact body of more than one hundred thousand acres valuable for state-forest purposes can be secured at low prices.

If you will glance at the map of the state of Pennsylvania (indicating) you will see that the state forests make a considerable showing. Pennsylvania is one of the small states comparatively speaking, nevertheless it is much larger than others. It could be said without casting any reflections upon any one that this area of six million acres which is contemplated to be purchased, is larger than the entire state of New Jersey.

Mr. GASKILL. In quantity not quality.

Mr. WOODRUFF. In quantity it is larger. You will see the green here (indicating on map) are the present state forests. It is nearly one million one hundred thousand acres, which makes quite a showing on the map. When it be-

comes six times as great, as it properly should and is believed to be necessary by the present State Forest Commission, you can well imagine that that map would look a little like Ireland, especially if these red spots become more conspicuous as the game commission sets aside further game refuges.

The average paid thus far for state forest land is two dollars and twenty-eight cents per acre—I was going to show you, here is a place right in here (indicating) where Sullivan, the southern border of Bradford, northwestern Luzerne, and southwestern Wyoming, come together; there is a piece of land, I think considerably over one hundred thousand acres, which may be gotten. There are probably here six or seven thousand acres that will ultimately become state forest land.

There is another place where forest service allows it to be made public, and I am not giving anything away, namely, in the four counties right here (indicating) of Warren, McKean, Elk and Forest county, and where are certainly eight hundred thousand acres there on the head-waters of the Allegheny that about on one hundred and fifty thousand acres right over the line in New York, and it is within the range of possibility that under the Week's law it might be extended in time further south. There (indicating) is another place where the state could easily put a forest, several hundred thousand acres, and not take any land that anybody will claim is valuable for agriculture at the present stage of the development of agriculture and the need of the country. The average paid thus far for state forest land and is two dollars and twenty-eight cents per acre. The law restricts the Department of Forestry to a maximum of ten dollars per acre, but the Department does not pay as high even as five dollars per acre except with extreme reluctance.

Dr. ROTHROCK. For the surface right alone. That ten dollars an acre contemplates even taking only the surface.

Mr. WOODRUFF. Yes, the surface.

On July seventh, 1919, a specific condemnation law was passed, which provided that if the Commissioner of Forestry believes that land should be acquired for state forest purposes, and can not agree upon a price with the owner, or can not find the owner, he may enter upon and take possession of the land, and thereafter, by means of viewers appointed by the court, the price to be paid will be fixed.

This law has not been tested, but it has already been decided to use it in two ways: first, in order to get rid of obnoxious interior holdings; and second, in order to obtain good titles in particular instances where the land is desirable, and the alleged owners are willing to have an agreed verdict at a low price, if the court should decide that it has power in the condemnation proceedings to determine the right of these alleged owners to receive the purchase price.

Land has been purchased in Pennsylvania for state-forest purposes with allowance of all kinds of reservations, such as oil, gas, coal and other minerals, rights of way of all kinds timber cutting rights, and so forth; but the Department of Forestry has established the principle that except for rights of way, which may be reserved during their use, all reservations must have a definite termination in time; also that mineral reservations will not be allowed unless there is reason to believe the mineral is existent in the land, and that discovery must be made within a definite time, and production of mineral known or discovered completed in a definite time; also that timber cutting rights will never be allowed except when the land is highly desired for state-forest purposes, and the Department is sure that the timber-cutting allowed would be exercised upon the land anyway if it were not purchased. The

theory is that since the private owner can, under the present state of the law, cut as closely as he desires if he retains title, the state will be in no worse position, and, perhaps, in a better one, if it buys his land subject to timber-cutting rights with all reservations at an end as soon as any determinable unit of land is cut over once.

That is slightly different from Mr. Besley's idea, as I understand it, that he would take land when the cutting is complete, that his idea is to actually buy the land and take the title and record the deed, and the former owner is left in charge of the land with the right to cut, and then turn it over to the state, but only the right to cut according to the reservations. Of course, the state owner of the land can be there to see what he is doing all the time.

In Pennsylvania every kind of utilization of the land and resources of the state forest is allowed either by specific law or by general power granted in the act of February 25th, 1901, permitting the State Forest Commission to establish such rules for the control, management, protection and development of the state forests as in their judgment will conserve the interests of the commonwealth. Such utilization includes camping permits; recreational sites; rights of way of all kinds; business use, such as hotels, boat-houses, etc., timber sales, mineral leases of all kinds, water uses, and, in fact, every possible utilization of the lands and resources of the state forests which is not harmful to the purposes for which they were established.

Payment for the state forests has been made thus far by appropriations, the first purchase being seven thousand eight hundred and eighty-four acres in 1898; the largest purchase in one year was one hundred and seventy-one thousand three hundred sixty-four acres in 1902; the smallest purchase five thousand and fourteen acres in 1916. The average number of acres purchased per year over a period that we may call twenty years has been fifty-five thousand acres annually.

The examination of titles has been carried on in this state in a way that sometimes caused the Forest Commission, I can say, to stop and think, and it is stopping and thinking now about it. I sometimes shudder at the responsibility for whoever is the head of the acquisition bureau, if he had to determine these titles himself, and I would shudder more for the Attorney General's office or the Department of Internal Affairs if they had to examine them. On the other hand, I suppose that we should not be afraid to depend upon administrative officials to do their duty and to attend to it and do it just as well as an out side agency.

One outside company known as the Potter Title and Trust Company of Pittsburgh has examined and passed upon the titles to the Pennsylvania state forest land, without insuring them. It has simply given a certificate for each case directly after it has examined the title and has cleared up everything that it deems necessary to have cleared. It certifies that the title is good in the opinion of that company; and there has been so little loss of land, and so little trouble with regard to the title, that it has practically exemplified the practice used. The system of bookkeeping up to this year has not been possible for us at a prohibitive cost of time and expense, to determine exactly the question that the state forest commission asked me right away, how much is it costing; but we do know now how much it is costing, and we can draw conclusions from that.

The only other thing that I will speak of is the taxes. This state has assumed the attitude that if it takes away from taxation as much land as you see here in green (indicating), and ultimately nearly six times as much, it is not fair to the county and the township, to the roads and schools, to the poor and those who have charge of

the roads and the schools and the poor, to take away from them the opportunity of taxing the land and not do something in lieu thereof. Hence they have adopted the law that for every acre of land set aside as state forest land, the state shall pay two cents per acre for roads, two cents for schools, and a cent for general county purposes. At this time what they get is certainly equal to what they would get for taxes; but much of the forest lands of this state, and perhaps of other states, is taxed, and perhaps properly so below its actual value, whereas under the law of the state it is supposed to be taxed at its actual value.

Just one last word, in passing, and because it was brought out by somebody here, and perhaps would be a matter of importance, and that is the question of what this state does in regard to exempting forest land from taxation to try to encourage the growing of forest crops. First of all, the practical thing we do, and then the important task of drawing a conclusion from the practice here and probably in some other states. Practically we have passed what is known as the auxiliary forest reserve law, whereby anybody who has forest land may get his land identified by the department of forestry as an auxiliary forest reserve. There are certain rules in regard to the care and management of that land which are promulgated by the department of forestry. There is supposed to be an inspection of this land from time to time to see that the owners live up to these rules. Under this law they can not be taxed more than the bare land value and not more than one dollar per acre. When they are ready to harvest their crop they must announce that fact and they must pay ten per cent of the stumpage value determined ahead of time, and may be required to give bond for the payment of this ten per cent. That law was passed in 1913. I think there were only eight thousand acres out of the twenty-four million acres of this state that have been put in the auxiliary forest reserve. Even this small area has never been inspected, but one of these days it will be inspected to see what is happening to the eight thousand acres or so. I hate to take issue with friends like Mr. Wirt, eagle-eyed and eagle-brained, but after all the facts are substantially so. I may be a little bit wrong in some of these things. I did not prepare for this particular point, and even though it is eighteen thousand instead of eight thousand acres it makes no difference. The principle of invoking the "coax method" of getting people to produce timber seems to break down. I do not know whether that is so, but for some time I have been confident it is.

This state also had a law for planting trees along highways which was taken some small advantage of, but I doubt very much whether it was a success. What I am advancing, however, is rather an expression of opinion. That the "coax method" of getting private individuals to grow their trees does not work. There may be some other way of coaxing that will work. I believe that we have got to have a "prod method". But you are never going to use the prod method on the man who is handling his own private land until it becomes vitally necessary to the public need, but that is the very thing which is coming, as Colonel Greely and Mr. Pinchot told you today. The nation or the state, or both, certainly are not going to let this land become desolated, devastated and unproductive when we know that time is coming. If it does, we will be in the same position as China and other states that have done the same thing.

Dr. ROTHOCK. In regard to the tax law, I do not think it was ever very cordially received.

Mr. WOODRUFF. The auxiliary forest reserve law?

Dr. ROTHOCK. The auxiliary, yes, by the forestry administration. My colleague and I on this commission were very much interested, although for several

years we had been exercising our wits to see if we could not bring about such a condition of affairs as was contemplated there; but it was very coldly received, I think, by the past forestry administration. There never was very much public interest shown in regard to it. It should have been pushed a little into the public notice.

The CHAIRMAN. What might have been the bearing upon that thing?

Mr. WOODRUFF. I do not think at that time it was contemplated at all by the parties that were interested. It just seemed to be a case of indifference. I think that because the question never was raised in the minds of these prospective applicants for those lands as to what the fire-menace was. It just seemed to fall flat.

The CHAIRMAN. It did not appeal.

Mr. WOODRUFF. It did not appeal. However, I may add something along that line by saying that ninety-five per cent of the timber owners do not know that there is such a law. There were some applications made that I know of that I never succeeded in having action taken upon, and that leads me to think that probably the partial explanation of the failure was the indifference of the past administration to look after that particular aspect of forestry.

Mr. HARRINGTON. I would just like to ask a question with regard to the payment of the taxes on the lands that were taken over by the state. I was wondering whether that question was ever considered by the supreme court of this state, and as to whether or not these payments were made from direct appropriations, or whether they are paid out of the receipts that the department takes in, or just what the method was.

Mr. WOODRUFF. It would be interesting in the line of what we are talking about. They are paid out of a direct appropriation. There is an appropriation for that purpose. The receipts of the state forestry department in Pennsylvania from any source whatever, are paid into the school fund of the state, and none of the net receipts of the state forests are retained. But it would also be interesting probably to the outside state foresters, Mr. Pinchot. Because the proceeds have to be paid into the school fund, the department of forestry has no good out of its earnings of any kind. Dr. Rothrock, considered away back, that it was net proceeds that were meant by the law and not gross proceeds, and this summer we put up to the Attorney General the question of whether the law meant net proceeds and whether, when in order to make net proceeds from some particular kind of activity, operation or utilization, we might actually use the money we receive, to put in our own portable saw-mills, cut blighted chestnut trees, in short whether or not we might pay all these expenses out of the gross receipts, and then identify and turn over the remaining net proceeds to the school fund. The Attorney General found that there had been a decision practically to the same effect a great many years ago, and confirmed it to our great advantage not only in handling the questions like the blighted chestnut but also to the school fund itself, because we could not have induced an outsider to come in and pay stumpage to take out these scattered chestnut trees.

Dr. ROTHROCK. I happened to be right on the inside of that chapter of the school code. It was drawn up by Dr. George M. Philips, who was a townsman of mine, and in drawing up that particular portion of the school code he wanted to know how the forestry department would look upon it. The original draft was that

the proceeds, simply the proceeds, meaning the gross proceeds of the sale of timber and all that, should go to the public school system. I insisted that that was unfair and that it should be made net proceeds, and that was the statement I believe in the law. It was not a question of whether the net proceeds or the gross proceeds was the rule, but it was in the construction of that rule that the net proceeds were distinctly specified in the agreement that I had with Dr. Philips. And here was another thing. We wanted growing timber exempted from taxation. This tax law grew out of the clause in our state constitution, I believe, which says that all taxes upon property of a given class shall be evenly laid, that in other words there shall be no exemption from taxation in a taxed class. We tried to have this phrase alone, as the gentleman from Alabama has suggested, omitted. We wanted some system by which taxation could simply be evaded, but there was that constitutional clause which confronted every governor from the time of Governor Beaver down, until the time that this law was finally passed. We had wrestled with them in the courts, so that we could by some means exempt the state lands, or the lands that we wanted for forestry purposes from taxation, but it was not possible and finally we resorted to this auxiliary system, which originated with Mr. Elliott.

Mr. BAZELEY. The way in which we take timbered lands which are to be cut, we take the title of the land and pay over the money with the reservations in the deed, because in that way we feel we can hold the lumbermen to the reservations much better, because if they don't observe the reservations we take back the land, and they lose.

Mr. HARRINGTON. I still want to know if this matter has ever been put up to the supreme court of the state. It has been in our state.

Mr. WOODRUFF. This law was taken as a matter of course, and nobody ever raised any objection to it in the way of a quo warranto proceeding.

Mr. HARRINGTON. It may be interesting to know what happened in our state. We were up against the same situation. About five years ago something in the neighborhood of two hundred thousand acres was purchased in the northern part of the state, bringing the state's holdings to three hundred thousand acres in four counties. In some of the towns this state land, which was exempt from taxation, rose as high as seventy to eighty per cent of the acreage. Now, the government, the local government, could not stand the expense of road construction, schools, and so forth, and later on there was a vigorous and in most cases justified opposition to the development of the general forest plan that was being carried out. The whole opposition I think to the development in Wisconsin of a forestry plan came about through this tax question. The matter was brought to the attention of the supreme court. A bill was introduced in the legislature to pay in lieu of taxes five cents an acre, just like you have here and just like they have in Michigan, and the court held that it was unconstitutional, and that is the status of the situation at the present time. The result is that wherever you go or any meetings you attend, or in talking with citizens of northern Wisconsin where these state lands still exist, this tax question is always referred to and generally not in a pleasant manner. The taxpayers in that part of the state in my estimation have a just and good complaint. A good many of the towns have as high as seventy or eighty per cent of the land exempt from taxation. It is dangerous, and it seems to me that it is one of the most vital things in the whole policy of the general acquisition of the state forest lands to provide some way whereby these towns can be reimbursed for these state properties within their limits.

Dr. ROTHROCK. The state is obliged by the law to pay this five cents per acre.

Mr. HARRINGTON. We have a provision in our law whereby we can exempt up to forty acres for forest plantations, but nobody has ever taken advantage of it.

Mr. BAZELEY. It may be interesting to know the way it is in Massachusetts. All the state lands in Massachusetts are assessed by the state tax commissioner every five years, and the tax on that is paid directly to the towns in which the state land lies, directly to the treasurer of the municipality.

Dr. ROTHROCK. There is a very interesting fact that I think ought to be stated here. We have a list of the first land that was purchased in the state of Pennsylvania under what were known as the tax sales. At one time there were two million acres in the state of Pennsylvania upon which the taxes were not paid. A good deal of criticism was made. Upon that law the state proposed to go in and purchase the land, and then the cry was raised, and the people complained that that was taking away their lands from them, and that we were depriving them of their rights, and all that; but the result of the operation of that tax law was that you can hardly buy an acre of land now at a tax sale. Taxes are paid all over the state and promptly paid. We can not buy land at tax sales. I remember one particular tax sale with a thousand acres at four cents an acre, and the state would not sell today for ten dollars an acre.

There was another interesting thing that came up when the state bought these lands, and they allowed the counties their four cents an acre, subsequently an additional cent an acre, making it five cents an acre. The county treasurer finds himself in better condition than he had ever been before the state took possession of the land. I do not believe there is a county in the state today that would be willing to go back to the old system. I think where the state has taken a foothold in this land in any county the people are satisfied that it has been so. With private cooperation of their citizens we have given them better protection against forest fires and a lot of things in which their condition has been improved, and every county of the state I say where the state has advanced into it is satisfied with the ownership by the state.

Mr. WOODRUFF. May I add one thing? The purchase of the land is justified from a business standpoint in this state, because a very conservative appraisal of those lands bought in Dr. Rothrock's administration, we will say, for which about ten or twelve years is the average life of the purchase, and that cost, as you can see, only about two million three hundred thousand dollars, and the administration has only run that up to about five million odd dollars, and a very conservative appraisal of those lands today is ten million dollars from a commercial standpoint, which is a comforting thought outside of the benefit to the public.

Mr. CHAPIN JONES. I just would like to inquire of Judge Woodruff how that five cents an acre tax compares with what the tax would be if the land were still in private hands.

Mr. WOODRUFF. The county treasuries are better off than under the old plan of an assessment which was always very low.

Mr. JONES. How is that five cents arrived at?

Mr. WOODRUFF. The Department of Forestry certifies to the treasurer for

each county how much state forest land there is in that county, and makes a requisition on the treasurer of the state and a check is drawn by the state treasurer of the state to the county treasurer, I think.

Mr. JONES. How did you decide on that five-cent figure?

Dr. ROTHROCK. It just grew, that is all. First of all, there was three cents given, as I remember it. Then they came out specifically for two cents for schools, and later on they came out for two cents for roads, not on any particular basis at all, and then last session they came out for one cent additional, which was advocated by our friend, Mr. Pinchot, particularly, and they passed one cent for general purposes; so it is entirely arbitrary.

Mr. JONES. It is all a matter of law?

Mr. WOODRUFF. The determination of values by the regular method, and I think it would give us a more fair assessment generally.

Dr. ROTHROCK. Let me give you two concrete illustrations of the relative merits of allowing two cents for schools. In two of the counties of this state, as the state had been acquiring large bodies of land, the school fund in one case and the road fund in another case was so well looked after that they did not need the state's help, and the collectors appropriated the money for their own use and they were subsequently surcharged for it.

The CHAIRMAN. Gentlemen, it is six o'clock. Do you wish to continue this discussion, or shall we call it off until eight o'clock tonight? At eight o'clock there will be a baked-apple party. I would like to remind you also that at nine o'clock tomorrow morning, not ten o'clock, we will convene here in this room and continue this wonderfully interesting discussion of these problems.

At six o'clock P. M. the conference adjourned until Thursday, December 9th, at nine o'clock.

Senate Chamber,

Harrisburg, Pa., Thursday morning,

December 9, 1920.

GOVERNOR OLCOTT presiding.

The CHAIRMAN. The conference will please come to order. If since yesterday there have been any acquisitions to our ranks in the way of state foresters or representatives of state forestry departments, I wish they would make themselves known to the secretary and hand their names to him so that we may make a full and complete record.

Are there any suggestions from anyone as to the program other than to proceed along the scheduled line? If not, we will take up "State-wide Forest Protection in New Jersey," by Mr. Alfred Gaskill.

Mr. ALFRED GASKILL, State Forester, New Jersey. I take it for granted that state-wide forest protection is in the mind of every forest official. That is the ideal toward which we must work; if anything less than its actual accomplishment is considered it can be temporary only, and because circumstances or conditions require us to adjust our efforts to those conditions. I cannot see, in other words, how any state forester, or any official organization, can undertake to maintain a fire-protective organization which does not cover the whole exposure in the degree that is required. The next ideal, as I see it, is that a protective service shall approach as closely as may be the paid fire department that is established, and maintained as of necessity, in every large city. We know well enough that we can not have paid fire departments in our forested areas, it costs too much. Perhaps they are not necessary, certainly not in the degree of refinement that they are necessary where the property to be protected is worth so much, but surely we must get the first essentials of such an organization. That is adequate control in important sections, and some sort of service throughout the whole area.

Now, a good many states, Jersey amongst them, have tried to get along with a good bit less than what they have indicated as the ideal. We have tried ex officio wardens, we have tried volunteers, we have tried, in short, to get something for nothing by one means or another, and usually we have gotten nothing for something. It has not amounted to anything at all so far as efficiency goes.

I shall speak with a good deal of diffidence about what Jersey has done, for two reasons. First, because our accomplishment is so far short of our aims; and next, because what we have done, and what we have not done, may mean absolutely nothing to those of you who have different conditions to deal with. You can not set up a standard, for any state, or any section, that is going to be profitable to any other state, or any other section, unless you find identical conditions there. The program must be fitted to the exposure exactly as you find it, and by exposure I nothing by one means or another, and usually we have gotten nothing for something. It has not amounted to anything at all so far as efficiency goes.

Fifteen years ago Jersey enacted a law intended to bring about a better order of things in a state which perhaps represented more truly than any other the extreme of forest devastation. It is true enough that Jersey is small in area. It is likewise true that she is so situated that every one of her resources and interests is magnified in several ways, so that they become pretty important. Our forest exposure may be surprising to some of you, but it includes forty-six per cent of our area, and considerably more than half of it is pine forest; couple with that, if you please, the greatest concentrated population in the whole country on one side of us, and the third greatest on the other side of us, and our little state may be considered, I sometimes say, as a thoroughfare rather than a community. The whole country passes through Jersey in its communications from the west and south with the great center in New York, and to and from our seashore resorts. We have more miles of railroad to the square mile of territory than any state in the Union, one mile of railroad to three square miles. Even Pennsylvania is better off in this respect. We have twenty-five thousand miles of highway, and ninety per cent of these highways are used by automobiles. The state issues approximately one hundred thousand hunting licenses. The gunners literally pour from the cities to the country communities to enjoy a day's sport at somebody else's expense. Now, I do not quarrel with hunting on legitimate hunting ground, but I do contend that in organized communities and in densely populated sections, such as are found in that little state across the river, there is no room for that sort of thing. Something must give way in the interest of what we foresters believe is development and

progress. Then there are incoming settlers cleaning up homes, and many wanderers in the woods—and most of them seem to be cigarette smokers. We thus have a very complex problem to deal with—the railroads, hunters, automobilists, pleasure-seekers, all sorts of people using the wooded areas, because they are easily accessible, and because, in spite of all you can say about it, the woods of New Jersey are pretty attractive. The south Jersey pine-lands are full of flowers in the spring, and full of color in the fall, and the mountains in the north have their attractions.

Now, that is about what we have to deal with—forest cut over not once but two, three or four times; forests so burned that portions of them will not come back in a natural way, although it is surprising that the effect of the fires is so slight. There really are mighty few areas where the natural forest is not simply pushing for a chance to come back. That is true of the pines as well as of the hardwoods. We started out with the idea, somewhat different from that of other states, that fire-prevention and not fire-suppression was the goal. I do not mean that we must not control the fires that start. It is obvious that we must. But whatever organization is perfected, it should have in mind first of all the prevention of fires. We gave over at once the thought of using volunteers. You do not get anywhere with them, and we settled upon the principle that any man who was engaged in combating fire in any way deserves pay. We could not afford to pay a great deal, but exactly as the small town or borough finds that it can support a volunteer fire organization by providing a good equipment and a supper now and then, through which the interest of the men is kept alive, so it seemed to us advisable to assure pay to every man engaged in the forest fire-service.

The organization that in the course of the years has been created now numbers about three hundred and seventy-five wardens in one hundred and sixty-five townships. It is so arranged that few of these men have more than five thousand acres to look after. Three-fourths of them have telephones in their houses. These men are under the direction and control of a state firewarden who has four assistants called division firewardens. They keep in touch with all parts of the organization, investigate fires, check up reports, see to getting the right men appointed, and that they are on the work and keep it in hand. It is a rather inadequate, but still fairly efficient, state control. Under the law a township warden is given the magnificent sum of twenty dollars a year, as a retainer and as compensation for issuing permits, posting notices, making reports; but it serves to enlist him actively in the service. A district warden, where a township is too large for one man, gets ten dollars a year. When we first made this provision I expected that we should have to increase the rate after a while, that the men would not be satisfied for long. As a fact, they are satisfied and there has been no demand for more; the little sum of twenty dollars, or ten dollars, comes to most of these men as easy money. In addition to this allowance, the law provides that any warden who goes to a fire shall get at least two dollars, no matter how short a time he is there. Until last year he served up to five hours; the law now reads that a warden going to a fire shall have two dollars for any service lasting two hours or less, and any man that he calls out to help him shall have one dollar for any service of two hours or less. The idea is to get there quickly and put the fire out, to make slight fires. If the men are required to work longer than two hours the warden is paid at the rate of fifty cents per hour and helpers at the rate of forty cents per hour. This all means that the interest of every warden, three hundred and seventy-five men, located all over the state, is enlisted and maintained, and that they are quick because they get their pay if they do not have to do much. If a man is located where fires are plenty, and he is frequently called out, he will adjust his work to that condition during the forest-fire season, and be ready for fires, the pay compensates him for the time that is expended. The plan seems to work well, and, as I said, there has

been no demand yet for an increase of the retainer. We call it a retainer, rather than a salary, because it is so insignificant.

The wardens are appointed for three years, and are township, not state officials. The idea is that the fire-service should enlist as large a part of the population scattered through these districts as can be done. We cannot have a big state force, but we can maintain a considerable local force supported by local interest and local pride. The township committees, at the direction of the department, make the appointments. The department can say if the townships shall have wardens, but the township committees actually appoint the men, and if the state firewarden does not like the appointees he can dismiss them. That virtually puts the power in the hands of the state authorities while satisfying the pride and interest of the local people, and it seems to work pretty well.

The organization of what we call our ground-service, that is, this very considerable body of local wardens, was the first thought and care, and it is still our principal thought and care for the reason, as I have stated, that fire-prevention, rather than fire-control, is at the bottom of our effort. Having gotten this organization fairly well going, we have begun to establish watch-towers and to maintain patrols. No part of the service has gone nearly as far as we hope to develop it. As in every state, the money does not come fast enough; but working in this way I think I may venture to emphasize the point that it does not do a great deal of good to set patrols or to establish watchers before there is somebody at the end of the telephone-line to respond to a call and take care of the fire after it has been found.

As the work developed, we have experienced what practically every other state has experienced, an increase *apparently* in the number of fires. Let none be discouraged if he finds upon the extension of his forest-fire service that the number of fires grows and grows. It will grow, it is bound to grow, until the service is fully established. Such a record does not mean that your fires are increasing, it only means that you are beginning to get a complete knowledge of them. Years ago some efforts were made to count the fires in New Jersey. The record shows sixty or seventy or eighty fires a year and the average area burned was upwards of 1000 acres. Only the big fires were noticed. We now record between six and eight hundred fires every year, on only two million acres of woodland. Our consolation is that the proportion of serious fires is decreasing. Last year 27 per cent of all the fires were stopped before they burned two acres, 57 per cent burned less than 10 acres, and only 11 per cent covered over 100 acres. We believe that a service which gets men at every fire quickly and holds it to small proportions is as much as can be hoped for yet. I do not like it that the number is maintained as it is, the fires ought to be fewer; but if we keep the size down, and the size is continually going down, the loss, however you measure it, is less and less year by year.

It used to be said that our fires burned for weeks without attention. I guess that is pretty nearly true, but the average total area covered by the fires in the state for the last ten years has been about seventy thousand acres a year, or three and one-half per cent of the total woodland. In one view that is not very bad because the same ground often is burned repeatedly, in another view it is bad because if we burn three and one-half per cent of our woodland every year we have no assurance that any part of that woodland is going to escape burning within a rotation. Until we get the hazard down to where we can assure the maturity of the trees that we are trying to protect the effort is only partly successful. And still I do not count the situation discouraging, although it may sound so. We must be patient, perhaps safeguard one area at a time, and by degrees reduce

the three and one-half percent of our woodland, or the woodland of any state, that may be subject to burning until every body of forest shall have immunity until the young trees can be matured.

The cost of the service, as I have outlined it, has grown from five thousand dollars a year, which was the first appropriation I think, not more than that anyhow, to about forty-four thousand dollars. Of that the townships pay one-half the expenses of the local firewardens, that is half of their retainers, and half of the actual cost of helping in suppressing fires, the state pays the other half and all the costs of supervision, clerks, printing, etc. The total is equivalent to two and one-half cents an acre a year on the woodland that we are covering. It is a pretty high rate; if it were insurance we could say it was a low rate. Counting the thing as it is, it probably is not enough. I know it is not enough to bring us to the point of fireproofing the forests, which is what we aim at.

Now, for all this, what is the accomplishment? Mr. Pinchot said yesterday that he felt a very large proportion of the fires in Pennsylvania were set intentionally, if not deliberately incendiary. In our experience that is almost unknown. Most states charge the majority of the fires to railroads. When we began we regarded between fifty and sixty per cent as attributable to railroads. Last year, and every fire of that kind is recorded, only thirty-five per cent of all our fires started from the railroads. Brush-burners, smokers and those who traverse the woods are responsible for the most of the fires started in our territory. To the improvement of the condition with respect to the railroads we have, in very large measure, the railroads themselves to thank.

Our cooperation with the railroads in the matter of fire-lines and cleaning up the right-of-way has been referred to. We established that principle by law in 1909, and every railroad in the state but one fell in with us to make fire-lines by clearing strips one hundred feet wide on each side of the tracks and outside those making belts ten feet wide stripped bare to the soil. One of the roads, through a property-owner, fought the law and the courts declared it unconstitutional. Now, here comes the pretty part of it. Pending the controversy some three hundred miles of fire lines of the standard type were built by the railroads. Since the law was thrown out by the court not only has every mile of that three hundred been maintained voluntarily by the railroads, but they have added fifty per cent to it, and are still going. Every now and then one of the railroad men comes in and says "we can not get across that man's land down there, he won't let us clean up, could you help us?" Fortunately we have another law by which anyone who maintains a nuisance of that sort can be required either to clean up or to put on a patrol at his own expense.

So much for the railroads and their fire-lines. The thing we are proudest of in this connection is our success in fixing the responsibility for our forests fires. It is not that the penalties imposed are specially important, but that the convictions show where the danger lies and help to prevent other possible violations. Last year responsibility for sixty-two per cent of all the fires that occurred in our state was fixed upon some person or agency. The penalties are made to fit the crime in each case. The railroads are never charged more than the actual cost of controlling a fire, because it is recognized that their acts are involuntary. If an offense is malicious, or due to extreme carelessness, the offender pays a heavy penalty. The law allows up to four hundred dollars. If a violation is due to ignorance or if some poor devil in the woods has hard luck while trying to clean up a little place to live on the penalty may be purely nominal.

In another way we are getting ahead. Whereas in the old days our fires burned for days and weeks, they now are literally matters of hours, with a very few exceptions. Once in a while one gets away, and in some sections of the state it is still possible for a fire to burn for hours without being known, but that is getting rarer and rarer. I think we have the absolute and complete support of the public. There was the usual opposition and criticism when we began, but that seems to have vanished entirely. The townships do not object to paying their share of the cost. They urged us, as a matter of fact, to increase the pay of the fire-fighters last winter and are ready to hold up their end. It seems to be pretty generally accepted that something of material value to all interests will come out of the effort. I hope that that expectation may be realized.

There is one thing in this connection about which I must express envy of Pennsylvania and New York and a few other states, concerning the possibilities perhaps more than the actualities of fire-control and that is your state police. It surely is the only practicable dependence in some of the far western sections, as it is of the greatest value where there is a constant menace from all sorts of sources—streams of people, hunters, automobilists, flower gatherers or what you will. We have so many that the only sure way to control them successfully is to have somebody continually on their trails. There resides I think in a state police organization very great possibilities in this direction. Unfortunately we have not yet got it, but my hope is that we shall have one before long. It can do much to lessen the hazard by covering the frequented forests during the danger seasons. What may be expected is indicated by an experience several years ago. There happened to be a little money available at the opening of the deer-hunting season. As I have told you, the hunters pour out of the cities during the few days when hunting is lawful. We served notice that hunters building fires illegally would be arrested, but they did not believe there was anything in that. Just four patrolmen went around the deer grounds after dark, and in two nights they rounded up one hundred and thirty-six deer parties building fires in violation of the law. The violators were not penalized very much, most of them paid an insignificant fine, but we said, "you are watched". Next year a similar patrol found not a single fire illegally set, but practically every deer hunter went hunting in an automobile and with an oil stove. That is sport, if you please!

Gentlemen, I have tried to outline what little Jersey has done in the way of safeguarding two million acres of forest which has nothing important in the way of matured timber, but which has great potentialities, because of its location and the productive quality of the land. On this account we are convinced that, mainly through fire-protection, there can be built up a forest which will have great value to those who come after us. (Applause.)

The CHAIRMAN. Mr. Gaskill will be succeeded on the same subject by Mr. M. C. Hutchins, of Massachusetts.

Mr. M. C. HUTCHINS, Massachusetts. I have been asked to give an outline of our state-wide forest fire protection system in Massachusetts. I have listened with a great deal of interest to the remarks just made by State Forester Gaskill of New Jersey, and if I were to touch on the fire menace or fire conditions in Massachusetts, I would simply need to repeat what Mr. Gaskill has told us, as conditions in Massachusetts and New Jersey are somewhat similar.

The present system was started in the fall of 1911, legislation being enacted that year calling for state-wide fire protection. In fact nine years ago at this time we

were constructing our first observation station at the summit of Grace Mountain in the town of Warwick, and within five miles of New Hampshire line. The state was divided into five districts, each comprising around seventy towns, each district being under the supervision of a district forest warden, who was provided with an automobile and necessary equipment for handling and small fire. It is their duty here, that in selection of our district forest wardens, we have not adhered to fires, and to urge upon them the necessity of providing themselves with necessary forest fire fighting equipment.

We have thirty-seven observation stations, thirty-two of which are steel towers from thirty-eight to eighty-three feet high, according to the location, and topography of the country. Twenty-six of these towers are equipped with fire escape stairs, and six with ladders. The total cost, including the erection, is \$33,000, and the towns receiving the benefit from these towers have contributed \$14,000 of this amount. All stations are equipped with field glasses, sliding map tables, and topographical maps, which give the location and telephone call of over eighteen hundred forest wardens and deputies throughout the state. The construction work of towers has been done entirely by our district men and observers. I might say right here, that in the selection of our district forest wardens, we have not adhered to the policy adopted by many of the states in selecting foresters for this position, and the reason for this is that the fire menace in our state is so serious that it needs a man specially trained in the handling of fires to make a success of it. We therefore selected some of the best fire department chiefs, together with experienced telephone and map-making men for the positions. This gives us a type of man that with very little training could go ahead with our entire construction problem, so that for the past eight years it has not been necessary to engage a single outside man for this work.

The matter of having a closed room at the top of the towers is very important, and I have found that if we are to expect results from our observers we must give them a protected room to work in. The equipping of our towers with stairs has made it possible for more than thirty thousand people to visit them annually, coming from every state in the Union and from many foreign countries. For instance, this year at our Mount Everett Station, which is located in the most desolate part of the state, being in the southwest corner, we have had more than thirteen hundred visitors from twenty-two states and five foreign countries.

All our towers have a complete set of the bulletins published by the department, and anyone interested may procure similar copies by leaving their address with the observer. Most of our observers have been with us many years, and make it a point to give the visitors a good talk on fire prevention. The matter of selecting observers is a very important one with us. We prefer a local, middle-aged man, who has either lived in the locality a number of years, or who has been a frequent hunter or trapper in that vicinity, so that the information he has gathered in this capacity, together with our triangulation system in the station, make it possible for him to locate fires very accurately and quickly. The matter of accuracy is very important, as we have three hundred and fifty-three towns and cities within so small an area, and an observer must be so familiar with town lines that he will know just what town the fire is in.

The cost of a fifty foot tower made of 4 x 4 angle iron, with stairs and an eight foot room at the top, all complete and ready for use is about \$1,200, and a seventy-five foot tower with 5 x 5 angle iron all complete is about \$1,600. This does not include the cost of erection, which, as I have said before, is done entirely by our

salaried district men and observers. We have had considerable experience with the cheap wind-mill tower, but they have not proved satisfactory—in fact they are not heavy enough to carry stairs and the closed in room at the top. The expense of erecting is nearly as much as one of the heavier towers, so that practically all the extra expense is the initial cost in the purchasing of a better grade tower.

Our fire fighting corps are generally organized into crews of eight. Under the old system, whenever a crew arrived at a fire it was natural for each man to select an extinguisher and immediately turn it over; consequently, before three hundred feet of fire line had been extinguished, these extinguishers were empty, and nothing had been accomplished. We say to them now, let one man discharge the extinguishers, three men keeping him supplied with full ones, and the balance of the crew follow along behind with wire brooms, rakes, shovels, etc., and see that any live fire is pushed back into the burned area and fire line established. One extinguisher will last about two minutes and will deaden the fire line a distance of two hundred feet in length and thirty feet in depth. This accomplishes the same results as throwing sand and dirt, only it is done so much quicker and easier, and with two or three crews working on a fire in this manner, any ordinary fire is under control within a very short time.

We have what is known as the town forest warden system. The selectmen of each town are required to appoint a forest warden during the month of January. This appointment however, does not become effective until approved by the State Forester. This system is in a measure satisfactory, as it places the burden of responsibility on the towns, who are liable for all bills for extinguishing fires. It is the duty of the town forest warden to divide his town into fire districts, appointing a deputy who has supervision over his district. The town forest warden has full supervision of the fire work in his town. It is his duty to issue all permits for fires in the open air between the first day of March and the first day of December. He has supervision and care of all forest fire fighting equipment purchased by the town, and he and his deputies have the necessary authority to make arrests of persons violating the fire laws.

In 1910 a law was enacted in Massachusetts known as the reimbursement act, which really established a workable cooperative plan between the towns and the state, which has been of immense value to us in the building of our present system. This law requires that the state shall reimburse all towns with a valuation of \$1,750,000 or less, fifty percent on any forest fire fighting equipment purchased by the town and approved by the State Forester. In no instance does the state reimburse any town more than \$250. In other words, the town may purchase \$500 worth of forest fire equipment, and the state will pay \$250 of it. We have had during the past ten years, 182 towns, covering nearly two-thirds of the land area of the state, come under the provisions of this act; 42 of these towns have taken up their entire allotment; 13 have had their valuations increased, so that while they have taken up a portion of their allotment, they will not be allowed to take up their entire amount. This leaves 127 towns that are still building up their town organizations and purchasing small amounts of equipment each year.

In many of our smaller towns we have gone still farther than just the control of forest fires, and are organizing fire companies that will also handle all building fires. This, we find appeals to many of the small hamlets, and at the same time assures us of the necessary equipment for handling our forest fires in these towns.

The state and towns have expended up to the present time \$47,000 for such equipment, the state's share being \$23,500. This has made it possible for us to have over 10,000 pieces of apparatus and tools distributed throughout the poorer and thinly populated towns, and where the majority of our forested area lies. This equipment is ready for immediate use.

The equipment that we recommend includes the ordinary three-gallon house extinguisher, one-man and two-man pumps, necessary shovels, wire brooms, pails, water cans, etc., and also motor apparatus for providing means of getting to the fires promptly.

We are asking for an amendment to this law so that we may reimburse towns \$50 per year for the replacement of destroyed or worn out equipment. Other laws that were on the statute books were, the permit law, locomotive spark arresters, and the right-of-way act, all of which were very essential in the building of our present system.

With the above organization and the observation system, we have been able to reduce the fire loss from over \$600,000 per year in 1911 to an average of less than \$100,000. This year our loss will probably be around \$60,000, and our number of fires will exceed 1,800.

I want to say just a word about railroad fires. I do not want my friend Gas-kill to leave the impression here that he has all the locomotives over in New Jersey, as we have 1,500 in operation in Massachusetts every day of the year, thirty different lines coming into Massachusetts from outside of the state. A system of inspection is carried on by our department and members of the Public Utilities Department, which covers all Massachusetts locomotives. These inspections are made in the early spring and fall before the fire season starts. Our chief trouble today is in locomotives coming from outside the state over these various lines where no inspection is made and very little attention is paid to the front ends and ash pans. In fact it has been necessary for our Utilities Department to prohibit certain locomotives from coming into the state without their approval as to the condition of the spark arresters and ash pans.

The advisability of closing the hunting season has been mentioned, but I want to say that we have had our troubles with hunters' fires. In 1914 more than four hundred fires were set the first week of hunting, the Governor then closed the season. This year we had one hundred and sixty-five fires the first three days of hunting; the season was then closed for four days until we had heavy rains.

Mr. LOVEJOY. May I inquire what the cost per acre is for this protection, if all the legitimate items are charged in?

Mr. HUTCHINS. You mean fire-protection.

Mr. LOVEJOY. Yes, the total cost of protection, per acre on the acreage protected.

Mr. HUTCHINS. The forested area in Massachusetts is scattered more or less over the entire state, therefore, our state laws require state-wide fire protection. The total area of Massachusetts is a little more than 5,000,000 acres, but we have

about 3,000,000 acres of forested area or potential forested area. If the cost of fire protection were distributed over the entire 5,000,000 acres, it would be about 1½ cents per acre. On the other hand, if this cost is charged only to the actual forested area, it would be about 3 cents per acre.

Mr. LOVEJOY. With everything legitimate charged in, depreciation of property, volunteer labor, and so forth?

Mr. HUTCHINS. No. This estimate does not include depreciation of property. It includes our state appropriation, money expended by towns for fighting fires and the purchase of forest fire fighting equipment, and money expended on our state reservations for fire protection.

Mr. LOVEJOY. Does that include the volunteer labor contributed?

Mr. HUTCHINS. No.

Mr. PETERS. Is that based on your whole forest area of three million acres?

Mr. HUTCHINS. No. The 3 cents per acre is based on our actual forested area of 3,000,000 acres.

Mr. PETERS. It means less than that.

Mr. HUTCHINS. It means a cent and half an acre on the total acreage of the state in order to cover the forested area.

Mr. PETERS. Four cents of the forest-area protected?

Mr. HUTCHINS. Yes, practically that.

Mr. PETERS. May I inquire how nearly you have reached what you consider the practical ideal of protection?

Mr. HUTCHINS. We feel that our observation system is nearly complete at the present time. It will be necessary to establish two or three more towers in order to cut our radius down to not over ten miles in some of our dangerous localities. When this is done, and our present slash law is enforced throughout the entire state, we will have accomplished about all that is possible under our present laws.

Mr. PINCHOT. What would you figure would be an ideal sum that would give you really the sort of protection that you want per acre?

Mr. HUTCHINS. Figuring on the actual forested area, I would say that between 4 cts. and 5 cts. per acre would give Massachusetts an ideal protective system.

Mr. PINCHOT. May I ask you just what you mean by very good protection?

Mr. HUTCHINS. We have an average of about 2,000 fires per acre. Before our present system was installed, the average area burned over per a fire was nearly forty acres. The average damage per fire was around \$225.00. Through the present system, this has been reduced, so that the average area per fire at the present time

is around thirteen acres and the average damage per a fire is about \$40,000. This is about all we can expect from our present organization and the appropriation we are receiving today for this work. If this appropriation could be increased to between 4 cents and 5 cents per acre of forested area, I think it would allow us to perfect our organization so that our average area per fire would be between eight and nine acres, and our average damage per fire would be around \$20.00 or an average loss per year of not more than \$50,000. If the loss could be reduced to the above figure, I would consider that we had an ideal system.

Mr. PINCHOT. That means how much in proportion to the total area? What is the ratio, so that we could apply it to other regions? Is it one hundred and fifty thousand against fifty millions, or what sort of a ratio?

Mr. HUTCHINS. I can tell you that exactly.

Mr. LOVEJOY. I would like to ask Mr. Peters: Is there any state that has a more intensive or a more successful fire-protection system than Massachusetts?

Mr. PETERS. I think that some states have better systems in certain respects. None has a lookout system any better than that of Massachusetts.

Mr. LOVEJOY. Has the reduction of fire losses been more successfully carried on in any other state?

Mr. PETERS. New York and New Jersey have reported the loss of one dollar or less per acre. I do not know of any states that can beat them when you come right down to actual dollars-and-cents results.

Mr. BESLEY. A dollar an acre on how many acres of area?

Mr. PETERS. On the acreage burned over.

Mr. BESLEY. I was very much impressed by the exact data with regard to the damage per acre of land burned over. I do not think it is any index, or a suitable index at least, of the damage from fire. I can not understand exactly from Mr. Gaskill's figures whether the woodlands in New Jersey were so much less valuable than they were in other states, or whether they are estimated on an entirely different basis. I think in Massachusetts they figure the average loss per acre of forest-land burned over, at four or five dollars an acre.

Mr. HUTCHINS. Around five dollars an acre.

Mr. BESLEY. I think it really ought to be placed on the actual acreage burned over. That is the only way you can get at any fair estimate of the results of fire-protection in this state, and in comparing it with the damage per acre of forest-land.

Mr. HOLMES. I would like to ask Mr. Hutchins whether he can not expect to decrease the number of fires in Massachusetts by education and other means.

Mr. HUTCHINS. We are working along this line at the present time. Just how much can be accomplished, is hard to say. With our immense population, it is impossible to reach more than a small percentage of them; then you take our immense railroad system, our 250,000 automobiles and trucks, 150,000 hunters, and

our extremely large foreign population, and the fact that ninety-five percent of our fires today are caused by carelessness, the future for reducing the number of fires does not seem very bright.

Mr. SECREST. On what basis is that estimate made?

Mr. HUTCHINS. This estimate is taken from our reports of the actual damage, received from our fire wardens. There is some question about it being very accurate, owing to many of our forest wardens not appraising brush land as being of any value.

Mr. PETERS. This question of assessing fire-damage is one that I would like to see the states take up a systematic manner. The figures come to the Forest Service from the states, and we are forced in assembling them for statistical purposes to enter the damage as reported. If we tried to harmonize these figures, we have great difficulty. In fact, we can not harmonize them; we simply can put them down as reported and leave it to the person who scans the statistics to do the harmonizing. Now, you can see what a discrepancy there must be between New York's and New Jersey's estimates of around a dollar an acre and Massachusetts' estimate of five dollars an acre. This is something I would like to see the states consider.

GOVERNOR OLCOTT. It seems to me there is very great discrepancy there.

Mr. PETERS. I believe that the method of estimating should be standardized. If this could be brought about it would be of considerable benefit to those of us who are interested in getting a line on the actual results in fire-protection.

Mr. WILLIAM P. COX, State Forester, Minnesota. If I may say a word regarding that, our instruction to the rangers in assessing fire-damage has been of this nature, that no merchantable timber, of course, would be appraised at its real value, which they could determine, and that the young growth was to be figured on the cost of replacement, and, of course, on grazing-lands very often we ignore fire-damage.

Mr. SECREST. That is probably applicable to standing timber destroyed outright. Fires very frequently occur in Ohio woodlands which do not destroy the second growth stands, but scar the trees in a manner that with the subsequent entrance of decay may seriously affect the quantity as well as the quality of the timber eventually produced.

Each ground fire sweeping over a woodland causes damage to the timber, and to the soil in various ways, although it may not be apparent at the time.

How are you going to assess damages in such cases?

The CHAIRMAN. It seems to the chair that matter is absolutely one of speculation. If there are no other questions—

Mr. W. G. HOWARD, Assistant Superintendent of Forests, New York. It seems to me that you can not make any hard and fast rule in determining this fire-damage. It has got to be fixed by the man who has charge of the fire, or by someone inspecting the burned-over area after the fire is out. It varies so much. We have had fires that have done damage to the extent of one hundred dollars an acre, where they have destroyed virgin timber stands ready for market. We have had

some fires, notably this past year, which because of weather conditions and conditions of the ground, burned lightly over the ground, and twenty-five cents an acre is easily the entire measure of damage caused. It varies so much in different instances that it seems to me impossible to lay down any hard and fast rules.

The CHAIRMAN. The gentleman is entirely right in the opinion of the chair.

The next gentlemen to address the convention will be Mr. George H. Wirt, of Pennsylvania.

Mr. GEORGE H. WIRT, of Pennsylvania. Mr. Chairman, I realize the position that any man is in that has charge of the fire-work in a state and is asked to explain that work to a bunch of foresters and to do it in twenty minutes, an hour, or even ten hours and twenty minutes. Without going into the details as to the whys and the wherefores, which all of you know, I simply want to refer very briefly to the organization which we have in Pennsylvania. It is the result of an evolution which started along about the time of William Penn, and is not finished yet. In other words, we do not have in Pennsylvania everything we would like to have, just as Mr. Gaskill has said and as Mr. Hutchins has said they do not have, but which they are naturally looking for in their own respective states. This evolution that has proceeded in Pennsylvania in regard to the protection of forests from fire, started, as I suppose it did in both of your states, with the unorganized force made up largely of the individuals who happened to hold land and whose land was either being damaged or subject to damage by forest-fires and the few friends that they could get together with them in time of emergency to extinguish the fire which happened to get started. From that in Pennsylvania it developed into an organization of so-called ex officio forest fire wardens, being the local officials. These men had been saddled with extra duties in addition to the duties for which they were locally selected. Township supervisors, road men and township and borough constables were at different times so designated in our laws as ex officio forest fire wardens. Where these men were more or less conscientious, more or less appreciative to the oath of office to which they subscribed, and observant of the duties that were placed upon them by law, some measure of success in the protection of forest from fires was accorded; but, unfortunately too many of these men did not know anything about forest-fires and how to extinguish them, and cared less. The result of the whole scheme was that, taking the average over the state, it was serious, and the owners of land had little or no protection over and above what they and their friends afforded to their forests. There were some remarkable instances, of course, where forest-fires started, and people having the community interests at heart got together and protected the forest of a community without regard to ownership. Previous to 1909, still with this ex officio organization, there grew up in Pennsylvania different systems, by reason of which men were paid for the extinction of forest-fires. I can not give you exactly now—it makes no difference—just when this idea of paying for fire extinction began, but it was pretty early in the game, I think co-equal with the placing of the duty upon the township supervisors and constables. It began at least with the idea that the county should pay both the officers and wardens and the men who assisted them. The first grade of pay for the people who assisted the wardens was rather high at the time in proportion to the rate of wage then existing generally over the state, with the result that there was a continuous agitation that men and boys and perhaps others were setting fires in order to get the compensation for fires extinction. That rate was finally reduced. All of these expenses for fire extinction, to start with, were paid by the county. Then plan after plan came in from the county commissioners, and gradually the legislature made arrangements that a portion of

the expenses should be borne by the commonwealth, the county paying it out in the first instance and billing the commonwealth for various percentages, the percentage to be paid by the commonwealth constantly increasing. This arrangement provided in no way for supervision by the Department of Forestry; consequently, there was little or no chance of keeping any kind of tab on what was done or of giving the results to any state organization.

In 1909 the legislature made it possible to do away with the ex officio fire wardens and establish a system of wardens directly responsible to the Department of Forestry; the idea being that there should be a so-called district fire warden in each township and borough, and this fire warden to have authority to appoint as many assistants as he wanted. There was no way of making these appointments except as recommendations were sent to the department, and without going into any further detail you may guess how these recommendations were made. The appointments were made, and sometimes we got good men by chance, most of the time we did not. Let me say this, however, that this system of appointments and the organization as created under the act of 1909 was somewhat better than the ex officio organization; but the great defect in 1909 organization was, first, that there was no means by reason of which the department could check up the individual men who were recommended and who subsequently received appointment just the same, nor was there any method of supervision of the men who were appointed. In 1914, without going any more into details as to the historical proposition, we began to do something towards checking up the wardens appointed under the 1909 act. By that time we had a number of state foresters located on state forests in twenty-six different counties of the state, and we directed the foresters to take under their supervision all of the fire wardens within their convenient reach and to do this work in connection with their activities on the state forests. The result of this inspection and checking up of forest fire wardens by the state foresters was so beneficial that it was positive evidence that what we needed in the whole organization was just some such plan, and by various means the 1915 act was finally approved by the legislature, which made it possible for the Department of Forestry to begin at the bottom and really create a new forest-fire organization. As I told some of you men who were at Washington when we began the real re-organization under the 1915 act, we found men who had been dead four years still listed as forest fire wardens, and, as some one said, possibly some of them are still fighting fire. Well, we got rid of all the dead wood, I think, in the first year after the new law went into effect. We dismissed probably sixty per cent including, of course, the dead ones, getting that many names off the list, and substituting real, live, wide-awake men who were interested in the protection of forests from fires. One of the things which we desired to do in the 1915 organization was to find men who were interested in the proposition from an individual and personal standpoint, and not simply through the proposition of the amount of money that they might possibly get out of it. As the second feature of the 1915 organization we provided for inspection for I am thoroughly convinced that no organization, no matter how good the men may be in the field, can produce the results that we want them to produce without careful, frequent and constant inspection of activities, and with that inspection the keeping alive of interest which the men may have had when they started, but which, by reason of all sorts of discouragements which you all know come to the man who is interested in forest fires, may gradually diminish, and in many cases it is diminished unless there is a constant stream coming in from some one place, coming into his life and keeping him up to the highest pitch. With that idea we provided for the districting of the state, each district to be under the supervision of the district fire warden, whom the law

specifically designates shall be a forester. Up until the recent change in our administration of the Department of Forestry in Pennsylvania that portion of the law was never put into complete effect, but under Mr. Pinchot's administration we have finally divided the state into twenty-five districts, and each district is now in charge of a district forester having under his supervision anywhere from sixty to one hundred and eighty forest fire-wardens. The district forester is made responsible for the appointment, the choosing of these men, the recommendation of them, and their general efficiency in the field. We have something over two thousand forest fire-wardens, including foresters, state forest rangers and game wardens. All of the game wardens are made forest fire wardens. The state police in Pennsylvania are made forest fire wardens, although we do not list them individually in our list of wardens. We have the very closest cooperation with them. Mr. Gaskill referred to the matter, and we feel very proud of the work which has been done by our state police independent of all organizations and cooperating with our organization. We feel, and are working on the principle, that every acre of forest lands can be put in a position, or in a condition, by reason of which it receives a reasonable amount of protection from forest fires. Therefore there is no limit to the number of fire wardens whom we may appoint in the state. In a great many places we have probably considerably more wardens than would be absolutely necessary for the forest conditions prevailing in the community, but as long as we do not have to pay them twenty dollars or ten dollars a year it makes no difference so far as expense is concerned, because our wardens are paid only while they are in actual service, or on actual duty assigned to them, or which arises in the case of a forest fire starting. We do not limit the appointment of forest fire wardens purely and simply to forest communities, for we feel that every man, woman and child in Pennsylvania is a prospective or possible user of forest land, and we use our forest fire wardens, the whole forest fire organization, not only for the control and extinction of forest fires, but to develop in every community of the commonwealth a healthy public spirit against forest fires. And stressing prominently again, as Mr. Gaskill has stated that they started out with the ideal thing, there was the idea of prevention of forest fires. Consequently in the southeastern section of the state, where there is very little else than small woodlands, and in the southwestern section of the state, which has more or less of a similar character in relation to farm lands, we propose to have a sufficient number of forest fire wardens that these men in their respective communities will develop a healthy attitude toward forests and against fire. In connection with the development of this state-wide forest-fire organization we are also developing a state-wide system of observation stations and towers. As is the condition perhaps in your respective states, so the condition has been here; we have not been able to develop these towers by any means as rapidly as we would like to, although I am very glad to say "Amen" to what Mr. Gaskill said in regard to the erection of towers previous to the time that we have the right kind of public sentiment in the community to make the tower effective. I feel there is a relation between the erection of towers and public attitude. You have got to develop the public attitude before you erect the towers to make the thing work. The proposition is a simple local proposition, and we must deal with it according to the people, largely the people rather than the forest conditions which exist. With the towers, of course, we are developing the telephone system. I can not tell you off-hand how many of the forest fire wardens have telephones in their homes, but one of the propositions that we hold out to the forest fire wardens is that the men shall have telephones either in their homes or at least available within a short distance, if there is any telephone line at all in the district. We have in Pennsylvania unfortunately a great many districts where there is no telephone service, and in such districts we must have our own, of course, as part of the state equipment; and that we are working on, us-

ing the state forests, which you see here marked in green, as a nucleus around which those systems will be developed. We, of course, must have the best kind of telephone communication with our foresters, both from the Harrisburg office to them and from the foresters to their rangers, and then from the foresters to the forest fire wardens, and so on down through the line.

I might stop here just a moment to go back to the personnel question. In our scheme we have constantly from the beginning induced our wardens to develop local forest-fire crews, picking out the best men of the community whom they find, and whom they can induce to join with them in this forest-protection work, and to keep them together as a center around which the other volunteers, or the ones who are compelled to go fight fires, will work on the fire-lines. We believe that the organization must be state-wide, must consist not only of the higher and the controlling officers and the inspectors, and then the fire-wardens, but the organization must also include the individuals in the respective communities who are going to help the fire-wardens right out on the job when a fire occurs. We are endeavoring to get just as many of these forest fire-fighting crews organized as it is possible to get together.

This leads then directly to the matter of the development of cooperation with any kind of individual organization, or what not, that the foresters or the fire-wardens might find of value in their communities. I will say here, as Mr. Pinchot referred to the matter yesterday, that we have gotten the most splendid cooperation from our Boy Scout organization in this state. There have been several instances in Pennsylvania this spring where if it had not been for the support given the fire-wardens by the Boy Scouts of America, I do not like to think what might possibly have happened. They have been splendid boys and scoutmasters in the protection work and have been of splendid help to us. Mr. Pinchot told you of the organization of the Forest Guides which we are developing through the Boy Scout organization. We have given them a very nice little button. It was my pleasure the other night to give the buttons to thirty-two scouts of one troop here in the city, and to say something about the importance of protecting forest from fire, and to tell them what the organization means to them and to us. I was very much gratified the next morning to meet the father of two of the boys of the troop and have him tell me what the boys told him when they went home that evening. So that is just one instance, and if it happened in this instance, I have every reason to believe that the same thing will happen in many other instances, for the boys went home and the parents wanted to know what this button was. The purpose for which this work among boys was started was, of course, accomplished. In addition to that, one of the boys to whom I gave a button the other night said, "I will have a dickens of a time explaining to the boys at the Technical High School what this button is for." I said, "Go to it, that is just what we want you to do." The result of it is there is a mighty big publicity proposition. I do not know whether it will be like the bone-head from Salem, Oregon, but it will go a long way to put the publicity in the hearts and minds of the people we want to reach.

In addition to the towers and telephone lines which we are planning, we have done very little in the way of furnishing our men with equipment, not because we have not wanted to, but because we have not seen our way clear for financial or other reasons to place equipment in the hands of the forest fire-wardens. Personally I felt there was great risk in placing equipment in the hands of wardens until we had our inspection system in such shape and condition that the inspectors or district foresters could keep tab from time to time on the material furnished. Judging from past experiences with state-owned equipment and publicly owned

equipment, it was a very easy proposition for the individual who happened to get a hoe or rake on the fire-line to very quietly take it along home with him or drop it in the brush where he could conveniently find it the next day, and the result of it was that the tools were used on the neighboring farms instead of being ready for the next forest-fire.

Now, with our inspection system complete, I am very anxious that we begin to develop complete tool-sets for all of our men. We furnish, or have furnished this year to some of our foresters, in fact I think we have sent a set to each district forester, some rakes, some torches, some axes, one cross-cut saw apiece, and a few other smaller tools. There is just one little tool that we have developed in Pennsylvania that I would like to call your attention to, if I may. It may have some interest to you even though you do not agree with our back-firing methods in Pennsylvania. It may be of value and of interest to some of you other men, and even Mr. Hutchins and other men in Massachusetts, a little wooden rake—you saw it on the table in the department—with four or six teeth in it, and a very short handle. It is so cheap that it does not make any difference whether a fellow carried it home or not. In case he does take it along home it is an encouragement to somebody to make one like it, and at any rate he will have it ready for the next fire. This rake is useful in cleaning a trail in front of a fire, either to stop the original fire or to rake a trail from which to start a back-fire. I would like to call your attention to the new forest-fire tool which we have developed as the result of the fertile mind of one of the fire-wardens. It is known as the Rich forest-fire tool, and we think it is the best thing available in the forest-fire equipment for Pennsylvania at least. Of that also a sample is on the table in the Department of Forestry, and you can see it there.

Probably the best way in which you can get an idea of the state-wide organization which we have in Pennsylvania is to look at the forest fire map which we have in the department, showing the location of the fire-wardens, observation stations, and so on, which is also up in our department, if you have not already observed it. We have indicated there by pins the location of all our fire-wardens, the location of all of the towers we are now using, and that is a mighty valuable map in the forest-fire game, especially during the forest-fire season. I am not going any further into the details of our organization unless you ask me some questions in regard to it.

Just a point in regard to the ideal for which we are working in Pennsylvania, or at least the ideal which we are trying to tell our fire-wardens, and which will answer a number of Professor Lovejoy's questions as to what we think is the ideal for Pennsylvania; also just to give you a few figures as to what has been accomplished under a comparatively small appropriation for a state where we have at least ten million acres of forest-lands to protect, and where we also have some railroads, and some hunters, and a few other fellows who are careless with their fires. We have in the ordinary course of things too many of that kind, but we have got to endure them just as you fellows have, and it is our game to offset the unsatisfactory conditions which have developed and to make things right. In 1913, as far as the figures show that we were able to collect, the average forest-fire in Pennsylvania was something like three hundred and eighty acres. This fall the average fire was sixty-four acres. The average for the whole year this year will probably be close to one hundred and fifty-eight acres. Last year it was down to one hundred and thirty-four, but this spring we had a beautiful forest-fire season, and our average for the year may run a little higher than the average for last year, although I do not know yet, for the reports are not all in; but a drop in the average from three

hundred and eighty acres per fire to sixty-four acres per fire I think is some slight accomplishment. It at least shows that with any kind of a decent fire-organization we can accomplish results. Now, the thing I am telling our fire-wardens, and the only thing I am holding up to them, is that we want to reduce the average per fire in Pennsylvania to ten acres. That is not a real ideal by any manner of means, but I do feel that if we can keep that in the minds of our men, and keep them on the jump, so that the average fire in Pennsylvania will come down, say, in the next ten years, and I hope it will before that; but if in the next ten years we keep the acreage per fire in Pennsylvania down to ten acres, I think we shall have accomplished remarkable results, and will put the protection from forest-fires pretty nearly where it ought to be in Pennsylvania.

Mr. BESLEY. I was just wondering about the financial situation. It would be of interest to me to know how much you pay your district rangers right on down for fires.

Mr. WIRT. The 1915 law provides that the chief forest fire-warden shall receive twenty-five hundred dollars per year. The law provides that the district fire-warden shall receive eighteen hundred dollars per year, although under the present arrangement of placing district foresters, by doing away with the term "district fire-wardens," simply having the foresters, under the general department as foresters, paid out of the department's funds, these men are receiving anywhere from seventeen hundred to two thousand; fifteen to twenty-four hundred dollars is the scale. The next men in rank, as we now have it, are the fire-wardens, who receive the magnificent salary of thirty cents per hour while on duty. However, if we employ or designate any of these forest fire-wardens as permanent observers at towers, we are authorized according to law to pay only fifty dollars per year; but by paying them as laborers, and by reason of the cooperation which we receive in the majority of cases through protective associations of the state or our friend, Mr. Peters, at Washington, we are able to pay these men anywhere from fifty to one hundred dollars per month. The men who assist the fire-wardens in the extinguishing of forest-fires we are allowed to pay anywhere up to twenty-five cents per hour for the time which they actually put in. The appropriation which we received for the work of the bureau of forest protection from the 1915 session of the Legislature, was sixty thousand dollars for two years; in 1919 we received ninety thousand dollars for two years. Does that answer your question?

Mr. LOVEJOY. I should like to inquire as to the cost of protection as you have it now, that is to say, the cost which you charge up. How much an acre?

Mr. WIRT. Taking the forest-land as nearly as we know at ten million acres. or practically that, taking the expenditure of the state as forty-five thousand dollars a year, which it averages, and considering the fact that private individuals unquestionably spend as much as we do, if not twice as much, you can figure out the cost yourself.

Mr. LOVEJOY. Would it be five cents?

Mr. WIRT. No, I do not believe we have spent, in fact I know we have not spent five cents; but five cents per acre is what we are hitting at, and that is in accordance with the request we are now making.

Mr. LOVEJOY. With five cents an acre of state money, and such an organization as you expect to have pretty soon, can you get your fire-loss down to one per cent of your area per year?

Mr. WIRT. I believe we can.

Mr. LOVEJOY. But that does not include the volunteer labor of the people in the woods and farms in protecting their own property, and so forth, what would be the total items of expense; individual plus state expenses?

Mr. WIRT. I say, Mr. Lovejoy, the proposition at the present stage of the game is like this, that if the state can get five cents per acre every year, say, on the basis of ten million acres of forest to be protected, and we can get that allotment or proportion for, say, whatever period of years it may be necessary in order to establish our tower-system and telephone-line system, and to place in the hands of our organization the equipment, more or less permanent, which we need, that then we can begin to drop back so that the state expenditures plus the private expenditure will not exceed five cents per acre. In other words, I feel that when we have our organization complete and our equipment complete we can safely count on complete protection at an expenditure of five cents per acre all told.

Mr. LOVEJOY. But doesn't your "complete protection" involve a loss of one per cent per acre every third year?

Mr. WIRT. No, I will go even better than that. If we reach that stage of the game we are going to do better than one per cent. We are not going to have that much burned over. I also feel like Mr. Hutchins and Mr. Gaskill that if it is possible for us to have the actual number of fires on the increase, but the measure of the protection will be not necessarily in the reduction of fires; although I have great hopes in a considerable reduction, I am banking on it. I believe it is possible, because with the cooperation we get from the railroad companies this fall for example; and you may be extremely interested in knowing that we had a very small percentage of forest fires from railroads, less perhaps than any year for which we have figures. And I believe that with the constant and persistent development of the safety-strip movement along the railroads, and with the probable inspection of railroad locomotives, that we can cut thirty or thirty-five or forty per cent of the fires caused by railroads down possibly to five per cent of the total. But with that reduction in such causes we are altogether likely to have an increased number of fires from other causes, so that the total may be slightly on the increase for several years to come; also considering the fact that with the completion of the tower system, and patrol system, and perhaps an increased number of wardens, that we will come closer and closer to one hundred per cent report instead of perhaps ninety as I feel we get now.

Mr. HARRINGTON. Before this subject is closed up I would just like to have the benefit of the experience of the men in the East, in which states unquestionably these forest fire organizations are developed to a higher point. Out where I come from we would like to know just what effect high rates of pay have on the malicious setting of fires. Now, I understand that in New Jersey the rate of two dollars an hour up to two hours is paid, and after that fifty cents an hour is allowed. I was wondering whether or not that would not set up a tendency to maliciousness in the setting of fires, and really in a way the establishing of a sort of

forest fire industry in a good many localities when work fell off. Mr. Wirt touched on that a little, and I was wondering about it. He mentioned that as having occurred in this state several years back, and I would like to have the benefit of your experience in these states along this particular line.

Mr. GASKILL. There has always been a suspicion, even an assertion, that payment for extinguishing fires induced a certain class of people to set fires for the sake of the pay. That was one of the strong arguments made against our minimum rate. I am free to say that in the early days there may have been an occasional case of malicious fire-setting, but I am practically sure, that within ten years we have had not even a strongly suspicious case of that kind. The essence of the answer seems to be that with the right kind of supervisory organization, both with respect to the original appointment of the fire-wardens, and with respect to the inspection force there is little real danger of that kind.

Mr. WIRT. I heartily agree with everything Mr. Gaskill has just said. I feel that the proposition, the choosing of men, inspection, policing, judging from my own past experience with them, would be sufficient to check up on any difficulties of that kind. We did have one instance of it several years back, when we were pretty hard pressed for good men to fight fires, and some of the boys of the community were pressed into service; and without thinking as to what the results might be these boys were paid for their services, and were paid a rate which was almost as much as the rate for able-bodied men, with the result that we had some few incendiary fires in that neighborhood. Finally one of our state forest-rangers caught a kid setting a fire, and in his confession before the justice he owned up to the fact that he set the fire only to get the pay. With that knowledge in front of us we stopped paying the boys in the community. If they went to the fire they fought without pay. There is, of course, always that chance that some one might set a fire for the little bit of money that he gets out of it, but if you have wardens and the wardens are on the job, and see that the men do any kind of decent work, there is not much danger. I remember one instance that came to my attention in the last three or four years. There was a grave suspicion that a certain individual had been setting fires in order to get the pay for the work of extinction. Our forester got wind of it, and, of course, the next fire that occurred this individual was one of the first fellows who was notified to go to the fire. I suppose you know we have in our law in Pennsylvania a compulsory provision, and if a man is directed to go to fight a fire he must obey. This individual was well aware of this fact. Of course, one of the foresters saw that he was put right up to the flame, and was kept there until the fire was out. From that time on to the present time, so far as I know, there has never been any suspicion raised against that man for setting fire. Some of those things the local men can do on occasion if suspicion arises, so that I believe there is no danger in an arrangement by reason of which a man may get a certain rate of wage for the work that he does in connection with protection from forest-fire.

While I am on my feet, Mr. Chairman, my attention was just called to the fact that I made a statement which was in error. I inadvertently stated that our patrol-men were paid one hundred and fifty dollars. As a matter of fact, they are paid from fifty to one hundred dollars a month, and the clerks will please make the correction.

Mr. HUTCHINS. Speaking about the rate of pay, some twelve years ago, during a bad fire in New York, I remember the rate of pay being increased as high as \$1.50 per hour for labor, and it was a supposition at that time that this high

rate of pay was the cause of many additional fires. In Massachusetts, we are paying our forest wardens an average rate of \$.50 per hour at the present time.

Mr. W. J. MORRILL, State Forester, Colorado. We have a method of raising fire crews in Colorado which may be of interest to some of you outside of the national forest. The sheriffs are responsible for the extinguishment of fires. We have a method frequently employed for raising a crew which costs nothing, and, of course, we know the men that fight the fires also are not the fellows who set the fires because we have this very simple arrangement. The sheriff takes the prisoners out of the jail, loads them into cars, and he takes the whole crew of the petty prisoners out and fights the fire, and then he brings them back. I have fought on two fires at least where nearly the whole crew was made up of prisoners, and they fight well. They do just as well as hired help, and they all come back to jail. Of course, they have plenty of opportunity to escape. I once complimented the chief of police of Colorado Springs on the fact that about twenty men we had out on the fire all came back and he said, "Yes, I was very much disgusted that they did."

The CHAIRMAN. I would like to remind the members of the conference that the time is going on; it is five minutes of twelve. The next paper will be read by W. G. Howard, of New York, on "Special Fire Hazards."

Mr. W. G. HOWARD, Assistant Superintendent of Forests, New York. Mr. Chairman and gentlemen: Before proceeding to take up the topic which has been assigned to me, I would like first to comment on something which is closely allied to it. I do not feel quite as discouraged about the proposition of preventing railroad-fires as Mr. Hutchins seemed to be. I think they can be practically eliminated. I do not believe we will do it in a year. We had a good many fires in New York state this past year, but I do believe it is possible. We had a demonstration which showed that, with the proper organization and attention on the part of the railroad company, fires started by coal-burning locomotives can be prevented. It was on the Adirondack line where, for eleven or twelve years, the use of oil-fuel during the daytime in the summer months has been required. Last spring just before the opening of the fire season the railroad men came down to Albany and put a petition up to the public service commission, saying they wanted relief from burning oil, because it was impossible to assure themselves of an adequate supply of fuel for the season. We looked up that statement and found it to be substantially correct. Therefore, if the railroad was to be relieved at all we would have to let them burn coal, and we decided that after imposing every possible safeguard we would take the chance. We provided for a very rigid patrol, carefully checked up by responsible officials; and for fire trains to be ready at all times, and for the use of one of the finest type of locomotives, big superheater locomotives, equipped with a suitable type of spark-arrester, a thing which experience has shown was effective, and also equipped with a suitable ash-pan, the clearing of the right-of-way to be done as usual; because with the very great sums of money at stake, oil burning costing the railroads tremendously with the ordinary price of fuel oil, and this year what oil there was was very high in price. Because of the very large sums of money at stake the railroads put their best and most conscientious efficiency men in charge of keeping these coal-burners in good condition. As a result they operated throughout the summer, under one extension of time after another. They operated these coal-burners right through the woods in May and June and again in October, when we had some of the driest weather, and the greatest fire hazard that we have had in a great many years. They set practically no fires. There were three or four reported, but we have no definite assurance that any of them can be directly attributed to locomotives. They might have been set by smokers or tramps along

the right-of-way, or something of that sort. It just shows what can be done with the railroads taking the proper interest and putting the right kind of men in charge of it.

The title "special fire hazards" is rather general and might easily be construed to cover nearly our whole fire-protection system. However, my present intention is to confine myself to considering under that head a dangerous condition which may be created on forest-lands, and which increases the normal fire hazard. In this connection I will endeavor to make suggestions as to methods of control to be applied in each case.

Perhaps the greatest danger from carelessly started forest-fires exists along the railroads and highways and trails which run through forest lands. The danger from fires started by locomotives along the railroad lines is too well understood to need much discussion here. Our method of taking care of this situation in New York is:

First: To take care of the locomotives themselves, either by requiring the use of oil-fuel or by requiring the best known fire-protective appliances for ash pans and front-ends of coal-burning locomotives, and to see that these are at all times properly maintained.

Second: To see that the railroad right-of-way is kept cleared of all inflammable material for its entire length, to a distance of fifty feet each side of the track. Broadcast burning of the entire right-of-way at least once a year is required wherever possible. Lately we have induced the railroads to cooperate by burning over the entire right-of-way.

Third: The reduction of the fire hazard on lands adjoining the railroad right-of-way. This last is made possible by a provision in our conservation law which forbids the leaving of debris or slash from a lumbering operation within twenty-five feet of the outer edge of the right-of-way. This is a great protection to adjoining timberlands, and can be accomplished at little or no expense if the operator takes care to fell his timber away from the railroad rather than towards it.

The fire hazard along well-traveled highways is great, and it is increased when the brush is cut within the highway right-of-way, usually three or four rods wide, and permitted to lie on the ground and dry out until it forms the best kind of tinder to kindle a fire from a match or cigarette carelessly thrown out from a passing vehicle. Lumbering operations are frequently carried on adjacent to highways and the slash left along the edge of the road to create an extraordinary fire hazard.

These conditions are met by us with a provision in the law requiring the removal of any brush or slash not only from the highway right-of-way itself, but also from a twenty-foot strip adjacent it. It is customary for the town authorities to mow the brush and weeds along the highways at least once a year. We require that this material be disposed of, such disposal being usually effected by burning.

The cost of this is not great, nor is the cost to the lumberman of keeping clear the strip outside the right-of-way very burdensome if he goes at it in the right way. The results, however, are good enough to justify even a considerable expense, because of their effectiveness in fire-proofing adjoining timberlands, at least from the carelessness of those who travel the beaten highways.

These requirements apply, it is true, only to slash created by the owner of the land and not as the result of fires or windfall. Still, the greater part of the danger is taken care of.

There are, of course, many footpaths or trails where the restrictions governing the removal of slash can not be applied. However, it has been our experience that it is not difficult to convince the land-owner that it is to his own interest to reduce the fire hazard along any trail as much as can be done at reasonable expense. We have pointed out the advantages to be gained by clearing back brush and slash from a trail which passes through a lumbering operation, and we have found the lumbermen ready to cooperate by taking care of this danger.

So much for fire hazards along well-defined routes of travel. However, the average fisherman or hunter is not content to confine his wanderings to roads or even trails. The best fishing and hunting can usually be found in the more inaccessible parts of the woods.

This brings us to a consideration of the reduction of fire hazards on cut-over lands. We have a law in New York state which requires the lopping of the tops of coniferous trees; that is, the lateral branches must be cut off the top so that both the trunk and branches will lie close to the ground and decay more rapidly. This method of taking care of the softwood slash seems to answer very well in our north-woods forests. While it is true that the fire danger is not decreased for the first two or three years after lumbering, the hazard is rapidly reduced after that time because of the quickness with which decay sets in.

I would not recommend the lopping of softwood tops as a panacea under all conditions. Burning the slash is not practicable with the deep duff and dense forest conditions of our Adirondack region. Lopping is far less expensive and seems to fill the bill.

Our greatest concern at the present time is with the reduction of the fire hazard on lands which have been lumbered for both hard and soft woods. The hardwood tops, under our present standards of utilization, are huge and ungainly, and the question of what to do with such a slash is one that has troubled us for some time.

Any investigations we have made—and we had splendid assistance last summer from Mr. Austin Cary, of the United States Forest Service—have failed to show that the lopping of hardwood tops facilitates their decay materially, if at all. When left unlopped they cease to be a fire menace after five or six years. Furthermore, it is a fact that the lopping of hardwood tops is very expensive and we feel that the money required for that work can be spent to better advantage in other ways.

As I said before, probably ninety per cent of our forest-fires are the result of carelessness. Bearing this in mind, we naturally turned to some method of preventing the starting of fires in these bad lumber slashes, with a provision for attacking promptly any fires that might be started. At the present time we are now considering presenting the following plan to the next session of the legislature, with a view to securing the necessary amendments to the law. Prominent land-owners and lumbermen have declared themselves in favor of it.

Inasmuch as the fire hazard on lands lumbered for both hard and soft woods is too great, we would authorize the conservation commission to post all areas so lumbered—except small lumbering operations where no great fire hazard was

created. Such posting would be effected by placing notices at certain legally prescribed intervals around the area in question. The notice would recite that the land was closed to hunting and fishing, on account of the fire hazard, for a period of five (or possibly six) years from the date of posting. Trespassers would be liable to criminal prosecution.

Needless to say the posting would not be effective unless enforced, and we would, therefore, ask for authority to require the land-owner to maintain a sufficient patrol to keep out trespassers during the period of years the posting was to be in effect. The patrolman would also be equipped with fire-fighting tools, and would be required to fight any fires that might be started. This would be a very intensive patrol, coordinated with our regular protective system. We would have the law provide that where the land-owner failed to maintain the patrol, the commission would have authority to put men on, and the expense thus caused should be a lien on the land.

The advantages of such a plan are obvious. The complaint is often heard from land-owners and lumbermen that fires are caused on their lands by irresponsible fishermen and hunters; and yet the owners hesitate to post their lands for fear that objection on the part of the local people may embarrass their operations or even lead to incendiarism. The proposed plan contemplates that the commission will assume the onus of the posting, but that the landowner will get much of the benefits of it. It is only fair that he would bear the expense of the special patrol in order to take care of the special fire hazard he has created by his own lumbering operations.

Another thing about this plan that is attractive to the owners is that in this way they are taking care of the special fire hazard on their own property. Most of them are willing to concede their responsibility for bearing a certain proportion of the expense for protecting cut-over land. Now, the advantage of this plan is that that expense comes when they have just received their money for the timber which they sold off that land, and they have the opportunity of setting aside a sum of money at that time in order that they may carry out their plan for the next five or six years, when it will be less burdensome than if they were asked to put on a considerable patrol or pay taxes of some kind before they had cut the timber.

The principle is generally conceded, and I believe generally accepted by lumbermen, that a man has no right to create a nuisance and to endanger his neighbors' property without at least taking all reasonable steps to abate that nuisance. I prepared a part of this paper and then in reading it over I felt that perhaps you would like some figures. I can not claim great accuracy for these figures. Let us assume an area of six acres to be limited every six years, let us say a rectangular area, or perhaps roughly a circular area, one department could take care of it seven months each year. Five years would cost thirty-one dollars ten cents, or three dollars eleven cents per acre for the entire fire season. As a matter of fact, in the average season it would be unnecessary to maintain the intensive patrol for more than a total of a month or six weeks of the entire season. At a very conservative estimate in cutting three thousand board-feet, hardwood board-feet, per acre, at a cost of two cents per thousand feet, lopping the hardwood tops, we would have an expense of six dollars per acre, and practically nothing to show for it. For about half that amount, under our proposed plan, we can give that limited area more intensive and effective protection. (Applause.)

Mr. PETERS. I would like to ask Mr. Howard whether the cost of the patrol would be a charge against the lumbering operation, or whether it would have to be included as a part of the cost of so-called complete protection.

Mr. HOWARD. We would have that expense borne by the men who cut over the timber-lands. Does that answer your question? That the owner of the land himself should be required by this law to install that patrol, that enforcement of the posting, after the lumbering operation is completed.

Mr. PETERS. I understand that you do not include the cost of brush-disposal, by which I mean lopping, or piling, or burning, or the like, as a part of the cost of complete protection by the state, and, I was wondering whether you would treat the patrolling cost in like manner.

Mr. HOWARD. I think that this would absolutely be a cost of protection.

Mr. PETERS. Brush-disposal is a logging cost. It is a cost which is chargeable to the logging operation.

Mr. HOWARD. Yes, it is incurred on account of the logging operation, it is not limited to brush-disposal.

Mr. HUTCHINS. I would like to ask, do you think it is necessary to patrol that seven months of the year?

Mr. HOWARD. No, I should have stated that that seven months is in the Adirondacks, the duration of our fire-season, that is the maximum figure, I believe. If we get this scheme organized and have close enough cooperation of the special patrolmen, we thus can assure ourselves, with our regular fire-protective forces, that we will be able to make arrangements whereby lumbermen who will be working near at hand might assign certain of their crew to do that patrolling, nor could we get better forest-rangers. For instance, that could have been made very intensive during this present year, which was a bad year for fires, because the fire-danger this year was concentrated in two periods, one in the spring and one in the fall. Six weeks of patrolling would have safeguarded practically all of the cut-over land during this past season. Another year we might have a less severe fire-danger extending over two or three months, and where the operator had men working in that vicinity they could go and patrol this tract on short notice, and where we could be absolutely sure that they would be gotten in there. We would be able to relieve him of a great deal of that expense.

The CHAIRMAN. We are a little behind the schedule. We have a few more papers this morning. I think we can get through them this morning so we can start with a clean slate promptly at 2 o'clock. If that is agreeable to every one?

The next paper on the program is "Forestry on State Timber Lands," by William T. Cox, of Minnesota.

Mr. WILLIAM T. COX, State Forester, Minnesota. It seems to me that before attempting to cover the subject that has been assigned to me, that of "Forestry on State-owned Lands," it is necessary to say something in regard to the fire-protection that must necessarily precede the practice of forestry on those lands. I am not in a position to talk with regard to very many states, because I am not familiar with just what is happening at the present time in the other states; but in Minnesota we

have a particularly interesting situation. In our state we have perhaps greater fire-danger than in most any of the other states, that is because the forest is a particularly inflammable kind of forest, and also because it borders on the prairie region, and is a windy section of country, and moreover we have in Minnesota the largest area of peat-land to be found in the United States. These peat-lands during the last ten or fifteen years have been drained in large part and have been transformed from the safest fire district to the most dangerous to be found anywhere. Another thing that interests us particularly is the fact that in the past our fires have sometimes developed into very serious propositions, terrible conflagrations, that destroy whole communities. In some states you have little of that sort of thing, particularly in the central and some of the eastern states, where a fire may kill little timber, do a little damage, but it is not likely to destroy cities and villages, or ruin whole settlements. With us these fires may very easily develop into just that sort of thing, and have so developed in the past on several occasions. So every effort in Minnesota has been aimed at the prevention of these serious conflagrations. That was the first job.

The secondary thing was the reduction of fire-losses in general, and these were preliminary to doing anything in regard to state-owned lands and the actual practice of forestry on them.

I want to tell you something else, and it seems to me very interesting to foresters. I believe that in the last year there has been demonstrated in Minnesota the fact that serious conflagrations are absolutely needless. They can be prevented. We have had during the last year, the last fire-season, one of the worst on record, one of the longest, one of the driest, one of the windiest, and all conditions were favorable to the worst kind of fire catastrophies occurring. It was necessary to be on the job in full force, and luckily we are in such a position that we could organize our forces better during the past year than at any other time. We had a larger appropriation to start with. Of course, it was not large enough for the department, but we had available another fund, the so-called board of relief fund, which the last session of legislature provided, and that money was supposed to be available to prevent or relieve distress in case of calamity or impending calamity; so that when the situation became really serious I went to the board of relief, consisting of the governor, auditor and state treasurer, and asked them for funds to aid our own particular forces, and pointed out the need for the money, and they gave it to us. It enabled us to more than double the force of patrolmen at a time when this was very necessary. As a result, while we had this very critical situation, over nine hundred fires occurring, not one of those fires got away during the whole season, not one of them was out of control at any time, and yet there were fires of very considerable size, and especially in this peat-land, the country that I spoke of. In one instance we had to dig a trench seventy miles long, and that was actually done by a force of about two hundred men, and that fire did not escape from the peat territory. The thing seems to me to have been thoroughly demonstrated that calamities can be prevented. We are always going to have some forest-fire loss. I believe we are likely to have more fires in the futures than we have had in the past. Settlement is taking place in the timber country, and more and more there is added danger; but the fires are going to be smaller, they are going to be extinguished more promptly.

Now, in regard to other fire-protective work, we have the railroads pretty well organized. The railroads during the past season expended almost exactly one hundred thousand dollars in Minnesota in patrolling their tracks. We laid greater stress on the patrolling there than we do on the spark-arrestor and right-of-way

cleaning work, because we find that with us it works better. They are thoroughly organized. We can ask the railroads to put on so many men, equipped in such and such a manner, and they put them on. More recently we have persuaded them to put supervisory officers on to see that these men work properly. They report to our district rangers just the same as though they were state-paid men, so that it is equivalent to adding a considerable force to our forest service. Then the lumber companies have expended fifty thousand dollars on their own property, which is in addition to slash-disposal work. The townships have voted on themselves to appropriate additional taxes to provide fire-funds in different townships which aggregate one hundred and forty-two thousand dollars, and this money also is expended under the direction of our rangers. Forty-three thousand dollars was furnished by the board of relief in the emergency for patrolling for a short time. So there was a total, with the funds from the federal government under the Week's law, of four hundred and fifteen thousand dollars for fire-protection. That is equivalent to about two cents an acre, because we have a little over twenty million acres to patrol. That with us, with the present state of settlement, affords what I consider adequate protection. Roughly speaking, it might be improved, of course; but I believe that during an average year it will give us sufficient protection, all we can reasonably ask for.

In regard to the state lands, the state owns about two million acres in Minnesota, but it is in different classes, different lands; some of it is school land, some lands granted for different purposes, some of it consists of state forests, about four hundred and fifty thousand acres have been set aside for state forests. The land within the state forest is given some added care, and some degree of forestry is practiced. In the timber-cutting operations on state lands outside of the state forests, perhaps better fire-protection is afforded than on most private land, but very little forestry has been attempted or is possible under the existing law. Of the state forest lands, some are also parks. For instance, we have Itasca Park at the head of the Mississippi river. It is about thirty thousand acres in extent, and it contains one hundred million feet of pine. Some of the other state forests have very valuable stands of timber. In the case of Itasca Park we have an illustration of what can be done in state forests, even in a small one. I maintain that is one of the best illustrations in the country, and it is put under rather intensive management. Fires are absolutely prevented in that park. A fire-break has been constructed around it, it is thoroughly patrolled, it is covered with a telephone system and look-out towers, as well as a force of men watching it. Some timber-cutting is done, but it is done under forestry rules, and very carefully, so that where it has been logged over you would scarcely know it has been logged at all. The game is thoroughly protected, for it is also a game refuge, and perhaps as good an illustration of a game refuge as can be found anywhere. The deer have increased wonderfully, and the beavers there run the whole place over, there being ten to fifteen hundred of them in the park. Otter have come in and are thriving there, and it is intensely interesting piece of state property. Now, we hope to see that sort of thing carried out on many other areas of state-owned land, but those things come slowly. It is a matter of education. You can not force the legislatures to go too fast in matters of that kind, as we find, but I think within a reasonable time we shall have a dozen or more areas similar to Itasca Park made out of the present state-owned land.

Now, when it comes to buying lands for state forests, we have a wonderful opportunity there, and I think they have over in Wisconsin and Michigan. So far we have bought very little land. Most of the state forests are part of what were grants to the state, but we have a great opportunity to buy cheap land at two or

three dollars an acre. There are millions of acres of land suitable only for forest-growth. Figures we have collected would warrant us in believing that the poorer, rougher, lands in timber will bring just as good a revenue as is derived from the second-class agricultural lands throughout the state, and will support just as great a population. Moreover, the tourist business is starting in our part of the country, and in a short time will be very similar to what you have in the Adirondacks and in Maine. Thousands and tens of thousands of automobiles pour into the state from Iowa, Missouri and other states to the south of us. The change in the last four or five years is remarkable in this respect. Cars from all over the country show that it is going to be worth while to develop the scenic feature. Now, one of the things we are doing on all of the state-owned land is making an effort to preserve the beauty of our lakes and lake-shores. I have been able to insert a clause in the timber sale contracts so that those shores will be protected. That it seems to me is very important if we are going to develop the tourist business. On private lands hundreds and hundreds of those beautiful lakes are wrecked every year in the logging operations. As I have said on other occasions, our lakes up there are no more beautiful in themselves than the mud-lakes out on the prairie. It is simply a difference of the timber growth around their shores. Considerable planting has been done—but in that regard I want to say one word about the raising of nursery-stock. We find a good deal of trouble out there in getting nursery-stock. We have found real trouble. Our nurserymen are very well organized, and they seem to want the state to purchase seedlings to transplant from the commercial nurseries. That would be all right if we could get them at a reasonable price, but if we are going to embark on a large plan of planting it is necessary to obtain stock at a price that will warrant us doing the planting, so that we can look forward to a profit from the operation. If it is going to cost us one hundred dollars an acre to buy these little trees and plant them, we can never expect a profit from the operation, and we know that we can raise them at a cost of six or eight dollars a thousand, or say eight to ten dollars an acre for the plants, and we have been doing that. We have gotten into serious trouble in some instances with the organized nursery people, but that is one thing that I suppose every state is more or less up against, the matter of obtaining stock.

Another thing, we are leasing cottage-sites on these state lands, and derive some little revenue, and greatly popularize the state forests in that way. We are making use of the fur crop in Itasca Park. For several years we have been trapping systematically, particularly beaver, and the revenue goes to the support of the park. Last spring we trapped fifty-one beavers, catching only the males, and sold that little bundle of fur for two thousand twenty-five dollars, which helped considerably in the support of this park and forest. Now, as regards the actual cutting operations. We have not gotten very far on the timber sales. With us for the most part our sales were made before these lands were turned over to our department, and they are still active, and the loggers are still cutting under the old agreement. These are expiring from time to time, and the new leases may be made on a different basis; but for the time being the actual practice of forestry is rather limited. We hope to see the time when Minnesota shall be like you people of the state of Pennsylvania, where we shall have millions of acres of state forests, actually designated as such, and actually handled on a forestry basis, on a permanent yield plan. We have perhaps ten or twelve million acres better situated for that purpose than any other, and even that does not express it all, because there are great areas of land which are of doubtful value for agriculture. There are also large tracts in Minnesota that have come up to second-growth pine, particularly jack pine and Norway; and while those stands of timber may be on land that can be profitably farmed later on, it would seem a crime to destroy those promising growths of timber

at the present stage of their development. And so we are making an effort to have them incorporated in what might be called temporary state forests or auxiliary state forests, and there is some promise of success in this regard, because the profit or advantage to the state of doing this sort of thing is very evident.

I am afraid the time is so limited that I should not talk any more at this time. I would be glad to answer any questions. (Applause.)

Mr. PETERS. I should like to ask Mr. Cox how much this problem would be solved by fire-protection alone.

Mr. COX. That is pretty hard to say, but we have a fair reproduction of pine and spruce, hardwood too, particularly poplar and birch; but there are hundreds of thousands of acres where logging was severely done, and where fires followed rapidly, and where it will be necessary to plant, so that fire-protection is not sufficient in itself, and we shall have to do a great deal of planting.

Mr. PETERS. To what extent can natural reproduction be depended upon?

Mr. COX. Natural reproduction will take care of seventy-five per cent at least.

The CHAIRMAN. The next paper will be on "Assistance to Private Timberland Owners," by Mr. R. C. Jones.

Mr. LOVEJOY. It seems to me that the item of the bill concerning which Mr. Pinchot spoke, has rather gotten lost in the shuffle. Unless some one will relieve me of the responsibility, this afternoon, I should like very much to hear enough discussion of the status of that million-dollar appropriation and of this bill, to leave us at least fairly clear in our minds as to where the bill is and where we are.

GOVERNOR OLCOTT. I think the gentleman's suggestion is very meritorious. Oregon was not on the program. Yesterday Mr. Morrill kindly mentioned Oregon in connection with the western states. If there would be no objection, before the session closes this afternoon I would like to have a few minutes, I will be very brief. We have a very good board of forestry, a non-political organization, five members on it, being representative of different industries of the state. I notice on this afternoon's program there were some additions to it in order to fill in, so with the consent of the conference I would like a few minutes this afternoon. That would give me a better clearance with my board for spending some of their good money in Pennsylvania.

The CHAIRMAN. Surely, Governor Olcott, we would be pleased to hear you.

GOVERNOR OLCOTT. They would know at least that I was on the job.

On motion duly made and seconded, the conference, at one o'clock P. M., took a recess until two o'clock P. M.

Senate Chamber.

Harrisburg, Pa. Thursday afternoon,

December 9, 1920.

GOVERNOR OLCOTT in the chair.

The CHAIRMAN. The first paper on the program is "Plant Quarantine Protection," by J. G. Sanders, of the Pennsylvania Department of Agriculture.

Mr. J. G. SANDERS. Gentlemen, I feel almost like an interloper on your program, and I assure you I only want to occupy a comparatively brief period of time to discuss a matter which I think is very close to the hearts of most of you; at least I assume by your presence at this meeting that you are interested in plant-protection, and deeply so. The matter of plant-quarantine in America and its subsequent adoption, and the enforcement of the law, has engendered, as most of you know, considerable discussion, particularly on the part of importers of plants. Dealers and certain of these nurserymen, and pseudo-nurserymen, who have made considerable money in the past by importation of plants from foreign countries have had very little regard for the future safety of American agriculture. I want to bring to your attention the condition which exists at the present time and ask for your cooperation, which I think I already have, for the enforcement of quarantine No. 37, which was promulgated in 1912 by the federal horticultural board.

The federal horticultural board is made up of scientific men of the United States Department, who unfortunately have other duties in addition to taking care of the matters which come up before their board. The attack which is brought about at this time is the outgrowth of various and sundry attacks by dealers and nurserymen, which have been ill-timed, and rather poorly considered, and in many cases very slight attention has been given to the truth. More recently a board has been appointed representing the American rose-growers society, the American nurserymen and certain horticultural societies of several states and others interested in horticulture, either professionally or from an amateur standpoint, and these people are now getting down to a constructive opposition. I do not know how far they will go. I can not see that they will make very much advance in their attempt, but the point is this, every man I believe here should do his utmost in his own bailiwick to offset any attempt to emasculate the law or limit the federal board's action on Quarantine No. 37. This attempt is under way at the present time, and I believe that we only need to consider a few of our major diseases in order to bring to your mind the importance of limiting the miscellaneous importation of plants from foreign countries in wholesale quantities.

As state officer, I have been taking the lead somewhat in this feature for the past eight or nine years. I have made a great many friends and some enemies, but I believe that I am on the right side, in fact I know I am on the right side, and on that account I am willing to "stand by my guns."

The ravages of the chestnut-blight, which you all know has been confined to the eastern part of the country, is an example of what might be expected if we continue to permit the miscellaneous introduction by private companies and private individuals, professionalists and trade concerns, of plants from all quarters of the globe. The chestnut-blight, possibly you know, was brought in incidentally with a small shipment of trees from China, and the ravage it has caused in this region or the east is well known. The fact that there is apparently no stopping of it until our American chestnut is almost wiped out is serious food for thought. The citrus-canker is another disease brought from China and established in Florida by nurserymen. This disease was unknown to science and no one would have recognized this disease at a port of entry had it been found by an inspector. So with the white pine blister-rust.

Now, more recently we have introduced another disease that becomes particularly interesting to you, as your interest may be open toward losses of a food product. I will leave here a sample of the potato-wart disease which was found in this state only within the last three years, and promises to be a very, very serious pest, one which can not be eradicated from the ground by any crop-rotation method. In fact we have been unable to sterilize the ground with any known method within any reasonably economical cost. Even steaming the ground, the use of formaldehyde under eighty pounds steam pressure is not certain to sterilize the soil and prevent the spread of this disease.

These are a few of the well-known examples of what can be expected for future generations, if we permit unrestricted entry of plants and plant-products from foreign countries. Now, this committee has taken action only recently at the meeting of the American Entomological Society to issue a statement, and I must say has paid very little attention to the facts, and it ill becomes men of the standing of some of the men of this committee to put out a paper or a statement of this kind without trying to determine more carefully what the real facts are in connection with the enforcement of Quarantine No. 37 by the federal board. It is unfortunate that this committee did not get the facts before they published their statement "An Appeal to Every Friend of American Horticulture," in several papers and magazines. In this appeal they make the statement that there has been built a "Chinese wall around American horticulture." Now, no such condition exists at the time, I can assure you of that. Only the other evening I was in Washington discussing this whole matter, and they assured me that there was every possible attempt on the part of the federal horticultural board to permit the introduction of desirable trees, shrubs and plants of all kinds, but that they wished to safeguard these plants by certain restrictions. Now, the nurserymen are still permitted to bring into this country bulbs of certain types, but an absolute prohibition has been put on the importation of all plants of certain other types carrying soil about their roots which we can not possibly inspect at the port of entry. It is the hope at least of the federal board, provided congress gives them sufficient funds, to install a larger force of inspectors at the various ports of entry, so that less difficulty will be occasioned in the importation of plants due to the inspection at the port of entry. When I tell you that five hundred special permits, covering hundreds of thousands of plants, have been granted to importers of plants during the past twelve months, you can see that no "Chinese wall" is being built around American horticulture.

There is another side to the question. I have been laboring for some time with the nurserymen at their national conventions, on three or four different occasions,

trying to explain just what this means, and fortunately most of the growers of nursery stock appreciate the conditions.

The Japanese beetle is another pest which has come into this country and was brought in by one of the large nursery concerns, and it has become established that it came from Japan in soil on the roots of Iris. Numerous other pests and diseases have been brought in to the country in the same way. Now it happens that the nurserymen who introduced this pest are the people who have been fighting the federal board most violently. They have been using facts rather carelessly in connection with their criticisms of the work of the federal board and have been attacking it without just cause. I want to read you a brief statement from the "National Nurseryman," which gives you a little more light on the attitude of the nurserymen:

"Here are some of the losses to American farmers in the United States in one year by plant diseases which might have been prevented if known control-measures had been immediately applied: Wheat, 112,000,000 bushels; oats, 50,000,000 bushels; corn, 80,000,000 bushels; potatoes, 50,000,000 bushels; sweet potatoes, 40,000,000 bushels (two-fifths of the total crop); tomatoes, 185,000 tons; cotton, 850,000 bales; peaches, 5,000,000 bushels; apples, 16,000,000 bushels. The figures were compiled for the year 1919 by the Plant Disease Survey of the Bureau of Plant Industry, United States Department of Agriculture.

"In compiling the above the Bureau of Plant Industry has been playing the children's game of supposing.

"Why not play the game to a finish and keep on supposing what would happen if the 'might have been' really happened.

"Without disease and crop-failure present plantings would produce more than could be harvested, transported or used. Farming and gardening would soon be a lost art, no skill and little labor would be required to produce all the crops necessary.

"We might as well keep on supposing there would be no disease among animals and incidentally no disease or death among human beings if proper control measures were used. The game ends here as the imagination gives out."

I feel that you have some very important papers on your program, and although I could talk at considerable length on some of these matters, yet I believe I can readily close by asking of you the support of your different states for the work of the federal horticultural board in the enforcement of quarantine No. 37, which I believe is unassailable. The method adopted by the board may be open to criticism that you might expect from any new organization in putting the quarantine laws and regulations into force, and under the existing conditions I ask your serious support for this federal quarantine No. 37 and any regulations that may be promulgated under it.

Just a word more on this white-pine blister-rust. We have had some experience in this state, fortunately we have been able in Pennsylvania to prevent the spread of this disease, and during the past two years no appearance of it has been discovered, and that only by very aggressive action. The big question for us now is to prevent it entering into the western states, Dakota, Michigan, Minnesota, and that region, and to prevent by all means possible the introduction of this disease

into the western five-leaved pine region. If it goes into that country there is no doubt but that enormous loss would occur.

If there are any questions that occur to you on this disease I should be very glad to reply to them if I can. Regarding quarantine No. 37 I do feel, however, that the federal board should have the heartiest support of you people interested in forestry, nursery-work and nursery propagation. The trees in this country, they not only are guarding your interests, but the interest of the farmers.

Mr. LOVEJOY. May I inquire, Mr. Sanders, whether there is any technical opposition; opposition from technical men, to this order?

Mr. SANDERS. On the part of technically trained men, very little indeed. We think the most serious opposition comes from the State Horticulturist of Illinois, but I really think we have enlightened him on just what this quarantine means so that he will probably change his opinion somewhat. I hate to take any more of your time, but the point is this; the strongest opposition to this quarantine comes from a great many of those who have been accustomed heretofore to get some German, English or Scotch catalogues and seeing some new varieties that they do not have in their garden, they want to introduce them; and when they find they are unable to bring in these varieties to add to their collection their ire is immediately aroused. This group have gathered up a great deal of opposition, but the technically trained men are able to see the advantage of a quarantine of this character; but, of course, the importers who have made considerable sums of money are very "peevish" over the whole situation.

Mr. COX. Mr. Chairman, I would like to offer at this time a resolution before any of the members have to catch trains.

Resolved, That the state foresters in conference do hereby express their deep appreciation of the courtesies and privileges extended to them in Harrisburg by the Pennsylvania Department of Forestry, by the individual members thereof, and in particular to Mr. Pinchot, whom we wish to thank for a repetition of his old-time hospitality.

Mr. GASKILL. I do not want to run any one else out, but I hope I may have the privilege of seconding that resolution. The foresters are pretty well accustomed to being well entertained in their going about in the country. They have had some experience of the hospitality accorded them by a good many individuals, but I think I can say without much overstating the fact that Mr. Pinchot and his organization have laid themselves out here in such fashion that we can joyfully and whole-heartedly say you have done yourselves, and us proud and we are very grateful to you.

The resolution was unanimously adopted.

The CHAIRMAN. The next paper on the program is "Keeping Idle Forest Lands Busy," by Prof. P. S. Lovejoy, of the University of Michigan.

Prof. P. S. LOVEJOY. Mr. Chairman, I have taken the liberty of changing the title a little, so as to make it read, "Making the idle cut-over lands get busy."

In a theoretical way, the problem of getting the cutovers to work is absurdly simple. First, you designate those areas which will shortly be needed for uses

others than timber-production, then you stop the fires, thereby saving whatever there may be left of the original forest and permitting volunteer growth. Later, as convenient, you, fill in the holes by planting, proceed to your thinnings, and when things are nicely settled, put in your spare time drawing curves revising the working-plan, and complaining over the professional and personal shortcomings of the office over yours.

All very simple, as far as the technical end goes; get your land, stop the fires, take what natural growth you can get and supplement it artificially as fast as practicable. But it is not as simple as all that—is not simple at all, as things look from 1920.

As to matters of artificial reproduction, there is no longer any possible question.

Having gotten pretty much over our German-made notions about Scotch pine and Norway spruce and European larch, and having been cured of our short-cut to glory via catalpa and locust, we are about ready to get down to business and to thank our gods for jack pine and popple, loblolly and red gum, white fir and birch. We have broadcasted and seed-spotted and grub-hoed and fussed with 3—2 and 1—0 stock, have made quite a lot of 0—0, and now know about all we really need to know in order to pick up and go at any speed. Suitable planting stock? By the tens of millions or billions—a few months after anybody orders it. Planting methods? Spud or mattock or plow or spade—and so as to insure a decent survival and adequate catch with all the certainty with which a farmer sows clover—more certainty than that. Subsequent growth? Not a question but that it will be satisfactory; the basal area computations can wait.

As to the quantity, quality and usefulness of the volunteer growth which will follow automatically upon the suppression of the fires, we are, I think, rather shy, both in facts and in faith. It is my very strong impression that we have been overlooking a very big bet here. Research upon elastic limits and the effect of polarized molasses upon the xylotomous tissue of *Bunkobus tittywampus* we have not lacked. As to just what happens when fires are kept out of cut-over land I can find little worthy information and still less technical interest. We are even told to hush-hush on that subject, for fear legislatures will get the notion that nursery-work is superfluous, and that clean-cut and plant is the high European hunch. There will be exceptions, of course, but my own feeling is that the stopping of the fires will in the majority of cases insure a forest which will prove very decently satisfactory and which will give more usable forest per dollar of fire-money than will a hundred dollars of planting-money. It is certain, of course, that better forests will be made to follow the early volunteers and that nursery-work and planting can contribute to this very largely.

If then, it may be assumed as established that we have developed an easily workable technique for big-scale forest-planting, and if it is admitted that the volunteer forests will be much better than merely worth saving from fire, we are brought back to the consideration of stopping fires. How about that? Have we satisfied ourselves that we can stop fires? What do we mean by that? Not that we plan to prevent fires from starting, for we know they will start. Not that we do not expect some big and costly fires, even after we get things fixed up to suit us, for we shall expect some bad fires. Perhaps we mean that on the average fire-losses are to be reduced to a negligible minimum—to such a small fraction of loss that it can be disregarded. How much of a loss is that, in per cent of acres per year and per rotation?

What is adequate forest-fire protection? If but one per cent of the area protected is burned over in an average year, will that be considered pretty good work? That would be equivalent to burning over one hundred per cent of the area every one hundred years. To burn over one acre in every thousand would amount to burning over ten per cent of the area in one hundred years. We have been taught forests may not be expected to pay out more than three or five per cent, net, per year. If the forest suffers a ten per cent loss from fire, each rotation, where then would the net returns be? Can anyone show a single solid township of cut-over country subject to normal fire-hazards, where fire losses have actually been kept down to twenty-three acres a year for ten years, or five years? What about this "stopping-fire" talk which we all get off so glibly?

In Michigan, if anywhere, there should be some experience and judgment concerning fire in the cut-over country. But an official report from the United States forest service to the responsible state officers last year said that a cent an acre should give "adequate" protection. At the same time one professor of forestry was saying that five cents would be required, and another professor was saying that the job could hardly be done for less than ten. Meanwhile a forester who had had years of experience in operating a big private fire-protection association was saying that, for three cents, he could reduce fire-losses to that degree justified by the value of the property protected.

The national forest in the jack-pine plains of Michigan was then charging up five cents an acre for fire-protection and rather crediting itself with intensive work. But one day the wind blew in the usual "unprecedented" manner while the country was in the usual "abnormally desiccated condition," and the fire went to Silver Creek or thereabouts in the customary manner, burning over a per cent of the area protected which would be too sad to quote. During all this time the state forester, who alone of the entire outfit could show a chunk of cut-over sections where fire had actually been kept out for twenty years—new fires running up to the fire-lines from outside, year after year, and being stopped at those lines—he was making no statements whatever as to the practicability of stopping fires or as to the cost of stopping fires. But, having already one big tractor to pull stumps and clear fire-lines, he proceeded to get another tractor to clear fire-lines and to keep those lines clean.

I am well aware that the American forester can exhibit a greater accomplishment per dollar of fire-money expended than anybody in the world. I am willing to assume that the machinery for fire-prevention and control has nearly all been invented and tested out. I have seen fire fought in a good many states and under many conditions. I have no doubt but that it can be done and I have a full conviction that it must be done, but, with the exception of a little string of sections on the Higgins Lake state forest of Michigan, I have never seen a place where fire has been actually, deliberately and artificially kept out of the cut-over country for so long as ten years. Those sections have fire-lines around every forty-acre square, those fire-lines are freshened twice a year, a fire-tower overlooks the area in great detail, there are many roads, a real fire-fighter is custodian and he has a crew of men with automobiles constantly available.

Considering everything, is it appropriate that we should be so smug and so glib about stopping fires on the cut-over lands? Have we told the full truth about the costs and difficulties of that thing? Have we made serious or adequate attempt to determine the essential facts and practicabilities? Do we know as much about

the effect of fire on soil and forests as we do about the effect of seed extracting house heat or the viability of tree-seed collected from altitudes A, B and C, and from dominant, co-dominant and sub-dominant specimens of juvenile, mature and decadent condition?

We are inclined to bemoan the difficulty of developing an intelligent cooperation in fire-work from settlers, hunters and fishermen, not to mention railroad officials and business men. We allege that stopping the fires would vastly improve the stocking of game and fish, would lead to a great expansion in the recreational values of the cut-overs, would conserve the scant organic content of forest-soils, would insure forest-products for the wood-using industries, and so forth. But where is the forester who is in a position to substantiate these statements in an orderly and convincing way? A university forestry department undertakes to show a relation between forests and wild life and dredges around in the bottom of a lake for proof, instead of taking a census of the animal life in a typically unburned and in a typically cut and burned area.

A high official of the United States bureau of soils informs an influential citizen that the damage done to soils by fire is commonly exaggerated, and that the organic deposit of the forests typical of the north lake states is deleterious to both soil and forests, and its removal—as by fire—will benefit both soil and forests—and the United States forest service is not in a position to demonstrate the contrary. A professor conducts an experiment showing certain agricultural advantages to be possible by burning over peat-lands and the state forester spends a summer fighting peat-fires.

In another state an irate citizen writes to his paper claiming that the stopping of fires in the young second-growth is vastly more important than planting wind-breaks and the like, and the presumably responsible officers hunt around to find somebody to bawl out the offending citizen for his dangerous contentions.

My feeling is that foresters have done little more than flutter around the subject of cut-over country fires. This may once have been expedient, but is it expedient from now on? The chief of the forest service is about to ask congress for a million dollars as a bait to catch fire activities in a score of states. The state forester of Pennsylvania proposes to ask his legislature for a million dollars for his state alone. There is no forester who will doubt but that it will take that much or more to stop the fires in Pennsylvania, and equal sums in a dozen other states. There is no forester worthy of the name who doubts that such funds so expended would be the best sort of investments. But, save for that one man, where is the forester who has been telling the full truth about fire-control and its cost in the cut-overs and acting according to his convictions?

It is a tremendous undertaking, gentlemen, but one which will not be advanced until we quit our pussyfooting. If in its accomplishment tender and timid foresters must be replaced by bolder and harder men, foresters or otherwise, then the more reason for starting soon. The problem of getting the cut-overs to work starts with better fire-protection, is conditioned upon more fire-protection, and lingers as long as fire-protection is wanting.

Whatever the local technique best adapted to the job, it will involve great sums of money and a very large personnel of fire-trained men. We shall continue to learn that part of our business by fighting fires. We shall get a chance to fight

fires and thereby learn this business only as we are able to convince the public that stopping fires is at once practicable and worth the cost. It is my thought that we have not yet succeeded in either; that we have not yet properly demonstrated that stopping the fires is really practicable or that it is worth the costs. If I am wrong in this, someone will certainly contradict me directly and will arise with convincing argument and object-lessons, pointing out instances where cut-over country fires have long been kept under control, and pointing out the exact relations between the cost of the fire-work and the increase in values arising out of the protection.

I know, of course, that these things are subject to demonstration; my point is that the full demonstration is now lacking, and being lacking, it is reasonable to expect a considerable measure of skepticism and hesitation on the part of the public, legislatures and congress. That lack requires remedy in the very near future.

So much for artificial restocking, for volunteer growth and for fire. There remains the matter of getting the land. This, of course, is the big item—the item most generally lacking and, perhaps, the item in which we have bungled most grievously. We can not plant, can not grow or tend volunteer forests or keep fires out of the cut-overs until and unless we have some manner of jurisdiction over the lands—the cutover and burned-over lands, the lands now lying idle, loafing or devastated by ax and fire—and by the hundreds of millions of acres, and in twenty states.

As in the case of fire, it is my feeling that in their procedure foresters have very often been seriously at fault in all this—that we have failed to apprehend the nature of the obstructions which have confronted us—that we have not used all the tools ready to our hand or have bungled and fumbled in their using.

Take the case of Wisconsin as the most perfect example of this. After years of leadership and uniformly favorable legislation which appropriated funds and gave authority for the direct acquisition and consolidation by the state of cut-over land, for state forests, and generous authority concerning fire and planting, there developed a sudden and violent opposition to the whole scheme. Entire county boards came down to the capital, breathing fire, a case is forced to the supreme court of the state and the court invalidates the whole forest program, holding it to be unconstitutional. Now, how could such a thing happen?

The nubbin of the controversy hinged in this; the state forester's plans disregarded the point of view of the citizens living within the areas designated for consolidation into state forests. The state forester, following the early precedents of the national program, and with too single an eye to easy administration, planned to acquire about a million acres lying in a nicely rectangular solid chunk. Within this area were streaks and patches of loams and clays more or less well suited for agriculture and already supporting more or less in the way of farming settlements.

In Wisconsin, after years of labor and concentration, they had developed an unusually clear and workable policy of agricultural development. The state forester did not understand its potency, allowed himself to appear as opposed to it—and was smashed, along with his forest-program. It was another case of the "June eleventh" troubles of the national forests, only bigger and more acute.

While the state forester was traveling the southern counties of the state with a set of lectures and lantern-slides showing endless devastation caused by fires, the state director of immigration was also traveling with a set of slides showing the

development of stump and brush-fields into prosperous farms. Neither official justly appraised the intents and proprieties of the other's work. When it came to a show-down, the established agricultural idea won hands-down, and forestry in Wisconsin is to-day hiding out like a moonshiner with the revenuers on his trail.

Other states than this could be named in which the dominance of the agricultural idea has buffaloeed and suppressed the forest idea even to a point where state forest officers quote experiment-station bulletins, having to do with lime and sweet clover and yield of butter-fat per acre of silos, with more ease and conviction than they speak of second-growth oak or the market possibilities of hickory—and this, perhaps, in a state having millions of acres of idle land, punctured with deserted farms and abandoned farmers.

Have we, as foresters, soberly canvassed this situation and made intelligent plans for meeting it? Has any forester or forestry organization ever attempted to assemble convincing evidence to demonstrate the reasonable limits to which the agricultural development of given cut-over areas can go within given time? Has anyone urged effectively that the greatest possible agricultural development of the cut-overs can only be achieved by making the whole cut-over area continuously productive? Scattered through the low-grade lands are patches and streaks of good land like peninsulas and islands in an ocean. To work these streaks and patches by farming is usually difficult or unprofitable, not by reason of soil or climate, but because of their geography and the economic conditions which their geography entails. When surrounded with new forests, of the sort we will have from now on, the forest areas would require and absorb all the surplus labor of the farms, the coming of permanent wood-working industries would create a local market for agricultural products, and farm would supplement and work with forest as, in the west, the ranch supplements and works with the range. Is the picture of all that plain and clear before our eyes? Have we ever tried to present that idea and ideal before the altars of the agricultural priests? Have we never formulated for ourselves or explained to the back-woods citizens how the new forests will differ from the old; that the new forests will be protected and tended and will grow faster and more per acre in less time than the old wild forests? That the new forests will not be jungles left undisturbed for a century or so, bottled in and frozen up, but, instead, will be worked and working things, intimately and profitably associated with the farms and farm-towns which will be located in and through them? Have we explained and expatiated upon the effect which a great and growing forest-cover will have upon game and fish and tourist traffic, and how this will prosper the forest-region communities? Have we sold that idea to the sportsmen and tourists?

My point is this: Too often we have assumed that forests and forestry justified themselves. Too often we have attempted to force an unintelligible plan down the throats of communities desperately trying to keep their economic footing by old-line agriculture. Too often we have thought in terms of big, solid chunks of land within our jurisdiction. Too often we have tried to further our schemes by wholesale condemnation of the agricultural possibilities of the cut-overs. In doing these things we have gone counter to all American precedent and the prevailing doctrines of the country. No economic notion is more firmly rooted in America than the idea that anything is a good thing which furthers agricultural development. To buck that notion is not only futile—it is bone-headed.

But this is dissertation. The cut-over lands are in private ownership. The cut-over lands are held by the tens of millions of acres by a handful of lumbermen

and ex-lumbermen who have no plans for these holdings save a vague hope that they can unload ahead of compounding taxes and interest. That hope is as vain as it is vague. Within a few years, as things are going, great areas of cut-over land are due to be confiscated by taxes and interest. Perhaps that will result in wholesale tax-delinquency and reversion to the states. If so, the tax-reverted lands will come back in irregular and isolated tracts unfit for administration and requiring endless trading and consolidation and delay before they can be properly protected or managed. Will that be a good thing for us or for the owners or for the states?

The public was a party to the great economic mistake which passed the ownership of these lands into private hands. It seems to me that it will be poor economics and poor business to force great areas into bankruptcy. On the other hand, where the big and little speculators have incurred unreasonable expenses, they can not expect the public to guarantee them their interest or profits. A way out, as I see it, is through state and national acquisition under an extension of the Week's law plan, perhaps coupled with an increase in local tax rates or assessments so as to hurry the proceedings.

Theoretically, it might be well to attempt a soil and economic survey which would appraise and classify the lands, and on the basis of such a survey, to proceed with the working out of policies and plans for agricultural and forest and recreational uses. Actually, I apprehend, that would be a dangerous and difficult procedure, for too great a responsibility would be placed upon the surveyors and too much local and political friction would probably develop. It would be better to allow the basic economics of the situation freer play. By putting even slightly more tax-pressure on the owners of idle cut-over land and at the same time giving a chance for their relief, the owners themselves could be depended upon to classify their holdings with considerable accuracy and with a minimum of debate and friction. It may well be that the owners will often see their way to growing timber on their own lands if it comes to such a show-down between timber crops or nothing.

But I do not mean to intimate that I would do away with soil, on soil and economic surveys. If not imperative, they are at least tremendously valuable. Such a soil reconnaissance as that of Wisconsin, for instance, immediately blocks out the large areas of soils of different character, defines with much accuracy the practicable development to be anticipated, and prevents the loose assumptions and wild talk so generally met when cut-over-land possibilities are under discussion.

No mere soil survey, however, is enough. There should be an economic survey also, which will report on such items as ownership, cover, cost of clearing, transportation, markets, past history and probably availability for given uses. This economic and soil survey should do for the cut-over country, what the forest survey does for the forest; should furnish the base data for the formulation of a real working-plan, section by section, township by township, county by county. We are closer to that than we may be aware, I think, Michigan laws now provide for such work.

In the really mountainous country such surveys are, perhaps, less needed, since there the line between agricultural and non-agricultural lands is easily fixed, as a rule. But on the basis of acreage the mountain areas of the cut-overs are of less importance than the relatively level areas of the coastal plains, the lake states and of the southern pineries. In these regions, surveys of the sort described seem to me to offer the cheapest, quickest and surest assistance in arriving at a real understanding of the situation, and such an understanding as will force prompt consideration and action with a minimum of difficulty. But if such surveys

are considered or undertaken, foresters will need to insure themselves of representation and of adequate consideration for their point of view. Soil-surveyors are few in number and inclined to regard very highly the sufficiency of their private technique, and the agronomic data which they characteristically append to their field-records and reports has to do almost exclusively with affairs of orthodox agriculture. With them, as with their brothers of the agricultural colleges and experiment stations, forests as crops, appear as mere academic conceptions, not reasonable probabilities save for the utterly waste and hopeless lands. They are usually willing that the forester should some time scavenge after them when the soy-bean and the frost-proof peanut fails, but not before. We have been too modest or too timid. But lumber is now quoted by the board-foot instead of the thousand feet, and pulp is quoted by the pound rather than the ton.

If the solution of the cut-over-land problems has yet to be found, we, as foresters, are very largely to blame. We have not always played our hand with courage or with skill. It is time to shake things up and get going to the tune of "Every acre working all the time."

Mr. PINCHOT. I have been very much impressed by this paper of Professor Lovejoy's, particularly that part which relates to fire as correlated with the discussion we had on fire this morning. Would it be in order at this time to move that the president of the Society of State Foresters be requested to appoint a committee of three to report to the next meeting of the association on the question of standards of fire-protection? My intention is to make that as wide a subject as it is possible to cover.

Mr. GASKILL. I think it altogether admirable that the national organization or association should follow the precepts laid down. I second the resolution.

The resolution was unanimously agreed to.

Mr. MORRILL. Mr. Chairman, I would like to ask if there have been arrangements made whereby the papers which have been read may be multigraphed or mimeographed and the members to receive copies; if such arrangements have been made, or can they be made?

Mr. PINCHOT. May I answer that question, so far as I can? It is my hope that it will be possible for the Pennsylvania Department of Forestry to print the proceedings of this conference and supply copies to all of the members.

The CHAIRMAN. That completes, I believe, the regular scheduled program.

Mr. PINCHOT will you kindly take the chair?

Mr. PINCHOT in the chair.

GOVERNOR OLCOTT. Mr Chairman and gentlemen, I spoke briefly yesterday about the airplane and fire-service that the Government has given the states of California and Oregon, and in that connection I want to briefly state that I have before me a little magazine published in New York, called "The Old Colony Club." They asked us for a typically Oregon story a couple of months ago, in response to which this was prepared. It deals largely with the airplane fire-service in Oregon. I will read it to you.

"While the smoke of industry year after year hangs in denser and still denser clouds over the cities of Oregon, and while her agricultural resources have grown to proportions so vast as to be unbelievable, even to those who first saw and pioneered the way for those industries, we claim an intense pride in two of our greatest assets, our timber and our scenery.

"These assets are inseparably intertwined. Our lakes, our waterfalls, our rivers, our majestic mountains and our tortuous glens of perpetual green would become wastes, inhospitable in their barren bleakness, but for the stands of fir, of pine, of spruce and of cedar and hemlock, which crown them with the glory of God.

"To give to the world her fair share of our timber, cut into the sizes and lengths which will take it into the channels of commerce and trade, to build our ships, to house our peoples and to be converted by the hand of man into the million utilitarian uses to which lumber may be put, is one great share of our problem. For Oregon has within her vast boundaries one-fifth of the standing merchantable timber left in the United States today. More and more the world is looking to the mountainsides of Oregon for the lumber to ship to the nations bordering on the seven seas, and it is the duty of Oregon to use this birthright in the manner that will bring the greatest good to this nation and to the peoples of the world.

"The other magnificent share of the problem confronting us is to retain in the fullest splendor possible the God-given wonders of Nature, our scenic beauties which challenge the Alps and look down with scorn upon many of the boasted wonders of the old world.

"But too few years ago the people of our state began to awaken to a realizing sense of her wonderful endowments. But we are awake now, and from every county, city and hamlet comes the cry to save what we have ere it passes away from us forever.

"The forests have two deadly enemies. One is fire and the other the destroying hand of man. By means of the latest of man's own devices, a device that gives us the wings, and the speed, and the eye of the bird, man has turned to his own use the airplane to combat the ancient enemy of the forest, the ravaging fire. To protect the forest against its other enemy man is beginning to look into his own heart and be afraid of the ravages which he himself has wrought. Between the two we have hope to save for trade and commerce the lumber to which it is entitled, and sufficient of the forests and the witching greenery with which they are braided to preserve our scenic marvels, and to leave here forever in the heart of the Pacific Northwest a paradise for tourists and sportsmen from every land and clime.

"To revert to the airplane. The aerial forest-patrol is an unqualified success. Despite obstacles difficult to overcome, such obstacles as are always confronting untried ventures, the aerial forest-patrol has proved itself a success and a boon to those who have watched millions of dollars' worth of timber evaporate into smoke-wreaths.

"The patrol was inaugurated in 1919 when eight planes were sent into Oregon from the army service in California. Here I wish to express my appreciation to Col. H. H. Arnold, commander of the air service for the western department of the army, and Lieutenant-Colonel Watson, one of his ablest aides, who were directly responsible for sending these planes into the state, after I had made an air trip from Portland to Sacramento and San Francisco with Lieutenant-Colonel Watson, to discuss with Colonel Arnold the feasibility and possibility of establishing an aerial-

patrol in Oregon. The planes that came were manned by as fine a body of young aviators as could be found in the service, and millions of feet of timber are today standing unseathed in Oregon as a monument to the skilful alertness of these pilots who braved every danger known to aerial science to pioneer the way for what will eventually be the most efficient form of patrol system known to man.

"Despite the wonderful success they had, it was only after a bitter and prolonged struggle that we could secure for 1920 a complement of planes suitable for patrol-work. Again Colonel Arnold, undyingly devoted to the belief in his cause, came to the front with the planes that have meant another wonderful season for the forests of the state. While final reports and figures are not yet available for the season's work, the ten planes that were sent here covered the forests in many sections like blankets. In far-off places and in remote canyons and recesses of the mountains they spied the tiny puffs of smoke that meant quick ruin and destruction to vast areas of timber unless its fires were curbed quickly and effectually. Many of these incipient fires were beyond the eyes and the districts of the regular patrolmen, but the planes brought quick response. Enormous areas of forest may be patrolled in a single day by a solitary aviator; areas which would require the services of many men over widely distributed sections without the aid of the planes.

These airships operated at the expense of the government forest service, although the state stood ready to share in the burden if demanded.

"The planes are saving the forests to industry, and we are looking to the hearts of our people to save for us and our children and our children's children the magnificent beauties which we have always considered as our right.

"Like the prodigal who inherits a fortune and spends it giddily and gaily in the folly of his belief that it will last forever, we have been squandering, without heed or thought of the future, the greatest inheritance that can be given to mankind. We have been squandering the birthright given us by the Creator himself, but through word which has come to me from people all over the state, I know that we are seeing the folly of our prodigal ways and will call a halt before our bank account with Nature is closed.

"There is something selfish behind this with all of us. It is not altogether a truism, it is not altogether sentiment. We have millions of dollars worth of scenery within our borders to sell to the beauty-loving people from every state and nation. We are spending millions of dollars on a hand-surfaced highway system, which, when finished, we hope will surpass that of any state in the Union. These hard-surfaced highways will penetrate the heart of our scenic centers and take the motorist leisurely on his way through wonders which no painter with brush or words can portray.

"In our efforts to curb the destruction of our forest beauties we are finding the cooperation of the timberman as well as of the private citizen. We hope to enact laws, or in some manner meet the emergency, so that those who, hold private rights in property will not lose thereby. The move is not one of socialism to give to the state the property which, by the right of our constitution and laws, belongs to the citizens of our commonwealth and nation. It is a move to preserve, to cherish and to keep close to our hearts that beauty in the environs of which God Almighty wished his people to live.

"We regret that in the years gone by the public was not alive to the destruction and waste which were being wrought around them. Nature has been so lavish with her favors here that they seemed an unending blessing.

"But if the law and public opinion and the hearts of our people can accomplish it, we will preserve for all time and all generations enough of the beauty remaining so that Oregon will continue what Nature intended her to be—a Mecca for the tourist and an Eden for those so fortunate as to reside within her state lines."

After concluding the reading of the magazine article Governor Olcott read the following paper dealing with forestry questions, particularly as to the forestry policy in Oregon:

"Being the most heavily forested state in the Union, Oregon must each year take greater interest in matters affecting forest-industry. The prosperity of its citizens is more than elsewhere closely linked with forest-resources and forest-industry. Our prominence among forested states also required recognition that the rest of the country is interested in the management of our forest-resources.

"Oregon contains about one-fifth of the nation's timber-supply. It is now third and will soon be first among lumber-producing states. The annual lumber pay-roll is already about fifty million dollars. Climate and species are favorable to rapid forest-growth. We have to consider not only the use and protection of a great existing resource, but best future use of an increasing area of land from which timber is being removed.

"These considerations have not been neglected. More money is spent for forest-protection in Oregon than in any other state. Last year the sum expended outside national forests was approximately three hundred sixty-two thousand dollars, which included a far greater amount for fighting fires than should be spent for this purpose. All merchantable timber and most re-stocking lands are covered by cooperative patrols supported mainly by timber-owners but also by state and federal government. Oregon pioneered the way in compulsory protective legislation, compelling by law all owners to protect land having forest-fire hazard, whether commercially timbered or not. It has equally rigid laws compelling slash-disposal, abatement of fire-nuisance and control of fire. Unfortunately at an early date we disposed of most of our timbered school-land. We now recognize this as a mistake and are seeking to re-establish state forests. We are keenly alive to the importance of forest-growing as well as forest-use, but with over half our land area untaxable being in national forests, Indian reservations and unappropriated public domain the raising of revenue for state needs is more difficult than in many eastern states.

"Luckily natural reproduction is usually swift and certain with us if protection is given. Many of the technical difficulties existing elsewhere do not trouble us greatly, and we are making good headway toward giving the protection.

"It is figured, however, that to adequately protect the twelve million acres outside national forests will require an annual expenditure of some three hundred forty thousand dollars, and that since much of this area is not in merchantable timber, government and state must bear a fair share of the expense. By doing this we propose too that the state and government have a decided voice in the program to be carried out, and we propose too that the bulk of this fund be expended in a manner to prevent need for fighting large fires."

"Oregon early adopted the belief that in all forest matters the leading interests, private and public, must be harmonized and jointly represented in the framing and execution of policies. The state needs their interest, technical competence and local familiarity. Our success in this has produced firm conviction that it is the correct principle to underlie all state, federal and private relations in forest matters. It is no longer theory that in no other way can rights and responsibilities be successfully adjusted and general public support assured. We have tried out the principle while others have been questioning whether or not it would work.

"Ten years ago a state board of forestry was created with the governor as chairman and the head of the state forest school as a statutory member. Believing in the representative principle, our state provides that the other five members be nominated by the lumber interests, timber interests, agricultural and grazing interests and federal forest service. This board has for ten years worked in perfect harmony. Each interest has been fair and willing to yield to the majority, while at the same time contributing services which the state could not have secured for a money consideration. The representatives of forest industry and consumers have been no less public-spirited than government and state officials, and the result is the progressive legislation I have briefly mentioned and a spirit which I am convinced will meet new problems equally well as they develop.

"It was not until the passage of our present forest code in 1911 that forest matters in Oregon were given much consideration, speaking in terms of actual accomplishment. Not until this time were funds made available to employ a state forester and fire-wardens. Since 1911 progress has been rapid even though appropriations are far from adequate. However, the timber-owners have cooperated with the state and made possible a protection system which we feel is not surpassed in excellence by any state in the Union.

"Our state board recently adopted a forest-policy with a view to having an even more definite program to follow and also to outline a course for public education in forest matters. Time will probably not permit presenting this policy for your consideration. It advocates state forests, assistance to farmers and timber land owners in management of their properties, tax reform, land classification, protection of all potential forest-land and a campaign of education looking to better public understanding of our forest problems.

"In conclusion I wish to state that we advocate the same constructive cooperation in national forest-policy which has proven so successful in state affairs. Just as we have been able to assist, correlate and promote the efforts of other agencies without denying their independence or alienating their support, so we believe the government should have a program equally designed to bring out the best state effort without denying local competence, police power, rights or responsibilities. I believe the Oregon system has proven that such a course will succeed.

"For this reason and because in our case at least the fire-problem underlies all other possible steps, we favor a substantial federal appropriation for cooperation with the various states in forest-protection and replacement and will urge on our congressional delegation support of such a measure."

I will close my remarks by reading to you a forest-policy for Oregon, advocated by the Oregon state board of forestry.

"Realizing the vital importance of the forests and of forest-products to the economic welfare of the people of the United States and especially to the people of

the state of Oregon, the state board of forestry hereby approves the following fundamental principles as indicative of its proper field of activity in assisting in solving national and state forest problems, to the end that forest industries may be perpetuated and extended and that the people of the United States and of this state may for all time have timber-supplies adequate for their needs.

"Federal Activities.

"1. The state board of forestry recognizes the desirability of maintaining the present national forests under federal control and believes in the blocking out with certain limitations of existing federal forest-areas, by purchase or otherwise, of absolute forest-land in the interest of more efficient and economical management of existing forests.

"2. The state board of forestry believes that congress should make adequate appropriations to insure reasonably rapid forest replacement on all denuded national forest-land.

"3. It is urged that congress make appropriations sufficient in amount adequately to protect all national forest-areas from fire and insect-depredations.

"4. The federal government should provide for a comprehensive inventory of the forest-resources and absolute forest-lands, including:

"A. The total supply of merchantable timber.

"B. The total acreage of immature timber with the approximate time of its maturity and the estimated yield at maturity.

"C. The total amount of forest-land now unproductive.

"5. The state board urges the maintenance and extension of airplane-patrol by the war department, in cooperation with the United States forest service.

"6. It is believed that the federal government should not only continue but extend its experimental work looking to better utilization and handling of forest products. Field experiment-stations should also be maintained throughout the west as a means for studying fire, grazing, reforestation and other problems.

"7. The United States weather bureau has, for the past five years, rendered valuable service in forest-protection by forecasting protracted hot spells and dangerous fire-winds. This service has not been brought to the highest state of perfection due to inadequacy of funds for conduct of studies aimed at perfection of the work. It is urged that adequate federal appropriation be made for study of methods in forecasting fire-weather.

"Federal and State Cooperation.

"1. Since forests are a national asset and contribute to the welfare of all the people, the state board of forestry urges that liberal federal appropriations be made adequate in amount to prevent and control forest-fires outside the national forests. such appropriations to be met by equal expenditures within the state.

"2. Funds should be allotted jointly by the federal government and the state for the classification of forest-land now outside national forests in order that no land better suited to agriculture than to forestry may be devoted to forest-purposes.

"3. To facilitate management, there should be in operation a policy of land-exchange, on the basis of equal values, between the federal forest service and the state of Oregon.

"4. The federal government and the state should provide a plan of cooperation through which forest nursery-stock may be supplied to farmers, municipalities and other land-owners at cost of production.

"5. In the interest of economy and efficiency, a cooperative agreement should be entered into through which the state would have the privilege of purchasing supplies and equipment used in the various branches of forestry work from the federal forestry service.

"State Activities.

"1. Such legislation should be enacted as will make possible, through cooperation with the federal government and by direct state action, that degree of fire-prevention and control which will make forest-properties an insurable risk. The state board of forestry regards fire-prevention and control of fundamental importance in any forestry program for this state. Fire-protection should be extended to all potential forest-land as well as those lands now carrying mature or immature timber-crops.

"2. The state of Oregon should enter on a program of acquisition, by purchase, gift, bequest or acceptance in trust, of logged-off or otherwise denuded absolute forest-land.

"3. The state board of forestry commits itself to an aggressive campaign of education, by publications, lectures, demonstrations and otherwise, to the end that the people of the state may be fully informed concerning the value and extent of its forest-resources, the damage done to immature and mature forests by fire, together with the means which should be employed to bring about the full and continued utilization of forest-lands within the state, and to insure the full protection and wise use of the state's existing timber-supplies.

"4. Systematic and continued investigations of insect-depredations should be provided for, in order that feasible means may be discovered for minimizing timber-losses through this agency.

"5. There should be created a commission authorized to investigate and report upon the whole question of the taxation of forest-lands devoted to the reproduction of forest-crops, and of these crops during the period between establishment and maturity.

"6. There should be a definite program of assistance to woodlot owners and to those who desire to establish forest-plantations for farm use, for commercial timber-productions, or for beautifying the public highways.

"7. The state should lend every reasonable encouragement to the establishment of municipal forests for the protection of watersheds valuable to towns and cities in maintaining their water-supply.

"8. Since Oregon heads all other states in the extent of its timber-resources and since the state has within its borders absolute forest-land sufficient in amount to enable it to maintain this position of supremacy, the state board of forestry believes it will be doing a real service to the state in striving to maintain this position of leadership both by advocating the policies indicated above as well as in advocating other lines of activity when such shall appear desirable." (Applause.)

Mr. PINCHOT. Before I relinquish the chair to the governor I would ask if there is any discussion of this paper, and if not, now that I have him at this disadvantage, I wish to say that the chair would be very glad to entertain a motion on the part of any member of this conference expressing the opinion of the conference as to the gracious and able way in which the governor has presided over our deliberations—

Mr. PETERS. Mr. Chairman, I make that motion.

Mr. MORRILL. Mr. Chairman, I second the motion.

Mr. PINCHOT. And as to his very notable contribution to the success of this meeting. Under no other circumstances could it have been as satisfactory as it has been with you, Governor, in the chair, and I know that all agree with me.

The motion was unanimously agreed to.

Mr. COX. If it is in order at this time, I would like to announce the names of the committee on standardization of forest-protection: Messrs. Peters, of the national department of forestry; Elliott, of Oregon; and Mr. Pinchot, of Pennsylvania.

Mr. HOWARD. It may not be necessary, but it occurs to me that a suggestion might be in order at this time that the committee would appreciate the assistance and the cooperation of the president of the State Foresters' Association, Mr. Cox. It appears that the middle west, where the problem is of great importance to be considered by this committee, is not represented, and I am sure after speaking with Mr. Pinchot, a member of the committee, I am sure the committee would welcome and hope that they may have Mr. Cox's assistance and collaboration in their work.

Mr. COX. I shall be very glad to serve the committee in any way I can.

Mr. GASKILL. Can not we all volunteer to help out that committee in any way that is practicable? I do not think anybody wants to hold back.

Mr. PINCHOT. I am sure, as one of the members of the committee, that we would welcome such cooperation. I am sure we all would.

The CHAIRMAN. What is the next business to come before the meeting?

Mr. LOVEJOY. I am not at all clear in my mind as to how the principle item of business before this conference, now stacks up. I am not clear and I should like to find out something as to the detail of the status of the bill which has been introduced, or is about to be introduced; which was or was not, or will or will not give us as much as one million dollars or more of Federal fire money. As I understand the situation, a bill has been framed by the chief of the forest service, and consent or approval for the bill has been obtained from the secretary of agriculture. Presumably it will become a part of the appropriation bill for the department of agriculture. If I am properly informed, or if I understand the remarks made by Mr.

Pinchot yesterday, there seems to be very grave doubt that this bill in its present form, will receive any consideration whatever. I also understood that the defects in the bill might be rendered. Just what that remedy might be I do not understand, and I should like to inquire of Mr. Peters, as the representative of the forest service, what his understanding of the status of that bill now is.

Mr. PETERS. Mr. Chairman, I am suprised that there should be the mystery about it that Professor Lovejoy would have you think. The facts of the case are those, which I thought were pretty generally known, that when the forest service estimates for the next fiscal year were sent to the secretary's office, in the customary manner, they carried a million-dollar item for cooperation with the states in keeping forest lands productive. The one-hundred-and-twenty-five thousand dollar Week's law item, the current appropriation for cooperative fire protection, was not included. We, along with all other bureaux, were subsequently informed that any increase in current appropriations would have to be submitted as general legislation, or supplemental legislation, outside of the regular agricultural appropriation bill. Consequently the item of one hundred and twenty-five thousand dollars was substituted for the million-dollar item, and that is the way the bill now stands. To carry out the secretary's request, the million-dollar item has been forwarded to the Secretary of the Treasury as a supplemental appropriation, which, as I understand it, will come before the House Committee along with the regular appropriation bill, and if approved by the committee will be substituted for the one hundred-and-twenty-five-thousand dollar item now in the bill. Is that perfectly clear?

Mr. HARRINGTON. In other words, if the bill fails of passage all the money of the Week's law is lost at the same time. Do I understand it that way?

Mr. PETERS. No; if the committee does not approve the substitution of the million-dollar item for the one-hundred-and-twenty-five-thousand-dollar item, the one-hundred-and-twenty-five-thousand-dollar item stands.

Mr. HASTINGS. May I ask Mr. Peters a question? In case the million-dollar item is approved by the committee and if rejected in the house or senate, do we then lose the one-hundred-and-twenty-five-thousand-dollar item?

Mr. PETERS. If it were rejected by the house the bill would then go to the senate without the million-dollar item, and, of course, without the one-hundred-and-twenty-five-thousand-dollar item. Now, what the senate does is another matter.

Mr. LOVEJOY. I should like to ask a question of Mr. Peters: What his understanding is of the point made by Mr. Pinchot yesterday that the million-dollar item, as written, very plainly carries new language which would be subjected to a point of order by any member, and whether if that is the case it is not very likely that such point of order will be made, and if so as to the chances of that one million dollars? If any member can stand up, as I understand it, and say, "I object, this is new language," and, then the bill automatically goes out, is not the chance of getting that million dollars tremendously jeopardized? It certainly is so jeopardized, it seems to me.

Mr. PETERS. There is some question as to whether that is new language, and that point has not yet been cleared up, so far as I know.

Mr. LOVEJOY. Surely this bill—

Mr. PETERS. Oh, yes; it is cooperative fire-protection.

Mr. LOVEJOY. I should say it was, Mr. Peters. I presume every one is acquainted with the wording of the bill, but I should say that as a matter of fact, the fire-protection item is a minor matter as the language now stands, and that this language was subjecting the million-dollar item to tremendous jeopardy.

Mr. PETERS. I would hardly call it a minor matter, as we would spend most of the million dollars on fire protection.

Mr. LOVEJOY. I should say that the item in this connection was minor.

Mr. PETERS. I do not think that the committee would so consider it.

Mr. LOVEJOY. In order to be perfectly clear may I ask this question: As to whether, in your opinion, it is likely that the bill in its present form would pass the house or the senate without objection being made to what I assume to be new language?

Mr. PETERS. It may stand a very good chance of passing.

Mr. BESLEY. Isn't it so that if a point of order is raised about its being new language the speaker of the house or the president of the senate rules whether the point of order is well taken?

Mr. PINCHOT. Yes, sir.

Mr. BESLEY. And if he rules it is well taken, it will be dropped. If he rules it is not well taken, or in either case a vote will be taken of the body if they disagree. That is my opinion of the subject.

Mr. PINCHOT. My understanding is, if I may say this much from the chair—in a moment I am going to ask Governor Olcott if he will kindly re-assume the chair—in explanation of what at least has been the practice in so far as a point of order is concerned, that under the rules, unless they have been changed, always a point of order must be sustained if the language is new, and the language is new, at least it was so in my time, if there is a word in the appropriation bill which was not there before; in other words, it does not depend in any degree upon the form of the expression or the purpose, but upon the actual language itself. At least that was so ten years ago when I was very familiar with this sort of thing.

Governor Olcott, may I ask you to assume the chair?

GOVERNOR OLCOTT. Mr. Harrington will you kindly occupy the chair?

Mr. PINCHOT. May I explain briefly the matter as I understand it? It being true, as I understand it, that any language which is different from the language which is already contained in the bill is subject to a point of order (and I speak with entire confidence in this matter as to how the rules used to be, because we got a good many of these things through in the old days) my belief is very strong that no matter whether or not all of us get behind this particular item, it will necessarily go out. As I understand from my special investigation of the matter in Washington, men of great influence in both chambers are opposed to it.

I want, if I may, to state the difference of opinion as to the fundamental policies involved, and I am so very, very much interested in securing the appropriation that I venture to make it, and you can then look at it as you choose.

There are four or five things that, as a rule, you have to have to get through an item of this kind that is subject to a point of order. It has to be brief; it has to be unmistakable in its language; it has to be unobjectionable; it has to be for an obviously necessary purpose; and it has got to be substantially without support which would lead to criticism. I say this because we got through in the old days of the forest service a great many such items in different appropriation bills.

Now, it just happens that this very language is subject to all these objections. It is long instead of short, it is difficult to understand instead of clear, it involves a big question of policy and therefore it is sure to meet with objection; and in addition to that, and entirely apart from the merits of what I am about to say, it embodies language prepared by great lumber interests, and therefore would naturally meet with objections. To my mind it is absolutely clear that any item to which these various objections are to be made has not a show in the world, and it has not a show in the world in addition because of the specific objection which will be made.

I am keen as a briar to get this money, and I think that there is a chance of getting it if we go at it in the right way. I think there is no chance of getting it if we go at it in the wrong way. The only way in which we can get it is by putting the language in such shape that it will awaken as little objection as possible. Of course, it is perfectly clear, at least it seems to be perfectly clear to all of you, that no great decision as to policy can possibly be reached in an appropriation bill. If I wanted to try to put a national point of view over I would know with absolute certainty that it was absurd to try to do it in an item of an appropriation bill. It cannot be done. Things in congress are not done that way. Big things can only be settled after a great deal of discussion and on their own merits. There is no desire on my part to settle this issue in any other way, but I would enormously like to see us get that money. I believe we have a chance for it if we go at it in accordance with the rules of the game, and so far as I am concerned I would like greatly to get behind a movement of the state foresters and try to get out of congress what we want.

Mr. PETERS. I would like to correct Mr. Pinchot in one particular with reference to the bill that he mentions. The item in question was not prepared by the great lumber interests, but the wording of that bill was prepared by Mr. William L. Hall.

Mr. CHEYNEY. As I see it, it is no longer a discussion of a point or policy, or whether it is one thing or the other. It has gotten down to a point of the wording of a bill. It is whether the bill can be put in such shape that it can go through. It does not seem to me that we are justified, or would be justified, in putting up something that has a possibility of being objectionable, that is, if the objectionable features can be taken out; and it looks to me as though they could be taken out without in any way influencing the effect of this bill. It might well be, as a permanent policy, as Mr. Pinchot says, that a permanent policy can not be settled in an item of a fiscal bill; it has to be settled on another basis. The only effect that the difference between these two bills could possibly have would be on action that might be taken a number of years from now, whether this matter is put in the present form in which it is worded in the bill or whether it is simply made in the wording as the Week's law has it. There would be, in my opinion, absolutely no difference in the things that are accomplished in the next two or three years under

these two bills. We cannot hope to get any kind of control measure through in the next year, as I see it. It will simply be a question of getting more money to be expended in exactly the same way as the Week's money has been expended in the past, and if the wording of the Week's law can be retained and exactly the same things done under it as we can do under this bill here, then any wordings that we change now are simply so many hurdles that we are sticking in the way of its passage. If we can stick to the old wording and stand a better show of getting the money, it seems to me that we ought to do it. Later on we can take up the question of policy. Later on we can find out what we want or what we do not want on this particular point. So far as this argument goes, it seems to me to be a purely academic discussion of the wording of the bill.

Mr. PINCHOT. May I perhaps contribute this to it? I was in Washington and saw Haugen, chairman of the committee of agriculture; Kenyon, of the committee of agriculture and committee of appropriations of the senate; Capper, who is one of the most influential members of the committee on agriculture; and Lenroot, who would have been speaker of the house had he remained there, and is one of the two or three leaders of congress. I asked their judgment, and Lenroot and Capper wrote me letters, copies of which I have in my possession, in which they stated there was absolutely no chance whatever in their judgment of the passage of items of this sort, and Kenyon and Haugen authorized me to quote them to the same effect. That comes back to another question of opinion, if you like; but it is the opinion of men who have some right to know. I think you have a right to know in detail what my best judgment is, and I can back that up so far as my own opinion is concerned and my experience of some years in dealing with these matters in congress.

Mr. PETERS. I would like to ask Mr. Pinchot, if he is at liberty to give the information that he has secured from the gentlemen mentioned, whether they thought the Week's law fire-protection item could be increased to anything like a million dollars?

Mr. PINCHOT. I am sorry to tell you that question did not come up. I am at perfect liberty to tell you anything they told me. I should say there is no doubt, under all the circumstances, that we should take the wording that is familiar to the House and already approved by it, and tie your appropriation to that wording. As I said yesterday, these appropriation bills pass during the final hours of the session. Nobody has much chance to enter into fine points, and decisions are taken broadly. If a member don't like a thing he makes a point of order against it. If he makes a point of order against an item, you have a great deal better chance, obviously a great deal better chance, if the thing is in language that is clear and familiar both to the house and senate.

Mr. MORRILL. Much of this discussion is a mystery to me, because I have been situated where I have not come into contact with it. I am probably denser than most of you in regard to the matter. I would like to ask Mr. Peters, if he is willing to inform me, just what the objection would be to the forestry service bill if it adopted the suggestion made by Mr. Pinchot and Mr. Cheyney and others. I do not quite understand.

Mr. PETERS. Mr. Chairman, in answering the gentleman's question I would say that the Week's law item provides for one thing, fire-protection. The other language provides not only for fire-protection, but also for reforestation, management-work, and whatever else might be necessary to keep forest lands productive.

Mr. MORRILL. It covers a much broader field.

Mr. PETERS. A very much broader field.

Mr. CHEYNEY. So the use of this money for such purposes as planned, which might very reasonably be construed as a matter of protecting navigable streams and certain other methods of fire-protection there, and possibly certain matters of management, (whether they would be included in the Week's law or not,) would be largely a matter of interpretation.

Mr. PETERS. Absolutely not included. That point has come up.

The CHAIRMAN. Are there any further remarks on this question? It impresses me that this is a very vital question all the way round to some of us, and I know Mr. Morrill is in the same position that I am. There is a sort of mystery about the whole thing that I can not penetrate, and it seems to me that a good, full and frank discussion all the way round would certainly be advisable.

Mr. PETERS. Don't you think that Colonel Greeley's talk yesterday was clear? And did you get a copy of his Madison talk?

The CHAIRMAN. Yes, sir.

Mr. PETERS. Have you read it?

The CHAIRMAN. Yes, sir.

Mr. PETERS. You could not understand it?

The CHAIRMAN. I understood it perhaps. It seems to me there is something more back of the whole subject, however, than I have neither heard nor read so far.

Mr. BAZELEY. Is not the whole thing back of this situation, when you get right down to it, that there is a great question coming before all the men interested in forestry, the question of federal control or state control? Now, from what I have read in the papers lately it seem to me that there is very little chance of increased appropriations being made by the present congress for any of the specific governmental activities. It seems to me that unless the department is going to show that the increased appropriation it is asking for is going to be used for its activities it has not got a chance. I do not believe, no matter how important the question of fire is, that there is any chance of a million dollars being granted by this present congress. If that is all that is going to be put into the bill I think congress will stick to just what they have allowed before without any increase whatever. Now, that is the way I have gathered it from reading the papers, from talking with several congressmen who are talking about the size of the budget; and that brings me down to the thought, as an old legislator, of what is going to happen if we go in with the decided stand that we are going to take a million dollars for state cooperation instead of one hundred and twenty-five thousand dollars, winking at the fact that we do not say anything at the time about state or federal control, but with a majority of the states at the present time I believe against federal control. Now, I believe if we say that we will stand for the bill we wink at the fact

that we are asking for a million dollars which will lead to federal control in the future, and that we are a great deal better off by taking the one hundred and twenty-five thousand dollars for the next year and waiting until the fight is completed to see whether we have federal control or state control. I know in Massachusetts we feel there has been too much federal control, and it is no time for us to bring to any of our citizens any more talk of federal control in anything like the near future. Cooperation? All right. I think cooperation will increase our budget if we can cooperate with the federal government, but if there is federal or state control I should not have a chance to get this before our budget committee and get the money to carry out my part of the protection.

Mr. PINCHOT. May I just say that I think Commissioner Bazeley misunderstood the suggestion that I made? I am a strong believer in federal control, but I believe a tendency to push a decision in any direction in this million-dollar thing would kill it at once.

Mr. HASTINGS. I am glad to see the discussion run high, because I want your best thought here to express itself for my benefit. Perhaps I can not "get it" as quickly as the rest of you members have, or perhaps as quickly as the gentleman who is occupying the chair, and I therefore hesitate to trespass further upon your time, but I imagine I see something beyond and behind this controversy. I do not know, but I wonder if Mr. Pinchot could not tell me whether or not a few words could be added to or subtracted from the proposed legislation which would clear matters in his mind. I do not know that it would clear up the subject in my mind, but would it in yours, Mr. Pinchot?

Mr. PINCHOT. If I may answer that question, I suggested yesterday, or intended to, that there are about two or two and a half lines in one place and one word in another place in the bill which carry the state-control point of view. This, of course, could be eliminated. I am strongly of the opinion, however, merely as a matter of practical results, that if it were possible to secure a short form of wording such a form of words would have a better standing than a long and somewhat involved and difficult item.

Mr. GASKILL. Are we not really agreed upon the essentials of this whole situation, which are that there shall be provided by Congress a greater sum of money available for cooperation with the states? Now Mr. Greeley, representing the forestry service, has proposed something; the Secretary of Agriculture has approved it, and it goes before Congress with their support. Mr. Greeley has stated his program in detail. It is clearly up to him, to my mind, to take such action as will secure the desired results. I do not believe that Mr. Greeley, any more than Mr. Pinchot, has any other desire than that, fundamentally and first of all, there shall be secured that million dollars, or as much of an increase over the present appropriation as Congress can be induced to make. I question very much whether in discussing this question here and in this way we are not more or less beside the point. The responsibility or obligation to do the necessary and proper thing is with the Secretary of Agriculture, supported by Mr. Greeley; and very frankly I do not know that it matters a great deal what may be in the minds of some of us with respect to the procedure on various underlying points. It all comes down to the one question of how Mr. Greeley and Mr. Secretary Meredith are going to secure what they want, and what we want, and what we are all agreed that we want. For one I feel very strongly inclined to say, let us trust the forestry service.

Mr. LOVEJOY. May I inquire of Mr. Gaskill what, in his opinion, the forest service might do to further the passage of this bill, in view of the facts as related by Mr. Pinchot concerning the specific statement made by leaders of the house and senate?

Mr. GASKILL. Answering Mr. Lovejoy's question, it is perfectly obvious that it is their obligation. They have undertaken to carry this thing through. The means are clearly in their hands. We have a difference of opinion as to procedure, as Mr. Peters has suggested. Now, opinions don't go, and I can not but think that it is directly up to the people who are going to conduct the negotiations at Washington. We have all said we want the money. We have all said we are going to back the forest service in the efforts to get it. Now let us help them get it. Stand up. I don't mean hands off, if we can do anything; but let us not do anything that will mess things up.

The CHAIRMAN. Are there any further opinions? Is there any other business to come before the meeting

Mr. PINCHOT. May I just ask one more question? And then I am through. If I understand the suggestion made by Mr. Gaskill, it is to the effect that we hold off and see what the forest service is going to do and then get in behind it so far as we can. I am very strongly in favor of getting in behind it and helping it all I can, but I do believe, subject, of course, to the better opinion of everybody here, that unless Mr. Peters has got a fair impression of what this outfit wants he ought to be given that before he leaves here so that he can report it to the authorities at Washington. I do not know whether he has or not.

Mr. PETERS. Well, beyond what has been said here this afternoon and beyond what was declared at the Atlantic City meeting, I do not know that there need be any additional information.

Mr. PINCHOT. If you are clear in your mind of what this crowd wants, that is all I wanted to know.

Mr. PETERS. I think I have the point of view of the various State Foresters.

Mr. PINCHOT. That is, on the big question. I mean on this matter of appropriation.

Mr. PETERS. You mean following Mr. Gaskill's suggestion that we leave it to the Secretary and the Forester to try to secure the appropriation from congress?

Mr. PINCHOT. Here is what I want to get at. I have one opinion, and I have expressed it; some of the other gentlemen have opinions which they have expressed; some have opinions they have not expressed. I think it would be a very valuable thing for the purpose of getting the money if you could have, either by private conversation with those who are here, or by whatever way you choose to get at it, the opinion of each of us as to what he really thinks, in order that you may report that to the one man, as Mr. Gaskill very wisely says, who has the right to introduce an item and push it.

Mr. PETERS. There are some State Foresters here whose views I do not know.

Mr. HASTINGS. I got one of my questions answered. May I ask Mr. Pinchot whether or not certain things could be stricken from the bill which would relieve

the situation? As a secondary question I should like to ask Commissioner Bazeley whether or not the suggested omission would in any way in his estimation jeopardize the securing of the million-dollar appropriation?

Mr. BAZELEY. I believe that unless you have an explanation to give in asking for one million dollars instead of one hundred and twenty-five thousand dollars there is not the chance of a snowball on a red-hot stove of getting it from this congress, because I know. I have just been having a conversation with some men on another agricultural item which is absolutely necessary, that is, on the gypsy-moth item, where they are asking for a supplementary appropriation on account of an outbreak of the gypsy-moth devastation in three states, which if it is not handled immediately will come down to the same proposition we are up against in Massachusetts; and they said even with that very great emergency they doubted very much whether any additional sums could be added to the gypsy-moth appropriation, but they thought that on account of that emergency it might be. So that I believe we have some chance for the fire-protection, but there is no chance of getting additional appropriation for other expenses.

Mr. HASTINGS. Do you think there is a chance for additional appropriation if it cuts off the state control?

Mr. PINCHOT. Are you asking me?

Mr. HASTINGS. Yes, sir, if you please.

Mr. PINCHOT. The new language is the whole item that has been suggested, and the whole item is, in my judgment, subject to a point of order. The special point to which objection was developed during my trip to Washington was that particular feature which establishes state control, which is a very big new policy.

Mr. HASTINGS. It seems to me that the logical thing to do, for I still want to keep my mind open for every tip and enlightenment, the logical thing to do would be to remove from the bill the particular features which Mr. Pinchot found so objectionable in the minds of certain leaders in the house and senate, but to include sufficient new matter which, in the judgment of Commissioner Bazeley, would insure the securing of a larger appropriation for cooperative work among the states. Now, I am not saying that that is my fixed opinion. I am simply suggesting it, and I am seeking for light and information. I have tried hard to see both Mr. Pinchot's and Mr. Peters' side of the question, but I feel there are still some things that have not come out as plainly as they might.

Mr. BESLEY. I think the situation is something like this. The Weck's law calls for an appropriation of one hundred and twenty-five thousand dollars. That is independent from this other measure. If this bill is introduced, and if we eliminate to answer Mr. Hastings's question, if we eliminate that one item of control, still it would be open to the objections Mr. Pinchot mentioned yesterday, because there would be some new language, and it would be thrown out on that account if objection was made. But does it lessen our chances of getting a substantial appropriation from congress by introducing this bill? I agree with Mr. Bazeley entirely that if we simply eliminate everything but fire-protection and go before them for an appropriation of a million dollars there is no chance of getting it. They would say you have been getting along with one hundred and twenty-five thousand dollars, and we do not know if you have spent exactly all of that; and with the present feeling toward economy the chances are we would not get any more now.

We have the same chance of getting one hundred and twenty-five thousand dollars and the additional one of presenting this new matter and enlarged program, with the possibility of getting one million dollars in place of one hundred and twenty-five thousand dollars. I do not think that we are going to lessen our chances of getting one hundred and twenty-five thousand dollars through the Week's law by introducing this other measure; but I rather think it is going to emphasize the importance of increasing the appropriation, and thereby increasing our chances of getting a great deal more money out of congress.

Mr. PETERS. Mr. Chairman, I dislike to prolong the discussion beyond reasonable bounds myself, but I can not see how the passage of this item would in any way operate against the additional passage of such legislation as Mr. Pinchot or the committee of the society of American foresters has in view. Now, it strikes me that this is a pertinent question, Mr. Pinchot. If you were advocating Federal control of child-labor, would you object to the states passing child-labor legislation?

Mr. PINCHOT. May I answer that question? Not in the slightest. I hope the state will pass all the legislation it can to prevent forest devastation; but if I were advocating United States control over child-labor then I would object to the United States passing legislation which turned it over to the states. Do I make the distinction clear? Whatever the states do of their own accord will be welcome; but I would object, under those same circumstances, to the United States passing legislation which turns the question over to the states.

Mr. PETERS. This legislation provides a cooperative fund for advancing money to the states if the states do certain things. It encourages the states to adopt adequate measures. I do not understand you about turning something over to the states which the states already have.

Mr. PINCHOT. Let me give you a concrete illustration in this way. Secretary Meredith told me that the object of this wording was to incorporate the policy of state control. That being true, as I, of course, assume it is since the Secretary said so, and since I naturally want national control—

Mr. PETERS. As I see it, if at any time federal control seems desirable and the people want it, then irrespective of what the states may have done the Federal Government will take control. I fail to see how by encouraging the states now any obstacle will be put in the way of Federal control in the future, provided the people want it.

Mr. PINCHOT. Let me answer that in two ways. In the first place, it is no less than one hundred times easier to stop the passage of a bill in congress than it is to secure the passage, as Mr. Besley well knows. Moreover, once you have adopted a policy precedence is so strong that it would become very hard to prevent the passage of state control enactments.

Mr. PETERS. Maybe congress would simply consider that as a succession of steps in the enactment of legislation for Federal control.

Mr. PINCHOT. In the second place, I do not think my information on the matter is of any consequence at all. I think the essential fact is that certain leaders have told us that that particular thing can not go through, and I think they have sufficient position so that you have got to accept what they say. We know,

so far as we can know anything, that the item which is subject to a point of order by a single man can not go through.

Mr. HASTINGS. If I may have one more moment, I simply wish to apologize, if you will, for occupying so much of your attention. I did it for this particular reason: A month ago I did not understand the subject at all as I should and my effort to get enlightenment at Atlantic City failed. I have gotten a great deal of information today but I still do not understand the whole question sufficiently so that I will feel justified in getting behind this particular measure and crowding it forward. I do not mean that I am reserving whatever infinitesimal power I might have to help put a bill through congress. I am willing to do my part, but I did not know from the information I had which was the better way to push—forward or backward. I have been hunting hard for the information needed and have gotten enough of it today to shape my future actions.

The CHAIRMAN. The time has come for the closing of our session unless something further is desired to be considered.

Mr. PINCHOT. May I say just a word to the foresters? I want to express, Mr Chairman, with your permission, the very great gratification that I am sure every member of the Pennsylvania Department of Forestry feels who has had the opportunity, and the most delightful one, of entertaining the visiting foresters. It has been to me a perfect delight all the way through, and it seems to me that our discussions here together may lead to a repetition of the gathering. So far as I am personally concerned. I wish to apologize to you gentlemen for having been so fully occupied during the intervals between our meetings, and yet I know you understand. There have been certain questions not relating to forestry which had to be handled during this time, which have made it necessary for me to be away except during the actual meetings.

I do want to express for myself and my colleagues our very profound satisfaction that you were good enough to accept the invitation of the governor, and I hope that when the time rolls around Pennsylvania may once more have the opportunity of entertaining the association of state foresters under the presiding genius of the governor of Oregon. (Applause).

The CHAIRMAN. I just wish to say I think I voice the sentiment of every man in the association of the delightful and profitable time that we have enjoyed here. It has been a real pleasure to associate with the state foresters. I carry back to the Pacific coast, back to the Pacific northwest, only the most pleasant memories; and I want to personally thank each and every member of this conference for his uniform courtesy and kindness to me.

Mr. Pinchot the other day, just before I left for Philadelphia, asked me if I would serve as chairman of this conference. I thanked him and declined, although I appreciated the honor, for the reason that I have never presided at any thing of this kind. I finally screwed up my courage and told Mr. Pinchot that if you wished me to serve I would do my best. You have been very kind to me, and fortunately you did not get into complications on parliamentary law, or you really would have found out how little I know.

I want to thank you from the bottom of my heart for the gracious way in which you have treated me.

Mr. GASKILL. Mr. Chairman, I move that the conference do now adjourn.

The motion was agreed to, and at 4:35 o'clock P. M. the conference adjourned.

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