

SIXTH ANNUAL REPORT

OF THE

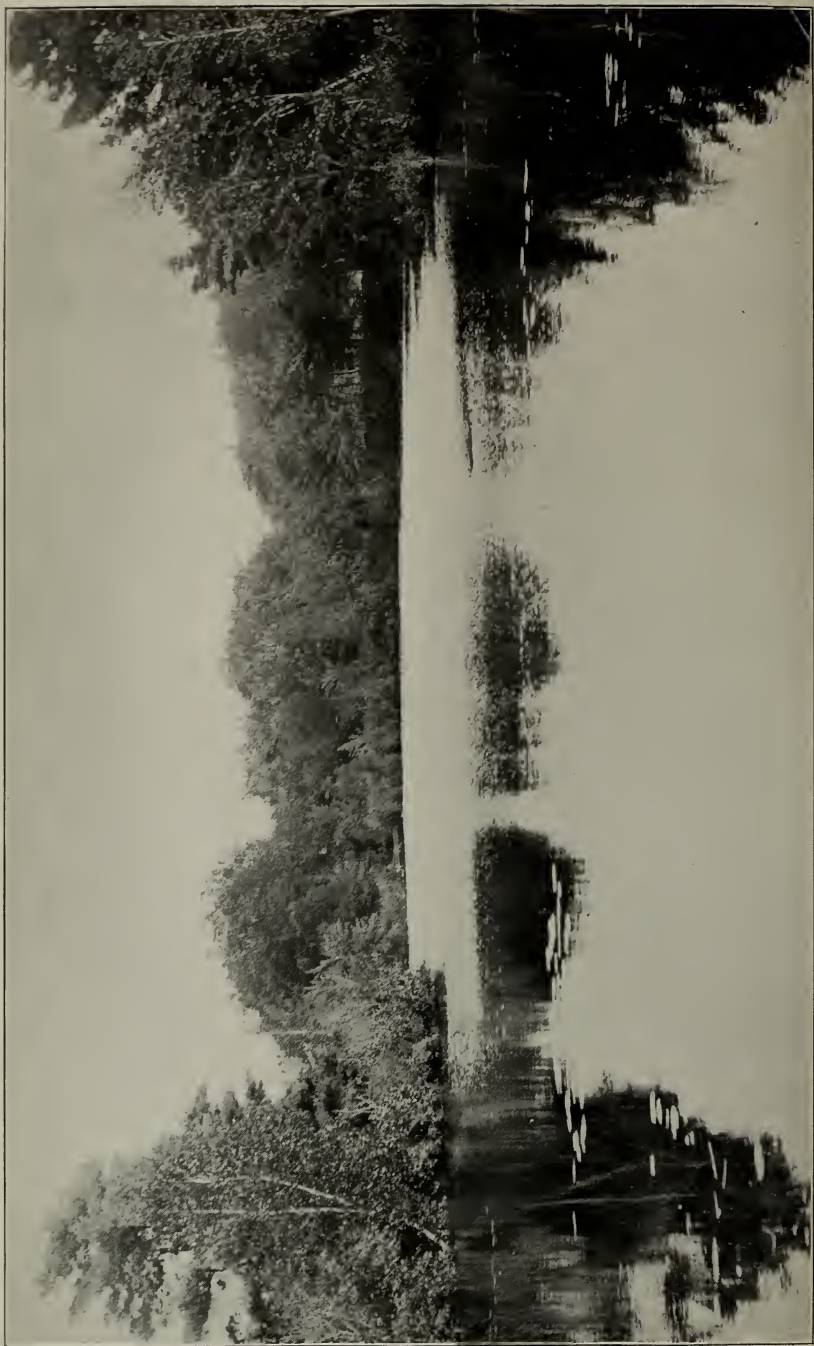
WACHUSETT MOUNTAIN

STATE RESERVATION COMMISSION.

JANUARY, 1906.



BOSTON :
WRIGHT & POTTER PRINTING CO., STATE PRINTERS,
18 POST OFFICE SQUARE.
1906.



BOLTON POND, LOOKING NORTH.

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THE STATE BOARD OF PUBLICATION

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OFFICERS.

Commissioners.

HAROLD PARKER. THEO. L. HARLOW.
JOHN T. BURNETT.

Superintendent.

GUY H. CHASE.
Address, Princeton, Mass.

Commonwealth of Massachusetts.

REPORT OF THE WACHUSETT MOUNTAIN STATE RESERVATION COMMISSION.

In the fifth annual report of the commission it was strongly urged that an appropriation of \$25,000 be made to enable it to construct fire guards, acquire adjoining lands and to reconstruct the building at the summit of the mountain. Owing to the fact that no such appropriation was made by the Legislature last year, your commissioners have no report to render for such work as was therein recommended, except such as they have been able to do out of the appropriation made by the county of Worcester. It was pointed out in that report that fire guards for the protection of the State property were, in the opinion of the commissioners, absolutely necessary; so necessary, in fact, that with the money allowed by the county of Worcester, which is hardly more than sufficient to maintain the reservation in fair condition, a certain amount had to be spent in the construction, so far as it would go, of the fire guards that we had urged upon the Legislature. In view of the fact that it was not deemed wise on the part of the State to make appropriations for this purpose, the commissioners have decided to make no further request for help in this respect from the State, but to go on with the construction of this necessary protection out of the county appropriation as fast as it is possible, notwithstanding that the commissioners believe that serious loss may result because of uncontrollable fires within the limits of the reservation.

The report of the superintendent shows in detail the work as it has been done, and the measures that have been taken to

protect, so far as it is possible, the territory acquired by the Commonwealth on Mount Wachusett.

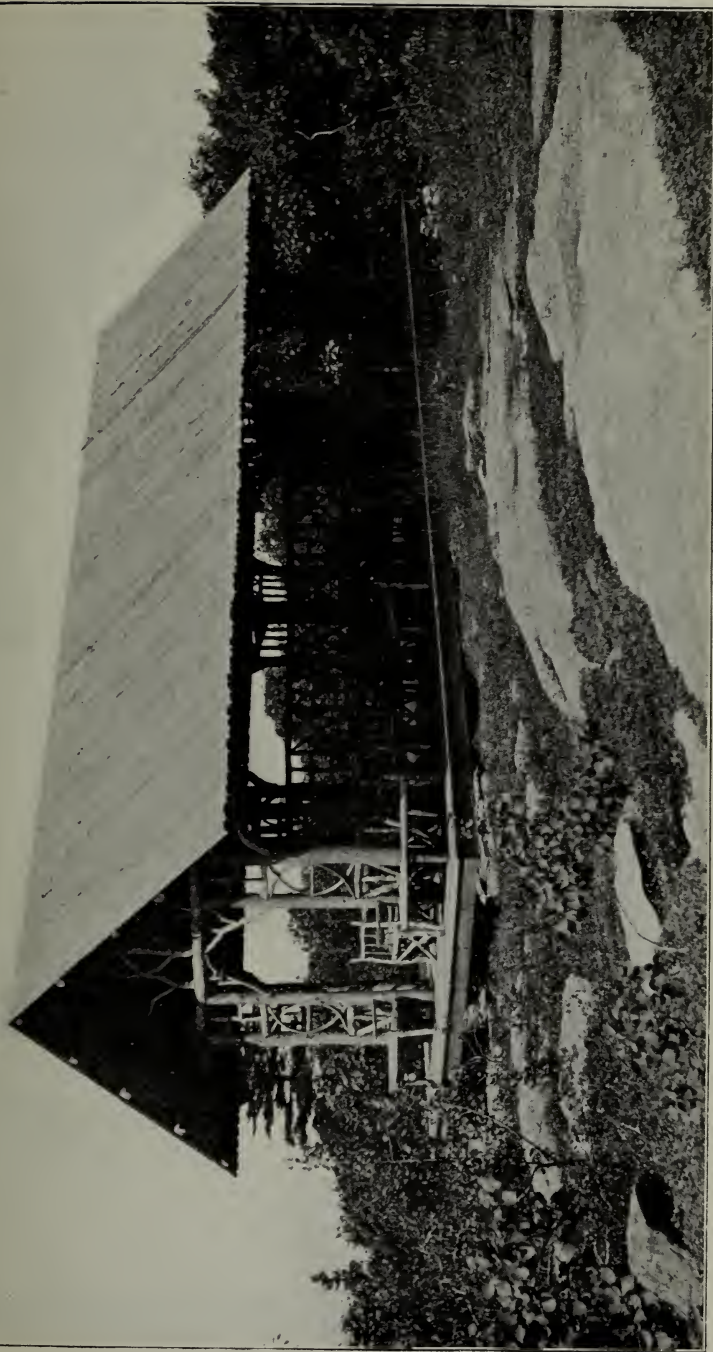
Reference is made to the report of the consulting forester as to certain methods of developing the forest growth on the mountain, with a view to improving the growth thereon, as a matter of financial economy and also as a matter of picturesque beauty. These reports are submitted herewith, as indicating the needs in the case and embodying also the views of the commissioners themselves.

The reservation is yearly becoming more popular, and more people not only from the immediate country but from greater distances are collecting here each year as a centre for recreation and pleasure; it is estimated that nearly 50,000 people visited the reservation during the past year. It must be manifest that where so many people congregate, proper accommodations should be provided for their use. As has been repeatedly stated to the Legislature in former reports, the hotel and its surroundings are wholly inadequate, and are a cause of very much adverse criticism by the people who visit this region. It is claimed by these persons that, the reservation having been made for the public good, proper means of enjoying themselves should be supplied by either the State or the county.

By the advice of the Attorney-General, and also from the opinion of the county attorney, it is impossible for the commission to spend the appropriation made by the county for any material improvement or reconstruction of the State's buildings. The law provides that the county of Worcester shall maintain the reservation, and no more. The county money, therefore, cannot be used except to a very small degree in improving the conditions on the mountain.

The commissioners ask that a sum of not less than \$12,000 be appropriated by the Legislature for the purpose of reconstructing the hotel on the summit, as being, in their opinion, no less than the circumstances actually demand.

The commissioners also believe and have so stated previously that certain tracts of land should be acquired, for the filling out of the proper outlines of the reservation. For this they ask a sum of not less than \$5,000.



RUSTIC LUNCH SHELTER, NEAR THE TOP OF WACHUSETT.

So far as the condition on the State reservation is concerned, it may be stated that the commissioners have used their best efforts in preserving the natural beauties; in maintaining the only road to the summit in a satisfactory condition; in building various shelters for the use of the public at different points within the reservation which command especially fine outlooks; in doing such things as they could towards the improvement of the forest conditions; in constructing roads as fire guards, as above referred to; and in further increasing, by breeding and otherwise, the number of deer and elk contained within the limits of the reservation. The cost of maintaining these animals is very small, owing to the fact that the natural increase requires no outside purchase, and all the feed is raised upon the reservation. The commissioners have felt that the breeding of deer and elk under conditions very near to their natural ones is an interesting experiment; they have made a careful study of this, and believe that the result may be of general usefulness.

There appears to be no doubt that this reservation will serve, as was intended, a very large public need, and it is very manifest that the public appreciates what the State has furnished. It seems, therefore, unwise on the part of the Commonwealth not to enable its commissioners to complete what it plainly had in view when the reservation was originally established. The commissioners therefore recommend the passage of the following act:—

AN ACT TO PROVIDE FOR THE IMPROVEMENT AND ENLARGEMENT
OF THE WACHUSETT MOUNTAIN STATE RESERVATION.

Be it enacted, etc., as follows:

SECTION 1. A sum not exceeding seventeen thousand dollars shall be allowed and paid out of the treasury of the Commonwealth, from the ordinary revenue, to be expended by the Wachusett Mountain state reservation commission for the following purposes: for acquiring, by purchase or otherwise, such lands adjoining the present Wachusett Mountain state reservation as said commission may deem it necessary or advisable to acquire, a sum not exceeding five thousand dollars; for the reconstruction of the Summit house and adjacent buildings on Wachusett Mountain in said reservation, a sum not exceeding twelve thousand dollars.

SECTION 2. Said commission shall have the same power to acquire, take and care for such additional lands as are given to it by section four of chapter three hundred and seventy-eight of the acts of the year eighteen hundred and ninety-nine, and section two of chapter four hundred and ninety-six of the acts of the year nineteen hundred and one, in respect to the lands already acquired by the commission for said reservation. The additional lands taken or acquired under the provisions of this act shall form a part of said reservation, and the title thereto shall be and remain in the Commonwealth.

SECTION 3. This act shall take effect upon its passage.

Respectfully submitted,

HAROLD PARKER,
THEO. L. HARLOW,
JOHN T. BURNETT,

Commissioners.

REPORT ON A PRELIMINARY EXAMINATION OF THE WACHUSETT MOUNTAIN STATE RESERVATION.

By R. T. FISHER, *Consulting Forester.*

To the Wachusett Mountain State Reservation Commission.

DEAR SIRs: — I submit herewith my report upon an examination of the Wachusett Mountain forest, undertaken at the request of Mr. Harold Parker, for the purpose of determining the most satisfactory scheme for the regulation and development of the forest growth within the reservation. My understanding of the function of this tract, which I have discussed with Mr. Parker and Superintendent Chase, is that it is primarily a State park, for the resort and recreation of the people, and that it therefore should preserve and render accessible the woods, streams, points of outlook and other natural features of the mountain; but that, on the other hand, so long as this general policy is not interfered with, there is no reason why the wood and timber should not be utilized and developed in order in some degree to cut down the expenses of the reservation, or to increase the value and productiveness of the land. It is the fact that the present general needs of the Wachusett forest, from the park point of view, would be very largely fulfilled by a policy of utilization and development for the forest growth; but, on the other hand, improvements such as the extension of roads, trails and fire guards, which will render the tract safer and more accessible as a park, are needed to make the proper and profitable treatment of the woods fully practicable. It is assumed, therefore, in the general scheme herein discussed, that the carrying out of the park idea and the betterment of the forest go together.

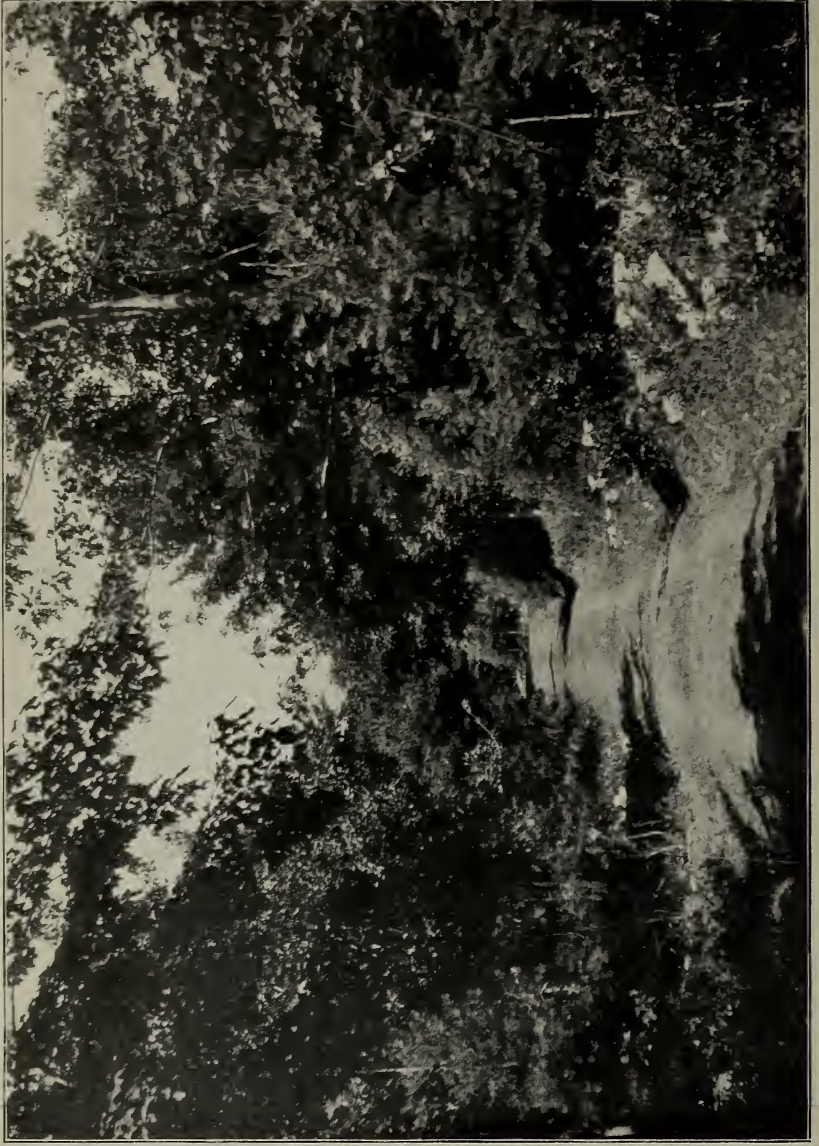
FOREST CONDITIONS.

The forest contained in the Wachusett reservation is mainly in poor condition. The great bulk of it consists of sprout hard woods, chiefly red, black and white oak, hickory, beech, chestnut, white ash, sugar and red maple. Most of it has been cut clear several times already, and the present stand, in blocks of various ages from ten to fifty years, is much reduced in value and vitality. Inferior species, such as gray birch, bird cherry and red maple, have in many places begun to crowd out the better trees, and the general rate of growth has been lowered through the frequent coppicing. In the higher parts of the reservation considerable damage was done to the larger growth by the ice storm of 1900. Much of the forest, however, particularly in the southern and southwestern portions, on the Gregory and Russell takings and along the Harrington trail, shows a thrifty young growth either of white pine or valuable hard woods, which, if released in time, will take the place of the older or worthless trees.

In addition to the main hard wood stand, there are scattered bodies of hemlock, occurring on the steep ledges south and west of the mountain and in the ravine above the deer park. The trees are old and of slow growth, but thrifty and reproducing well. White pine occurs in small groups on the west slope, and as a rapidly increasing young growth in and about the Woodward lot and along the lower and westerly edges of the forest generally. Taking the forest as a whole, whether as a park or a wood crop, it stands in need of proper cuttings to improve the growth, restore the lead to the valuable species, and encourage reproduction in the older, less healthy portions of the woods. Such cuttings would in no way spoil the characteristic appearance of the Wachusett forest, but rather tend to prevent its degenerating into forest weeds and poor growth.

AVAILABLE YIELD.

The present available yield consists almost entirely of cord wood. Small amounts of pine and hemlock saw timber could here and there be got out, but they are mostly too valuable



SOUTH ROAD. ONE OF THE ROADS BUILT BY THE COMMISSION AS A FIRE GUARD,
AND INCIDENTALLY FOR DRIVING.

for purposes other than lumber to be considered for cutting, except for local use in very small quantities. The hard wood areas, according to the treatment proposed, will yield from 3 to 10 cords per acre at the first thinning or improvement cutting. This applies to stands twenty years old and over.

FIRE RISK.

The situation of the Wachusett forest, concentrated upon the exposed slopes of a single mountain, makes the spread of a forest fire unusually easy. Furthermore, there is so much brush and small growth in the woods, which in occasional spring or autumn droughts get very dry, that a very destructive fire might easily occur. At present there are no adequate checks or fire guards to assist Mr. Chase and his men in restricting and fighting a possible fire.

GENERAL OUTLINE OF MANAGEMENT RECOMMENDED.

In view of the facts that the Wachusett Mountain forest is in poor and unproductive condition and considerably exposed to damage from fire, and that its best usefulness as a park would be fulfilled by a policy of protection and gradual improvement and regeneration for the woods, the following scheme of management is recommended:—

1. *Protection.*

(a) A system of roads, trails and fire lines, so laid out as to make all parts of the tract accessible, and so adapted to the topography as to obstruct the natural progress of fires, and offer bases for back-firing in case of need.

(b) At least two resident watchers or patrolmen to watch the tract during the dangerous seasons of spring and fall, report the start of fires promptly to the superintendent, and go at once with all available help to the spot.

For the purposes of protection, as well as of travel, the roads, etc., already built, proposed and under construction by Mr. Chase are thoroughly serviceable, but they should be completed and extended along the lines indicated as fast as possible.

2. *Transportation.*

Driveways or wood roads sufficient to make it possible to get out wood from the portions of the mountain most in need of cutting. This applies especially to the lower south and westerly slopes.

For this purpose also Mr. Chase's proposed locations are thoroughly suitable.

3. *Cuttings.*

(a) Thinnings and improvement cuttings in young and irregular stands, to improve the conditions of growth and remove the worthless in favor of the valuable species. Such cuttings to be made only where the stand is dense, and old enough to yield a return at least equal to the cost of the work.

(b) Reproduction cuttings in the older or damaged portions of the forest, to start young growth or release what is already on the ground. These cuttings to be made gradually over small areas, where the stand is accessible and the yield sufficient to cover the cost. Under this treatment, small amounts of saw timber can here and there be cut.

(c) No cutting should be made on the ledges and precipitous portions of the mountain, where the growth is slow and the danger of drying out the scanty soil is great.

4. *Planting.*

The open and unused land along the northern and eastern margins of the reservation should be gradually restocked with suitable species, particularly white pine. Some planting could also be done in the sparser portions of the forest, where natural reproduction is poor.

These measures Mr. Chase has already planned and provided for with a good forest nursery.

PRACTICABILITY OF PROPOSALS.

The operations outlined above cover what seems to be a complete and sufficient management for the forest land of a public reservation like Wachusett. Inasmuch as they depend upon more roads and more labor, they require some outlay.

The need of roads and trails, and at times more patrol, is quite as essential to the perpetuation and usefulness of the park, as such, as to the woods operations alone; therefore, only a portion of the cost of these measures is chargeable to the account of forestry, and their total cost can be more reliably had in Mr. Chase's estimates than in any that could here be given. As for the treatment of the woods, though it cannot be completely carried out under the present resources of the reservation, it can be satisfactorily begun. The proposed cuttings should yield a more or less constant profit, and they certainly are advisable if they pay no more than their own cost. Cord wood can be cut and shipped to one of the local brick yards or wood yards for (in round figures) from \$3.50 to \$4.50 a cord. The chopping will cost from \$1 to \$1.25, according to whether the thinnings will yield enough to be cut by the cord or by the day. Hauling to Princeton or Westminster should cost not over \$1.35; loading, 25 cents; and shipping, \$1.60 to \$1, according to whether shipment is to Boston or nearer points. Marking the trees for cutting will cost from 5 to 10 cents a cord. This makes a maximum cost of \$4.55, and a minimum of \$3.65. On this basis, the prevailing price of \$5 a cord for wood will leave a margin of from \$1.35 to 45 cents as the returns from thinnings and improvement cuttings. If some of this should have to be used for the disposal of tops or swamping out temporary roads, the cutting would still be good policy for the reservation.

As regards the planting, that cannot of course pay for itself from the start, but it is none the less a good investment. Planting should cost at the outside \$8 per acre, and should average nearer \$6. An acre of white pine at fifty years old will yield from 30,000 to 40,000 board feet, according to soil, or, at a \$5 stumpage rate, \$150 to \$200. At 4 per cent., the original outlay, with expenses of protection and incidentals, will have accumulated in that time to about \$75, leaving \$75 to \$125 profit. Whether the timber be sold or left standing, the increase in the value of the land is plain.

EXECUTION OF THE WORK.

In view of present conditions, the execution of the general scheme recommended had best be undertaken gradually, the roads and fire lines extended as the resources of the reservation permit, and the forest improvements carried out wherever the need is greatest and the opportunity for paying work is best. If this plan is approved by the commission, I stand ready, as a part of the service covered by this report, to cooperate with Mr. Chase in looking up a market, in locating the first cuttings, and in marking a sample area of forest for improvement. It is essential to the success of these cuttings that they be intelligently laid out and frequently inspected, and that the care of young growth be rigidly required of the choppers. It would be desirable, though not at present imperative, to have a detailed working plan for the whole tract, giving a description and an estimate of the stand; a division into compartments, with the exact condition and required treatment recorded for each; a set of cutting rules and a forest map. At present this would be too costly to be justifiable; but, in default of a working plan, it is all the more urgent that a trustworthy man be trained to carry on the marking for cutting, tally and inspect the wood and oversee the chopping. Any honest and experienced chopper can do this, under proper direction; or it may be possible, if Mr. Chase has the right help available, to distribute this work.

I shall be glad to discuss the matters of execution and supervision when the commission has considered this report.

Very truly yours,

RICHARD T. FISHER.

SIXTH ANNUAL REPORT OF THE SUPERINTENDENT.

To the Wachusett Mountain State Reservation Commission.

GENTLEMEN:—For administration purposes, to properly protect the reservation from fire, for the benefit of visitors to the reservation, and to carry out the recommendations of the consulting forester, it is of primary importance to construct a system of road fire guards, as stated in my last annual report to your Board, and our efforts have been largely along those lines during the past year. We have constructed what is called the South Road, across the southerly end of the reservation, a distance of 4,750 feet, with all the necessary culverts, rock ballast, etc., with a maximum grade for a very short distance of 18 per cent. and an average grade of 5 per cent. This road is practically completed, requiring but a little surfacing in the coming spring. It is already used as a driving road for business and pleasure, and meets with a large measure of approval from the public, as well as being indispensable for administration of the reservation. It is altogether a well-built road, though it is in no sense a parkway.

We have also constructed across the north end of the reservation a road termed the North Road, extending from the Ox-bow on the Mountain Road to a point on the west town road in the town of Westminster, a distance of 5,400 feet, with all the necessary culverts and water courses, with a maximum grade of $14\frac{1}{2}$ per cent. and an average grade of $5\frac{1}{2}$ per cent. This road is not completed, as there is some unfinished ledge work; but it is passable for teams of any description, and in the early spring will be completed and open to the public. This road provides a new route to the

summit for persons coming from Gardner, Westminster, Hubbardston or any points north or west of the reservation, thus saving much in distance, and, what is of more importance, eliminating the necessity of descending to the level of Wachusett Lake, and then making the long ascent from the lake to the summit of the mountain. The entrance to the reservation from the Westminster town road being 400 feet higher than the level of the town road at Wachusett Lake makes it unnecessary to descend to the lake and then climb 400 feet to reach a point on the Mountain Road the same elevation as the entrance to the reservation of the North Road.

We have cleared of all timber, wood and brush the location of what is to be termed the Administration Road, ready for construction in the spring. This road starts at a point about midway of the South Road, and runs through practically the centre of the reservation to a point about midway of the North Road, a distance of 8,400 feet, and is the important link in the system of roads to be constructed.

These three roads are a start in the right direction, and form a part of a system of roads to be built in the future as the appropriations will allow, not by any means a set of detached roads.

Considering the topography of the reservation, the grades are all comparatively easy, and the construction equals that of the average town road. While these roads are given over for the use and pleasure of the public, it must be remembered that the primary object is administrative. The important work on the reservation is in the line of forestry, and the roads are essential before a proper start may be made.

Since the date of our last report the nursery for raising seedlings for the purpose of reforesting the waste lands, and for underplanting where the growth is past its prime, has been enlarged until the capacity is three times greater than it was at that time. We now have over 2,000 lineal feet of seed beds, 4 feet wide, provided with movable screens, and have some two-year-old stock of white pine and white spruce. All the other seedlings came from the seed in May of this year. We have in the nursery the following stock: —

Broadleaf.

Tulip tree,	<i>Liriodendron tulipifera.</i>
Catalpa,	<i>Catalpa bignonioides.</i>
Chestnut oak,	<i>Quercus prinus.</i>
Scarlet oak,	<i>Quercus coccinea.</i>

Conifers.

Larch,	<i>Larix laricina.</i>
White pine,	<i>Pinus strobus.</i>
White spruce,	<i>Picea Canadensis.</i>
Red spruce,	<i>Picea rubens.</i>
Norway spruce,	<i>Picea excelsa.</i>
Blue spruce,	<i>Picea pungens.</i>
Balsam fir,	<i>Abies balsamea.</i>

I would suggest that we reforest the summit of the mountain with spruce, — a tree well adapted to withstand snow and ice pressure. The present growth of beech is a low-lying, scrubby tree, that will never attain any great size; while there are already a few white spruce trees that show by their symmetrical shape their ability to withstand the elements.

White pine can be better started on the lower sections of the territory. The catalpa, being a rapid-growing tree and coming into use for railroad ties, was started in the nursery as an experiment, and time alone will tell whether it is suited to the climatic conditions prevailing here. Chestnut and scarlet oak were placed in the nursery primarily to add to the silva of the reservation.

The proper treatment of the reservation from a forestry standpoint is fully set forth in the report of your consulting forester, Mr. Richard T. Fisher, with whom I am co-operating in work of that nature.

If the present plans of road building, reforesting and improvement thinnings are carried to a conclusion, the time will surely come when the reservation will be in a large measure, if not entirely, self-maintaining. The sooner the roads are built to enable us to properly carry on the work, the sooner that end will be attained, as well as safeguarding the reservation from fire.

The relief map is completed, and will be used as an index of all work of a forestry nature. This map shows very clearly the possibility of enlarging Bolton Pond to a depth of 25 feet, length of 2,000 feet, and an average width of 300 feet, by the construction of a dike about 100 feet north of the present old dam. This dike would need to be but 300 feet long on top, with a height of about 30 feet in the centre and 4 feet at each end. This would add greatly to the attractiveness of the reservation, and it could be well stocked with fish. The work necessary to complete this dike could be carried along gradually, as the funds at our disposal would allow.

During the past year we have built about 1,600 feet of guard fence along the roads, and all has been painted. We have built a very attractive lunch shelter upon the Indian trail near the summit of the mountain, with tables and seats for picnic parties. It is of rustic design, and no finished stock was used in the construction excepting the floors.

A small parcel of land was seized from William R. Howe in the early spring, comprising Taking No. 8; this was needed to supply gravel for the construction of roads.

I can only repeat what I said in my last annual report of the necessity of providing some adequate public convenience upon the summit. The present building is altogether beyond ordinary repairs, and any money expended in this way is simply wasted. What is needed is a new building, or an entire reconstruction of the present building, of a type more suited to the needs of the public, with proper sanitary conditions, provisions for supplying lunch, and a few rooms for those who are desirous of staying over night to see the beauties of a sunset and sunrise, and to see the lights of the neighboring cities and towns. This kind of a structure could be self-sustaining, to say the least. The present building is the subject of much well-deserved criticism from the public, who may reasonably expect to find better conveniences upon a State reservation so well patronized and appreciated as Wachusett.

We have captured six wild deer to add to our herd, and we now have five elk.

Of the routine work, policing, etc., you have been informed

from time to time, and I will add nothing here to what I have already stated in my other reports.

The South Road is largely built upon land owned by the Woodward heirs, as is also the nursery. This land is held under a lease with option, and it is absolutely necessary that an appropriation be made to enable us to acquire the same. There are also other small parcels which it is necessary for us to acquire, not from any vain desire to increase our holdings, but for the fulfillment of certain specific plans of improvement; and I strongly urge that a petition for an appropriation for the furthering of the plans outlined above be presented to the Legislature.

Respectfully submitted,

GUY H. CHASE,
Superintendent.

