

NEW HAMPSHIRE  
FORESTRY COMMISSION  
REPORT

1901-2

REPORT

OF THE

NEW HAMPSHIRE  
FORESTRY COMMISSION

FOR THE YEARS

1901 - 1902.

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1902.

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MEMBERS OF THE COMMISSION.

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GEORGE E. BALES, Wilton.

MARSHALL C. WENTWORTH, Jackson.

GEORGE H. MOSES, Concord, *Secretary.*

# REPORT.

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*To His Excellency the Governor and the Honorable Council:*

In presenting the summary of its operations for the past two years, the Forestry Commission begs leave to call attention to the general increase of public interest in the question of forest preservation which has been so marked in the time covered by this report.

In the nation not only is a more enlightened policy being pursued by congress and the administrative departments with reference to the care and maintenance of the national forest preserves, the extension of their area and the preservation of their forest cover, but, at its last session, congress took the first steps toward the establishment of a national park to be created out of forest to which the government did not possess the title. This park, situated in the southern chain of the Appalachian mountains, is designed to protect the head waters of the navigable and commercial streams of several states, thus bringing it clearly within the purview of national legislation; and at the same time aims to preserve to the agriculture of those states the beneficial conditions which nothing but forest preservation can perpetuate.

The annual message of President Roosevelt departed in many respects from the stereotyped formulæ used by his predecessors in dealing with matters before the various departments, and in none was it more vigorous and outspoken than in its references to the kindred topics of forest preservation and irrigation. To this stout stand taken by the president may be attributed much of the general public interest which now prevails with reference to forestry. For in his exalted position he was able to attract and to centre the attention of the people whom lesser advocates would be unable to reach.

In our own state Governor Jordan, devoting, as he did, by far the larger portion of his inaugural address to a consideration of some of the pressing needs of forest preservation in the White Mountain region, served to stimulate public interest in the problem in our own state.

#### SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS.

Perhaps, however, the most directly active of all the forces now at work upon this problem in New Hampshire is the Society for the Protection of New Hampshire Forests, which was formed soon after the issuance of the last report of this board. In the formation of this society the Forestry Commission participated, and the two organizations have cheerfully and harmoniously and actively coöperated in advancing the cause which they both aimed to subserve. Representatives of this board appear in the society's list of officers, and the programmes of both the organizations have been formulated with a view to supplementing the efforts which each is putting forth.

The commission necessarily is restricted in its efforts to work among actual residents—landowners, and forestry enthusiasts in our own state; but the society, being a voluntary organization, is not thus limited, and it has been especially successful in enlisting the coöperation of summer residents and casual visitors, who through its machinery have been brought to add their forces to swell the general attempt to secure better forest conditions in our state.

#### WORK OF THE BOARD.

The work of the board during the past two years has been pursued along lines which previous experience has shown to be valuable. The commission has sought to extend the scope of its influence among individual landowners, especially among those possessing large areas of timber land in the mountain regions, with a view to securing more rational

methods of management in those forests; and has supplemented this private individual solicitation with public appeals through communications to the press and through addresses delivered before audiences in different parts of the state.

Work of this kind must necessarily produce results which are not wholly tangible, but the improved condition of public sentiment toward forestry in general, the enlarged demand for information respecting the conditions of profitable tree growth, the increasing purpose on the part of lumbermen to utilize their forests so as to ensure perpetual crops of wood material, and a growing desire among small landowners to increase their forest area through tree planting, are claimed by the board to be due in no small measure to the persistent efforts which have been put forth under its auspices during the years since it was first established.

#### PERSONNEL OF THE BOARD.

A closer affiliation with the interests which control the larger area of the forest cover in the northern counties of the state, and with those interests which are chiefly devoted to the upbuilding of the summer resort business in the White Mountains, has been brought about through changes in the personnel of the board made by the appointments of the governor and council since the date of the last report. The Hon. George Byron Chandler, of Manchester, a member of the temporary commission of 1889 and chairman of this board upon its establishment in 1893, was succeeded in 1901, by Col. Henry O. Kent, of Lancaster.

Colonel Kent, by reason of his life-long residence in the North Country and through his intimate knowledge of the character and topography of the forests of that section gained by his services in conducting the state survey in 1858, brought to the board an accumulation of detailed and valuable information which has been of exceptional value as the board has come to study into some phases of forest conditions in the White Mountains.

The Hon. Napoleon B. Bryant, who was appointed a member of the board upon its inception, and whose talents of oratory were especially helpful in enforcing the lessons which the board sought to convey to the people, died January 28, 1902, and was succeeded by Gen. Marshall C. Wentworth, of Jackson, whose long and intimate connection with the summer hotels of the White Mountains has enabled the board to come more closely into touch with summer resort proprietors whose interest in forest preservation is both obvious and keen.

Through these agencies the board hopes to extend its influence both among landowners and summer visitors to an extent which promises from the results already attained to produce important and valuable additions to the body of public sentiment which is necessary to stimulate and sustain the work of forest preservation, no matter whether it be undertaken from sentimental or economic reasons.

#### FIELD WORK.

It seemed to the commission essential to the proper conception of forest conditions in the state, that members of the board should have, so far as possible, personal knowledge of our forest area and growth, the actual denudation of mountains and hillsides, the clearings of whatever character near points of summer resort, the conditions attending lumbering and the wood pulp industry, and generally all matters pertaining to forestry in New Hampshire, that they might be able to present a report to the legislature, based upon such knowledge of the subject as would justify practical conclusions and recommendations.

Accordingly, early in 1901, a series of trips was considered, to be taken at convenient intervals, including attendance upon the annual meeting at Washington of the American Forestry Association, whereof the Hon. James Wilson, of Iowa, secretary of agriculture, is president, and with which society Mr. Gifford Pinchot, head of the forestry bureau of the agricultural department, and other leading foresters are associated.



Sundry trips have been made as contemplated, practically covering the entire state and including the meeting at Washington. Much interesting and valuable information has thus been gathered, so that the commission feels it is able to consider existing conditions wisely and to deal with them intelligently, so far as the means and authority placed at its disposal will admit.

Matters thus elucidated or coming under our observation will be treated in their appropriate places, but a general resume of field work is first given, for a better understanding of facts and the sources drawn upon.

#### THE WHITE MOUNTAINS.

In September, 1901, we rendezvoused at North Conway, examining the stately pines near Intervale Station with the secondary pine areas in the vicinity, passing to Glen Station and Jackson. This section is the heart of the summer business on the eastern side of the Presidential Range, Conway being one of the very oldest resorts. The work of the lumberman has been over for quite a period and save occasional lots there have not been of late, cuttings near the large hotels or favorite drives, that disfigure the scenic beauty of the region. Either cultivated clearings, green with verdure and grateful to the eye as evidencing agricultural thrift, or slopes covered with new growth, replace any reminders of devastation.

At Jackson very much has been accomplished, both by proprietors and residents, in the line of picturesque forestry development along the roads among the extensive and delightful summer estates, so that little seems to be left to complete a perfect picture of mountain and valley forest and cultivated opening, varied by mansion and lodge crowning salient points and emphasizing the completed picture.

From Wentworth Hall we followed up the valley of the Ellis river and down the valley of the Peabody river through the Grants, past Glen Ellis falls, the picturesque site of the old Glen House, which is the point of departure of the carriage road up Mount Washington and the eastern slope of

the great range, to Gorham on the Grand Trunk railroad, on the Androscoggin river near the state line between New Hampshire and Maine, a distance of sixteen miles.

A few miles above Jackson we enter the primeval forest, ascending the height of land, of somewhat greater altitude than the Crawford Notch, about two thousand feet, and continuing through forest growth, with the exception of small clearings at Glen Ellis falls and the Glen House site, nearly to the Libby mills a mile only from Gorham.

#### THE GLEN ELLIS FOREST.

There is no more delightful and attractive spot in the mountain region than Glen Ellis falls, beloved of tourists, the drives to this favored spot from the great mountain resorts north and south being famed for their beauty. It is to be deeply regretted that such indiscriminate cutting in this forest has occurred. There is no havoc visible on the western side of the road until emerging upon the Glen House site. From there to Gorham the ragged appearance of the hillside and along the stream is depressing. It is to be said, however, as will be emphasized in a summary later, that the years elapsing since the cessation of active operations have covered and hidden by the newer growth much of the nakedness of the land.

The soil around Glen Ellis falls is held by one of the great pulp companies, and we were advised by the commissioners of Coös county that contracts had been made for cutting, during the winter of 1902, the growth around and in the immediate vicinity of these falls.

Immediate steps were taken by us to prevent, so far as possible, such cutting, in order that the public, the preservation societies, and the legislature might have opportunity to protect and preserve this unique and beautiful spot. Hon. Irving W. Drew, of Lancaster, attorney for the owners, interested himself at once and assured us that all operations there would be deferred until opportunity for preservatory action could be taken. There seems to be little

doubt that if private generosity fails to protect this particular spot, the state may properly aid to retain unmarred this choice bit of scenic domain, which opinion attaches to a few other exceptional localities.

The great mills at Gorham have been largely supplied from lands on the mountain slopes draining into the Peabody river, from along its tributaries, and from land not too far distant for hauling the logs to these mills. Here, as elsewhere, the commissioners have urged upon proprietors the wisdom of selected cuttings of matured trees with future crops in view and, as elsewhere, have received assurances that such a policy is commending itself to wise consideration and is yearly receiving greater practical compliance.

Shelburne, the lower New Hampshire town on the Androscoggin, is becoming a most desirable and attractive summer resort. There are no untoward conditions there, either of forest cutting or denudation, and the region becomes yearly of greater repute.

#### THE ANDROSCOGGIN VALLEY.

From Gorham up the Androscoggin to Berlin, the end of our first trip, little can be said of forestry or its conditions. The eight miles between the two municipalities are given over wholly to roadways, both steam, electric and carriage, for traffic. East of the river the abrupt hillsides were long ago closely denuded of timber and even of trees, so that the strip of farm land along the stream alone remains in attractive guise. The most that can be said is a repetition of our comment on the Peabody river hillside; a new growth of bushes covers the ground, beginning to hide its barrenness. Such of this land as is arable will in due time succumb to cultivation, or be clothed in the green of younger growth.

The Androscoggin here is always picturesque, flowing swiftly through tremendous gorges or over a pebbly bed, conveying at times great reaches of logs for the mills nearer the sea, and supplying power from the great lake reservoirs, accumulating the waters of the vast forest regions in Northern New Hampshire and Northwestern Maine.

An electric road now connects the phenomenal "Paper City," Berlin, with Gorham. In its way the attractions of this reach of the valley have strong claims upon the tourist.

#### THE CONNECTICUT HEADWATERS.

Late in October the commission met at Lancaster, where a business meeting was holden and conference had with Governor Jordan relative to present and prospective plans, and the ideas of the executive secured as to practical forestry as applicable to existing conditions in the state, embracing the lumber and pulp interests, the encouragement of the summer business, comprehending hotel and boarding-house investments, and incidentally the railway traffic connected therewith. Much encouragement was derived from the exchange of opinions, and facts here elicited are regarded as of great importance in the prosecution of our work.

From Lancaster we proceeded by rail up the Connecticut valley, forty-five miles to West Stewartstown, where we were met by Hon. Thomas H. VanDyke, who conveyed us by carriage twenty-seven miles further north, to the second Connecticut lake, stopping the first night at the Connecticut Lake House at Pittsburg, the point on the first lake whence the river debouches from the parent water and where is the great dam two hundred and eighty feet long and twenty-nine feet high, regulating the flow from this storage reservoir; and where is also the immense fish screen erected by the state across the outlet, a structure five hundred and seventy feet long and twenty-one feet high, wings of wood, respectively three hundred and forty and one hundred and ninety feet, with the centre of iron, forty feet. Here is also a sawmill for the use of the lumber company in preparing timber for dams and supply outfits, and here also is the entrance into the wild timber tracts owned by the Connecticut Valley Lumber Company.

Two miles above West Stewartstown, and just over the national boundary in Canada, is the flourishing village of

Beecher Falls, with important lumber manufacturing industries. The mills largely manufacture hard wood, which is abundant in the adjacent forests. This wood, unlike that of the coniferous trees, cannot be floated, while its weight, to a degree, precludes railroad transportation, hence its manufacture at this remote point, reducing expense by freighting only the finished product.

#### THE FOREST TOWN OF PITTSBURG.

The town of Pittsburg, wherein are the Connecticut lakes, is twenty miles north and south, with a like average width. Its point is the Crown monument at its northeastern extreme. Herein is the Colebrook Academy Grant, the school grant to Pittsburg, and other timber tracts of great value, well known by name among lumbermen. On the eastern side of the state is the New Hampshire part of that square of twelve miles, extending into Maine, the former territory of Massachusetts, known as the Carlisle Grant, from Thomas Carlisle of Lancaster, a merchant and land speculator of the first third of the last century. This grant was subdivided into three townships—Hubbard, Webster, and Carlisle. Massachusetts, for its province, confirmed this Indian grant, but New Hampshire declined to do so. These lands are embraced within the territorial limits of Pittsburg.

Hall's stream, coming from the Western Highlands of the St. Lawrence, makes a part of the boundary with Canada; Indian stream empties into the Connecticut in the alluvial lands three miles east of the border. It was here in the early forties that the Applebee war, or Indian Stream war, which state troops were ordered out to quell, occurred over disputed jurisdiction. The Canadian government and the state of New Hampshire both claiming the debatable land, but either contestant being lax in enforcing authority, a family named Applebee, with their associates, set up an actual miniature commonwealth, with legislative, judicial, and executive system complete. The state restrained the ambitious promoters, while the Ashburton treaty of 1845 settled disputed jurisdiction.

Perry's stream is the third of the water courses draining this great territory west of the three lakes and discharges into the Connecticut but a mile below the lower or Great lake. East of the lakes the waters either flow into them and so down the Connecticut, or into the Diamonds, the Magalloway and finally into the Androscoggin. It was for years the dream of the state to open up this territory to settlement, and a great part of it was duly surveyed and lotted by the Cross survey of 1844 and the subsequent survey of 1858. These efforts had been abandoned prior to the sale of state lands in 1867, so that, with the exception of a few farms upon the Connecticut and the streams named and in contiguity to the highways along them, the great township is a primeval forest, the only remaining one of equal area in New Hampshire.

#### THE GREAT NORTH FOREST.

Gradually the grants and smaller timber-land holdings in Pittsburg have been absorbed from individual control, until all are practically the property of the Connecticut Valley Lumber Company; southeast of Pittsburg proper are large contiguous tracts of forest, in Clarksville, Stewartstown, Errol, Dixville, Millsfield, Wentworth's Location, and College Grant,—all making up the great forest of the North Country. This vast region is given over to the lumberman, and save at The Balsams at Dixville Notch, the romantic and admirable holding of Mr. Hale, of Philadelphia, the summer tourist is as yet unknown, unless in the person of occasional sportsmen around the Connecticut lakes, Diamond ponds, or the Umbagog and Magalloway waters.

It is this great tract that emphasizes our later assertion that less than ten per cent. of this North Country area has been mutilated or devastated beyond natural reproduction and that our largest forest area is practically intact.

It is however with Pittsburg proper that we are now dealing. Much of this land has been cut during the last half-century; considerable areas cut with discretion have grown a new crop of timber, in many respects better than the original stand.

Around the Third lake is an open forest of aboriginal spruces—the perfection of primeval growth, with clean floor, straight, tall trunks, undefaced by axe and undisturbed by wind or fire.

The growth in Pittsburg is very largely spruce, with a few isolated pine tracts, heavy hard wood on the uplands in some quarters, and with cedar in the lowlands around the lakes.

Being for years under single and intelligent control, this solid body of timber has been farmed with unusual sagacity and profit. No pulp wood is cut, and only matured trees or trees of reasonable diameter are logged. Of course, there are the inevitable exceptions of abrupt hillsides, which are practically cleared when reached, and which thereafter can only produce bushes and deciduous trees—which, however, prevent erosion.

From the First lake, after passing perhaps two miles of upland farms, the “tote road” plunges into primeval forest, ending at “Idlewild” or “Camp Chester” on the Second lake, a total distance of eight miles, largely built by state appropriations. From here we look east across the lake to the great bulk of Camel’s Rump, rising 3,711 feet into clear air.

The Third lake is five miles to the northeast, near the national boundary, accessible only by a trail and the winter roads of the loggers. No clearings break this great expanse, in which moose, deer, bear, and smaller game abound, the waters being filled with fish. There have been here no serious forest fires. The commission is assured that the lay-out of each year is planned with the intent to cut only matured spots, developing the residue for later crops. It seems to us that this, our largest forest, is as well conserved and managed as could be expected, unless under critical state ownership and supervision as a reservation for public purposes.

#### DIXVILLE NOTCH.

Returned to Colebrook, a thriving and beautiful town, the half-shire of Coös county, we strike southeast for Dixville Notch—the gorge in the Dixville chain of mountains, where,

at its western extreme, The Balsams, developed by skill, artistic taste and plenty of money, invites the tourist to the most delightful spot in the extreme northern section of the mountain region. This gorge is a stupendous work of nature. Rent through trap rock that towers at the crest of the pass eight hundred feet above the roadway to Table Rock, it has all the accessories of a mountain "notch." The Flume is equal to that at Franconia, the Cascade rivals that of the Crawford Notch, while it has a "Great Stone Face" on its southern wall that divides with its familiars the admiration once wholly awarded to the "Old Man of the Mountain."

In the crescent of the mountains at the western extremity stands The Balsams, an extensive modern summer hotel, perfect in all its appointments. The old rough road through the gorge has been deflected and carried up the mountain side. A brook has been dammed so that a lake of thirty acres now fills the valley in front of the house. The road east of the crest, through state appropriations and local expenditure, has been carried down the incline at an easy grade, held up by heavy masonry, and well macadamized. The house, with its surroundings, is a very gem in the wilderness.

So full reference is made to this unique spot to emphasize what intelligent treatment may accomplish in preserving scenic forest conditions about pleasure resorts. In commendable contrast to the policy of some owners in the southern section of the mountain region, who allowed to be cleared timber lands which they owned in their immediate vicinity, and who have permitted to be sold other tracts that they could have procured and preserved at reasonable sums, with the result that parties whose only quest was money have wrought the inevitable desolation of indiscriminate clearing, including subsequent debris, slash and fires—in commendable contrast to this policy, we say, the owners at Dixville have purchased the entire forest area covering the western slope of the converging mountains and in sight from the hotel, thus thoroughly guarding against possible forest devastation or fire, and preserving intact the scenic beauty of the surroundings.



It is suggested that if this reasonable and simple policy had been observed elsewhere, much of the righteous indignation expended upon unæsthetic lumber operators could easily have been avoided. The example may be followed in the future in other sections with profit.

From the Notch, ten miles further southeast brings us to the Androscoggin, at Errol. We pass through Dixville and Millsfield, practically forest townships, unsettled save along the highway. These townships are still covered with timber, but the woods are largely exhausted from cuttings made by individual owners without that system essential to preservation or continued crops; the mountain sides are, however, covered with foliage, and nothing indicates disintegration or denudation.

Errol slopes to the river, and its farms along Clear stream are as well cultivated and thrifty as are those of the lower Connecticut valley, while clearings along the hill road have developed into rich upland holdings. Much of the forest in Errol is still under control of the E. S. Coe estate, having extensive holdings in Maine and New Hampshire. There are no abnormal conditions visible in the Errol woods. Parties have cut or "permitted" as seemed best to them, and, while waste has largely resulted, better counsel seems to prevail and a future crop, to be secured by careful management, is now an element in the calculations of every landowner. There is yet considerable pine in this town, although the general character of the growth is that of the more northern forests—spruce. Much of the timber land yet uncut is held for a rise in price. Consequent upon prevailing high prices, lands are more carefully cut and more *humanly* treated.

#### ALONG THE EASTERN BOUNDARY.

To penetrate the forests of the north on the eastern boundary of the state, we pass over a fairly good road largely aided by public appropriations, from Errol Bridge one mile to Errol Dam, the great structure across the Androscoggin that

holds the river in check, lifts the waters of Umbagog Lake, and sets back Magalloway and its tributaries as far as "Brown's Farm" and College Grant. Next above Errol is Wentworth's Location, owned largely by the Coe estate — mostly a wilderness, a few fertile farms along the Magalloway alone evidencing the thrift of this region, affording quick, certain and profitable market for farm produce necessary to equip the camps with supplies. Mr. Coe was regarded as a wise and conservative manager of forest areas. Since his death it is evident lax methods have to some degree succeeded. The worst evidence of injurious and wasteful cutting observable in all this trip was near the settlements and along the river on the Coe lands in Wentworth's Location, where the taking of poplar for pulp wood had been "permitted."

"Brown's Farm," so named as the woodsmen's headquarters of the Berlin Mills Company, of which William W. Brown, the veteran lumber operator, and his sons are the chief if not sole owners, is situated on the Maine side of the river just opposite the post-office at Wentworth's Location, and about a mile above the farm known in the earlier days of the settlement as "Durkee's" — Ziba F. Durkee, an emigrant from Hanover, who returned there late in life, being at that time the general factotum of the settlement, representative in the legislature, justice, postmaster, and holder of all town offices. In those days it was the Peter Bennett farm; now while only a farmhouse, it has stabling for scores of horses, and halls for victualling and sleeping of a hundred woodsmen, or even more. The heavy wagons depart from here to ford the Diamond and crawl up the blind trails called roads, to the camps on Dead or Swift Diamond streams, or to drag up the Magalloway to the steamboat landing at the head of Escobos falls, whence bateaux and teams take the freight to Parmachenee, Little Boys falls, and the depots through the wilderness. The Berlin Mills Company own great areas and, as will be noted later, their business is conducted with intelligence, expensive system, and notable results.

## A WILDERNESS ROMANCE.

From "Brown's Farm" we pass a mile up the river, crossing the Magalloway—there twenty feet in depth—by a ferry, the only route affording access to College Grant and the lands beyond for the months when the waters of the Diamond are out from melting snows. The Diamond enters the Magalloway at the base of Mount Dustin near this point. One and one fourth miles up it receives the Swift Diamond from the east, which heads at the Diamond ponds in Stewartstown and Colebrook. At this point, too, is an ancient farm, ancient for this region, the Robbins' farm, occupied early in the last century by a trapper of that name, who murdered in the woods for his peltries, one Hines, a fellow hunter, and his son, and whose capture by Gen. Lewis Loomis and Hezekiah Parsons, of Colebrook, incarceration in Lancaster jail and escape therefrom, is one of the romances of the early days in this county. This farm and the tragedy are the foundation of the novel "Gaut Gurley," by D. P. Thompson, a former novelist of repute, author of the "Green Mountain Boys."

Just in rear of the house on the farm we again pass beyond civilization and continue, stopping at the clearing four miles above known as "Van Dyke Farm," where was and is an extensive lumber camp. From here the semblance of a road continues six miles further to "Hell-gate" Camp on the Dead Diamond, where is the most original, retired and successful fishing and sporting camp in the northern wilderness. This tract, College Grant—officially known as the "Second Grant to Dartmouth College"—a tract of seven and one half miles by five miles, has been the subject of strenuous litigation. Owned by the college, the taking of timber thereon for a term of years was permitted under restricted conditions. This contract was let and sub-let, and suit is now pending brought by the college for alleged wasteful and excessive cuttings thereon. Counsel is engaged on either hand, the amount involved is large, and the result awaited with anxiety (October, 1902).

Examining this region quite thoroughly, we returned to "Brown's Farm" and proceeded six miles up the Magalloway along Half Moon mountain on the east of the river, past Mount Escobos on our right, to Wilson's Mills, the most northerly clearing, across a spur of Escobos, two miles further to the steamboat landing at the head of the falls before referred to. This valley, perhaps eight miles in length and one mile in width, lying on both sides of the river, when first known to the president of the board held a few occasional houses surrounded by woods. Wilson's Mills still clings to the faith of Capt. John M. Wilson, its proprietor in the days of the land speculation in the thirties, that it was to be a station on an international highway from Quebec to Portland, but the outlook was not encouraging. To-day it is a cleared rich farming territory, the river spanned by three covered bridges, fine houses, a good hotel, a church dotting the landscape, occupied by a prosperous and contented people. The president of the board had the pleasure of meeting here two of his old employees on the survey of the state line in 1858 — Nahum W. Bennett and Lorenzo Linnell.

#### METHODS OF THE BERLIN MILLS CO.

Returned to Errol Dam, we passed down the comparatively new road twenty-five miles to Berlin, of which thirteen miles — from Errol to John Chandler's, "the only second class hotel in the United States," at Dummer — is unbroken forest. We have referred to forest conditions in Errol through which several miles of this road are built, thence we pass through a corner of Cambridge into Dummer. From Chandler's tavern, twelve miles to Berlin, the land is alluvial along the river and occupied by cultivated farms. We pass Pontoocook falls along miles of river filled with piers, booms and timber of the upper lake region, through Milan to the phenomenal city of Berlin with its stupendous lumber, pulp and paper mills and its ten thousand inhabitants.

Here we were shown through the mills of the Berlin Mills Company and made somewhat familiar with their woods work. Colored maps of each township, with raised maps showing contour and streams, form a part of their data. This company, owning very largely in Maine and extensively in New Hampshire, controls its own land and declares its intention to cut conservatively and to keep up the lands for future cuttings. They have an educated and trained forester, Mr. Austin Carey, familiar with continental methods and with the varying shades of American lumbering. His published paper upon forest conditions in New Hampshire, given to the press last year, seems to be one of the most sensible, practical and excellent brief treatises yet made public on lumbering and scenic conditions. It is devoid of sentiment and hyperbole, hence distinctly valuable. In the north woods the Berlin Mills Company does not cut or "permit" pulp timber, as such. It is connected with the Burgess sulphite pulp works, and its waste, defective timber, butts, rifted or unavoidable smaller sticks that come in with the drive, are turned over for pulp.

In a general way we may say that the three great lumber concerns of the North Country — The VanDykes, the Coe estate, the Berlin Mills Company — are all sensible of the value of forest development and preservation and are conducting their work accordingly.

At Berlin our route joins the northern terminus of our earlier trip, thus covering the state from Conway on the south to the Canadian boundary on the north.

#### THE JEFFERSON NOTCH ROAD.

In November following, on invitation of Governor Jordan, the president of the commission accompanied him on an inspection of a section of the state road to lead from the Crawford House near the White Mountain Notch along the western slope of the Presidential Range, to the E. A. Crawford House at the lower extremity of Jefferson Highlands, near

the Randolph line (that part of Jefferson formerly the leg or extension of Kilkenny), southward to Low and Burbank's Grant. The building of this road was let in two sections, the southern part from the Crawford House north to the carriage road leading up to the base of Mount Washington being one part, about four miles, the other continuing to Jefferson, about ten miles, not then completed. The governor, Messrs. Barron and Merrill of the Fabyan and Crawford Houses, Mr. Anderson of the Mount Pleasant House, the contractors, and several old-time stage drivers being also of the party.

This section of the road itself was excellently well constructed. The first trip over it, being made by our party in a mountain wagon drawn by six horses, was easily accomplished in thirty-five minutes. Much credit is due to the proprietors of the contiguous hotels and the engineer for the success of location. Instead of striking from point to point in the most direct course, the road is led along hillsides, around salient points and by streams, that afford great variety, opening charming vistas toward the Fabyan on the north and the Crawford Notch. Its completion to Jefferson will afford equally attractive situations. There can be no doubt that its construction will be of great convenience as a means of communication between summer resorts, prove a delightful forest drive, add greatly to the attractiveness of the region and to the business at Jefferson and near the Notch, and of course further augment the revenue of the state and all concerned in the important interests so promoted.

The northern and eastern end of this line follows essentially the course laid out for the "Waumbek Road," projected by a corporation established in 1868, for which no public aid could be secured and which languished for lack of private capital with which to construct it. It is a delightful route through deep forests all the way to its junction to the southern half described, and as a whole is a work from which the state as well as individuals must derive much benefit.

## BAD FOREST CONDITIONS.

Incidental to this trip was a renewed observation of the forest through which the road passes. It will appear later that by great misfortune the most inopportune destruction of the mountain forest by axe and by fire has been in the most conspicuous places. There could be no places selected more open to public observation and criticism than along the western slope of the Presidential Range, from Fabyans to the Notch, along the Franconia Notch road, along the Peabody river and the vicinity of Glen Ellis falls. It is these areas, an infinitesimal percentage of our entire area, that have experienced the worst treatment, giving occasion for much of the criticism and alarm that have pervaded the public mind.

As is too well known the original timber tracts along the Ammonoosuc and from Fabyans to Crawfords have been very thoroughly denuded of their valuable growth, some sections having even been stripped for charcoal kilns. In the last named section, after the axe had done its work, fire alleged to have been communicated from locomotives followed through the slash so that desolation was as nearly perfect as the most nervous alarmist could desire, furnishing object lessons of deplorable and vivid degree. Through this devastated section from the Ammonoosuc to Crawfords this carriage road is led. It is gratifying to note with what zeal and success nature is supplying new growth and repairing the desolation of axe and fire.

While stately primeval trees are gone, save gaunt and bleached trunks occasionally standing, a new growth covers the land and the inexperienced eye fails to note the absence of original trees. The bleached trunks referred to are gradually falling before decay and the prevailing winds, to be hidden by the young vegetation, so that happily the time is not far distant when the great blemish of devastated forest, for years offending the eye and public taste, will disappear, accompanied by conditions that will prevent repetition of misuse; but this generation will not see its commercial value restored.

This area is further protected by the wise action of the hotel proprietors. The owners of the Crawford House hold large tracts, bought to control forest cutting. The elegant and capacious Mount Washington Hotel, recently completed by the Mount Pleasant Hotel Co., and owned by Mr. Joseph Stickney, of New York, a son of Concord, is also safeguarded as to its scenic surroundings by the purchase of large tracts of land including Crawford's Purchase upon the mountain slopes and in the valley adjacent, a wise policy adopted and referred to in the case of The Balsams at Dixville Notch.

#### AMERICAN FORESTRY ASSOCIATION.

In December the president and secretary of the board attended the annual meeting of the American Forestry Association at Washington. This society, formed for the propagation of information and instruction as to forestry conditions throughout the country, is composed of men skilled in the lore of woodcraft as practised by Continental governments and as the result of intelligent forest culture, to whom are added amateur foresters and volunteers who are interested in the work. The secretary of agriculture is its president, and it numbers among its members the professors of forestry in the greater colleges of the country, state boards of forestry, and such eminent savants as Mr. Gifford Pinchot, whose culture and experience in practical forestry, exemplified in the Adirondacks and at Biltmore—the Vanderbilt estate in North Carolina—entitle him to rank as recognized authority in his chosen profession. This society meets annually at the capital and is well attended from all sections of the Union, thus gathering information from delegates and its own corps of officers, and disseminating information of uniform and valuable character.

The business meeting of the American Forestry Association at Washington, in December of last year, was holden at the New Willard, where the programme of the day was discussed, followed by a lunch at which interesting concise addresses were made on practical topics, commencing with that of the secretary of agriculture and continuing with eminent experts from North, South and the extreme West.



## PROPOSED APPALACHIAN PARK.

An interesting presentation of the plan for congressional establishment of the proposed Appalachian park, concerning which so much has recently been said and written in and out of congress, was made by Dr. W. J. McGee, of the bureau of ethnology. This project took form in a bill introduced the same month, which has passed the senate, and which provides for the purchase of some 4,000,000 acres at a cost of \$10,000,000; and the *Springfield Republican*, reviewing the project at some length, expresses the opinion that it is not too much, either in area or in dollars, for the purpose desired. It will secure a preserve about one hundred and fifty miles in longest measure, and of various breadths, from four thousand to six thousand feet above the sea, running through the states of Virginia, West Virginia, North Carolina and South Carolina, Alabama and Tennessee. In this mountain region are the springs of the James, the Roanoke, the Catawba, the Savannah, the Kanawha, the Tennessee, the French Broad, and many other important streams of the South which water the states named and also others in their further course.

Much stress was laid upon the alleged necessity of preserving this section as the source of the rivers named, whose flow and power as well as agricultural attributes were imperilled by wasteful cuttings and actual erosion of hillsides, preventing reforestation. It was evident that this scheme had a powerful united support, backed by a number of states in the central South, and that, aside from its declared and apparent merits, it was so presented as to be likely to meet ultimate success.

Since this park has reached greater notice through action of congress, its merits have of course been the subject of newspaper and public discussion and criticism. Suggestions have been made that our own delegation essay to transfer the appropriation and location to the White Mountain region of our own state, on the ground of its greater attractiveness to tourists and its greater publicity.

We have not considered such a plan likely of success if attempted. The Appalachian park is demanded for other than scenic reasons, as stated, and has, as also stated, the united local support of a number of powerful states. It occurs to us that its success is desirable, and that it may prove a precedent for the later establishment of a national park in our own forest and mountain region, of great benefit to the state and to scenic, tourist, railway, agricultural and manufacturing interests. Further allusion to this subject of a national park within our own border may be found elsewhere in this report.

At the close of the business meeting Professor Pinchot invited the delegates to a reception at his own home the same evening. This gathering was largely attended, and proved to be of great interest and value. The spacious library had been fitted for the occasion, and with screen and lantern slides, several hours were spent by different gentlemen in displaying forest conditions, denudation, erosion, lumbering, tree culture and growth in all sections of the country, from excellent photographic views, accompanied by statistics and figures. Indeed, the evening embraced an illustrated lecture on forestry by the highest and most accomplished experts and teachers in the field.

Later an arrangement was made by the New Hampshire representatives with Professor Pinchot that he would in the near future apply to a tract of Corbin park, in Sullivan county, assigned for this important purpose through the efforts of Senator William E. Chandler, the methods of approved scientific forestry. We regard this concession as of great importance as affording our people an object lesson as to what is practised and accomplished by these methods. Mr. Pinchot having been sent to observe forest conditions in the Philippines, this work has necessarily been delayed; but the subject was presented to President Roosevelt during his recent visit to New Hampshire and to Corbin park itself, and the commission has personal assurance of his continued interest in the work.

## REPORT OF FORESTRY COMMISSION.

The day following, through an interview arranged by Senator Chandler, whose deep interest in forest culture and preservation is well known, and accompanied by him we visited the White House and enjoyed a very satisfactory and encouraging interview with President Roosevelt. Stating our mission and connection with the work in hand, the President was much interested, particularly in the scenic beauties of our forest and mountain region and the relation of forest preservation to the material prosperity of New England and the country at large, evincing familiarity with the subject which he declared interested him greatly.

This trip we conceive to have been of considerable importance as putting the New Hampshire commission in touch with the national association, the gathering of new and practical ideas, obtaining the concession from Professor Pinchot relative to Corbin park, and the very satisfactory interview with President Roosevelt.

### THE PEMIGEWASSET FOREST.

In June of the present year the commission passed over and through the Pemigewasset valley, embracing Campton, Woodstock, Lincoln, and along the highway from the Profile house to North Woodstock, the terminus of public traffic on the railway. The familiarity of the tourist public with this region, the importance of the hotels at the Profile, the Flume and Deer Park, with the summer colonies scattered through the valley, lend great interest to this section aside from the magnitude and character of the lumbering operations, past and in progress.

We examined quite thoroughly the extensive mills, both for cutting lumber and the manufacture of pulp, of J. E. Henry & Sons, at Lincoln, two miles above the terminus at North Woodstock, looked over the size and character of round timber in the storage pond and on the trains coming out from the camps eight and ten miles further north, being unable from restriction of time to accept the invitation of the firm to remain another day and go with the lumber trains up the Hancock Branch, ten miles northeast to the terminus.

Henry & Sons are one of the great lumber and milling establishments of the state, ranking with the Connecticut Valley Lumber Company, the Berlin Mills Company and the White Mountain Paper Company. Henry & Sons own over 100,000 acres of contiguous forest and manufacture over 125,000,000 feet of round timber into dimension stuff and pulp annually. They have a ground-pulp mill at Livermore Falls, near Plymouth, and a double-side sawmill with chemical-pulp mill at their village of Lincoln in the corner of that forest town.

It was the senior of the firm who operated along the Ammonoosuc and along the western base of the Presidential Range, as before referred to. It is about ten miles from the present terminus of their forest road to their former mills at Zealand, and in due time they expect to pass through the valleys to that point.

The work of this firm along the mountainsides by the Pemigewasset is visible, but time has partially covered the lands with new growth so as to promise to remove the rough traces of the lumberman. There are other firms still operating along this valley, and still others whose works, closed or abandoned, with their debris are largely noticeable along this once charming stage-coach drive through the Franconia Notch. As may appear in later comments and conclusions the worst seems to have happened to scenic conditions, while nature, the restorer, is busy to reproduce a new cover to the landscape.

The Henrys, like the other great firms alluded to, admit the wisdom of careful cuttings for future crops, but do not always practice the wisdom they assent to. We understand the *theory* to be to cut only the matured timber, leaving the smaller growth for a future crop or crops for the pulp mills. As with other locations and firms, this intention must be received with generous allowance, consequent upon cutting high slopes difficult of access, cutting around expensive roads bushed out and laid over bad places, tracts likely to be affected by winds when once thinned, and other causes familiar to woodsmen—a general reservation common to all lumbermen.

Passing down the railway to Meredith we drove to Centre Harbor, along the shores of Lake Winnepiseogee, through Centre Harbor, Moultonborough, Tuftonborough, noting the prevalent summer boarding-house and ever present arrangement for summer guests, to the northeast towards Chocorua, and Ossipee Park. The carriage road up the mountain and the buildings erected in the forest at high altitudes emphasize the impetus of this extensive and growing business.

#### SUCCESSFUL REFORESTATION.

Our especial object was to examine under natural conditions an attempt at reforestation by the planting of seedling pines over quite an area on the north shore of the lake in Moultonborough. In 1878 Hon. Isaac Adams, then of Sandwich, having carefully prepared a tract of forty acres of arable land, once a productive farm, caused it to be planted with seedling pines. These were set in parallel rows four feet apart so that, looking either way, the rows of trees "crossed each other like lines on a chess board," as the Malte Bruns geography of our childhood declared of the streets of Philadelphia. Thus the trees were four feet apart each way; none of them were over six inches high when transplanted. The contract gave one cent each for digging and replanting these trees, payable, as a measure of caution, only for such of them as were alive the succeeding year.

During the twenty-four years that have elapsed nothing in the way of trimming or culture has been done to this grove. Few of the original trees died and they have attained an average height of twenty feet with a diameter of from three to eight inches. Cutting of surplus trees is much needed, perhaps a distance of eight feet is now required for healthy development; but enough has been shown in this stand to demonstrate what may be accomplished by tree planting and intelligent culture of pines. Another grove belonging to the same owner and transplanted under like conditions shows like results.

## THE ELWYN WOODS.

As an object lesson the "Elwyn Woods" in Rye and near the coast affords the finest example in New England of primeval forest. This is a growth of stately pines, standing without admixture of other trees for a part of its area; grand oaks, perfect in outline and verdure, covering another space; with a mixture of equally stately oaks and pines filling the third part of the large area. This forest, of great commercial value and so dear to æsthetic taste as to make it a pleasure drive and show place for the guests of this region, shows of what the state has been deprived by unwise, indiscriminate cutting and what is possible of attainment under an intelligent system of replanting for reforestation.

On the farm of Capt. Alexander M. Beattie at Lancaster, the other extreme of the state, is a pine growth of most encouraging character, reaching along the Connecticut river near the crossing into Vermont of the Maine Central railroad. When Captain Beattie bought the premises, in 1866, this was but a native growth of seedlings and saplings. It has been protected and received constant although not critical care. To-day it is an open reach of straight, clean, thrifty trees, a foot to two feet in diameter, fit for the market in a commercial sense, demonstrating again how good an investment is a judicious replanting of pines on available and comparatively worthless lands.

## NATURAL REPRODUCTION.

In passing over the state we are struck by the recurring and ever present evidence as to natural facilities and accessories for tree reproduction. On the hillsides, the sites of former wood lots, the sterile pastures, the moist banks of the streams, trees coniferous or deciduous can be set at little expense, which in a few years will greatly add to the scenic beauty by their verdure, and to the commercial value of the farm.

Nature works silently and surely. "When you've naught to do, stick in a tree, Jock; 'twill aye grow while you're sleepin,'" said the laird of Dumbedikes to his hopeful progeny. It is advice that may well be taken by our own people.

It is believed that some encouragement by the state, like relieving from taxation something on each farm or holding where replanting had been successfully followed, to be evidenced by a return made to the selectmen yearly, when taking the inventory, all this without noticeable waste of time or increase of labor and absolutely without expense to the public treasury, would in a brief time exhibit most surprising and gratifying results.

#### THE DEMAND FOR PULP WOOD.

It is proper to note that the requirements of the pulp mills make a demand upon our forest product that is not fully comprehended. It is relative to this large demand that so great apprehension exists. While conservative companies may essay conservative methods in cutting, there is likely to be little restraint upon the jobber, or in too many instances the landowner, who, for the money there is in it, generally cuts all "in sight." The cutting of pulp timber is not confined to the forests alone, but any farm having upon it a stand of a few acres is likely to be denuded, as the wood finds ready sale at the near-by pulp mill, the railway siding or the landing on the nearest water course that will float it. It is here, if anywhere that the power of the state must be exerted in a comprehensive manner to protect alike the immature growth of the forests and groves of small area all over the state.

At Berlin, in the autumn of 1901, we met Mr. Curtis, superintendent of the woodlands department of the International Paper Company and supervisor of its forest work. With him the subject was thoroughly discussed and by him we were assured that it was and would continue to be the policy of his company to cut only trees of certain dimensions, leaving clean work and the smaller product for reproduction and subsequent cuttings.

Much interest is felt as to the policy to be pursued by the White Mountain Paper Company, purchasers of great areas of land (although greatly exaggerated by current report) along our eastern border in Carroll county and adjacent, and builders of very extensive pulp mills at Freeman's Point near Portsmouth. Discussing this matter of supply and reproduction, while in the city just named, with the representatives of the plant, we were also assured that, alive to their interests, their land would not be desolated, but cut for future growth and subsequent crops. If this policy is pursued it will greatly relieve public anxiety and demonstrate the wisdom of the promoters of this industry.

#### THE JEFFERSON NOTCH ROAD.

September 9 of the present year the president of the board, by invitation of the governor, accompanied him and his executive council over the forest highway, heretofore alluded to, from E. A. Crawford's, in Jefferson, to Twin rivers, there connecting with the southern end of the same line, constructed and inspected in 1901, to the gate of the Crawford Notch, the entire fourteen miles being the state highway joining the two extremes named along the western slope of the Presidential Range, authorized by the legislature of 1901 and made possible by generous and intelligent contributions of landowners, hotel proprietors and cottagers to raise the full sum necessary for the completion of the work.

This enterprise, costing about \$10,000, must be of great and increasing value to the state, in that it opens up a route at once convenient for public traffic and a delightful drive for tourists, besides connecting in a community of intercourse and interest the great hostelries, such as the Mount Washington, Mount Pleasant, Crawfords and Fabyans and the rest, with the Waumbek and hotels in Jefferson and Randolph, with the attendant cottages and cottagers, and with the highway to Gorham, the Glen House, and the route through the Pinkham Notch by Glen Ellis falls on the east, to Jackson and Glen Station at the southern end of the notch, thus making a circuit of the mountains and a drive unparalleled in the mountain region for noble views and vistas.



This completed road has been a formidable undertaking, and but for the knowledge of the region possessed by the governor, his wise support of the measure, and the persistent energy of the commissioners, could not have resulted in success. Particular credit is due to Ethan A. Crawford, of this road commission and builder of the northern section, for his indomitable persistence in surmounting the obstacles of the route. The third Ethan and the fourth from old Abel Crawford, the pioneer of the White Mountain Notch, it was peculiarly fitting that he should complete this work and drive over the completed road the first mountain wagon, carrying the governor of the state with his council and official guests.

#### DESCRIPTION OF THE ROAD.

The road starts from E. A. Crawford's summer hotel at Jefferson Highlands, about 1,300 feet above tide water, dips down to the Siwooganock or Israel's river, following up the south branch to the summit, about 3,100 feet above the sea, thence down to the Twin rivers and across the spurs of the range four miles further to the gate of the Crawford Notch, 1,914 feet above Boston Harbor. The drive over this remarkable route was one to be remembered. The day was wholly fitted for the occasion, the presence of the governor and a distinguished company emphasized the pleasure to all concerned; the grand and inspiring views, the novelty to many of the deep forests, tumbling brooks, rustic bridges, glimpses of castellated mountain ridges and peaks, with gleaming vistas of lowlands and shining waters, were all a part of an enduring picture.

The greeting at the summit by John Anderson with his cavalcade of ladies and gentlemen, the echoes of bugle calls, the reception at the magnificent Mount Washington Hotel, marked an epoch in mountain chronicle and achievement. The commission regards the construction of this road throughout its extent as wise and wholly advantageous to the state, its sponsor, and sure to return abundant practical as well as æsthetic returns upon the investment.

It seems pertinent to remark in connection with the opening of this state highway, that it is the fruition and complete realization of a plan for a road, before referred to, over practically the same route unsuccessfully attempted in 1869. The president of this board, being that year a member of the house, secured the passage of an act to incorporate the "Waumbek Road," extending from the highway in Randolph near the E. A. Crawford House up the south branch and down Jefferson brook to the road running from Fabyan to the base of Mount Washington. In the summer of that year, accompanied by Hon. Nathan R. Perkins, of Jefferson, Dr. John W. Barney, of Lancaster, and Ethan A. Crawford, father of the present builder, and projector of the Crawford House, all deceased, he tramped through the forest, with a pack, camping over night in the woods, on practically the same route that on this occasion the gubernatorial party passed over in an eight-horse wagon, driven by a sturdy son of Ethan, the builder of the present road. The generation intervening emphasizes the growth, magnitude and importance of good roads and forest preservation to the material progress and prosperity of the state.

#### BLUE MOUNTAIN FOREST.

In October last the commission spent several days at Blue Mountain forest, commonly known as Corbin park, in Sullivan county, making quite full examination of this great private preserve, unique in the state. Reference has been made to this park in connection with the presence of the board at the meeting of the American Forestry Association in Washington, and the proposition that a section of its area be assigned for practical application of scientific forestry methods in tree cutting and culture therein by Professor Pinchot, which work has been delayed, as also stated, by his official duties in the Philippines. This consideration, with others relative to the park, induced the visit.

Ex-Senator Chandler, who has long been a legal adviser of the Corbin estate, the owner of the park, and a director of the corporation, afforded us every facility for a complete

examination of the premises, extending to us in its fullest extent the courtesies of the park, himself accompanying us to points of interest, and explaining the manner, conditions, and methods observed in extensive tree cuttings now going on therein.

It seems to us pertinent to refer to this extensive area and its management, as a matter of interest connected with our work, to the people of the state.

Corbin park covers about twelve miles in a northeast and southwest direction, having an average width of nearly five miles. The central station therein, or club house, is three hundred feet above Concord, or five hundred and fifty-three feet above tide water, the land rising to the crest of Croydon mountain, which lies wholly within the park, two thousand seven hundred and eighty-nine feet above the sea. The total area is nearly twenty-five thousand acres, comprising swamps, low meadow, cleared hillside, forests and rough mountains. About one hundred and fifty farm holdings were purchased by the late Austin Corbin, together with forest and uncultivated areas, when accumulating this great holding. Of this farm aggregate, about one half were already "abandoned" in the fullest sense of the term, the others being in occupancy and cultivation. The average price paid for this land was five dollars per acre, making the purchase aggregate \$125,000.

These conveyances were all voluntary, nor were any public rights, so far as we know, in any way infringed upon by this accumulation. Several natural and artificial ponds exist. Public roads through this area were discontinued, but replaced by others constructed outside by Mr. Corbin, others of them being retained for use and kept in admirable repair. There must be between thirty and forty miles of road maintained inside the lines, supplied at intervals with heavy granite water troughs, enameled sign directions, with suggestions at abrupt changes of level to look well to harness, uncheck horses, etc. This holding is surrounded by a heavy wire fence of eight feet altitude, with a wire mesh six feet high additional, so that, in the language of a former north

country stock raiser, applied to a phenomenal rail fence of his own construction, it is "mule high, pig tight, and bull stout." This fence is pierced by heavy wire gates of convenient pattern, and made safe from trespass by uniform locks. This fence cost about \$100,000, and with the animals and general appurtenances, bring the understood expenditure for the park well up to \$500,000.

Within these boundaries is the largest herd of buffalo, or American bison, in existence, now numbering one hundred and thirty; nearly three hundred black boar of the ferocious Continental strain; herds of elk and deer; twenty moose; with goats and other smaller game. Several years since a lease was made of the premises for five years, with restricted hunting privileges, to an organization known as the "Blue Mountain Forest Game Club." It was here that President Roosevelt was last summer a guest and successful hunter of the boar.

It should be said that this land lies in six towns, but mostly in Croydon, Cornish, Grantham and Plainfield, with smaller holdings in Newport and Claremont. If any part of our state was to be given over for a park of this size, it seems that the site could not be better chosen. While generations of hardy sons of New Hampshire wrung a livelihood from these mountain slopes, and while men of brain and brawn once raised notable families within its present confines, the strife was strenuous, and the voluntary abandonment and willing sale of farms at the nominal price per acre cited, testifies to the willingness of owners to assent to such changed conditions. The park will increase in beauty. Its picturesque mountain ranges, open hillsides, green meadows, and varied contour, give variety and delight to the observer, while its timber product is by no means unimportant.

The northern section of this reservation is quite heavily wooded with a mixed growth, and having a good stand of spruce, in which forest and with which timber it has been decided to apply, as suggested, the art and science of approved scientific forestry, in anticipation of which work

the owners have "permitted" limited restricted cuttings on the southerly slope of the eastern end of the mountain range in the town of Grantham.

A single-side steam sawmill of the daily capacity of twenty-five thousand feet has been erected by the contractor one mile inside the fence at an elevation of one thousand feet above tide water. The timber is drawn from the mountain-side in the rear, fifteen hundred feet above sea level, extending up the slope from a point one mile back from the mill. The growth is straight clear spruce; the trees are first marked for felling, are cut with saws, thus saving stumpage and disfiguring tall stumps; they are "snaked" by oxen to the rough roads, one end loaded on a bob-sled, and drawn by four horses to the landing at the mill, the teams making four turns a day each at this season of the year. No trees are cut less than ten inches in diameter at three feet from the ground, and no destruction of small growth is attendant save necessary cuttings to provide for the safe fall of the tree or for corduroys and bridges, all smaller spruce being left for further growth. The spruce now cut shows from one hundred and fifty to two hundred annular rings, and is the first cutting upon this land. Spruce areas, treated as here described, yield reasonable return for stumpage and lumber without despoiling the woods or preventing the recurrence in due time of equally good timber crops.

As a complete object lesson, both of a game reservation and protected timber area, Corbin park furnishes information essential and valuable to a full understanding of conditions in the state, which is of importance to the commission in presenting its conclusions to the legislature.

From time to time within the period covered by this report, the commission have made other examinations of the secondary forest, with special reference to those sections where cutting has been most active of late, the most frequent inspections being made in central Merrimack county, in the Souhegan valley, and in Cheshire county. These are the sections where the normal product of the secondary forest

has been most extensively exploited, and they are the sections, too, where the character of the forest cover has been most attractive to foreign capital and enterprise.

Forest conditions there, as in the North Country, are not wholly bad; although it must be admitted here, equally with the White Mountain region, that in some instances there has been a wilful disregard of all proper rules for harvesting the timber crop. These conditions, however, are not beyond repair by unaided nature, as the nature of the soil, the topography, and the character of the forest cover all tend to swift natural reproduction. With intelligent direction added to nature's recuperative powers in these sections of the state, remarkable advances in prosperity and wealth are possible, and in another place the board points out certain means to this end.

#### INTEREST IN NEW HAMPSHIRE FORESTRY.

It is natural that interest should exist in widely different environments relative to the forests of the state and cognate subjects. So many strangers habitually spend the warm season within its borders, so great is the tide of pleasure travel, so heavy is the investment in hotels, boarding-houses and appliances, so large is the income derived by our railroads from passenger and freight traffic connected therewith, and so desirable is the market afforded for agricultural products and labor by this branch of enterprise, that all statements concerning our forest conditions are read with avidity and no doubt materially affect the revenue from this prolific source of income.

We conceive it to be the province and duty of this commission to lay before the legislature, as fully as possible with the means at its command, facts as they exist relative to this important matter. It seems to us our duty to have in mind *all* interests connected with the forest, wherein the labor and money of our people are invested. No *one* interest deserves undivided attention or encouragement — *all* should have the wise protection of the state.

We assume that the state does not intend to take ownership or suzerainty of any extended portion of its forest area, and that practical forestry, as it must at present exist and develop, lies along the lines of educating landowners (and restricting them in rare instances) to the wise cutting of matured trees, so that while operations return proper remuneration to owner and operator, the scenic beauty of our forest areas shall not be marred, the growth denuded or erosion ensue, or diminution of rainfall and the mechanical power of our streams, or climatic changes become possible.

Without doubt much has been hastily and crudely written, to be caught up, circulated and commented upon by newspapers, magazines, and correspondents, that has greatly exaggerated existing conditions relative to timber and pulp cutting; and it is a serious question if this indiscriminate criticism, or alleged *information*, may not have worked and continue to work undeserved and serious injury to all our people engaged in ministering to summer tourists and boarders, through presenting so shocking a picture from the eye of fancy as to deter travel and deplete income.

#### DANGEROUS HYSTERICS.

The importance of summer travel, as it is generally indicated, in our state is beyond doubt very great in building up our income. Here, however, as elsewhere, exaggeration is busy among the informants and sources heretofore referred to. It is a common expression among outside papers, not at all encouraging to our state reliance or pride, that "without the summer guests the state would have to go into insolvency"; "that the only future for New Hampshire rests in attracting and retaining summer boarders;" that the widespread destruction of our forests is despoiling the landscape and changing mountain views, is drying up the streams and producing erosions, is breaking the graceful contour of our mountain sides and rendering less attractive the once grand features of our scenery. Nothing could be further from the exact truth than these hysteric statements. In their place we

shall consider other matters here enumerated, but in this connection we present statistics drawn from the report of our State Commission of Labor and from the tables of the last United States census to show the amount of money and labor invested and the annual return received from *several* of the local industries of the state, of which the summer tourist interest is *among* the most important, although by no means the *most* important, as accompanying figures will indicate.

#### VOLUME OF SUMMER BUSINESS.

While two seasons have intervened between this writing and the time of compilation, it is believed that the variation in ratio between summer and other industries has not materially changed.

We gather these general statistics :

Capital invested in summer property.....	\$10,442,352.00
Cash income from this business, from all sources.....	6,609,364.70
Total wages paid.....	539,901.00
Total number of help employed.....	12,354
Total number of guests and in cottages.....	174,280

There are two hundred and four towns and cities in the state where guests are taken, and thirty-one towns where guests are not taken, or from which no returns were received. Of the receipts, the different transportation routes had approximately as follows :

Railroads.....	\$600,000.00
Stage drivers.....	63,275.50
Steamboat fares.....	60,369.21
Total.....	<u>\$723,644.71</u>

#### VOLUME OF FOREST INDUSTRIES.

We secure from the twelfth United States census the following figures relative to the forest industries of the state—covering lumber, wood-pulp and paper products—which show that the state would hardly be “poverty stricken,” as alleged by ignorant and unwise alarmists, even without its important revenue from summer business :



Number of lumber and wood-working establishments,	582
Amount of capital invested therein,	\$19,545,195.00
Value of annual product,	16,423,043.00
Total increased value of product during last decade,	9,499,576.00
Number of employees,	6,579

While these figures of a single industry largely exceed the figures pertaining to the summer business, figures of the aggregated manufacturing industries in the state are :

Capital invested,	\$100,929,661.00
Annual products,	118,669,308.00
Wages paid,	27,620,247.00

These figures demonstrate that while the summer business is of great and increasing importance, deserving wise encouragement and stimulation, it does not dominate all the rest or even equal in capital, labor, product or number of employees the lumber interest in our woods, which we believe is placing itself on a more conservative basis relative to tree culture and preservation, a condition that has been reached largely through the constant efforts of this commission, and which to continue and improve will require continual care and intelligent attention.

#### SPECIAL CENSUS STATISTICS.

In continuation of this topic we submit the following detailed tabulations relating to the allied forest industries of the state. These figures are specially furnished to us through the courtesy of the Hon. William R. Merriam, director of the twelfth census of the United States, and have never been published before :

TABLE No. 1.—LUMBER PLANING-MILL PRODUCTS.—

*Lumber planing-mill products,*

COUNTIES.	No. of establishments.	CAPITAL.						Proprietors and firm members.	Salaried employees.		AVERAGE ERS AND	
		Total.	Land.	Buildings.	Machinery, tools, and implements.	Cash and sundries.	No.		Salaries.	Total.		
										Average No.	Wages.	
Belknap .....	2	\$25,000	\$200	\$3,800	\$7,000	\$14,000	6	.....	30	\$15,294		
Carroll .....	4	21,700	2,400	2,400	4,800	12,100	6	.....	6	1,575		
Cheshire .....	6	80,900	2,800	6,800	17,500	53,800	7	4	\$2,460	56	28,160	
Coos .....	3	24,125	8,500	4,500	6,300	12,175	4	.....	16	7,000		
Grafton .....	10	82,749	8,300	16,860	19,916	30,033	13	2	1,042	66	24,199	
Hillsborough.	13	641,639	80,675	120,219	113,573	327,172	12	23	17,782	483	200,394	
Merrimack ...	5	52,050	2,900	8,700	14,300	26,150	6	4	2,050	58	20,595	
Rockingham .	4	72,188	750	12,925	18,700	39,813	5	4	2,340	43	18,500	
Strafford .....	5	127,210	2,300	15,900	28,994	80,016	5	12	7,022	111	56,864	
Sullivan .....	5	14,640	2,900	3,800	4,600	3,340	6	.....	2	975		
State total..	57	\$1,142,201	\$111,725	\$196,194	\$235,683	\$598,599	70	49	\$32,686	871	\$373,556	

DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.

including sash, doors and blinds.

NUMBER OF WAGE-EARN-TOTAL WAGES.				MISCELLANEOUS EXPENSES.				COST OF MATERIALS USED.			Products including custom work and repairs.
Men, 16 years and over.		Women, 16 years and over.		Total.	Rent of works.	Taxes not including internal revenue.	Rent of offices, interest, etc.	Total.	Principal materials, including mill supplies and freight.	Fuel, including rent of power and heat.	
Average No.	Wages.	Average No.	Wages.								
30	\$15,294	.....	.....	\$2,893	\$660	\$225	\$1,008	\$23,260	\$23,350	\$910	\$50,000
6	1,575	.....	.....	160	.....	114	46	8,858	6,608	250	10,260
66	28,160	.....	.....	6,609	1,867	490	4,252	135,054	134,435	619	181,680
16	7,000	.....	.....	1,532	.....	157	1,375	11,975	11,975	.....	28,000
66	24,199	.....	.....	1,666	75	570	1,021	34,391	33,150	1,241	87,321
483	200,304	.....	.....	42,403	3,150	5,983	33,270	475,810	474,660	1,150	807,003
53	20,595	.....	.....	1,897	140	277	1,480	35,320	34,645	675	70,650
29	13,800	14	\$4,700	3,559	35	279	3,245	46,143	45,593	550	77,388
110	56,500	1	304	4,775	1,440	552	2,783	149,325	148,925	400	268,730
2	975	.....	.....	685	40	97	448	6,451	6,451	.....	11,478
856	\$368,492	15	\$5,064	\$65,879	\$7,307	\$8,744	\$49,828	\$924,587	\$918,792	\$5,795	\$1,596,510

TABLE No. 2.— LUMBER AND TIMBER PRODUCTS.— DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.

*Establishments and capital.*

COUNTIES.	ESTABLISHMENTS, KIND, AND CHARACTER OF ORGANIZATION.						CAPITAL.												
	Total.	Saw mills.	Tie and timber camps.	Total number of establishments.	Individual.	Firm and limited partnership.	Incorporated company.	Aggregate.	LUMBER AND SAW MILLS.										
									Aggregate.	LOGGING PLANT (CONDUCTED BY MILLING ESTABLISHMENT).									
										Total.	Timbered land tributary to mill.	Other timbered land.	All other land.	Tools, implements, live stock, etc.	Railway and equipment.	Canals or chutes for transportation of logs.	River improvements (exclusive of stock in chartered boom companies).	Booms, chains, and supplies.	
Belknap.....	29	28	1	29	18	9	2	\$370,645	\$369,145	\$98,710	\$24,700	\$63,700	\$2,000	\$9,910	\$100	.....	\$500	\$100	
Carroll.....	45	44	1	45	36	8	1	589,870	587,020	299,185	89,750	179,100	5,500	16,700	2,200	.....	.....	210	
Cheshire.....	61	61	..	61	47	11	3	678,962	678,962	260,820	115,650	9,900	12,325	31,900	.....	.....	85,000	695	
Coos.....	41	37	4	41	20	14	7	4,195,656	3,632,092	1,759,950	1,268,925	133,700	35,000	123,100	69,000	.....	.....	36,725	
Grafton.....	86	85	4	86	62	20	6	2,813,393	2,714,293	1,524,105	1,168,500	83,150	13,900	91,005	123,000	.....	.....	2,000	
Hillsborough..	81	73	8	81	60	21	..	861,939	783,604	201,973	108,650	38,250	15,550	29,623	1,200	.....	.....	.....	
Merrimack....	71	71	..	71	52	18	..	580,995	580,995	120,490	55,050	17,000	3,100	29,975	.....	.....	.....	740	
Rockingham..	60	60	..	60	44	13	3	769,655	769,655	272,230	63,980	119,135	27,600	34,255	.....	.....	.....	160	
Strafford.....	30	30	..	30	19	10	1	267,173	267,173	45,700	25,975	6,025	600	9,000	.....	.....	800	.....	
Sullivan.....	46	46	..	46	35	11	..	253,826	253,826	68,155	33,570	10,100	5,600	15,735	.....	.....	.....	700	
State total ..	553	535	18	553	394	135	24	\$11,382,114	\$10,641,765	\$4,653,318	\$2,963,850	\$650,900	\$121,175	\$391,353	\$195,600	\$1,025	\$86,300	\$41,330	

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.—Continued.

Establishments and capital: persons employed and salaries and wages paid.—Continued.

CAPITAL.—Continued.

LUMBER AND SAW MILLS.—Continued.

LOGGING PLANT (CONDUCTED BY MILLING ESTABLISHMENTS.—Con.)	SAW-MILL PLANT.				PLANING-MILL PLANT.				LIVE CAPITAL.						
	Vessels used for transportation of lumber or logs, including steam tugs.	Saw logs, bolts, hewed timber, ties, posts, etc., on hand (not delivered at mill).	All other capital invested specifically "in logging."	Total.	Land.	Buildings, dry kilns, etc.	Machinery, tools, and implements.	Total.	Land.	Buildings, dry kilns, etc.	Machinery, tools, and implements.	Total.	Logs and bolts at mill.	Lumber or other products (not planned or finished) on hand.	Dressed lumber, stock in process, and unfinished goods m'hand.
.....	\$4,950	\$2,750	\$73,425	\$13,125	\$21,100	\$30,200	\$32,975	\$3,075	\$8,300	\$20,700	\$104,035	\$10,100	\$38,260	\$9,280	\$97,395
.....	3,850	1,850	116,910	16,105	34,505	66,300	23,135	1,860	5,595	12,680	147,700	29,300	39,925	11,150	67,415
\$1,000	2,760	1,500	207,725	27,650	76,660	103,415	17,525	2,825	7,265	7,435	192,892	26,095	40,906	14,927	110,964
30,000	500	63,000	518,200	81,425	229,425	207,350	68,625	4,275	28,875	35,475	1,285,317	829,075	212,275	41,346	202,621
.....	41,230	1,230	356,472	31,075	109,500	215,897	43,470	2,045	17,250	23,275	790,246	162,430	203,925	20,101	403,790
.....	200	8,500	195,865	15,095	55,635	125,135	64,675	6,550	26,475	31,650	326,091	7,815	165,980	27,750	124,546
.....	8,900	3,725	167,745	20,520	52,175	95,050	29,070	3,955	10,340	14,775	263,690	46,015	54,500	15,700	147,475
.....	24,450	4,550	143,560	17,985	39,975	85,600	40,410	3,315	11,895	25,200	312,455	4,425	180,740	12,875	114,415
.....	3,100	1,200	93,555	12,250	18,165	63,150	13,225	2,100	3,875	7,250	113,683	5,300	29,100	20,150	59,133
.....	500	1,950	94,330	9,050	26,775	58,505	11,615	830	2,925	7,860	79,726	12,473	31,765	9,738	25,750
\$31,000	\$90,470	\$90,255	\$1,967,797	\$244,280	\$663,915	\$1,059,602	\$344,725	\$32,630	\$125,795	\$188,300	\$3,675,925	\$1,142,028	\$997,376	\$183,017	\$1,353,564

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

CAPITAL.—Continued.										
TIMBER CAMPS.										
COUNTIES.	Aggregate.	PLANT.						LIVE CAPITAL.		
		Total.	Timber land, or standing timber.	Tools and imple-ments, live stock, etc.	Logging railways and equipments.	River improve-ments (exclusive of stock in char-tered boom com-panies).	All other items of investment in plant.	Total.	Value of products on hand.	Cash on hand, bills receivable, un-settled ledger ac-counts, and all sundries not in-cluded in the foregoing items.
Belknap.....	\$1,500	\$1,500		\$1,500						
Carroll.....	2,850	650	\$150	500				\$2,200	\$2,200	
Cheshire.....										
Coos.....	663,564	278,505	112,283	51,764	\$111,168	\$250	\$3,060	285,069	5,786	\$279,273
Grafton.....	99,100	82,500	71,200	10,300		1,000		16,600	0,600	10,000
Hillsborough.....	73,335	20,600	13,600	7,000				52,735	43,035	9,700
Merrimack.....										
Rockingham.....										
Strafford.....										
Sullivan.....										
State total.....	\$740,349	\$383,755	\$197,233	\$71,054	\$111,168	\$1,250	\$3,060	\$356,594	\$57,021	\$298,973

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

Persons employed and salaries and wages paid.

PROPRIETORS AND FIRM MEMBERS, SALARIED EMPLOYEES AND WAGE EARNERS, AND SALARIES AND WAGES PAID.

SUMMARY.												LOGGING.					LUMBER AND SAW MILLS.				
PROPRIETORS AND SALARIED EMPLOYEES.		WAGE EARNERS, INCLUDING PIECE WORKERS.										Salaried officials, clerks, etc.		Wage Earners, including piece workers (men, 16 years and over).					PROPRIETORS AND FIRM MEMBERS.		
Proprietors and firm members.	Salaried employees.	Greatest number employed at any one time during the year.	Least number employed at any one time during the year.	Aggregate.		Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		Number.	Amount paid.	Greatest number employed, etc.	Least number employed, etc.	Average number.	Amount paid.	Total.	Men.	Women.	
Number.	Number.	Amount paid.	Average number.	Amount paid.	Average number.	Amount paid.	Average number.	Amount paid.	Average number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Number.	Number.		
35	4	\$3,156	478	242	297	\$109,706	297	\$109,706	5	\$920	4	.....	123	57	59	\$21,250	35	35	.....		
53	1	2,000	724	306	258	95,516	253	94,506	.....	.....	.....	.....	184	76	50	19,269	53	53	.....		
72	14	8,700	797	357	373	139,032	367	137,859	2	678	.....	.....	284	120	102	33,550	72	71	1		
56	46	35,745	3,489	1,018	1,035	685,883	1,928	683,908	7	1,975	6	.....	1,367	360	682	200,516	56	55	1		
102	39	35,750	2,470	777	1,068	397,881	1,075	395,613	13	2,268	11	.....	2,940	1,205	492	154,792	102	100	2		
105	11	6,361	1,350	688	782	284,422	774	283,192	1	230	7	1,000	3	1,070	415	225	258	87,285	105	104	1
90	8	4,400	1,079	348	576	235,352	576	235,352	.....	.....	.....	.....	450	117	189	69,790	90	90	.....		
74	9	2,760	859	468	542	226,414	535	224,804	7	1,010	.....	.....	325	181	211	87,134	74	74	.....		
37	4	2,882	515	205	351	142,062	316	133,772	35	8,280	.....	.....	148	22	86	35,281	37	37	.....		
57	5	3,183	465	209	180	60,816	179	66,616	.....	.....	1	200	1	300	216	78	65	19,342	57	55	2
681	141	\$104,937	12,235	4,065	6,382	\$2,383,074	6,300	\$2,305,418	70	\$15,961	12	\$1,695	29	\$13,770	4,717	1,528	2,194	\$728,109	681	674	7

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.

Persons employed, and salaries and wages paid.—Continued.

COUNTIES.	PROPRIETORS AND FIRM MEMBERS, SALARIED EMPLOYEES, AND WAGE EARNERS, AND SALARIES AND WAGES PAID.—Continued.																				
	LUMBER AND SAW MILLS.—Continued.																				
	SALARIED EMPLOYEES.										WAGE EARNERS, INCLUDING PIECE WORKERS.										
	Aggregate.		Officers of corporations.		General superintendents, managers, clerks, and salesmen.						Total.				Men, 16 years and over.		Women, 16 years and over.		Children, under 16 years.		
	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Greatest number, etc.	Least number, etc.	Average number.	Amount paid.	Average number.	Amount paid.	Average number.	Amount paid.	Average number.
Belknap .....	4	\$3,156	1	\$480	3	\$2,676	3	\$2,676	..	.....	335	180	223	\$82,456	223	\$82,456	.....	.....	.....	.....	
Carroll .....	1	2,000	..	.....	1	2,000	1	2,000	..	.....	536	228	206	75,467	201	74,537	5	\$920	.....	.....	
Cheshire .....	10	6,600	..	.....	7	4,600	6	4,100	1	\$500	513	237	271	105,482	265	104,900	2	678	4	\$495	
Cook .....	30	26,776	..	.....	25	18,576	23	17,850	2	726	1,314	607	806	356,541	799	354,566	7	1,075	.....	.....	
Grafton .....	25	29,000	..	.....	19	22,500	17	22,000	2	500	1,154	438	554	229,679	541	227,411	13	2,268	.....	.....	
Hillsborough ..	8	5,291	..	.....	8	5,291	7	4,823	1	468	793	424	451	168,262	443	167,032	1	230	7	1,000	
Merrimack .....	8	4,400	..	.....	8	4,400	7	4,000	1	400	629	281	387	165,562	387	165,562	.....	.....	.....	.....	
Rockingham .....	5	1,850	..	.....	5	1,850	4	1,550	1	300	534	284	331	139,280	324	137,670	7	1,610	.....	.....	
Strafford .....	4	2,882	..	.....	4	2,882	4	2,882	..	.....	367	183	265	106,771	230	98,491	35	8,280	.....	.....	
Sullivan .....	4	2,883	..	.....	4	2,883	4	2,883	..	.....	249	131	115	47,474	114	47,274	.....	.....	1	200	
State total..	99	\$84,838	15	\$17,180	84	\$67,658	76	\$64,764	8	\$2,894	6,424	2,993	3,609	\$1,476,964	3,527	\$1,459,308	70	\$15,961	12	\$1,695	



TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.—Continued.

Persons employed, and salaries and wages paid.—Continued.

PROPRIETORS AND FIRM MEMBERS, SALARIED EMPLOYEES, AND WAGE EARNERS, AND SALARIES AND WAGES PAID.—Continued.										PERSONS EMPLOYED, WAGE EARNERS, INCLUDING PIECE WORKERS.											
TIMBER CAMPS.										AVERAGE NUMBER EMPLOYED DURING EACH MONTH.											
SALARIED EMPLOYEES.					Wage earners, including piece workers (men, 16 years and over).					LOGGING.											
Aggregate.		General superintendents, managers, clerks, and salesmen.								Men, 16 years and over.											
Number.	Amount paid.	Total.		Men.		Greatest number, etc.	Least number, etc.	Average number.	Amount paid.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
		Number.	Amount paid.	Number.	Amount paid.																
.....	.....	.....	.....	.....	.....	20	5	15	\$6,000	100	102	103	77	58	58	..	..	41	41	60	65
.....	.....	.....	.....	.....	.....	4	2	2	800	114	124	109	58	17	15	3	23	25	28	30	50
.....	.....	.....	.....	.....	.....	170	162	141	110	162	141	110	45	25	18	17	98	112	161	168	
10	\$6,029	10	\$6,029	10	\$6,029	808	51	447	128,829	1,237	1,185	1,113	269	129	250	227	231	578	728	1,080	1,162
3	300	3	300	3	300	111	47	42	13,500	930	922	608	214	188	269	247	273	431	436	592	793
.....	.....	.....	.....	.....	.....	161	39	73	28,875	368	360	356	320	281	226	87	95	191	231	273	307
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	323	308	253	179	161	148	108	103	130	134	178	249
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	292	300	263	248	222	186	127	114	158	177	202	240
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	108	112	106	98	92	74	7	57	83	89	104	104
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	178	149	125	40	45	26	16	15	32	39	47	66
13	\$6,329	13	\$6,329	13	\$6,329	1,094	144	579	\$178,001	3,820	3,714	3,175	1,622	1,238	1,277	840	928	1,766	2,014	2,727	3,213

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.—Continued.

Persons employed, and salaries and wages paid.—Continued.

COUNTIES.	PERSONS EMPLOYED, WAGE EARNERS, INCLUDING PIECE WORKERS.—Continued.																																					
	AVERAGE NUMBER EMPLOYED DURING EACH MONTH.—Continued.																																					
	LUMBER AND SAW MILLS.																																					
	Men, 16 years and over.												Women, 16 years and over.								Children, under 16 years.																	
Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Belknap .....	241	230	252	276	263	226	170	188	205	198	209	212	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Carroll .....	239	226	265	284	196	254	130	147	155	150	170	192	0	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Cheshire .....	319	324	330	310	297	269	107	174	215	241	266	268	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Coos .....	792	701	839	887	836	862	772	783	856	836	729	605	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Grafton .....	550	589	604	731	635	547	416	451	486	461	472	548	17	18	19	24	10	30	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Hillsborough .....	538	600	553	552	499	407	298	282	344	381	403	454	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Merrimack .....	456	464	482	499	434	374	254	261	291	343	331	405	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockingham .....	399	411	401	388	351	325	197	196	260	310	314	333	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Strafford .....	254	258	283	287	256	217	85	167	223	231	250	253	36	36	36	35	36	36	34	33	35	34	34	36	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sullivan .....	136	142	151	153	155	108	81	81	83	84	94	102	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
State total..	3,924	4,044	4,160	4,367	3,922	3,589	2,570	2,730	3,118	3,235	3,288	3,372	81	84	83	87	79	81	68	56	55	56	68	17	17	14	14	10	8	8	6	10	9	10	15	..	..	

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.—Continued.

Persons employed, and salaries and wages paid (Continued)—Animals used.

PERSONS EMPLOYED, WAGE EARNERS, INCLUDING PIECE WORKERS.—Continued.												ANIMALS USED.									
AVERAGE NUMBER EMPLOYED DURING EACH MONTH.—Continued.												AVERAGE NUMBER AND COST OF KEEP OF ANIMALS USED.									
TIMBER CAMPS.												IN LOGGING FOR SAW MILLS.									
Men, 16 years and over.												Aggregate.		Total.		Horses.		Mules.		Cattle.	
Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Number.	Cost of keep.	Number.	Cost of keep.	Number.	Cost of keep.	Number.	Cost of keep.	Number.	Cost of keep.
20	20	20	20	20	10	5	5	20	20	10	10	87	\$5,885	87	\$5,885	59	\$4,785	..	.....	28	\$1,100
4	4	4	4	2	2	2	2	.....	.....	.....	.....	159	10,614	155	10,264	129	8,844	..	.....	26	1,420
773	749	722	198	74	103	112	265	368	563	720	722	200	14,798	200	14,798	182	13,723	2	\$150	16	925
71	91	101	85	15	16	16	16	16	18	31	31	787	51,577	719	48,712	657	44,789	10	300	2	150
110	121	98	88	77	58	49	49	38	48	48	87	311	30,179	249	24,139	247	23,839	2	300	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	173	15,941	173	15,941	168	15,828	..	.....	5	113
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	214	15,017	214	15,017	198	14,186	..	.....	16	831
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	125	15,818	125	15,818	113	15,168	..	.....	12	650
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	136	8,649	136	8,649	116	7,937	4	192	16	520
978	985	945	305	188	188	184	337	442	649	809	850	3,215	\$250,068	2,792	\$218,818	2,501	\$208,244	20	\$988	181	\$9,586

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

*Animals used (Continued) and Materials used.*

COUNTIES.	ANIMALS USED.—Continued.								MATERIALS USED.					
	Average number and cost of keep of animals used.—Continued.—Timber camps.								Aggregate cost.	LOGGING.				
	Total.		Horses.		Mules.		Cattle.			Total.	Stumpage.		Supplies.	All other materials.
	Number.	Cost of keep.	Number.	Cost of keep.	Number.	Cost of keep.	Number.	Cost of keep.			Quantity, M ft. B. M.	Cost.		
Belknap .....									\$175,735	\$25,015	9,900	\$23,050	\$1,915	\$50
Carroll .....	4	\$350	2	\$175	2	\$175			182,161	32,893	13,385	28,628	3,840	425
Cheshire .....									144,854	48,635	21,033	45,187	3,448	.....
Coos .....	289	21,995	280	21,074			9	\$921	812,440	306,817	134,728	298,062	7,945	810
Grafton .....	68	2,865	68	2,865					690,364	305,212	83,340	285,079	20,093	40
Hillsborough .....	62	6,040	60	5,899			2	150	333,756	94,310	40,870	89,260	4,500	460
Merrimack .....									470,043	170,345	46,595	165,060	5,185	100
Rockingham .....									381,851	201,798	67,045	189,520	11,583	425
Strafford .....									196,019	88,865	26,390	55,465	33,400	.....
Sullivan .....									109,189	39,055	12,130	32,930	6,035	90
Total .....	423	\$31,250	410	\$30,004	2	\$175	11	\$1,071	\$3,496,425	\$1,312,945	455,416	\$1,212,241	\$98,304	\$2,400

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

MATERIALS USED.—Continued.

SAW MILL.								PLANING MILL AND REMANUFACTURES.						
Total.	Logs and bolts purchased.			Supplies.	Power and heat.	All other materials.	Freight.	Total.	Lumber (rough).		Supplies.	Power and heat.	All other materials.	Freight.
	Quantities.		Cost.						Quantity, M ft. B. M.	Cost.				
	M ft. B. M.	Cords.												
\$77,130	9,834	.....	\$68,050	\$4,855	.....	\$125	\$3,200	\$67,090	5,190	\$60,580	\$2,610	.....	.....	\$3,900
60,629	6,882	3,500	63,450	5,826	.....	801	552	87,714	7,821	86,450	879	.....	\$165	220
71,349	10,997	1,310	64,289	5,335	\$75	575	1,075	24,870	2,157	23,305	415	.....	1,150	.....
186,568	20,597	.....	139,939	13,243	.....	19,826	13,500	156,080	14,352	150,791	2,169	.....	1,120	2,000
209,247	28,792	1,300	193,205	10,514	300	1,728	3,500	161,075	13,675	159,400	1,650	.....	25	.....
70,840	10,145	860	62,070	6,893	95	1,782	.....	140,756	13,402	133,850	1,030	\$36	5,040	800
124,472	16,734	634	103,912	10,021	360	5,908	4,270	175,226	16,140	172,380	1,161	.....	260	1,425
108,772	16,677	80	100,158	7,601	.....	1,113	.....	71,285	5,933	68,195	1,185	.....	105	1,800
65,474	10,777	.....	59,215	5,653	.....	610	.....	41,676	2,075	20,650	262	.....	20,764	.....
46,374	6,225	175	39,450	5,021	75	823	5	24,790	3,390	24,410	312	.....	38	.....
\$1,019,859	137,060	7,859	\$884,698	\$74,862	\$905	\$33,292	\$26,102	\$950,532	84,135	\$900,011	\$11,673	\$36	\$28,607	\$10,145

REPORT OF FORESTRY COMMISSION.

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—  
*Continued.*  
*Materials used (Continued) and*

COUNTIES.	MATERIALS USED.— <i>Continued.</i>				
	TIMBER CAMPS.				
	Total.	Stumpage.		Supplies.	All other materials
		Quantity, M ft. B. M.	Cost.		
Belknap.....	\$6,500	2,000	\$0,000	\$500	.....
Carroll.....	925	275	825	100	.....
Cheshire.....	.....	.....	.....	.....	.....
Coos.....	162,984	45,333	136,188	24,796	\$2,000
Grafton.....	14,830	6,790	12,530	2,120	180
Hillsborough.....	27,850	11,000	27,100	750	.....
Merrimack.....	.....	.....	.....	.....	.....
Rockingham.....	.....	.....	.....	.....	.....
Strafford.....	.....	.....	.....	.....	.....
Sullivan.....	.....	.....	.....	.....	.....
Total.....	\$213,089	65,398	\$182,643	\$28,266	\$2,180

DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.

*Miscellaneous Expenses.*

MISCELLANEOUS EXPENSES.

Total.	Amount paid for rent of works.	Amount paid for taxes, not including internal revenue.	Amount paid for rent of offices, and for interest, insurance, internal-revenue tax and stamps, ordinary repairs of buildings and machinery, advertising, and all other sundries, not reported under the head of materials.	Amount paid for contract work.	
				Logging.	Sawing.
\$20,695	\$1,379	\$2,812	\$13,454	\$3,050	.....
9,600	2,789	2,691	4,120	.....	.....
15,419	830	3,658	7,061	3,860	.....
134,988	31	14,642	70,887	49,428	.....
40,568	1,010	10,055	22,013	6,490	\$1,000
37,231	1,700	5,469	9,592	10,195	10,275
32,804	591	5,665	9,848	16,700	.....
44,340	720	4,782	8,588	30,250	.....
14,352	.....	5,530	8,816	.....	.....
8,105	1,360	2,193	4,552	.....	.....
<b>\$358,102</b>	<b>\$10,410</b>	<b>\$57,513</b>	<b>\$158,931</b>	<b>\$119,973</b>	<b>\$11,275</b>

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED

PROD-								
SAW								
SAWED LUMBER.—								
COUNTIES.	Aggregate.		Total.		White pine.		Hemlock.	
	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.
Belknap .....	24,663	\$295,436	22,155	\$251,626	17,340	\$190,645	2,675	\$30,541
Carroll .....	23,404	266,294	22,404	252,686	17,718	199,359	2,127	24,874
Cheshire .....	38,375	392,272	36,509	365,261	28,522	275,903	1,865	20,787
Coos .....	101,095	1,149,192	99,620	1,128,872	4,085	50,963	830	9,448
Grafton .....	93,576	1,138,683	91,956	1,116,995	15,124	160,900	11,035	110,375
Hillsborough.	66,703	730,052	64,183	694,922	57,862	632,320	5,420	54,250
Merrimack ...	74,754	830,357	70,856	772,083	57,490	620,025	11,973	136,965
Rockingham.	79,498	871,551	74,416	763,365	70,029	698,844	2,647	23,701
Strafford .....	40,526	475,299	38,029	430,664	34,257	389,700	2,872	31,964
Sullivan .....	19,604	232,794	18,662	217,897	4,704	60,244	3,671	39,960
Total .....	562,258	\$6,381,929	538,790	\$5,994,371	307,131	\$3,278,893	45,115	\$482,865



STATISTICS, NEW HAMPSHIRE, BY COUNTIES.— *Continued.*

UCTS.

MILL.

CONIFERS.

Spruce.		Cypress		Norway pine.		All other conifers.	
Quantity. M ft. B. M.	Value.	Quantity. M ft. B. M.	Value.	Quantity. M ft. B. M.	Value.	Quantity. M ft. B. M.	Value.
2,140	\$30,440	.....	.....	.....	.....	.....	.....
2,519	27,853	.....	.....	40	\$600	.....	.....
6,122	68,571	.....	.....	.....	.....	.....	.....
94,665	1,067,921	.....	.....	.....	.....	40	\$550
65,797	845,720	.....	.....	.....	.....	.....	.....
901	8,352	.....	.....	.....	.....	.....	.....
1,293	15,093	.....	.....	.....	.....	.....	.....
700	10,500	1,000	\$30,000	40	320	.....	.....
900	9,000	.....	.....	.....	.....	.....	.....
10,285	117,668	.....	.....	.....	.....	2	25
185,422	\$2,201,118	1,000	\$30,000	80	\$920	42	\$575

TABLE No. 2.— LUMBER AND TIMBER PRODUCTS.— DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.— *Continued.*

PRODUCTS.— *Continued.*

COUNTIES.	SAW MILL.— <i>Continued.</i>							
	SAWED LUMBER.—HARDWOODS.							
	Total.		Ash.		Birch.		Chestnut.	
	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.
Belknap.....	2,508	\$43,810	10	\$200	15	\$320	.....	.....
Carroll.....	1,000	13,608	75	1,050	100	1,483	.....	.....
Cheshire.....	1,866	27,010	.....	.....	51	415	175	\$2,350
Coos.....	1,475	20,320	.....	.....	832	11,845	.....	.....
Grafton.....	1,620	21,688	186	2,962	844	11,081	.....	.....
Hillsborough.....	2,520	35,130	445	6,650	160	2,300	1,480	10,940
Merrimack.....	3,898	58,274	.....	.....	455	3,770	585	8,850
Rockingham.....	5,082	108,185	282	4,270	30	500	940	17,240
Strafford.....	2,497	44,635	75	1,750	25	350	200	3,000
Sullivan.....	1,002	14,807	175	3,434	127	1,500	50	700
Total.....	23,468	\$387,558	1,248	\$20,316	2,639	\$33,564	3,430	\$52,080

SAWED LUMBER.—HARDWOODS.— *Continued.*

Basswood.		Oak.		Poplar.		Maple.		Other hardwoods.	
Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.	Quantity, M ft. B. M.	Value.
.....	.....	1,873	\$35,100	.....	.....	360	\$5,065	250	\$3,125
.....	.....	250	3,975	.....	.....	575	7,100	.....	.....
.....	.....	1,125	16,790	35	\$450	235	2,645	245	4,360
.....	.....	2	30	.....	.....	491	7,245	150	1,200
18	\$200	147	1,640	25	250	380	5,055	20	500
.....	.....	340	5,140	.....	.....	.....	.....	95	1,100
100	1,000	2,686	43,914	.....	.....	47	490	25	250
.....	.....	3,830	86,176	.....	.....	.....	.....	.....	.....
.....	.....	2,172	39,185	.....	.....	25	350	.....	.....
44	368	181	2,645	30	300	325	4,890	70	1,060
162	\$1,568	12,606	\$234,595	90	\$1,000	2,438	\$32,840	865	\$11,595

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—*Continued.*

PRODUCTS.—*Continued.*

COUNTIES.	ROUGH LUMBER.									
	Total value.	Saw-mill value.	Planing- mill value.	Timber- camp value.	Total.		Merchant.		Custom.	
					Quantity, M feet.	Value.	Quantity, M feet.	Value.	Quantity, M feet.	Value.
Belknap .....	\$401,313	\$249,666	\$134,597	\$17,050	24,914	\$299,778	19,082	\$235,518	5,832	\$64,260
Carroll .....	415,583	279,975	117,648	17,960	24,095	279,242	19,020	225,692	5,075	53,550
Cheshire .....	390,765	323,798	49,710	7,257	38,880	400,832	26,852	279,312	12,028	128,520
Coos .....	2,402,665	1,604,899	237,737	560,029	105,295	1,213,905	100,451	1,162,855	4,844	51,050
Grafton .....	1,678,194	1,254,841	187,375	235,978	95,492	1,168,126	88,220	1,093,156	7,272	74,970
Hillsborough .....	1,000,589	671,949	216,903	111,737	67,356	737,794	50,224	555,724	17,132	182,070
Merrimack .....	1,045,878	767,451	236,137	42,290	74,895	832,729	64,087	714,010	10,808	117,810
Rockingham .....	1,036,255	866,964	103,366	65,925	79,605	874,353	74,827	824,540	4,778	40,813
Strafford .....	541,538	462,158	78,595	785	40,700	478,941	37,265	446,811	3,444	32,130
Sullivan .....	315,530	245,053	61,495	8,983	21,206	258,436	15,730	198,636	5,476	59,800
Total .....	\$9,218,310	\$6,726,754	\$1,423,563	\$1,067,993	572,447	\$6,544,136	495,758	\$5,730,163	76,680	\$813,973

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.— *Continued.*

COUNTIES.	PRODUCTS.— <i>Continued.</i>											
	SAW MILLS.— <i>Continued.</i>											
	SHINGLES.											
	Total.		White pine.		Cedar.		Hemlock.		Spruce.		All others.	
Quantity, No. of 1,000.	Value.	Quantity, No. of 1,000.	Value.	Quantity, No. of 1,000.	Value.	Quantity, No. of 1,000.	Value.	Quantity, No. of 1,000.	Value.	Quantity, No. of 1,000.	Value.	
Belknap.....	1,250	\$3,080	950	\$2,330	.....	.....	.....	300	\$750	.....	.....	
Carroll.....	2,158	4,139	1,983	3,738	.....	.....	50	\$100	100	245	25	\$56
Cheshire.....	1,392	2,982	792	1,620	.....	.....	212	404	388	958	.....	.....
Coos.....	12,665	21,993	686	1,083	4,729	\$9,576	.....	.....	7,105	11,166	135	168
Grafton.....	4,055	7,847	1,860	3,502	.....	.....	645	1,128	1,135	2,537	415	680
Hillsborough.....	2,859	5,406	2,295	4,004	.....	.....	85	232	479	1,170	.....	.....
Merrimack.....	5,161	11,497	4,200	9,227	500	1,500	10	20	451	750	.....	.....
Rockingham.....	1,754	3,893	1,754	3,893	.....	.....	.....	.....	.....	.....	.....	.....
Strafford.....	1,478	2,805	1,458	2,765	.....	.....	20	40	.....	.....	.....	.....
Sullivan.....	7,737	11,775	490	1,063	.....	.....	1,190	2,087	5,957	8,505	100	120
Total.....	40,499	\$75,417	16,468	\$33,225	5,229	\$11,076	2,112	\$4,011	15,915	\$26,081	675	\$1,024

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

PRODUCTS.—Continued.

SAW MILLS.—Continued.

OTHER SAWED PRODUCTS.															Amount received for custom work.			
Total.		Bobbin and spool stock.		Furniture stock.		Agricultural implement stock.		Carriage and wagon stock.		Pickets and palings.		Latbs.		All other products.	Sawing.	Grinding.		
Quantity, ft. B.M.	Value.	Quantity, ft. B.M.	Value.	Quantity, ft. B.M.	Value.	Quantity, ft. B.M.	Value.	Quantity, ft. B.M.	Value.	Quantity, ft. B.M.	Value.	Quantity, No. of 1,000.	Value.	Value.				
.....	\$8,273	.....	.....	.....	.....	.....	8	\$200	210	\$3,200	.....	.....	.....	.....	.....	.....	.....	
.....	50,699	.....	414	\$7,616	.....	216	\$3,939	.....	28	460	.....	200	\$475	.....	\$4,873	\$13,180	\$150	
.....	31,580	.....	.....	.....	467	7,517	.....	.....	5	100	.....	580	1,340	.....	38,219	11,470	10	
.....	420,183	3,985	61,950	.....	.....	.....	.....	.....	.....	.....	182	\$1,820	46,692	88,291	268,122	10,903	1,896	
.....	148,456	1,801	26,650	.....	52	850	22	900	.....	.....	.....	23,666	57,686	.....	62,270	16,367	750	
.....	85,049	410	3,300	.....	100	1,500	.....	.....	8	100	.....	83	199	.....	78,050	38,547	50	
.....	28,863	.....	.....	.....	60	530	.....	.....	40	800	.....	.....	.....	8	100	525	1,800	8
.....	37,710	.....	4	60	.....	20	300	.....	50	1,500	.....	.....	.....	.....	.....	.....	.....	1,385
.....	17,150	.....	.....	.....	150	2,700	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,283
.....	33,903	1,075	14,400	.....	410	8,500	.....	.....	24	1,800	.....	.....	.....	.....	.....	.....	.....	155
.....	\$861,806	7,680	\$113,976	.....	1,475	\$25,836	.....	30	\$1,100	.....	.....	.....	.....	.....	.....	.....	.....	464
.....	.....	.....	.....	.....	.....	.....	.....	.....	475	\$9,950	.....	100	\$1,920	74,221	\$155,491	\$553,593	\$172,525	\$7,141

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED

COUNTIES.	PRODUCTS.—									
	PLANING MILL.				COOPERAGE MATERIALS.					
	Total.	Gross value of finished lumber.	Gross value of remanufactured products.	Amount received for custom planing.	Hoops.		Staves.		Headings.	
					No.	Value.	No.	Value.	No. sets.	Value.
Belknap.....	\$134,597	\$44,875	\$88,002	\$1,720	.....	.....	.....	.....	.....	.....
Carroll.....	117,648	98,688	18,425	535	.....	50	\$500	.....	.....	.....
Cheshire.....	49,710	17,160	31,133	1,417	.....	3,507	15,870	250	\$4,080	.....
Coos.....	237,737	102,254	134,538	945	.....	192	1,038	.....	.....	.....
Grafton.....	187,375	149,100	38,875	1,400	.....	65	225	.....	.....	.....
Hillsborough.....	216,903	80,625	134,100	2,178	.....	2,345	9,187	68	950	.....
Merrimack.....	236,137	147,680	80,362	3,095	.....	120	600	.....	.....	.....
Rockingham.....	103,366	81,146	20,460	1,260	.....	2,450	7,200	.....	.....	.....
Strafford.....	78,595	9,450	68,485	660	.....	.....	.....	.....	.....	.....
Sullivan.....	61,495	53,675	6,700	1,120	.....	.....	.....	.....	.....	.....
Total.....	\$1,423,563	\$789,653	\$619,580	\$14,330	.....	.....	8,419	\$34,120	318	\$5,040

STATISTICS, NEW HAMPSHIRE, BY COUNTIES.— *Continued.*

*Continued.*

TIMBER CAMPS.

Total.	Cooperage stock.		Excelsior stock.		Fence posts.		Hewed timber.		Hardwood and other logs (cut for export).		Logs for domestic manufacture (cut for sale).		
	Value.	Quantity, cords.	Value.	Quantity, cords.	Quantity, number.	Value.	Quantity, M ft. B.M.	Value.	Quantity, M ft. B.M.	Value.	Quantity, M ft. B.M.	Value.	
\$17,050												2,000	\$14,000
17,060				100		\$500						275	2,100
7,257					250	\$50						225	1,800
560,029					3,600	400				150	\$1,800	73,513	451,181
235,978				45	100							26,500	183,300
111,737	8,500	\$25,200			29,500	1,720	25	\$200				5,500	22,500
42,230					400	50						300	1,000
65,925	4,500	36,000			2,400	340						200	500
785				60	120								
8,982												1,000	3,432
\$1,067,993	13,000	\$61,200	206	\$720	36,160	\$2,560	25	\$200	150	\$1,800	109,513	\$680,113	

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE,  
BY COUNTIES.—Continued.

COUNTIES.	PRODUCTS.—Continued.																	
	TIMBER CAMPS.—Continued.																	
	Handle stock.		Hemlock bark.		Piles.		Railway ties.		Rived or shaved shingles.		Masts and spars.		Telegraph poles.		Charcoal.		All other products.	Amount received for construct work.
	Quantity, cords.	Value.	Quantity, cords.	Value.	Quantity, number.	Value.	Quantity, number.	Value.	Quantity, No. of 1,000.	Value.	Quantity, number.	Value.	Quantity, number.	Value.	Quantity, bushels.	Value.	Value.	
Belknap .....				100	\$700	6,000	\$2,250										\$100	
Carroll .....			240	\$1,000	2,400	12,050	6,500	1,600			20	\$70					\$550	
Cheshire .....	36	\$120	58	287			7,500	2,000									3,000	
Coos .....			59	212	500	1,250											65,115	
Grafton .....			255	940	220	1,000											40,471	
Hillsborough .....			229	746			3,550	838							75,000	\$4,500	44,850	
Merrimack .....			3,080	16,780	200	700	55,100	13,155									41,201	
Merrimack .....							5,000	2,025			11	235	1,275	\$3,325			3,600	
Rockingham .....																	21,500	
Rockingham .....			10	30	400	1,200	12,462	3,355					1,000	2,000	2,000	200	14,000	
Strafford .....	5	05	50	150			850	220	100	\$200							8,000	
Sullivan .....			260	1,000			11,000	3,950										
State total .....	35	\$215	4,202	\$21,835	3,820	\$16,900	107,962	\$20,443	100	\$200	31	\$305	2,275	\$5,325	77,000	\$4,700	\$100,306	\$52,171



TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.—Continued.

COUNTIES.	POWER.										
	OWNED.										
	Total horse-power.	Engines.				Water wheels.	Electric motors.		Rented.	Furnished to other establishments.	
		Steam.		Gas or gasoline.			Number.	Horse-power.			
		Number.	Horse-power.	Number.	Horse-power.						
Number.		Horse-power.	Number.	Horse-power.	Number.		Horse-power.				
Belknap.....	1,946	19	1,240	2	21	22	685	..	..	..	..
Carroll.....	3,215	30	1,565	..	..	37	1,650	..	..	..	..
Cheshire.....	3,184	34	1,585	..	..	61	1,519	..	..	360	20
Coos.....	4,143	30	2,470	..	..	39	1,445	9	228	..	..
Grafton.....	7,869	59	3,824	2	64	67	3,991	..	..	..	325
Hillsborough.....	4,014	50	1,938	..	..	64	2,076	..	..	10	..
Merrimack.....	3,813	34	1,421	2	61	79	2,331	..	..	..	115
Rockingham.....	2,952	39	1,740	..	..	48	1,212	..	..	..	..
Strafford.....	2,228	31	1,455	..	..	19	773	..	..	..	..
Sullivan.....	2,130	20	931	..	..	39	1,199	..	..	..	4
State total.....	35,494	346	18,169	6	136	475	16,961	9	228	370	464

TABLE No. 2.—LUMBER AND TIMBER PRODUCTS.—DETAILED STATISTICS, NEW HAMPSHIRE, BY COUNTIES.— *Continued.*

COUNTIES.	CLASSIFICATION OF ESTABLISHMENTS BY NUMBER OF PERSONS EMPLOYED. (Not including proprietors and firm members.)							
	LUMBER AND TIMBER PRODUCTS.							
	Total number of establishments.	No employees.	Under 5.	5 to 20.	21 to 50.	51 to 100.	101 to 250.	251 to 500.
Belknap.....	29	2	4	20	2	1	.....	.....
Carroll.....	45	.....	8	34	3	.....	.....	.....
Cheshire.....	61	.....	17	42	1	1	.....	.....
Coos.....	41	.....	9	17	10	1	3	1
Granton.....	89	.....	26	43	15	4	1	.....
Hillsborough.....	81	1	22	49	5	2	2	.....
Merrimack.....	71	.....	27	40	3	1	.....	.....
Rockingham.....	60	2	23	31	4	.....	.....	.....
Strafford.....	30	2	12	13	3	.....	.....	.....
Sullivan.....	46	1	21	21	3	.....	.....	.....
State total.....	553	8	169	310	49	10	6	1

## TIMBER LANDS IN THE UNITED STATES OWNED BY LUMBERMEN: BY STATES AND BY GEOGRAPHICAL GROUPS.

1900.	Number establishments reporting.	Capital invested.	Area, in acres, according to ownership.	Average quantity merchantable timber per acre, in feet.	Estimated total quantity merchantable timber, in millions of feet.
United States.....	8,888	\$214,989,366	32,222,097	6,700	215,550.6
Eastern group.....	1,865	40,700,556	4,498,812	4,700	20,987.3
Maine.....	204	4,427,513	2,107,606	2,000	4,317.5
New Hampshire.....	150	4,200,138	663,879	5,800	3,879.1
Vermont.....	330	2,064,800	372,764	7,300	2,746.2
Massachusetts.....	162	1,715,459	41,028	9,000	375.5
Rhode Island.....	13	50,995	1,673	3,000	6.3
Connecticut.....	50	355,102	9,195	9,200	82.8
New York.....	276	8,097,840	648,131	5,600	3,630.1
Pennsylvania.....	614	19,339,297	644,766	9,300	5,910.5
New Jersey.....	47	390,677	7,576	3,600	28.9
Delaware.....	10	58,745	2,204	5,000	10.4
Lake group.....	632	75,184,637	6,694,163	4,900	32,925.0
Michigan.....	320	24,979,990	2,747,447	5,300	14,546.1
Wisconsin.....	227	30,909,588	1,920,607	5,400	10,387.8
Minnesota.....	85	19,295,059	2,026,099	3,900	7,991.1
Central group.....	1,599	17,527,334	3,244,420	4,700	15,423.9
Ohio.....	157	3,071,577	80,699	4,100	334.8
Indiana.....	162	1,864,061	104,167	5,700	593.7
Illinois.....	167	1,110,062	162,652	4,800	778.0
West Virginia.....	221	3,158,542	506,059	5,200	2,608.4
Kentucky.....	208	2,644,006	382,649	4,700	1,787.2
Tennessee.....	410	2,717,973	1,138,640	3,900	4,496.1
Missouri.....	274	2,961,113	869,545	5,600	4,825.7
Southern group.....	3,854	64,037,320	12,414,165	5,000	62,711.9
Maryland.....	114	838,988	66,928	3,700	250.1
Virginia.....	418	2,986,491	402,360	4,300	1,712.9
North Carolina.....	629	4,680,335	1,714,135	3,800	6,488.4
South Carolina.....	251	1,410,050	464,785	4,400	1,998.2
Georgia.....	453	4,044,247	1,107,838	3,800	4,212.2
Florida.....	113	6,717,592	1,318,387	4,500	5,918.5
Alabama.....	525	5,156,012	1,224,835	4,200	5,100.7
Mississippi.....	349	7,229,835	1,214,458	7,600	9,242.7
Louisiana.....	170	6,625,622	1,497,352	6,700	9,964.1
Arkansas.....	517	7,060,807	1,741,779	4,500	7,917.8
Texas.....	315	7,287,341	1,671,308	5,900	9,906.3
Pacific group.....	643	23,784,549	3,188,149	24,500	78,141.6
California.....	156	13,403,324	1,177,537	30,600	36,087.7
Oregon.....	212	2,186,171	825,687	24,500	20,351.8
Washington.....	275	8,195,054	1,184,925	18,300	21,702.1

TIMBER LANDS IN THE UNITED STATES OWNED BY LUMBERMEN: BY STATES AND BY GEOGRAPHICAL GROUPS.— *Continued.*

1900.	Number establishments reporting.	Capital invested.	Area, in acres, according to ownership.	Average quantity merchantable timber per acre, in feet.	Estimated total quantity merchantable timber, in millions of feet.
Miscellaneous group ...	295	\$3,754,970	2,182,398	2,500	5,360.9
Colorado .....	59	184,136	91,993	7,300	671.1
Idaho .....	43	210,484	84,420	6,900	576.9
Indian Territory .....	16	5,358	32,347	3,800	120.5
Iowa .....	43	1,978,332	56,160	4,900	273.5
Kansas .....	22	19,841	7,680	3,500	28.4
Montana .....	38	452,105	95,538	6,600	632.8
Nebraska .....		70,805			
New Mexico .....	11	112,515	1,518,780	1,500	2,319.7
North Dakota .....		17,660			
South Dakota .....	6	90,770	5,940	3,000	18.2
Utah .....	23	51,827	19,300	2,100	40.6
Wyoming .....	21	112,301	56,960	4,500	254.3
Arizona .....	4	350,611	202,080	2,000	409.2
Alaska .....		7,225			
Oklahoma .....	7	88,915	10,940	1,300	14.6
Nevada .....	2	2,082	260	4,000	1.1

LUMBER INDUSTRY IN NEW HAMPSHIRE.

YEARS.	Value of product.
1850.....	\$1,009,492
1860.....	1,208,629
1870.....	4,286,142
1880.....	3,842,012
1890.....	5,641,446
1900.....	9,218,310

TIMBER OWNED AND CUT, BY SPECIES, AND AVERAGE STAND.

SPECIES.	Owned (M feet, B. M.).	Average stand.	1900 cut (M feet, B. M.).
Spruce .....	2,070,100	6,700	188,605
White pine .....	562,600	6,800	310,424
Hemlock .....	504,500		45,557
Other conifers .....	79,300		2,303
Hard woods .....	662,600		23,468
Total .....	3,879,100		570,357

PAPER AND WOOD PULP INDUSTRY IN NEW HAMPSHIRE.

*Establishments and Capital.*

COUNTIES.	Estab-lish-ments: com-mence-ment, number and charac-ter of organi-zation.			CAPITAL.					
	Total number.	Individual.	Firm and limited partnership. Incorporated company.	Aggregate.	PLANT.				
					Total.	Land.	Buildings.	Machinery, tools and im- plements.	Cash on hand, bills receivable, unsettled ledger accounts, raw materials, stock in pro- cess of manufacture, finished products on hand, and other sundries.
*Belknap and Cheshire...	5	2	3	\$246,231	\$201,400	\$38,000	\$75,400	\$88,000	\$44,831
Coos.....	4	4	4	4,999,278	3,302,227	400,000	822,426	2,079,801	1,697,051
Grafton.....	6	3	3	405,284	252,400	66,500	84,500	101,400	152,884
Hillsborough.....	4	1	3	794,090	492,375	159,338	127,288	205,749	301,715
Merrimack.....	3	1	2	1,003,457	554,000	93,500	203,500	257,000	449,457
Strafford.....	3	1	2	215,000	90,000	25,000	20,000	45,000	125,000
Sullivan.....	4	1	3	499,741	347,866	47,962	102,246	197,658	151,875
State total.....	29	3	19	\$8,163,081	\$5,240,268	\$830,300	\$1,435,360	\$2,974,608	\$2,922,813

\* Belknap and Cheshire counties consolidated in order that the operations of individual establishments may not be disclosed.

PAPER AND WOOD PULP INDUSTRY IN NEW HAMPSHIRE.

Persons Employed, and Salaries and Wages Paid.

COUNTIES.	SALARIED EMPLOYEES AND WAGE EARNERS, AND SALARIES AND WAGES PAID.																			
	SALARIED EMPLOYEES.										WAGE EARNERS, INCLUDING PIECE WORKERS.									
	Aggregate.			Officers of corporations.	General superintendents, managers, clerks, and salesmen.			Total.			Men, 16 years and over.	Women, 16 years and over.								
	Greatest number employed at any one time during the year.	Least number employed at any one time during the year.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Number.	Amount paid.	Greatest number employed at any one time during the year.	Least number employed at any one time during the year.	Average number during the year.	Amount paid.	Average number.	Amount paid.	Average number.	Amount paid.	
Belknap and Cheshire.....	4	6	6	\$5,544	6	\$5,544	5	\$5,180	1	\$364	84	78	81	\$35,300	72	\$32,084	9	\$2,616		
Coos.....	56	56	90,476	4	\$22,075	52	68,401	46	65,511	6	2,800	1,581	1,197	1,373	590,704	135	590,181	17	3,583	
Grafton.....	8	10	12,421	1	1,000	9	11,421	9	11,421	.....	202	156	165	64,858	147	58,854	18	6,004		
Hillsborough.....	1	14	22,545	4	10,550	10	11,995	9	11,683	1	312	216	196	76,855	161	66,387	47	11,468		
Merrimack.....	8	8	23,883	3	5,201	5	18,682	4	18,214	1	468	368	254	141,115	265	136,052	25	5,063		
Strafford.....	3	6	4,660	.....	6	4,600	5	4,400	1	260	131	91	109	51,051	96	47,341	13	3,710		
Sullivan.....	3	13	13,531	2	4,500	11	9,031	8	7,793	3	1,238	173	151	73,913	126	58,437	39	15,476		
State total.....	20	113	113	\$173,060	14	\$43,326	99	\$129,734	86	\$124,202	13	\$5,532	2,755	2,123	2,391	\$1,036,850	2,223	\$988,936	168	\$47,920

PAPER AND WOOD PULP INDUSTRY IN NEW HAMPSHIRE.

*Persons Employed (Continued) and Months in Operation.*

COUNTIES.	PERSONS EMPLOYED: WAGE EARNERS, INCLUDING PIECE WORKERS.																							
	AVERAGE NUMBER EMPLOYED DURING EACH MONTH.																							
	Men, 16 years and over.												Women, 16 years and over.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Belknap and Cheshire.	71	71	72	72	72	73	72	73	73	71	71	71	8	8	8	10	9	9	8	8	8	8	9	9
Coos.....	1,402	1,355	1,410	1,452	1,410	1,235	1,220	1,233	1,270	1,377	1,455	1,435	17	17	17	17	17	17	17	17	17	17	17	17
Grafton.....	154	164	162	157	157	162	131	133	129	127	150	151	20	22	19	16	16	16	17	15	16	19	21	20
Hillsborough.....	162	162	162	162	162	162	158	160	162	163	162	162	47	47	47	47	47	47	47	47	47	47	47	47
Merrimack.....	245	258	278	279	273	254	266	265	255	251	295	260	24	21	26	21	29	28	24	27	29	26	26	18
Strafford.....	96	93	104	99	101	94	90	92	92	91	100	101	11	10	11	12	18	15	15	15	15	17	13	13
Sullivan.....	125	129	127	128	123	125	126	125	127	126	126	125	38	38	37	38	37	40	39	39	43	41	42	40
State total.....	2,255	2,222	2,315	2,349	2,298	2,105	2,072	2,081	2,109	2,205	2,359	2,305	165	163	165	161	173	172	167	168	175	172	175	164

## PAPER AND WOOD PULP INDUSTRY

COUNTIES.	MATERIALS										
	Total cost.	WOOD.									
		Domestic spruce for ground wood.		Domestic spruce for sulphite and soda fiber.		Canadian spruce for ground wood.		Canadian spruce for sulphite and soda fiber.		Other pulp wood for ground wood.	
		Cords.	Cost.	Cords.	Cost.	Cords.	Cost.	Cords.	Cost.	Cords.	Cost.
Belknap and Cheshire .....	\$87,373	000	\$4,050	.....	.....	.....	.....	.....	.....	.....	.....
Coos .....	2,604,914	20,390	115,231	68,006	\$413,141	4,089	\$24,766	83,050	\$474,578	.....	.....
Grafton .....	185,887	7,200	34,700	.....	.....	.....	.....	.....	.....	.....	.....
Hillsborough .....	283,051	734	3,352	.....	.....	.....	.....	.....	.....	720	\$3,430
Merrimack .....	419,111	11,208	81,122	.....	.....	.....	.....	.....	.....	.....	.....
Strafford .....	126,269	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sullivan .....	246,729	594	3,600	.....	.....	.....	.....	.....	.....	.....	.....
State total.....	\$3,953,334	41,035	\$242,055	68,006	\$413,141	4,089	\$24,766	83,060	\$474,578	720	\$3,430



IN NEW HAMPSHIRE.

USED.

		Rags, including cotton and flax waste, and sweepings.		Old or waste paper.		Manila stock, including jute bagging, rope, waste, threads, etc.		FIBER.							
								Ground wood pulp purchased.		Soda wood fiber purchased.		Sulphite wood fiber purchased.		Other chemical fiber purchased.	
Tons.	Cost.	Tons.	Cost.	Tons.	Cost.	Tons.	Cost.	Tons.	Cost.	Tons.	Cost.	Tons.	Cost.		
.....	.....	330	\$2,790	1,482	\$31,204	440	\$9,124	.....	.....	212	\$7,936	.....	.....		
.....	.....	.....	.....	.....	.....	14,508	252,396	16	\$502	3,461	112,670	21	\$372		
2	\$20	319	4,115	190	3,050	2,400	41,736	.....	.....	1,340	47,361	.....	.....		
1,020	34,433	608	14,103	.....	.....	2,473	7,875	2,045	70,283	970	31,121	.....	.....		
666	14,620	2,307	28,116	.....	.....	.....	.....	207	10,548	4,255	144,601	.....	.....		
400	12,000	200	1,600	200	12,500	1,152	21,490	109	4,475	652	25,110	.....	.....		
12	600	2,563	70,742	1,075	17,930	286	5,695	19	1,138	1,233	49,981	.....	.....		
2,700	\$61,573	6,327	\$121,466	2,947	\$64,684	21,266	\$338,316	2,396	\$95,946	12,123	\$418,680	21	\$372		

## PAPER AND WOOD PULP INDUSTRY

*Materials Used (Continued), Miscellaneous*

COUNTIES.	MATERIALS USED.—Continued.										MIS-
	Chemicals.	Clay.	Colors.	Sizing.	All other stock.	Fuel.	Rent of power and heat.	Mill supplies.	All other materials.	Freight.	Total amount.
	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	Cost.	
Belknap and Cheshire....	\$6,125	\$300	\$930	\$10	\$5,135	\$8,682	.....	\$2,887	\$3,900	\$4,300	\$16,825
Coos.....	375,996	20,036	6,905	3,928	7,009	356,457	\$10,800	83,416	346,721	.....	398,194
Grafton.....	2,151	1,049	2,366	218	3,000	18,936	.....	10,548	9,581	7,056	10,202
Hillsborough..	43,135	8,159	1,592	903	.....	26,627	.....	8,923	9,982	10,133	24,257
Merrimack....	10,832	13,122	4,692	3,683	.....	35,556	.....	37,920	27,149	7,250	45,984
Strafford.....	5,859	289	1,884	1,034	17,172	13,729	.....	5,127	.....	4,000	5,384
Sullivan.....	15,205	9,947	5,631	1,645	4,443	30,778	.....	5,193	9,834	14,467	39,109
State total.	\$459,303	\$52,902	\$24,000	\$11,421	\$36,759	\$490,765	\$10,800	\$154,014	\$407,167	\$47,206	\$539,955

IN NEW HAMPSHIRE.

Expenses and Products.

CELLANEOUSEXPENSES				PRODUCTS.									
Amount.	Amount.	Amount.	Amount.	Total value.	NEWSPAPER.				BOOK PAPER.				
Rent.	Taxes.	Rent of offices, interest, insurance, internal-revenue tax and stamps, ordinary repairs of machinery, fuel, and other supplies not reported under the head of materials.	Contract work.		Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	
.....	\$1,694	\$15,131	.....	\$183,525	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	27,897	254,518	.....	4,035,739	43,843	\$ 1,514,355	2,824	\$95,297	.....	.....	.....	.....	.....
\$1,010	3,480	5,712	\$115,779	355,248	1,500	89,000	500	20,000	.....	.....	.....	.....	.....
.....	4,111	20,146	.....	415,841	300	12,000	111	4,352	.....	.....	.....	.....	.....
100	10,444	35,440	.....	601,593	.....	.....	8,800	352,000	4,392	\$293,310	1,329	\$54,130	.....
600	284	4,500	.....	247,862	.....	.....	.....	.....	39	4,000	604	51,778	.....
200	3,085	30,451	5,373	414,925	.....	.....	.....	.....	4,700	320,835	.....	.....	.....
\$1,910	\$60,995	\$365,898	\$121,152	\$7,244,733	45,643	\$ 1,606,955	12,235	\$471,649	9,137	\$618,145	1,933	\$105,908	.....

## PAPER AND WOOD PULP INDUSTRY IN NEW HAMPSHIRE.

COUNTIES.	PRODUCTS.—Continued.																	
	WRAPPING PAPER.								BOARDS.						Other paper products.			
	Manila (rope, jute, tag, etc.).		Heavy wrapping (mill wrap- pers, etc.).		Bogus or wood manila, all grades.		All other wrapping.		Leather.		Press and album.		News.		All other boards.		Tissues.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
Belknap and Cheshire.....	.....	.....	.....	.....	.....	.....	.....	600	\$27,000	.....	.....	.....	.....	.....	.....	1,556	\$142,200	
Coos.....	.....	.....	723	\$18,798	10,059	\$492,761	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,582	102,830	
Grafton.....	75	\$7,000	25	750	.....	.....	.....	650	29,000	.....	.....	.....	.....	.....	.....	.....	.....	
Hillsborough.....	.....	.....	169	11,851	.....	.....	84	\$2,940	199	12,283	.....	.....	.....	.....	.....	.....	.....	
Merrimack.....	.....	.....	13	820	3,904	136,040	.....	.....	.....	.....	.....	292	\$8,760	1,267	\$29,141	.....	.....	
Strafford.....	1,881	112,862	.....	.....	.....	.....	.....	600	48,000	960	\$48,000	.....	.....	1,050	39,000	835	94,090	
Sullivan.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
State total.....	1,956	\$119,862	930	\$32,219	13,963	\$620,401	84	\$2,940	2,049	\$116,283	960	\$48,000	292	\$8,760	2,317	\$68,141	3,973	\$330,120



PAPER AND WOOD PULP INDUSTRY IN NEW HAMPSHIRE.

Comparison of Products : Power : Classification by Number of Persons Employed.

COUNTIES.	COMPARISON OF PRODUCTS.		POWER.												CLASSIFICATION.																					
	Value.	Census year, 1900.	Value.	Preceding business year.	OWNED.								SUPPLIED.				Aggregate number of establishments.	Total number of establishments.	Establishments classified by number of persons employed (not including proprietors and firm members).																	
					Total horse-power.		Engines.		Water wheels.	Electric motors.	Other power.	By this establishment.		To this establishment.																						
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.				Number.	Horse-power.	Kind.	5 to 20.	21 to 50.			51 to 100.	101 to 250.	251 to 500.															
Belknap and	3	\$111,525	\$99,500	5	1,615	3	165	12	1,450	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Cheshire.....	3	3,218,303	2,645,009	4	27,300	27	7,255	63	19,705	4	150	4	Locomotives.	160	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Coos.....	2	77,000	75,000	6	3,757	8	420	23	3,337	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grafton.....	4	415,841	375,786	6	2,763	7	770	14	1,993	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hillsborough.....	1	112,802	112,000	3	9,430	3	485	72	8,945	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Merrimack.....	1	370,335	318,821	4	1,625	2	325	7	1,300	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Strafford.....	3	370,335	318,821	4	2,250	7	780	13	1,470	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sullivan.....	3	370,335	318,821	4	2,250	7	780	13	1,470	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State total....	16	\$4,305,805	\$3,026,110	29	48,740	60	10,200	204	38,200	4	150	4	..	160	20	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

The purpose of the publication of the foregoing facts, statistics and conclusions is of course apparent; properly to assert the dignity and prosperity of the state and its varied industries, repelling the ridiculous assertions of its utter dependence upon summer travel, without the income from which it is alleged she would be "poverty stricken," such a decadent and abject commonwealth as would offer no attractions to intelligent self-respecting sojourners, and to attempt an antidote for the actual detriment wrought the state and to its income from summer travel, through false impressions created as to the destruction of our forests, the denudation of our hillsides and the drying up of our streams, all factors in the general picture of delight that nature presents to those who see her charms on our breezy hillsides, sparkling waters and lovely valleys. New Hampshire continues to welcome all who come to test her health-giving breezes—the latch string is out from the Third lake in Pittsburg to Boar's Head or Great Monadnock, and with vitality and beauty unimpaired.

#### FOREST FIRES.

The forests of New Hampshire have been especially free from fire for a long period of years. With the exception of the disastrous fire in the Zealand region in 1888, following the operations there of the Messrs. Henry and their associates, there have been no forest fires of great magnitude in our state for more than twenty years. Fire is the greatest enemy of the forest, being more disastrous than both the axe and vermin combined; for while denudation, whether by the hand of man or by the action of natural causes, never destroys the conditions of reproduction, fire not only checks the growth of the standing forest and destroys the fallen and blights trees, but in many cases actually burns up the soil itself, that humus covering which is the forest's own product and which it forms over the naked rock at the slow rate of one foot in from one hundred to two hundred years. The absolute nudity of the summit of Mount Chocorua, for example, is a striking

instance of what a succession of forest fires will accomplish. That bald, naked, glistening, and serrated cone, so absolutely distinguishable among all New Hampshire's summits, is much below the normal timber level in its altitude, and yet the growth with which it was once covered has been entirely removed by the flames, and the soil upon which it stood has also gone, leaving to nature the slow work of again creating the conditions for forest growth by making there again a new soil through the long and wearisome processes of the evolution of plant life from the lowest lichen forms up through the herbs and the shrubs to the completed and finest forms of botanical classification, namely, the hardy evergreens, which are at once the most persistent and useful of all the tree growths of the temperate zone.

#### OUR FOREST FIRE LAWS.

Two causes operate to give to New Hampshire forests this gratifying immunity from forest fires. First of all the topography of our largest forest areas contributes to check any forest fires which might occur. Fires run much less rapidly in mountainous forests than in those which stand on more level sections of country; and, since practically three fifths of all our forest growths lie in the three upper counties of Grafton, Carroll, and Coos, where, also, our rugged hills rise to their greatest heights, we have been well fortified by nature against extensive ravages from forest fires.

Our forest fire laws constitute the second element of our protection. These statutes, enacted in 1893, and based in the first instance upon the eminently practical suggestions of Dr. Bernhard E. Fernow, then chief of the forestry division of the national department of agriculture and now dean of the New York State College of Forestry, make the selectmen of towns forest fire wardens *ex officio*. These officers are directly charged with the duty "to watch the forests and whenever a fire is observed therein to immediately summon such assistance as they may deem necessary, go at once to the scene of it, and, if possible, extinguish it." So far as we



have observed, and the fire records fully substantiate our observations, these duties have been faithfully observed by the selectmen of the several towns; and the few fires which have occurred within their jurisdictions have been promptly checked.

#### FOREST FIRE WARDENS.

Similar duties were laid upon the county commissioners with reference to those regions where no town organizations exist. It soon became apparent, however, that these officers, few in number, and often living at remote distances from the heavily forested areas, could not be expected to be as effective forest fire wardens as the selectmen. Accordingly, at the suggestion of this commission, the law was amended at the next session after its passage so as to provide for better protection in the remote sections of forest growth. Under the amended law the privilege of adequate protection against fire was given to all owners of forests in the unincorporated townships by providing that the Forestry Commission should, upon the application of any such owner, appoint a suitable number of fire wardens, fix their compensation and limit their term of employment. The expense of such service is chargeable one half to owners and one half to the county. Few appointments have been made under this law. The Hastings Lumber Company, however, the proprietors of extensive forests in the township of Green's Grant, have enjoyed the service of special forest fire wardens from the first, and have maintained a strict patrol along the line of their lumber railroad.

#### PRESERVATION OF SHADE TREES.

The law of 1895 providing for the marking of shade trees by selectmen was found in its application to be of doubtful value, inasmuch as the restrictions placed upon the selectmen in their working under the law proved too limited to permit of the law's full effect in preserving the beauty of many of the highways in the state. Accordingly, at the session of 1901, this law was repealed and a new law enacted.

which is much more explicit in its provisions, and which in its workings as thus far observed appears to justify its existence.

Under this law, shade trees which are to be preserved are selected by a tree warden who, in the language of the law, must be a competent person, and the cumbersome and expensive tag of brass bearing the state seal has given way to a metallic spike having upon its head the letters "N. H." An appropriation of five hundred dollars a year to cover the cost of these spikes has proved thus far ample for the purpose, and under the terms of the law more than one hundred thousand shade trees have been preserved for the adornment of our highways.

The tree wardens being vested with wide discretion in the matter of the selection of the trees for preservation, have, so far as the board can learn, performed their duties with tact and zeal. Complaints have arisen in only one town, and as the law provides ample reparation for any abutter who may feel himself injured by the tree wardens' selections, it is probable that the difficulties in that community will be successfully dealt with by the courts.

So far as the board knows, also, the trees thus designated by the tree wardens have been respected as public property, and in only one town has information come to our knowledge that spiked trees have been cut contrary to the provisions of the law. In this town steps have been taken to prosecute the offenders, and, as the penalties prescribed for the illegal removal of spiked trees are somewhat drastic, it is unlikely in case of conviction in this instance that other depredations will follow.

#### THE SECONDARY FOREST.

The commission has chiefly confined its attention to forest conditions in the northern portions of the state, because there are centered within three counties upwards of two million of the approximately four million acres of our forest growth. In this same section is practically all of the original

forest area still left to us. And there, too, are those unique and entrancing factors in New England scenery, the White Mountains. It was the threatened and apparently immediate denudation of these magnificent slopes, which gave the initial impetus to New Hampshire forestry; and because of the intimate relation of these forests to the economic welfare not only of our own people, but to the people of all the New England states save one, that the commission felt justified in devoting so large a share of their attention to the securing of better and more rational forest conditions in these sections.

But we have not been unmindful of the interests of the secondary forests of the state, which lie for the most part in the southern and central tiers of counties, and which, though presenting few single areas of large extent, nevertheless in the aggregate comprise an acreage equaling that of more than one fifth of the total area of the state.

These forests in their commercial aspects may be said to consist of a single species, the white pine (*Pinus strobus*), valuable for nearly every use to which forest products are applied. The white pine, as we have said in previous reports, is the largest, most useful, and has the greatest range of distribution of our conifers. Originally two great belts of this valuable species occupied the valleys of the Merrimack and the Connecticut, which contained some of the finest timber in New England; but this primeval growth has long since disappeared and only a few scattered remnants, each of a few acres, now remain. The farm of the New Hampshire College of Agriculture and the Mechanic Arts, at Durham, has upon it the last considerable area of primeval pine in the state, so far as we have been able to ascertain. A few specimens of original pine stood for a long time in the town of Rye, where they were a familiar landmark for sailors and fishermen, in this connection being alluded to by Whittier, who spoke of the vessels departing from the shore as having

"Lost the sight of the pines of Rye."

These old tree growths having been removed, the soil which they occupied was turned to tillage or pasturage during those decades which were devoted chiefly to extension of our agriculture. With the changes which occurred in the conduct of this industry and its coincident abandonment of many fields and even of entire farms, the pines again crept into their ancient holdings. The white pine seeds very freely, and the sites of many of the ancient forests began to indicate themselves by tracts of vigorous sapling growth, which in from twenty to thirty years became of sufficient size for pail and kit stock, for box boards, etc., and in from fifty to sixty years to suitable dimensions for the manufacture of boards and timber. Springing up as this growth did upon so many of our worn-out or abandoned farms, it made industry and prosperity possible in many sections where otherwise there would have been a much more narrow and straitened life.

#### NATURAL PINE LANDS.

Within the limits of the distribution of this useful species there have appeared, naturally enough, certain sections pre-eminently suited to its culture. Chief among these are central Hillsborough and Cheshire counties, where, either through the topography and conformation of the land, the qualities of soil, or the relative humidity, the white pine has flourished exuberantly, and it has been no uncommon thing in the pursuit of the kit manufacture and kindred industries to remove successive crops at no longer intervals than twelve to fifteen years. These industries, none of them of great magnitude, but in their aggregate distributing a large sum of money every year among the farmers and other woodland owners in their immediate vicinity, were valuable elements in the prosperity of the state; and, had they continued, would have insured a small but constant source of revenue to many sections; and, so long as they continued to utilize on the average no more than the annual wood increment of their sustaining woodland growths, would have obviated any serious necessity for vigorous forestry agitation in these portions of the state.

## THE DIAMOND MATCH CO.

The appearance of a new factor in the field of forest industry has, however, entirely changed the conditions of the manufacture of the white pine product. A few years since, the Diamond Match Company, better known as "the match trust," began operations in New Hampshire. The method of the small manufacturer was to buy pine in the log from the farmer or the jobber, and they, except in rare instances, confined their cuttings to trees of reasonable size, leaving a considerable nucleus of thrifty young growth as a basis for a future crop and for seeding. The practice of the Diamond Match Company was wholly different. Buying logs only where the land itself could not be had, it took title to large areas of secondary forest, erected mills, and proceeded to clear the lands utterly, sending the resultant product out of the state in the rough for completed manufacture elsewhere.

As a consequence many small sawmills and wood-working factories in the southern counties were forced out of business, and the landowners received a lump sum for their wood-lots instead of the regular annual revenue from the sale of logs. The wood-lots thus stripped of their growth were abandoned by the operators, and the towns found their inventories diminished by the valuation formerly set upon the wooded lands. And the employment afforded by the match company during the brief period of its operations was far less than that offered steadily by the small manufacturers who had been driven out of business.

Before dismissing the operations of this company from consideration, it is fair to say that its managers are now coming to perceive the shortsightedness of their initial policy; and they are now instituting new methods of harvesting their timber crops. Cuttings are now confined to the larger growths, and on certain of their denuded lands the company plans for extensive reforestation by seeding and by the transplantation of seedlings. Such a policy, if consistently ad-

hered to, will remove further reason for criticism based upon an unwillingness to see the resources of the state diminished; and by insuring the perpetuation of the company's operations will serve to maintain a much-needed source of revenue in the affected communities.

#### ATTEMPTS AT REFORESTATION.

In connection with these plans for reforestation in lands recently denuded, it may be wise to call attention to some further attempts of private enterprise in the same line upon lands once used for agricultural purposes but now given over to the undirected forces of nature for the restoration of the forest cover. The plantations of Mr. Isaac Adams, in Carroll county, were mentioned in detail in another place; and the plantations of the late Hon. John D. Lyman, at New Durham, have become well known in many sections through their late owner's enthusiastic attempts to set others to following his example. Less familiar, however, is the work of reforesting begun by the late Mr. Austin Corbin upon his estate at Newport, where by means of transplanted pine saplings he made permanent a shifting soil of sandy structure, adding greatly to the attractiveness of his property and assuring an added value to it from year to year as the planted crop matures. Mr. Gordon Woodbury, upon his estate at Bedford, has also under way an experiment at reforestation on a large scale, which already gives excellent promise of large returns within the lifetime of its owner. In Cheshire county, the Butterick Publishing Company, once the operator of a flourishing box mill, now absorbed by the match trust, and still the possessor of many acres of farming and wood land, is planning for the immediate reclaiming of an extensive area of abandoned pasture through reforestation.

Such efforts mean the ultimate addition of large sums to the valuation of the state and to its resources, while the benefits of large forested areas for the conservation of the water supply can hardly be overestimated. Indeed, so closely

related to the entire prosperity of the whole state is the matter of extending the present limits of the forested area, that it seems to us wise for the legislature to take into consideration the advisability of state co-operation to secure this much-to-be-desired result.

#### EXEMPTION OF FOREST PLANTATIONS.

In other states where conditions akin to those mentioned have arisen it has been found that by a remission of taxation, in whole or in part, landowners have been encouraged to bring under forest cover large areas of denuded or waste lands which otherwise would never have increased in value, but which under the continued growth of a planted tree cover have been found to add materially to the wealth and resources of the community. It has seemed to us that New Hampshire by adopting some such course could materially add to its wealth through the permanence of its forest cover, and we accordingly suggested that the legislature of 1901 provide for the partial remission of taxes upon lands planted with desirable timber trees, in a specified number to the acre, this exemption to continue during the period of the forest's most rapid growth. Such a law was introduced at the last session of the legislature, passed the house, and failed in the senate only because it was not reached before the closing hours of the session.

We advise again that some such action be taken by the legislature of 1903.

#### SUPPLY OF SEEDS AND SEEDLINGS.

If, at the same time, the state's paternal aims could be so directed as to encourage reforestation additionally by supplying to landowners seedlings of timber trees at cost or at a mere nominal price, the process of extending the forest cover would be greatly facilitated and the area of land so treated largely increased. It has been argued that the establishment of a tree nursery by the state itself for the supply of such seedlings might prove neither profitable nor successful. It is

urged that it would require no little expenditure of money to establish a nursery within the state, and that it would be some time before the products of such a nursery could be ready for landowners who were willing to use them. Moreover, if there should prove to be no large demand for seedlings for plantation, the invested capital would have gone to waste. The alternative is therefore suggested that if the state should authorize the Forestry Commission to contract with some reputable nurseryman already established in some other state for the supply of a given number of seedlings of specified varieties of each year, an immediate step could be taken toward reforesting those areas which most urgently demand it, and if the experiment should prove unsuccessful the state would have no permanent investment in a tree nursery upon which to realize a loss. If, on the other hand, the demand for the seedlings prove sufficient to warrant, the legislature of 1905 could take steps for the establishment of a permanent nursery.

#### LEGISLATION DIFFICULT.

Forest preservation with rational utilization of the forest product is difficult to regulate by legislation. Under a more dictatorial form of government than ours, as for example, in the German Empire, no difficulty arises in the reservation and management of immense tracts of forest cover for the benefit of the general government. Here, however, this is not so easy; even in those states where forest preserves have been instituted, every attempt thus far made to throw them open to lumbering operations, though conducted upon the most rational basis, has been defeated amid a storm of popular disapproval. The national government, too, with its millions of acres of forest reserves has never undertaken a systematic removal of the mature trees in its forest cover as a matter of revenue. Wherever forest preservation has been brought about it has been through the exercise of the power possessed either by the state or national government, without view to future emolument other than that received from the mere fact of forest preservation itself.



In years past this commission has held and still holds that if the state of New Hampshire could—by the exercise of the power of eminent domain and through direct taxation, or by the proceeds of an issue of bonds—secure again to itself the ownership of those forests with whose title it parted thirty-five years ago, it would be a step of immeasurable advantage and profit to the whole community. But we realize the unwillingness of the people to tax themselves for this purpose, even upon a conclusive showing, such as can be and has been made, not only of the ultimate but of the immediate financial profit to accrue from such a course. In view of repeated rebuffs in successive legislatures we hesitate to press again this proposition upon our lawmakers, although we abate nothing from our opinion that such a course would immediately settle the vexed question of forest preservation in New Hampshire, and would assure to the state for all time a perpetual and increasing revenue from the sale of matured timber. In the absence of applying such a general policy of forest purchase and management, it may be well for the legislature to consider the advisability of purchasing and holding in preserve such strategical points in the White Mountain forests which, by reason of their relation to the head watersheds of our great commercial streams, or by their relation scenically to the ever extending volume of summer resort business, particularly commend themselves as the wards of a paternal state government. There are a few such spots which are now threatened by the axe and which can be procured for the state at fairly reasonable prices.

#### A FOREST MAP.

The basis of all scientific forest management is, as this board has heretofore remarked in other reports, an accurate topographical knowledge of the forest cover. In all cases where any well devised scheme of forest preservation and management has been put into operation, an accurate mapping of the territory affected has preceded all else. We therefore again call attention to the opportunity which the

state possesses to coöperate with the national government in completing the topographical survey of the state, which was begun many years ago but which has been neglected because other commonwealths have taken advantage of the opportunity for coöperation to advance their work to the detriment of that in those states which have depended upon the national government alone to complete it. The work already done in New Hampshire is confined to border towns along the line of Maine, Massachusetts and Vermont, and to the White Mountains, where the major peaks of the Presidential Range have been surveyed and completed. Accompanying this report will be found a copy of the White Mountain map, showing the character of the work. The extension of these maps over that portion of the state which bears the heaviest forest cover, that is to say, speaking roughly, over the northern half of the state above Lake Winnepesaukee, would be of inestimable value in outlining any plan for systematic forest management in that section, and would be of incalculable service to many of our people, saying nothing of its benefit to the thousands of summer visitors who yearly come into that region. We therefore recommend that an appropriation of not less than \$5,000 be placed at the disposal of the commission, for securing the co-operation of the United States Geographical Survey in continuing this work in the section above referred to.

#### A NATIONAL WHITE MOUNTAIN PARK.

Elsewhere we have spoken of the project to establish a national forest park in the Southern Appalachian mountains. This plan, now well matured and enthusiastically supported, has already won the favorable consideration of the national senate; and its friends hope to secure its passage through the house at the approaching short session of congress.

Assuming their success in this effort, it is reasonable to ask whether government action of this sort is to stop here. The forest reserves set aside by executive proclamation under the act of congress of March 3, 1891, are made up of lands already owned by the government. The Appalachian Mountain park

contemplates a purchase by the government of lands now owned by private individuals. If such a policy is to be inaugurated, it ought not to be confined to the single area under consideration in the Southern Appalachians. The White Mountain region has claims equally logical and forceful.

#### THE ARGUMENTS IN ITS FAVOR.

The chief arguments adduced in favor of establishing a national forest reserve in the Southern Appalachians are:

That those mountains embrace high peaks and large mountain masses. The same is true of the White Mountains, where altitudes and bulk are scarcely less than those found in the southern chain.

That upon these mountains descends a very heavy rainfall. A like meteorological condition is found in the White Mountain region.

That denuded slopes in those mountains rapidly lose their humus and then the underlying strata, which are washed down to ruin fertile fields below. The same is true almost to an equal degree in the White Mountains.

That the rivers originating in those mountains flow through many southern states, and possess agricultural, water-power and navigation interests along their courses which are essential to be preserved. The rivers originating in the White Mountain region flow through all the states of New England, save one; they support the largest manufacturing interests; they afford water-powers of great magnitude; they relate to rich and profitable agriculture.

That the regulation of the flow of these rivers can be accomplished only by the conservation of the forests. The Merrimack, the Saco, the Androscoggin, the Connecticut, the Piscataqua rivers are absolutely dependent for their equable flow upon the preservation of the forests of New Hampshire in their substantial integrity.

That the Southern Appalachians bear rich forests of hard woods. The forests of the White Mountain region are the finest growths of conifers found in the East. These forests are

characterized by a close and heavy stand of tall, straight trees of the most valuable and useful species found—the spruce—and furnish supplies which cannot be had from any other region except at great cost.

That the economic reasons for the preservation of the Appalachian forests are imperative. Not less so are the economic reasons for preserving the forests of the White Mountains. Upon these depends the prosperity of the lowlands through which their waters run, and their management under rational forestry principles will perpetuate and increase the resources of this region, will afford a valuable object lesson in the advantages and practicability of forest preservation through use, and will soon render them self-supporting from the sale of timber.

That the agriculture of the South must be protected and preserved, an end to which forest preservation is an indispensable condition. Equally important is it to preserve and extend New England agriculture.

That southern floods will increase if forest destruction continues. This is equally true of New England.

That southern forests, streams, and agriculture cannot be preserved by state action, hence the national government must assume the duty. If federal action is justified there on such a ground, much more is it justifiable here.

#### THE ONLY METHOD.

In the course of an elaborate argument submitted to congress in advocacy of the Appalachian Park proposition, the Secretary of Agriculture declares himself able to find but one way for these forests to be preserved, and that is by the federal government's buying the forest-covered mountain slopes and making them into a national forest reserve. A like conclusion would be reached in an extended study of the conditions attaching to the White Mountain forests.

It is declared to be a proper national function to restore the Appalachian forests already injured and to reforest the steep slopes already cleared, because the results are national in their

importance and extent. Satisfactory protection and development of those forests are declared to be wholly beyond the agency of private individuals, who have no direct interest whatever in the protection and perpetuation of water-power, agriculture, and navigation along the lower courses of the streams whose headwaters centre there. This is equally true of White Mountain forests and their owners.

It is urged, also, that the states within whose territory the Appalachian forests lie cannot be expected to convert them into a forest reserve.

The states do not own any of those lands. It is pointed out that North Carolina, for example, cannot be expected, at great expense, to create a forest reserve for the protection of streams which, though arising within her borders, lie mainly in other states; nor can Alabama be expected to purchase lands in Georgia for the protection of a great river emptying into Mobile bay.

These arguments all apply with equal or greater force to the White Mountain situation. New Hampshire owns no public lands. The rivers which have their origin within her borders contribute more largely to the prosperity of other states than to hers. She ought not to be expected to burden herself with debt for the benefit of her neighbors; and her neighbors cannot rightfully be asked to contribute money to buy land here.

#### A NATIONAL PROBLEM.

In summarizing his views on the Appalachian Park proposition, Secretary Wilson says:

“This is a national problem. The people of a number of states are directly interested. The dangers growing out of the policy now in force are national in their character, as are also the benefits to be obtained by the policy now advised. This proposal for a national forest reserve has already been discussed and commended by our ablest men of science, by practical lumbermen, by the forestry associations, by many of the business organizations of the country, and by both the technical and the general press. \* \* \* \* \*

“Congress has wisely provided for the setting aside out of the public domain, and thus withdrawing from sale, many thousands of square miles of valuable forest lands, with a view to protecting the streams and perpetuating the timber supply about the mountains in our western states and territories. And while the measure now proposed involves a purchase instead of a withdrawal from sale of forest lands formerly purchased, the principle and purpose are the same. In both cases, even if judged simply as a question of finance, the government’s investment will ultimately prove a good one.”

The advocates of a White Mountain park under federal ownership can state their case with equal force upon all these heads. And, in addition, the national character of the problem here is largely emphasized by the fact that the White Mountain forests not only affect the manufactures and agriculture of the five New England states through which flow the waters of the Merrimack, the Connecticut, the Androscoggin, the Saco, and the Piscataqua, but by the further fact that thousands of people, coming from all the states, resort to the White Mountain forests every summer in search of recreation and health.

#### NOW IS THE PROPER TIME.

If the general government is ever to become interested in this section, the time seems now ripe for the first steps to be taken. Public attention is now being aroused with reference to the new policy of creating forest reserves by purchase. It is fitting that congress should examine into all the propositions of this kind at the outset, so that the initial step, when once it is taken, shall be known to be not an isolated and unique example of such an exercise of a national function, but the first move in a general plan aiming to bring all unprotected danger spots under federal guardianship. One such locality is the White Mountains.

There are certain places in our country that are highly favored by nature in having not only grand and beautiful scenery, but also the purest of water and a salubrious and

health-giving climate, and these places are not so numerous that they should not be fostered and protected by a permanent influence, and what so permanent as our national government? The White Mountains are undoubtedly a pleasure-ground and residence place for a larger number of citizens from nearly every state in the Union (for at least a portion of the year) than any other place in this country. On looking over the registers of the different hotels in the White Mountains, it is easy to discover the truth of this assertion.

Now, under the circumstances, with the increase in population in the eastern and middle sections of our country, does it not seem that our national government should acquire possession of these specially interesting and attractive places and make a park or reservation of them as a pleasure-ground for all the citizens of our great country who wish to avail themselves of it?

Now, with the disappearance of our forests our water supply will also disappear, as the latter inevitably follows the former, and when these two have disappeared the White Mountain region will no longer be a desirable place of residence for the summer tourist. The attractiveness will have disappeared and they will seek other regions. There are millions in our country who love these superb scenes and who can see in them infinite possibilities for the uplifting of humanity by the inspiration which they receive from living in the midst of these grand mountains and noble forests, and they carry back to their busy teeming lives in the cities memories that can never be effaced. They are inspired with new thoughts and high resolves and are instrumental in helping to uplift those who have not had this privilege. In this way the influence which is received from a visit to these mountains is spread throughout the length and breadth of our land.

#### OTHER NATIONAL PARKS.

The government has already established by proclamation the Yellowstone park, containing over two million acres in Wyoming; the Sequoia, containing 161,280 acres,—all three in California; and the Mount Rainier park, of 207,360 acres

in the state of Washington. None of these parks or reservations are east of western Dakota, they are west of the 103d meridian, yet the population west of the meridian is approximately four million as against seventy-one million east of it. The increase west has been but 980,000 since the census of 1890, while the increase east was over twelve million; thus ninety-five per cent. of the population of the country is east of the meridian, west of which the present parks and reservations are located. The question at once arises, why should not the eastern section of the country contain such a reservation, either in the form of a national park, or of areas set apart under such restrictions as would preserve and foster the forest growth now rapidly disappearing? The need of intelligent action respecting forestry is now universally conceded. The government is committed to such an action upon its great western reservations. The federal government possesses the facilities for controlling such reservations in a broad way, unaffected by local or private interests, upon plans that will permit the use of the forests that remain, directing with intelligence such cutting as is proper, and promoting new growth on the denuded areas. The subject is exceedingly important in its relation to the prosperity of the farmer, who is largely dependent on the climate and rainfall, to the great manufacturing interests, more or less dependent on the water-power furnished by our rivers, to the rapidly growing cities and towns whose water supply is drawn from our northern lakes, to the health and pleasure of thousands who annually visit the mountains and uplands of northern Vermont, New Hampshire and Maine.

#### THE WHITE MOUNTAIN REGION.

The White Mountain region proper of New Hampshire covers an area of more than 1,200 square miles. Dominated by Mt. Washington and the Presidential Range, flanked by the Franconia and Sandwich ranges, it includes also groups of lesser peaks, feeding the Connecticut and Merrimack rivers, the Saco, the Androscoggin and many tributary



streams, the source of the water-power of hundreds of manufacturing villages and cities, to which the growth of New England is so largely due. It is a region of great historic interest, closely associated with the past and present life of New England, interwoven with its romance, poetry, art and tradition.

If the attention of congress is to be directed to this region, as one amply deserving federal ownership and control, the legislature of 1903 may properly adopt resolutions favoring the establishment of a White Mountain national park, and requesting our senators and representatives in congress to urge the subject upon the consideration of their fellow legislators.

#### FORESTRY KNOWLEDGE.

The knowledge of correct forestry principles spreads slowly ; but during the period of the commission's efforts it is believed that certain definite and valuable advances have been made in adjusting correctly the relation of the public to the forest cover. The recognized dependence of mankind upon forest growths for timber, fuel, and so many of the necessities of daily life, in the development of which man has shown so much of his ingenious capacity, is so great that it is not unnatural that in the first enthusiasm of forestry agitation in our state, an extreme and radical view prevailed ; and that a vigorous demand was raised for the immediate and total cessation of lumbering operations which affected the mountainous region so unique and valuable as a summer resort, and so intimately connected with the head watersheds of New England's most serviceable waterways.

This view, however, has now been practically abandoned. The fundamental concept of rational forestry, namely, that forests are grown to be used, is now the prevailing basis in formulating the rightful demands of the public upon the private owners of our forest areas. The woodman is no longer asked to spare every tree, but to spare such trees as are not of sufficient maturity to render them commercially

valuable, or which are so placed as to give no hope for their immediate reproduction in case of removal, or which ought not to be removed by reason of their consummate value in the relations they sustain toward the scenic and economic interests of the commonwealth.

#### THE FUNCTIONS OF THE FORESTS.

In formulating these demands the forester makes no extravagant statements of the forest's claim to stand because of its relation to rainfall or climate. Despite an exhaustive research, the commission has been utterly unable to unearth or to formulate any body of facts tending to prove even the remotest connection between forest areas and the total precipitation. The average annual rainfall in New Hampshire is about forty-two inches, and the amount has varied but little from year to year despite man's increasing efforts to destroy the balance of nature. The function of a forest in relation to the water supply is wholly mechanical. First of all the limbs and foliage serve to check the fall of the rain, thus decreasing the force of its impact upon the forest floor and preventing a hardening of the surface which would hasten the running off of the waters. The trunks and the protruding roots tend to hold in check the deep masses of snow which fall upon the mountain slopes and to prevent their sliding to the lower levels. Again, the spongy duff, accumulated from the forest litter through the ages, holds in reserve the melted snow and ice, giving it slowly out in summer as it drains through the porous structure into the streams below, and thus equalizing the flow of water in the larger courses which feed from the mountain brooks. And, finally, the shade of the forest materially lessens the evaporation during the heated term and saves for its destined use in the waterways the precipitation so generously given during the early spring.

To these, two other factors must be added to make up the argument in favor of the rational use of forest growths, such as we have above indicated.

First, the sentimental factor as exemplified in the attractions which the mountain forests maintain for summer visitors. When one reflects more deeply upon this phase of the forestry question, it is hard to locate the exact line of demarcation between the sentimental and the practical, for while it is almost wholly for their æsthetics that the forests attract the tourist, the revenue thus obtained for the state makes the subject of rational forest preservation a most eminently practical matter.

#### THE NECESSITY FOR FOREST PRESERVATION.

Last of all, though to our minds the chief in importance, must be considered the effect of unwise forest management upon the forest industries themselves. The perpetuity of every lumber mill, every pulp mill and every paper mill depends upon the productive capacity of the forest which sustains it. Under proper regulations that productive capacity can be enlarged and perpetuated, and no interest of the lumberman or the pulp manufacturer can be second to the securing of rational forest condition upon all his lands.

With this end in view the commission has continuously directed its efforts to enforcing these facts upon the attention of landowners and timber operators, with the result that, whereas at the beginning of our efforts not more than one of all this class was conducting his business under any systematic endeavor to insure to his mills an endless supply of raw forest material, to-day not more than one of them is operating without such endeavor, and some of them have so far developed the rational theory of forest management, that they employ large corps of trained men, some of them educated in superior forestry schools, to direct every detail of their forest work. Whether the enlightened self-interest thus aroused has demonstrated its value sufficiently to insure its continuation without the spur of official stimulus on the part of the state is a question yet to be determined; but certain it seems that the results thus far obtained by the commission along this line of effort justify the state in its action in permanently establishing the forestry department as a branch of government.

In line with the immediately foregoing matter the board submits the following

#### SUMMARY.

1. Approximately there are 4,200,000 acres of woodland and forest in the state, or about three fourths of its area, of which 2,300,000 acres are in the three northern counties, Coös, Carroll, and Grafton. Perhaps 700,000 to 750,000 acres of this is original growth, or the stand of trees on lands cut over so long ago as to be practically timber lands at the present time.

2. Of this area, in the North Country where are the great mountain houses for summer business, and where also is the domain of the lumberman, less than ten per cent. has been cut or burned over beyond the power of unaided nature to restore scenic conditions, and to-day the total area within the state covered with foliage, from young growth to the primeval trees inclusive, is doubtless larger than at any time during the last fifty years.

3. Unfortunately it is the fact that lines of railway built to encourage and accommodate tourists, have also made profitable to the lumberman tracts of scenic beauty before inaccessible and thus encouraged cuttings in territory that should, if possible, have been exempt from attack, and in the most noticeable locations, as around the western slopes of the Presidential Range, the lower Ammonoosuc valley, the Franconia Notch, Glen Ellis falls, the Peabody River valley; all beloved of tourists.

4. To a degree these spaces, for a time desolate and of forbidding aspect, have become covered by a new growth, and save where fire has left bleached trunks (themselves falling prone in the new foliage and thus hidden), mountain sides and valleys are again covered with verdure, so that the decaying debris of lumbering operations alone witness former work. The original trees are gone, but it often requires a trained eye to distinguish the new trees, or wherein the contour of hillside and glen is not as grateful to the eye as before lumbering operations commenced.

5. Nature thus reproducing itself, it is not strange that the water-flow over weirs on the larger streams like the Connecticut, Androscoggin, Saco and Merrimack shows no diminution, nor is erosion visible on the hillsides to any great extent. While the destruction of original forests is from a scenic and economic point to be regretted, there is much unfounded comment and alarm upon the result of timber cutting; nor is there data to prove any diminution of the annual rainfall (about forty-two inches per annum), loss of water-power or climate changes therefrom.

6. Statistics in their proper place in this report demonstrate certain of these conclusions and show the comparative volume of the manufacturing, agricultural, lumber and summer business, industries of the state, which will, perhaps, give a clearer and more just comprehension of existing economic conditions than always obtains.

7. The commission is called to face, not theories alone, but facts and results. The forest and wooded areas of the state belong entirely to private owners, who have the right to do what they wish with their own, subject only to the public exigency. It is not yet successfully advocated that these greater areas be bought by drafts upon the public treasury; to be taken under the right of eminent domain (of course to be compensated for by public taxation or the issue of bonds) and to be thereafter policed by a corps of state officials for protection or development, also at the public expense.

The lumber interest is one of the most important interests of the state, employing vast capital and much labor, affording markets for our citizens and opening lands for settlement. Like every other interest it should receive proper encouragement and be properly restricted. It has seemed that the present practical solution of the forest problem would be reached by instilling a clearer conception of intelligent forest treatment into the minds and methods of forest owners,—with perhaps stringent legislative restrictions in the cutting of areas devoted to pulp wood,—seeking to have cut only matured or well developed trees, thus clearing the forest of

exuberant growth, and providing for its development and for the successive crops of timber, which will ensue with careful treatment, without limit of time. Our examinations and labors have been to this end and we confidently believe with marked success, so that a new era in cutting and consequent preservation has beyond doubt been inaugurated. Its continuance, however, cannot be indefinitely relied upon; for, since it depends upon the caprice or circumstances of individual owners, it is impossible to say what might happen if any marked change in present industrial conditions should set in.

8. The most serious problem now apparent is the devastation threatened by cutting indiscriminately to supply the pulp mills. While some owners and the contractors for the greater mills assert their intention to cut pulp timber for future crops, jobbers and buyers of stumpage are likely to make clean and devastating work. If we would protect from this new danger, restrictive legislation seems necessary to limit the size of the cut.

#### HON. NAPOLEON B. BRYANT.

We have elsewhere recorded the fact that during the present year the board has lost one of its original members by death. The Honorable Napoleon B. Bryant was a New Hampshire man, born in 1825. He was the maker and master of his own fortunes, attaining great eminence in the legal profession and distinction in political and public life, being a well known eloquent and effective advocate and speaker. Mr. Bryant was solicitor for Grafton county, member and speaker of the house of representatives and delegate to the Chicago convention nominating Lincoln in 1860. Commencing political life as a Democrat he joined the long dominant party in 1856. He practiced his profession in Grafton county, at the state capital, and with marked success in Boston. Always devoted to his state, after success came to him he beautified and extended his earlier estate at Andover. He was a cordial, genial friend, beloved of his earlier

and later associates. He made many valuable addresses upon forestry and was of much service to the commission and the public. He died in the harness, at the close of an earnest and remembered address, delivered by him to his neighbors and friends, late in the evening of January 28, 1902, and rests in the town of his nativity.

HENRY O. KENT,  
GEORGE E. BALES,  
MARSHALL C. WENTWORTH,  
GEORGE H. MOSES,

*Forestry Commissioners.*

# NEW HAMPSHIRE FORESTRY LAWS.

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## CHAPTER 44, LAWS OF 1893.

### AN ACT FOR THE ESTABLISHMENT OF A FORESTRY COMMISSION.

*Be it enacted by the senate and house of representatives in general court convened:*

SECTION 1. There is hereby established a forestry commission, to consist of the governor, *ex officio*, and four other members, two Republicans and two Democrats, who shall be appointed by the governor, with the advice of the council, for their special fitness for service on this commission, and be classified in such manner that the office of one shall become vacant each year. One of said commissioners shall be elected by his associates secretary of the commission, and receive a salary of one thousand dollars per annum. The other members shall receive no compensation for their services, but shall be paid their necessary expenses incurred in the discharge of their duties, as audited and allowed by the governor and council.

SECT. 2. It shall be the duty of the forestry commission to investigate the extent and character of the original and secondary forests of the state, together with the amounts and varieties of the wood and timber growing therein; to ascertain, as near as the means at their command will allow, the annual removals of wood and timber therefrom, and the disposition made of the same by home consumption and manufacture, as well as by exportation in the log, the different methods of lumbering pursued, and the effects thereof upon the timber supply, water-power, scenery, and climate of the state; the approximate amount of revenue annually derived from the forests of the state; the damage done to them from



time to time by forest fires; and any other important facts relating to forest interests which may come to their knowledge. They shall also hold meetings from time to time in different parts of the state for the discussion of forestry subjects, and make an annual report to the governor and council, embracing such suggestions as to the commission seem important, fifteen hundred copies of which shall be printed by the state.

SECT. 3. The selectmen of towns in this state are hereby constituted fire wardens of their several towns, whose duty it shall be to watch the forests, and whenever a fire is observed therein to immediately summon such assistance as they may deem necessary, go at once to the scene of it, and, if possible, extinguish it. In regions where no town organizations exist, the county commissioners are empowered to appoint such fire wardens. Fire wardens and such persons as they may employ shall be paid for their services by the towns in which such fires occur, and in the absence of town organizations by the county.

SECT. 4. Whenever any person or persons shall supply the necessary funds therefor, so that no cost or expense shall accrue to the state, the forestry commission is hereby authorized to buy any tract of land and devote the same to the purposes of a public park. If they cannot agree with the owners thereof as to the price, they may condemn the same under the powers of eminent domain, and the value shall be determined as in the case of lands taken for highways, with the same rights of appeal and jury trial. On the payment of the value as finally determined, the land so taken shall be vested in the state, and forever held for the purposes of a public park. The persons furnishing the money to buy such land shall be at liberty to lay out such roads and paths on the land, and otherwise improve the same under the direction of the forestry commission, and the tract shall at all times be open to the use of the public.

SECT. 5. This act shall take effect upon its passage.

[Approved March 29, 1893.]

## CHAPTER 110, LAWS OF 1895.

## AN ACT FOR THE PROTECTION OF FORESTS FROM FIRE.

*Be it enacted by the senate and house of representatives in general court convened:*

SECTION 1. It shall be the duty of the forestry commission, upon application by the owner or owners of any tract of forest land, situated in a locality where no town organization exists, to appoint a suitable number of special fire wardens for said tract, to define their duties, to limit their term of employment, and to fix their compensation. The expense attending the employment of said special fire wardens shall be borne one half by the party or parties making the application for their appointment and one half by the county in which said tract of forest land is located.

[Approved March 29, 1895.]

## CHAPTER 98, LAWS OF 1901.

AN ACT IN AMENDMENT OF CHAPTER 85, LAWS OF 1895,  
RELATING TO THE PROTECTION AND PRESERVATION OF  
ORNAMENTAL AND SHADE TREES IN THE HIGHWAYS.

*Be it enacted by the senate and house of representatives in general court convened:*

SECTION 1. Mayors of cities and selectmen of towns shall, immediately upon the passage of this act, and annually thereafter, appoint one or more tree wardens, who shall be discreet persons, resident of the city or town where appointed, interested in the planting, pruning, and preservation of shade and ornamental trees and public ways and grounds, whose business it shall be to perform the duties hereinafter specified, and shall be allowed such compensation for their services and expenses as the mayor or selectmen may deem reasonable.

SECT. 2. Towns and cities shall have control of all shade and ornamental trees situated in any public way or ground within their limits, which the tree warden deems reasonably necessary for the purpose of shade and ornamentation; and it shall be the duty of the tree wardens, as soon as possible after their appointment, to carefully examine the trees, situated as aforesaid, and to plainly mark such trees as they think should be controlled by their municipality, for the purposes aforesaid, by driving into each tree, at a point not less than three nor more than six feet from the ground, on the side toward the highway, a nail or spike, with the letters "N. H." cut or cast upon the head. Said spikes or nails shall be procured by the secretary of the forestry commission, and furnished by him to said officers as may be required by them for the purposes of this act, at a cost not to exceed five hundred dollars a year. If any of the nails or spikes shall be destroyed or defaced, it shall be the duty of the warden to renew them as soon as possible after he is informed or discovers that they have been removed. They shall also have the power to designate from time to time, in the same manner as hereinbefore directed, such other trees, within the limits of the public ways and grounds, as in his [their] judgment should be preserved for ornament or shade.

SECT. 3. If any of the trees designated as aforesaid should prove to be private property, and the owners thereof refuse to release or convey their interest therein to the municipality, the tree warden shall acquire them for the use of the city or town, by purchase, if it can be done at a fair price. Failing in this, he may, on petition for that purpose, acquire them in the same way and manner, with the same right of appeal to their owners as in the case of land taken for a highway.

SECT. 4. Towns and cities may annually appropriate money, not exceeding in the aggregate fifty cents for each of their ratable polls in the preceding year, to be used by the tree warden in planting, pruning, protecting, and, whenever necessary, acquiring, shade and ornamental trees within the limits of their public ways and grounds.

SECT. 5. Whoever desires the cutting or removal, in whole or in part, of any public shade or ornamental tree, may apply to the tree warden, who shall give a public hearing upon the application, at some suitable time and place, after duly publishing and posting notices of the hearing in two or more public places in town, and also upon the tree or trees which it is desired to cut and remove; provided, however, that the tree warden may, if he deems it expedient, grant permission for such cutting or removal without a hearing, if the tree or trees in question are on a public way outside of the residential part of the town limits, such residential part to be determined by the tree warden. No tree within such residential limit shall be cut by the tree warden except to trim it, or be removed by him, without a hearing as aforesaid, the decision of the tree warden shall be final.

SECT. 6. It shall be unlawful to cut, destroy, injure, deface, or break, any public shade or ornamental tree, or to affix to any such tree a play bill, picture, announcement, notice, advertisement, or other device or thing, whether in writing or otherwise, or to paint or mark such tree, except for the purpose of protecting it, and under a written permit from the tree warden, or to negligently or carelessly suffer any horse or other beast, driven or being lawfully in a public way or place, to break down, injure, or destroy a shade or ornamental tree within the limits of said public way or place, or to negligently or willfully, by any other means, break down or injure any such tree.

SECT. 7. Owners of land abutting on the highways, and all other persons, are hereby prohibited from burning brush within or beside highways without first removing the brush such distance from the trees within the highway as not to endanger or injure them in any manner.

SECT. 8. Persons violating any of the provisions of this act shall forfeit not less than five nor more than one hundred dollars, to be recovered in an action of debt by the tree warden or any other person for the benefit of the town or city in which the tree is situated, or be fined not less than five nor more than one hundred dollars.

SECT. 9. All acts and parts of acts inconsistent with this act are hereby repealed, and this act shall take effect upon its passage.

[Approved March 22, 1901.]

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#### PROVISIONS OF THE PUBLIC STATUTES RELATING TO FOREST FIRES.

If any person shall kindle a fire by the use of firearms, or by any other means, on land not his own, he shall be fined not exceeding ten dollars; and if such fire spreads and does any damage to the property of others, he shall be fined not exceeding one thousand dollars.—Chapter 277, section 4.

If any person, for a lawful purpose, shall kindle a fire upon his own land, or upon land which he occupies, or upon which he is laboring, at an unsuitable time, or in a careless and imprudent manner, and shall thereby injure or destroy the property of others, he shall be fined not exceeding one thousand dollars.—Chapter 277, section 5.

Whoever shall inform the prosecuting officers of the state of evidence which secures the conviction of any person who willfully, maliciously, or through criminal carelessness has caused any damage by fire in any forest, wood lot, pasture or field, shall receive from the state a reward of one hundred dollars. The state treasurer shall pay the same to the informer upon presentation of a certificate of the attorney-general or solicitor that he is entitled thereto.—Chapter 277, section 7.