HISTORY OF SWANZEY, NEW HAMPSHIRE.

1734 - 1890

by

Benjamin Read.

Page 89

"For a long time after the town was settled good pine timber was of but little value, and large, coarse and defective trees of no value. These wortless trees were generally left standing to avoid the labor of cutting. After a piece of timber land had been cut over it was generally burned, purposely or accidentally, and all the trees not previously dead would be killed. As late as 1830 large numbers of these trees could be seen in almost all directions, some of them retaining their bark and limbs and some entirely destitute of them, presenting nothing but a tall black stump. These old trees gave the town in many places a very disagreeable appearance and where they stood in mowing lands were a constant annoyance by the falling of limbs and bark. For a long time the constant springing up of young pines was a great trouble to the farmers. It took but a few years for many of the pastures to become so much covered with them that they would be worthless for grazing purposes. No one appeared to think that any benefit would be derived by letting them grow. It was an indication of a shiftless farmer to see his pastures covered with small aapling pines. Many acres of pines of a larger growth, such as would now be very valuable for timber, were cut and burned on the ground merely to get them out of the way."

The Pisgah Mountain region of southern New Hampshire has for many years has been noted as one of the very few places where remnants of the original central New England forest could be seen in all its primitive wildness and beauty. The late R. T. Fisher, first director of the Harvard Forest, a competent naturalist and one whose practice of forestry was in close harmony with observed tendencies in nature, appreciated the great scientific value inherent in such a tract, and it was through his efforts and the generous gifts of a goodly number of interested friends that Harvard University in 1927 acquired twenty acres of the choicest remaining stand of virgin timber. This is to be kept forever in its natural state. Shortly after its acquisition a substantial gift from the Massachusetts Society for the Promotion of Agriculture made possible the beginning of a series of studies

Because continued logging in the surrounding areas was steadily reducing the remaining acreage of old growth stands, it was decided to make a reconnaissance of the Pisgah Mountain region as a whole, to locate and examine all pieces of virgin forest, with special attention to their history, insofar as it could be determined, their present form and composition, and any tendencies towards alteration in the future. It was believed that such information, takem together with years of study and observation in second-growth stands in the same region, would form a strong foundation for the sound growth of the art of silviculture, particularly in its bearing upon the regulation of the composition of existing young, wild stands and upon the choice of species to be used in

establishing new forests on land not restocking naturally. So the present study is not confined to the Harvard Forest tract, butvmerely includes it as one of many to be found in the vicinity of Pisgah Mountain.

While most foresters have long recognized the hazards of establishing what may be termed "artificial" stands, and have advocated a mixed composition based more or less on natural associations of species, it has been a concept easily accepted in theory, but extremely difficult to carry through in practice, especially where one must start with bare land or a depleted and deteriorated growing stock. Written records of the original forests of a given region are extremely meager, frequently lacking in other than the broadest generalities, and

Authentic remnants of old growth are extremely rare in the region, and non-existant ~~in~~ for many localities and ~~on many~~ sites. Second-growth stands have been so disturbed at short intervals by cutting that progress towards a natural climax association of tree species rarely has gone beyond an early stage in the normal succession. Methods of established my the broad-leaved species, so prevalent in the early New England forests, by planting are still in the experimental stage. Under these circumstances and in view of the inclination on the part of laymen to look upon tree growing as a form of orcharding, with uniformly spaced rows of whatever species ~~of tree~~ chances to be considered the most profitable to grow, it is small wonder that the "artificial" rather than the "natural"

June 12, 1937

Description of Soils in the Vicinity of Pisgah Mountain in Winchester, New Hampshire.

The land in the Pisgah Mountian region in Winchester, N. H., is classified, in the soil survey of the Sullivan-Cheshire N. H. Area, as 'Rough Stony Land, Shallow Hermon Soil'.

Rough stony land is a land classification used to describe areas where many large bowlders, ledges or steep slopes make preparation for pasture or cultivation impractical if not impsssible. The nature of the soil found in the area is shown by the suffix.

In this region the soil is classified in the Hermon Soil Series. Hermon soils are true podsols developed from granitic material. They have from 2 to 4 inches of organic material, subdivided into several horizons to show varying stages of decomposition, and from 1 to 2 inches of light gray of nearly white sandy loam. This gray horizon, bleicherde, varies in texture from a fine sandy loam to a very coarse gravelly sandy loam. The subsoil, from almost 2 to 4 inches (1) is very dark brown, (about the color of coffee grounds) smooth fine sandy loam that may be sticky when wet. The deeper subsoil is brownish-yellow smooth fine sandy loam to loam that becomes highter colored and coarsem with depth until, at about 30 inches, gray sandy glacial till, from which the soil has developed, is found. In this region, especially on the ridge tops and upper slopes, the soil mantle is very thin and the parent material (undeveloped glacial till) is not present in many places as the subsoil rests directly on bed rock. The bed rock and most of the rock fragments found here are a very coarse granite but the above description shows that the soil is somewhat finer than the Hermon soils found in other parts of the area included in this survey. This may be due to the fact that some schist fragments from the outcrops north and west have been included in the parent material.

(1) Horizon limits are measured from the surface of the mineral soil

September 29, 1937

Mr. W. H. Lyford
9 Monadnock Court
Keene, N. H.

My dear Lyford:

I am very sorry to have kept your book on the geology of New Hampshire so long, and trust that it arrived in time for your use in connection with Mr. Thorp's visit.

He stopped in at Hardwick recently to talk over our land use planning project and I was very pleased to know that he expected to see you and Simmons soon and to possibly pay a visit to our old growth forest on Pisgah Mountain.

Thank you ever so much for loaning the book, which has been very useful.

Very sincerely yours,

Assistant Director

9 Monadnock Court
Keene, N.H.
June 3. 1937

Dr. J. C. Clive
Assistant Director,
Harvard University Forest
Petersham. Massachusetts.

Dear Dr Clive.

On your recent visit the subject of fire in colonial times was mentioned. It may be that the enclosure will prove of interest to you.

Yours very truly.

W. H. Lyford.

October 9, 1936.

Dr. Stanley W. Bromley
Bartlett Tree Research Laboratory
Stanford, Connecticut

My dear Dr. Bromley:

Dr. J. R. Hansbrough of the Bureau of Plant Industry Office at New Haven has told me of your interest in forest ecology. Recently I have had occasion to discuss with the owner of a forest near Cornwall-on-the-Hudson the composition and character of the forests of the Hudson highlands at the time of settlement. As you undoubtedly know, the present cover type is made up largely of oaks of sprout origin, and there is abundant evidence of fires as well as repeated cuttings of a heavy degree; in fact, I believe the sprout stands used to be cut clean for charcoal.

Although I have no definite proof of it, I am of the opinion that the original forests contained substantial amounts of white pine and certain of the shade tolerant hardwoods, as well as several species of oak and I have thought it likely that the same holds true for certain parts of Connecticut where the present cover types also tend to run strongly to oaks.

I should be very glad indeed to have your opinion on the composition of the old growth forests of the region in question, and to learn of any authentic remnants which you may know of.

Very truly yours,

Assistant Director

ACC*BH

October 9, 1936.

Dr. J. R. Hansbrough
360 Prospect Street
New Haven, Connecticut

Dear Ray:

I greatly appreciate your letter of the 5th containing Dr. Nichols' thoughts in regard to the composition of the original forests along the west side of the Hudson River. I shall, of course, be careful in discussing the matters with others to make it plain that Dr. Nichols has no definite proof that pine and certain shade-tolerant hardwoods were present, and that it is simply a case of reasoned judgment based on his knowledge of similar situations elsewhere.

I am also glad to have the name of Dr. Bromley of the Bartlett Tree Research Laboratory whom I shall write shortly on the same subject.

Very sincerely yours,

Assistant Director

ACC*BH

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
NORTHEASTERN FOREST EXPERIMENT STATION

ADDRESS REPLY TO
DIRECTOR
AND REFER TO

335 PROSPECT ST.
NEW HAVEN, CONN.

R - NE
Pf-3

April 12, 1937

Mr. A. C. Cline,
Assistant Director, Harvard Forest,
Petersham, Massachusetts.

Dear Al:

This will acknowledge your letter of April 9.

Because of the pressure of other work it has been impossible for me to devote as much time as I would like to the study of the relation of the fire resistance of some of our native tree species. Up to the present no attempt has been made to analyze what little field data we have collected on our permanent study areas in this investigation. The laboratory study of the relation between bark character and heat resistance is confined to six species, namely, pitch pine, hemlock, balsam fir, beech, chestnut oak, and sugar maple. While no actual heat conduction tests have been made in this phase of the work, it has yielded very interesting information on differences in bark anatomy which, no doubt, have an important bearing on heat resistance.

On the basis of our field and laboratory studies I believe that with the exception of beech there is little difference in the heat resistance of the species you list, while these are in the smooth bark stage. Beech has the lowest heat resistance of any of the species in any stage of development because it never forms a true secondary bark. After bark differentiation has set in, that is, when a secondary bark has been formed and natural fissuring developed, I would rate the species as follows:

Hemlock (most resistant)

White Pine
Red Oak
White Oak
Sugar Maple
Red Maple
the Birches (Black and Paper)
Beech (least resistant).

The aforegoing rating applies more strictly to heat injury to the bole of the tree; hemlock may possibly be rated somewhat lower if root injury is considered, because this species is so shallow rooted that it suffers rather severely from that type of fire injury. As a general rule, it appears that smooth bark species are much less fire resistant than rough bark trees because they must necessarily form a smaller proportion of dead-to-live bark in order to develop this type of bark. This is well illustrated in the case of beech, the birches, and to a limited extent, by the relatively smooth bark of red maple during the first twenty to forty years of its life.

It is regretted that I can not at this time furnish you with any factual information. If I can be of any further assistance, please let me know.

Very sincerely yours,

C. EDWARD BEHRE, Director

By Paul W. Stickel
Silviculturist

History of Dublin. N.H.

1/19

Excerpt from address of Charles Mason

at Centennial Celebration June 17. 1852

"Here, too, we have the Monadnock, rising in cold, proud, isolated grandeur, an emblem at once of the essential stability and the superficial changes of nature. Its rugged sides, now compact of bald, cragged rock, were formerly covered with trees almost to its summit. But years ago, the ravenning fire, kindled whether by accident or design, spread over a great part of the superior portion of the mountain, killing every tree and shrub wherever it went. The dead trees, decaying and falling, furnished materials for another conflagration, which occurred within the memory of many of us. Some thirty years ago in the latter part of a dry summer the fire from a clearing on the side of the mountain made its way up to the higher regions, where, feeding upon the decayed wood, and nourished by the wind and the drought, it extended itself over almost the entire northern side. As the day light paled, giving place to the darkness of night, there might be seen from out the dense sea of livid, flame-tinged smoke, in which the mountain was enveloped by day, countless fires lighting up all along the extended range.

glowing with a more vivid brightness as the darkness thickened, until the whole mountain-side blazed with its myriad tongues of waving flame. It was a spectacle beautiful and grand in itself, but rendered sublime and awful by the thought of the dread power of the devouring element, and of the terrible destruction that must ensue. if, the wind and the drought continuing, it should burst its mountain barrier, and invade the domain of man. But fortunately, before such a catastrophe was reached, a drenching rain extinguished the fire, and thus put an end at once to the grandeur and the terror of the scene.

9 Monadnock Court
Keene N.H.
Sept. 22. 1937.

Dear Mr Cline

Mr Thorp of the U.S.D.A. is to be in our area next week, inspecting. When he was here before I promised him that I would have the copy of the "Geology of New Hampshire" by Goldthwait which I loaned you.

It has been my intention to drive down to Petersham some rainy day to look around more thoroly than I had opportunity before, but the rainy days have not been frequent enough for me to get caught up on our inside work, and it looks now as tho I wouldn't get down until later. Consequently I'm going to ask you to send it to me.

Hope you've finally completed your bulletin. We did a detailed survey of the Yale Forest, and sure let ourselves in for something. They're more soils than you can shake a stick at.

Yours truly

W. H. Lyford.

June 5, 1937

Mr. W. H. Lyford,
9 Monadnock Court,
Keene, N. H.

Dear Mr. Lyford:

I greatly appreciate your kindness in sending me an excerpt from the "History of Swanzey, New Hampshire" by Benjamin Read.

This is the first statement I have ever seen about the leaving of standing dead trees, and one of the few about the difficulties in keeping fields and pastures free from pine seedlings.

How would Wednesday, the 9th, be for our trip up to Pisgah Mountain. If convenient for Mr. Simmons and yourself, I will plan to meet you at the Ashuelot Post Office at about 9:30 A.M. Should something come up to prevent my going, I will wire Tuesday, and, in case of rain, we better call the trip off.

Very sincerely,

Assistant Director

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY

DIVISION OF
FOREST PATHOLOGY

360 Prospect Street,
New Haven, Conn.
October 5, 1936

Mr. A. C. Cline,
Harvard Forest,
Petersham, Mass.

Dear Al:

Since my chat with you about Kaup's conception of the original forest cover on the Black Rock Forest, I have been mulling the proposition over in my own mind and also this morning had a chat with Dr. G. E. Nichols concerning it. He says that he does not know the area under consideration at all but that he can see no logical reason why white pine and probably beech and maple should not have been well represented on all the moderate east-facing slopes along the Hudson River in the vicinity of the Forest. Climatically, he thinks there is every reason to suppose that white pine should be or have been potentially present. Its absence would have been due to local conditions unknown to him or else to anthropic influences, such as lumbering, charcoaling, fires, etc. Inasmuch as he has no personal acquaintance with the area under consideration he naturally does not wish to be quoted, but nevertheless, I think you may be able to derive a little information from this expression of his judgment. Furthermore, he voiced an opinion that if white pine planted on the Black Rock Forest grows approximately as well there as it does in other regions where it is absolutely known to occur naturally, one may reasonably think it once occurred there naturally too. Of course that is no proof.

The other man to whom I referred in our conversation as possibly having some ideas on the matter, is Dr. Stanley W. Bromley, Bartlett Tree Research Laboratory, Stamford, Connecticut. I think I told you that he is an entomologist by profession and training but is greatly interested in forest ecology as an avocation. He may have some data on areas identical to those in the Forest.

Best regards.

Sincerely yours,

J. M. Ray.

J. M. Ramsbrough
Assistant Pathologist

LM

BARTLETT TREE RESEARCH LABORATORIES
Under the direction of THE F. A. BARTLETT TREE EXPERT COMPANY
STAMFORD, CONN.

E. PORTER FELT, D. Sc.
Director and Chief Entomologist

October 22, 1936

Dr. A. C. Cline,
Assistant Director,
Harvard Forest,
Petersham, Massachusetts.

Dear Dr. Cline:

I wish to apologize for my delay in replying to yours of October 9th, which was due partly to the fact that I have been away and partly to the fact that I wished to look up some references on the subject which were not immediately available. Incidentally, I might say that Dr. Henry H. Tryon, Director of the Black Rock Forest, Cornwall-on-Hudson, N. Y., is very much interested in the subject of forest ecology of that region and would undoubtedly be able to give you some interesting information.

I have been very much interested in the forest ecology of southern New England and published a paper setting forth my views on this subject in Ecological Monographs 5:61-89 (Jan.1935) under the title, "The Original Forest Types of Southern New England". I am sorry that my supply of reprints of this paper is now exhausted.

My views at that time were that the climatic climax types were the mixed mesophytic in southwestern New England, the northern forest extending down the mountains of Massachusetts, and the white pine hemlock in the transition area between the two. However, the original forest in southern New England was largely oak which may have been a fire sub-climax as a result of the repeated burning of the lands by the aboriginal Indians to facilitate travel and hunting by removal of the undergrowth.

In trying to get similar evidence for southern New York State, I found in Vanderdonck's History of the New Netherlands that the aborigines of that region practised burning of the woodlands in much the same manner, which of course would tend to favor the oak-hickory or oak-chestnut type and subdue the beech, sugar maple, white pine and hemlock. It also favored the pitch pine on the sandier soils which undoubtedly composed much of the so-called "pine plains" of the early settlers.

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STAMFORD, CONN.

E. PORTER FELT, D. Sc.
Director and Chief Entomologist

In regard to authentic remnants in this area, most of those mentioned in my paper have now been destroyed. The woodland pictured on page 81 has now been cut down. Those on page 83 still stand, as does the Cornwall, Conn. grove.

Very truly yours,

BARTLETT TREE RESEARCH LABORATORIES

Stanley W. Bromley

Stanley W. Bromley
Assistant Entomologist

SWB:FHT

SUMMARY OF CONCLUSIONS

1. In the Mt. Pisgah virgin forest in southern New Hampshire the exposed ridge top sites support even-aged mixtures of White Pine, Hardwoods and Hemlock.

2. On the more protected slopes and knolls the Hemlock, Northern Hardwood, Hemlock-Hardwood and Pine-Hemlock types are predominant.

3. These correlations of site and type are due mainly to the varying influences of fires, windfall, lightning, insects and fungal diseases on forest stands on the different sites.

4. The presence of White Pine in nearly pure even-aged stands on the ridge tops in this region is correlated with the prevalence of windthrow (blow-downs) and severe fires on such unprotected sites.

5. The presence of even-aged groups of dominant White Pine on the protected slopes and in the valleys is correlated with the work of fire, lightning, insects, fungus diseases, ice storms and an occasional blowdown in breaking up the old overstory and causing an opening at least one-tenth acre in area in the forest.

6. The physiographic climax association characteristic of the exposed ridge top is the Pine-Hardwood-Hemlock type. Red Oak and Paper Birch, both light-demanding species, are the principal hardwoods in this type.

7. The climatic climax association on the protected sites is the Hemlock-Northern Hardwood type.