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CONTENTS

To JOHN MANVERS BRISCOE, M. F., Professor of Forestry at the University of Maine who, in a decade has, with ceaseless work and good judgment, carried the Forestry School through the troublesome years, and established it upon a firm foundation, the members of the Forestry Club respectfully dedicate this ninteen twenty-three "*Maine Forester.*"

PROF. JOHN BRISCOE

THE MAINE FORESTERS, 1922-23

The Forestry Guy

A knightly figure amid the green,
In khaki instead of mail,
A face of bronze, eyes quick and keen—
Swift hoofbeats on the trail;
A home in the saddle through the summer days,
A bed 'neath the evening sky;
Who is it travels the silent ways?
He's only a forestry guy.

A camp on the heights, where snowbanks gleam;
A pack-horse that's grazing near;
No sound save the sound of the mountain stream—
The town sends no echo here;
A figure bathed in the sunset's fires;
Who dwells on these peaks so high?
Who travels amid these granite spires?
He's only a forestry guy.

A tendril of smoke in the valley wide,
A flame that is fanned by the breeze;
A break-neck dash down the mountain side
And a fight for the living trees;
A fight that is won, though the price is dear;
There are scars ere the red flames die;
Who is it that dices with death each year?
He's only a forestry guy.

Arthur Chapman.

IN THE KINGDOM OF SPRUCE

Management of Private Lands

By Geo. T. Carlisle, Jr.

In a consideration of management of timberlands the object of the ownership will vary greatly. The methods of management of the lands of a water district or public reservation would not necessarily apply to that of individuals or pulp companies. In the former case a desired stand is to be maintained regardless of cost while in the latter it is right for the owner to expect a reasonable return from his capital invested.

At the present time the private owner is faced with a very serious consideration, viz: that the yearly return on his timberland at present stumpage prices is not equal to what the same amount of capital would produce if invested otherwise. This condition will exist until the price of stumpage is nearer what it will cost to produce it. The only hope of the private investor is that his timber will slowly increase until that point is reached.

With the above condition existing the private owner is not in a position to put into effect expensive methods of management which are in force in European countries. The forester must rather look about him for methods that will improve the stand of timber at no great expense to the owner.

This is best solved by applying good business principals to the logging operations under his charge.

At the outset he should take a detailed account of stock, know its condition as to maturity and so be able to conduct his operations accordingly. This is best done by means of detailed maps and estimates. The quarter acre sample plot method seems to be best suited, and they may be on lines a quarter or an eighth of a mile apart. The center of each plot should be numbered permanently and notes made so that it may later be found. This number should be placed on a tree not likely to be removed during subsequent operations. Barometer readings also may be taken from which to construct a topographic map.

With the above material at hand the forester should be able to plan his operations so that the mature species can be cut before all others. He must also have a knowledge of utilization and to take into account the demands of the market. It is not good business to sell certain species on a

low market, even though mature, when there is probability that a few years will make a decided change.

There are numerous methods that may be applied to the management of our Maine timberlands. The diameter limit is one that has been in use for many years and has been successful in most cases.

More care should be used in the future in applying it so that the loss from blowndown in exposed areas will be remedied. This is best done by clean cutting. Where there is sufficient hardwood for protection, however, a ten or twelve inch diameter limit can be used to good advantage.

Full utilization of the available timber is very important. It is very easy for the operator to pass by the scattered and perhaps less available material. In many cases he may be contracting and his tendency will be to take only that which is easy and cheap to log. Probably in the past more timber has been lost in this way than in any other. The waste in stumps and tops is well covered at this time. The most of the operators are well educated and there is little difficulty in this respect. A system of inspection must however be maintained to keep down the waste and it will be found that it will pay large returns.

Selection of species is also important. It will be found on some areas that the softwoods have been cut very hard while some available timber such as poplar and white birch are over mature. The forester must here obtain a market for his overmature trees and see that they are properly utilized. The big question he is up against in this respect is to find markets for his various hardwood species. Poplar, white birch and ash are in ready demand and a certain limited amount of beech and maple is taken for various uses such as clothes-pins, flooring and novelty stock. The demand is increasing for hardwoods for pulpwood and if realized to a large extent will solve one of our greatest problems of management.

The forester must know his conditions and be able to take advantage of many methods not in textbooks. As an example it was found that on large areas of old burn stocked with poplar, white birch and softwood that if the poplar and white birch were cut several years in advance of the softwood that a much better reproduction was obtained. This plan has been worked on one large tract for over ten years and results are very gratifying.

In some cases seed trees may be desirable and have

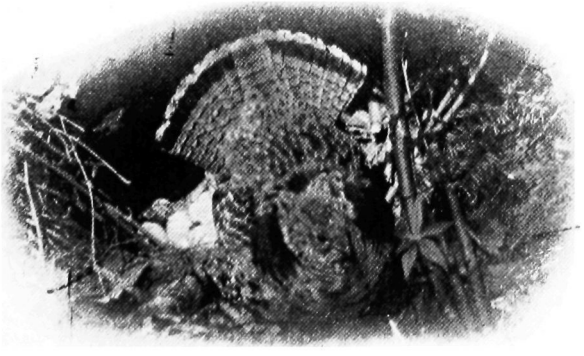
been used in Maine to some extent. The chief object would be to seed in the area in case of fire. During the operation inflammable material is cleaned from around the base of the tree for some distance so that the chances would be good of its withstanding a fire if it was not too severe.

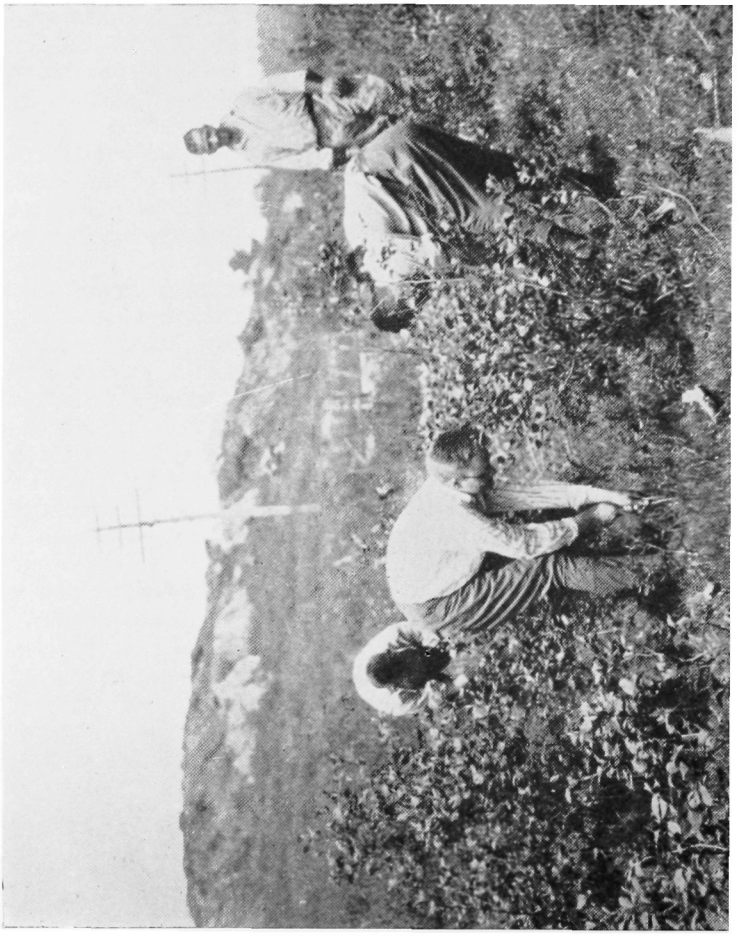
Fire protection is very important and should bear an important part in any plan of management. Fire lines can be constructed and brush disposed of in dangerous places. Gasoline fire pumps can be stationed at advantageous points and extra patrols placed in very dry periods.

Planting on a large scale is not recommended for our ordinary spruce land in the northern part of the state. There are of course exceptions to this such as areas that have been severely burned or more than once burned and not reproducing to desirable species.

Slash disposal is yet in the experimental stage and it is difficult to say if in general it is worth the cost. This does not apply where there is exceptional fire hazard.

In general the forester must necessarily work conservatively for much harm may be done by schemes that will not work in practice. Any plans must be well thought and worked out in his mind before he should attempt to put them in practice. Most private owners are interested in the future value of their timberlands and any sound plan to that end will be favorably received.





PINE BLISTER RUST WORK IN MAINE

White Pine and Blister Rust in Maine

By W. O. Frost, of the State Forestry Department

Too few Maine people realize or appreciate the great asset white pine has been and still is to the State of Maine.

The first sawmill in Maine was operated at Berwick in 1631. The next mill to operate was at Penobscot in 1643. By 1831 the mills at Penobscot had an annual output of 30,000,000 feet, principally white pine.

For a number of years Maine has held third place in the cut of white pine by states, cutting one-sixth of all white pine lumber manufactured in the United States. In 1919 the cut was nearly 225,000,000 feet. When you consider that white pine lumbering has been going on in Maine for nearly three hundred years and that the State still furnishes one-sixth of the pine lumber of the United States, we must realize that it is well named the "Pine Tree State."

The 1919 the white pine cut in Maine sawmills was valued at approximately $7,100,000, of which pine owners received $1,865,000 in stumpage. That is, white pine brought over $7,000,000 into the State, and it remained in the hand of farmers, laborers, and sawmill owners; it paid taxes and helped to build houses, farms, roads, and schools; it helped to support the State. Before it left the state in final form probably at least $3,000,000 in labor and profits of remanufacture of this white pine lumber came to the state in 1919. Therefore it is safe to figure that the annual value of white pine to Maine is at least $10,000,000.

Today Maine has approximately 3,000,000 acres of pine lands, 1,500,000 acres of which is young immature growth. We find reproduction coming in throughout the southern half of the state—white pine is coming back. It is this young growth that the farmer, laborer, mill owner, and manufacturer must look to in the near future. Whether this young growth ever reaches timber size depends upon what action the owners take in protecting their growth from white pine blister rust.

White pine blister rust is a European disease with a bad reputation in its native country. In Europe it has made the growing of white pine impossible in Denmark, Holland, and England, and is now threatening to make the growing of white pine impossible in the United States.

Blister rust is not caused by a bug or worm, but is a

low form of plant life which lives in the inner bark of white pine trees and in the leaves of all varieties of currant and gooseberry bushes. It is a fungus—a parasitic fungus —parasitic on white pine and currant and gooseberry bushes. In order for the disease to spread there must be currant and gooseberry bushes within 900 feet of white pine trees. One tree can not spread the disease to another but can cause infection on currant or booseberry bushes, and they in turn spread the disease to pine trees. Because of the fact that wild currant and gooseberry bushes are common throughout the state, we find blister rust on pines in every town throughout the southern half of the state.

Surveys show that the disease is spreading very rapidly —showing that 7 to 11% of all pine trees in certain sections of the state have blister rust, especially when these examinations are made in young pine. Sample quarter acre plots show even greater percentage of infection, running from 25 to 50 per cent. Scouting throughout the pine counties of the state show that pines are infected in almost every town, diseased pines having been found as far east as Franklin, north to Lowell, and westward to the New Hampshire line. Every pine town in York, Cumberland, Oxford, Androscoggin and Sagadahoc Counties we know positively to have pine infections, hence it is but a question of time before the pine area of Maine will become so badly infected that white pine reproduction may never reach timber size.

Since 1917 the United States Department of Agriculture co-operated with the state in control measures on a dollar for dollar basis, but owing to the small state appropriation very slow progress was made in eradicating currant and gooseberry bushes (Ribes) from the millions of acres needing protection.

On July 1, 1922, a new co-operative agreement for controlling the rust was drawn up between the Bureau of Plant Industry U. S. Department of Agriculture, Land Agent and Forest Commissioner of Maine, and the Extension Division of the College of Agriculture, University of Maine. Under this agreement permanent blister rust agents were placed in York, Cumberland, Oxford, Androscoggin and Sagadahoc Counties, whose duties are to blister rust as are county agricultural agents to agricultural subjects.

The state's policy in regard to blister rust control work is as follows:

1. So far as funds permit the state, in co-operation with the Federal Government, individuals, and towns, will take the leadership in educational, scouting, and supervisory work.

2. The actual eradication of currant and gooseberry bushes must be done by the towns and private owners at their own expense. To make certain that this is done effectively, specific eradication areas will be proclaimed, within which property not properly eradicated will be cleaned up by the forest commissioner at the expense of the town. In addition all work done by private owners will be checked by state or Federal agents prior to approval of the work.

During the summer of 1922 eradication was carried on in 17 towns, mostly in York County. Nearly 500,000 currant and gooseberry bushes were pulled from 190,209 acres, representing 464 owners, and at a cost of less than 5 cents per acre.

Blister rust is not to be considered lightly, but is really a serious matter, white pine and currant and gooseberry bushes must be separated by at least a distance of 900 feet if the pine are to reach a merchantable size.

Importance of Timber Cruising to Lumbering

By C. W L. C., Assistant Prof. of Forestry

Most timber cruisers aim to be conservative in their estimates of standing timber. This attitude is easily understood when the estimate is the basis for timber purchase. The buyer is always pleased to obtain more timber than he bargains for. This underestimating will be allowed as long as the stumpage prices are low. As the stumpage increases in value, so will the estimates increase in accuracy. In the case of forest owners operating on their own land, accurate estimates are equally as essential. The greater amount of standing timber, the greater will be the amount of money which may be justifiably invested in roads, chutes, driving improvements, or railroads.

Overestimates will cause losses by over investments in these improvements; underestimates will cause losses by not investing enough in them to provide adequate transportation facilities.

I have in mind two examples that illustrate both of these points. A certain pulp company operating in Maine found that a splash dam was necessary to drive the pulp wood, cut from a neighboring ridge, to the main stream. The engineers estimated the dam would fill with water from three to five times per day. This was really sufficient to drive the estimated cut on this brook. However, the actual cut overran the estimated cut by such an amount that about one-third of the wood had to be left on the banks of the stream. Had the estimate been accurate enough to assure the operators the true cut, the dam would have been located farther down stream at the forks, on a site shown to me by the superintendent of operations. This dam would have been larger and, of course, more expensive to build; and yet it would have controlled enough water to have floated all the logs cut that season.

The other example was also in Maine. The spruce timber growing on a certain ridge was inaccessable except by a roundabout and very indirect haul. The estimated stand justified building a chute. The actual cut, however, proved to be somewhat under the cruiser's estimate. In fact, so much so, that the expense of building the chute was not justified by the amount of timber transported over it. The cost of transporting that cut of spruce was excessive because of an overestimate.

One might be lead to believe by the above illustrations that our operators here in Maine do not know how to log; but this is not so. These instances were taken from small parts of large operations and the losses in one place were more than covered by profits from the others.

Forest Fire Protection in Maine

By Samuel T. Dana, Forest Commissioner

So far as forest fire protection is concerned, all Maine is divided into two parts,—the Forestry District, and the rest of the state. In these two parts both the organization and the method of financing the work are radically different. Before going into these differences in detail, however, a brief account of the historical development of forest fire protection in Maine may be of interest.

The first real step in the direction of organized protection was taken in 1891. In that year the legislature passed an act making the land agent forest commissioner of the state, and giving him the munificent salary of $200 a year in compensation for his services as such. At the same time legislation was enacted providing for fire protection in both the organized and unorganized towns. Curiously enough, as we now look at it, no provision was made for participation by the forest commissioner in this fire protection work. This was left entirely to the local officials, and the forest commissioner's functions were confined to investigation and education. In the words of the law, "It shall be the duty of the forest commissioner to make a collection and classification of statistics relating to the forests and connected interests of the state, and to institute an injuiry into the extent to which the forests of Maine are being destroyed by fires, and by wasteful cutting, and to ascertain so far as he can as to the diminution of the wooded surfaces of the land upon the water sheds of the lakes, rivers and water powers of the state and the effect of such diminution upon the water powers and on the natural conditions of the climate. * * * * The forest commissioner shall take such measures as the state superintendent of common schools and the president of the State College of Agriculture and the Mechanic Arts may approve, for awakening an interest in behalf of forestry in the public schools, academies and colleges of the state, and of imparting some degree of elementary instruction upon this subject therein. * * * * The forest commissioner shall prepare tracts or circulars or information, giving plain and concise advice for the care of wood lands and for the preservation of forest growth."

In addition to these duties the forest commissioner was,

LOOKOUT TOWER ON BLACK CAT MOUNTAIN

to be sure, authorized to prepare and distribute forest fire warning notices, and local officials were required to report to him for statistical purposes the occurrence of forest fires within their jurisdiction. The forest commissioner had, however, no administrative authority, and the actual control of forest fires was left entirely to the selectmen in the case of organized towns, and to the county commissioners in the case of unorganized towns.

This arrangement continued in force for twenty years, but did not result in stopping the forest fire damage, particularly in the northern part of the state. Accordingly in 1903 the law was amended so as to authorize the forest commissioner "to take measures for the prevention, control, and extinguishment of forest fires in all plantations and unorganized townships," and an appropriation of $10,000 a year was made for this purpose. Fire protection in the organized towns was still left in the hands of the selectmen. While the new system was an improvement, it fell far short of solving the fire problem, and in 1909 through the creation of the Forestry District further action was taken to place fire protection in the wild land districts in the northern part of the state on a really comprehensive and efficient basis.

The passage of the Forestry District act is the most important and most effective step that has so far been taken in forest protection in Maine. By it an administrative district comprising all of the unorganized towns and most of the plantations in Maine was created, and the responsibility for fire protection in this District placed squarely upon the forest commissioner. Specific provision was made for the sub-districting of this area, for the appointment of chief fire wardens, deputy fire wardens, lookout watchmen, and patrolmen, and for the construction of lookout towers and telephone lines. Most important of all the fire protection work was placed on a stable and more adequate financial basis by a special tax, to be used for fire protection purposes only, of 1½ mills on the dollar on all property within the district. This tax was raised in 1919 to 1¾ mills, and in 1921 to 2¼ mills on the dollar. The present return from this tax is approximately $165,000 per year, or about 1.65 cents per acre on all land included in the Forestry District. While more funds could be used efficiently, and would in the long run, in my judgment, prove to be true economy, the present amount is sufficient to handle the work

fairly effectively during normal years. During abnormal years it is entirely insufficient, as is strikingly illustrated by the season of 1921 when the district incurred a deficit of approximately $106,000.

No other state in the Union has organized its fire protection work along the lines of the Maine Forestry District, which is thus in a class by itself. The system is unique in that the funds for fire protection purposes are virtually contributed by the timberland owners through the special tax on all property in the District, but are controlled and disbursed by the state through the forest commissioner. This arrangement has elements both of strength and of weakness. It provides a definite fund that can be counted on regularly year after year, centralizes responsibility in a single state officer, provides protection for all of the forests in the wild land districts of the state, and tends to keep the fire protection work out of politics. On the other hand, there is a tendency for the timberland owners to feel that since the funds are furnished by them the work should also be controlled by them; while the fact that the state as such does not contribute to the cost of the work tends to decrease the interest of the citizens of the state generally in fire protection within the district. While I believe that the timberland owners should contribute liberally to the cost of protection, I feel that the state as a whole should also participate financially in the work. Maine's forests are its most important resource and contribute in large measure to the maintainance of its water powers, to the support of its industries, to the stablizing of its agriculture, and to the attraction of its tourists. As a matter of fact the forests in the northern part of the state play such an important part in the development and general prosperity that the entire state is even more interested in their preservation than are the owners themselves.

The Forestry District now includes 376 unorganized townships and 62 towns and plantations, and has a total area of nearly 10,000,000 acres. It is estimated that approximately 9,000,000 acres of this total area is forest land. During the last twenty years there have been an average of 88 fires per year covering an average area of 31,639 acres and doing an annual damage of $118,280. The average area burned each year amounts to 0.35 of one per cent of the total forest area of the district—not a bad record when the inflammable character of the forests, their

SALVAGING MERCHANTABLE TIMBER IN BURNED LAND

continuity, and their relative inaccessibility are considered. The difference between individual years is strikingly illustrated by the comparison between 1917, when only 147 acres were burned, and 1903, when 200,232 acres were burned. Both 1921 and 1922, judged on the basis of the number of fires, were considerably worse years than the average. That progress is being made, however, is indicated by the fact that while there were 86 per cent more fires than usual in 1922, the area burned was 38 per cent less than the average.

The Forestry District is now divided into about thirty sub-districts, each of which is in charge of a chief forest fire warden. Under the chief wardens come lookout watchmen, patrolmen, and other deputy wardens who work only when called upon. The chief wardens are for the most part

thoroughly seasoned woodsmen of wide experience, and are the back-bone of the fire protection system. They are, subject only to instructions from the forest commissioner, in complete charge of the activities in their respective districts. These include the planning, organization, and execution of the work, and the supervision of the personnel. They are employed only during the fire season, and I regard it as a real weakness that some of them at least cannot be retained during the entire year. Under the law they receive a salary of $4 per day plus an allowance for subsistence.

Deputy warden is the official title applied to watchmen, patrolmen, and other assistants to chief wardens. In the latter group are included primarily those who are not regularly employed, but who work from time to time on such specific jobs as may be assigned them by chief wardens. They have authority to summon assistance and to take charge of fire-fighting pending the arrival of the chief warden. Ordinarily they are assigned to a specific area within which they are expected to watch out particularly for fire, and to assist in law enforcement, and in educating both the local population and travelers as to fire protection needs and methods. Under a law passed by the 1923 legislature they receive $3 per day when actually employed, plus an allowance for subsistence, except that when in charge of fire-fighting operations they are paid at the rate of 35 cents per hour.

There are now approximately sixty lookout towers in the Forestry District, most of which are of steel construction. Each of these is equipped with a pair of field glasses and with a panoramic map which is of assistance to the watchmen in locating fires. While the lookout system is now fairly complete, there are still some gaps which should be filled as fast as funds are available by the erection of some half a dozen new towers. Lookout watchmen are the eyes of the service. Upon their effectiveness in locating and reporting fires promptly depends to a large extent the success of the fire protection work. The job is not an easy one. They must know the country thoroughly and must be absolutely dependable. During dry spells they must be on the lookout day in and day out from early morning until dusk. During wet spells there is always work to be done at the tower, at the camp, on the telephone line, or on trails. Moreover, lookout stations are frequently in remote and

comparatively inaccessible locations, and the work is apt to become lonely and monotonous. While college men are occasionally employed for the work, they are usually handicapped by lack of knowledge of the surrounding country. They are apt to find the work tiresome before the end of the season, and are frequently not available either as early or as late as their services are needed. For these reasons local men are more often employed.

Regular patrolmen are used only where there is an unusual fire hazard, as along well traveled roads, fishing streams, lakes, and in old cuttings. Only in rare cases are they placed in areas satisfactorily covered by lookout towers. They are used primarily to supplement the lookout system, and no attempt is made to cover the entire area with them. Patrolmen have two major duties, to prevent fires from starting, and to put out those that do start while they are still small. Their work is largely educational and preventive, and their efficiency is measured by the absence of fires requiring additional help to extinguish them. During wet weather they are kept busy on telephone lines, repairing roads and trails, fixing up camps, posting signs, clearing up camp sites, and doing similar work. In the majority of cases patrolmen are put on only for short periods during exceptionally dry weather, so that there is practically no opportunity for the employment of college men, who naturally want a continuous job during the season. Both lookout men and patrolmen receive the same pay as other deputy wardens.

The duties of the entire field force of the Forestry District may be summarized under the two heads of fire prevention and fire suppression. In no field is it more true than in forest protection that 'an ounce of prevention is worth a pound of cure." The fire that never starts does no damage. One of the warden's most important duties therefore is to keep fires from starting. This can be done largely through education, and every member of the force is expected to regard himself as a missionary called to preach the gospel of fire protection. They take advantage of every opportunity to talk things over with fishermen, hunters, campers, motorists, and other travelers, and to impress upon them the fact that fire is always dangerous. Fire prevention tags and literature are distributed, and fire warning signs are posted freely. The latter have proved an effective means of reaching the public if placed where the danger is

greatest, where they will be seen by the most people, and where they can be easily read. This means in general along fishing streams, canoe routes, highways, and trails, and at logging and other camps and camp sites. Most of the signs are made of metal which will last several years and contain as few words as necessary to carry their message. A bright yellow background with black letters has been adopted as the standard colors. Another good means of fire prevention is the preparation of public camp sites, which help to prevent travelers from building fires promiscuously and in unsafe places. Not only are travelers inclined to use such sites voluntarily, but if they are well distributed and conveniently placed we can very properly insist on their doing so. Camp sites are thoroughly cleared of inflammable material, equipped with stone fire-places, and pleasantly located near good drinking water. In every case their character is clearly indicated by posting the department's "Camp Site" sign. Special stress is being laid on the construction of additional camp sites in strategic places.

Next to preventing forest fires from starting, the most important job of the field force is to put out, as soon as possible and without undue expense, every fire that starts. To do this means that the force must be so organized and equipped as to respond almost instantaneously when notified of a fire. Time and organization are the important elements in fire-fighting. In its early stages one man may be able to handle a fire that a few hours later could not be controlled by a hundred men. Every chief fire warden is expected to have his plans laid before hand as to just how he will meet any situation that may arise. He must know where and in what numbers men may be secured, who can be relied upon to act as foremen, how supplies and equipment may be obtained, how a fire in any given situation can be most quickly reached, and how natural features such as roads, streams, and ridges may be taken advantage of in fire-fighting. The work is hard and sometimes dangerous, and can be handled effectively only by men of experience. If additional help is needed, local residents are used whenever possible and city labor employed only as a last resort. Special emphasis is laid on maintaining an adequate patrol after every fire until sure that it is completely out. Many of our most disastrous fires have been caused by

RURNED LAND

Showing how fire destroys young growth and undersized timber, making the land a waste for years.

Photo by Maine Forestry Dept.

leaving the burned-over area before the first fire had been absolutely extinguished.

The organization of the Forestry District is now on a reasonably stable and fairly effective basis. The greatest need in the work today is to bring the office of the forest commissioner into closer and more constant contact with the field force. It is a physical impossibility for the commissioner and deputy commissioner to keep in as close touch as desirable with the thirty chief wardens and their subordinates in the nearly 10,000,000 acres included in the district. This gap should be bridged by the addition to the commissioner's office of four inspectors, one for each of the major watersheds in the district. These inspectors, who might be known as district chiefs, would spend practically all of their time in the field, but would act as the direct representatives of the commissioner in co-ordinating and supervising the work of the district wardens.

In addition to the few lookout towers which should be built, several new telephone lines should be constructed and some of the present lines put in better condition, and in a few cases old roads should be swamped out to make it possible to get fire-fighting crews to areas now inaccessible. The putting of the telephone system in first class shape is of the utmost importance, since without good telephone service the lookout stations are practically worthless and the chief wardens are handicapped in many other directions. Additional supplies and equipment of various sorts are needed, including particularly a few portable gasoline pumps. These have proved of value both in other states and here in Maine, and are coming to be regarded as an essential part of any effective fire-fighting equipment. Seaplanes should also be tried out to determine their effectiveness. The fact that the Forestry District has so many lakes and ponds which offer good landing places would seem to make their use entirely practicable, provided they can be operated at reasonable expense. They would be of particular value in supplementing the lookout system during hazy and smoky weather, for patroling on holidays and week-ends, for reconnoitering large fires, and for taking a few fire-fighters quickly to the scene of remote fires. Their moral effect on campers and others, who would feel that their every movement was observed, would also be great.

Outside of the Forestry District, practically no change of importance in the fire protective organization has been

made since the original law in 1891. The work there is still in the hands of the selectmen, who serve as ex-officio fire wardens. An amendment to the law passed in 1921 provided that selectmen may, if they desire, appoint deputy wardens, but this is comparatively seldom done. The work is therefore in the hands of men who are often not particularly qualified for, or interested in it. The forest commissioner co-operates with the local officials through the maintenance of seven lookout towers, and to a limited extent in the enforcement of the slash disposal laws, but has no control over the fire-fighting or other activities of the local wardens.

There can be little question that the organized towns and plantations outside of the Forestry District now constitute the weakest part of the state's fire protection sysem. Records of the last twenty years show an average of 59 fires per year, with an average area burned of 11,241 acres and an average damage of $54,637, for the 6,000,000 acres of forest land outside of the district. The average area burned each year amounts to 0.19 of one per cent of the total forest area. Considering the fact that the fire danger is so much less than inside of the Forestry District because the forests are so much more broken up and so much more accessible, and because so many more fire-fighters are readily available, these figures are much higher than they should be. Furthermore it must be borne in mind that records of fires outside of the Forestry District are in all probability decidedly incomplete, since it is difficult to secure even reasonably full or accurate returns from the selectmen. For this reason the seriousness of the danger outside of the district is not to be judged by available records of fires there.

The work would be greatly strengthened by authorizing the forest commissioner to exercise general supervision over forest fire protection in this part of the state. Such supervision would be exercised through district chiefs who would supervise the work of the town officials, educate them in the best methods of prevention and fire-fighting, assist them in the purchase of fire-fighting equipment, co-operate with them in the enforcement of the slash disposal laws, and perform such other related worked as time allowed. Six district chiefs could probably handle the work satisfactorily. They would spend practically all of their time in the field and would act as the direct representatives of the forest

commissioner in the same way as would the district chiefs already suggested for the Forestry District. No other step would do so much to place the fire protection work in this part of the state, where the forests are of far greater importance than is generally realized, on a more solid basis.

The work could also be strengthened by requiring the selectmen to take positive action in appointing one chief forest fire warden in a town and as many deputy wardens as necessary. This would centralize the responsibility in a single individual, and by making it certain that the matter received careful attention would in most cases result in the appointment of qualified men. To safeguard this, however, and to bring about closer co-operation between the state and the local authorities, the appointment of fire wardens should be subject to the approval of the forest commissioner, who should also have authority to dismiss summarily incompetent wardens.

About six additional lookout stations are needed to complete the lookout system outside of the district, and these should be erected as soon as funds are available. It also seems to me that the state as a whole has sufficient interest in perpetuating the forests in the southern part of the state so that it migh well co-operate with the towns not only through increased supervision and the maintenance of the lookout tower system, but by financial assistance in the case of emergencies. This might be done by providing that all fire-fighting expenditures in any given year in excess of one per cent of the town's assessed valuation be paid from the state contingent fund. Any fire that exceeded this cost would constitute a real emergency that should fairly be met by the state. Payments from the contingent fund would in all probability seldom be required, but in emergencies would afford real relief, particularly for the smaller towns, which are more likely to suffer from disastrous fires and less able to stand the burden.

Several fire protection laws which are applicable throughout the state are worthy of special notice. Among the most important of these is the slash disposal law, of which the following are the chief provisions:

(a) The growth must be left uncut or the slash resulting from cutting must be disposed of within fifty feet of the right of way of a railroad or the center of the wrought portion of any public road.

(b) Slash resulting from the construction and main-

tenance of railroads, highways, power company, telegraph, or telephone lines must be disposed of in such manner that inflammable material is not left upon the ground.

(c) Persons cutting forest growth adjacent to woodlands owned by another outside of the Maine Forestry District must dispose of the slash within fifty feet of the line of cutting on the side or sides toward such woodlands.

(d) The written consent of the Forestry Department is required for the burning of any brush or slash resulting from these or other operations, or for the burning of blueberry land adjacent to forest growth except when the ground is covered with snow. Permits signed by the forest commissioner can be secured through chief forest fire wardens inside of the Forestry District, and from selectmen outside of the district.

(e) Failure to observe these provisions is punishable by a fine of $50.

Responsibility for the enforcement of these provisions rests primarily upon the chief forest fire wardens and selectmen. In this connection it is worth noting that the law provides, and the courts have held, that the towns are liable for the payment, up to two per cent of the town's valuation, of fire damages resulting from negligence or neglect on the part of the selectmen to perform their duties. In case of failure to comply with the slash laws, the forest commissioner is authorized to notify the owner of the requirements, and if such owner within a reasonable time shall fail to dispose of the slash, the forest commissioner may cause it to be disposed of at the expense of the owner.

Several provisions of the law are aimed at the prevention of railroad fires. Every railroad company whose road passes through waste or forest lands is required during each year to cut and burn or to remove from its right of way all grass, brush, or other inflammable material, but under proper care and at times when fires are not liable to spread beyond control. All locomotives which are run through forest lands must be provided with approved and efficient spark arresters, and no railroad shall permit its employes to deposit fire, live coals, or ashes upon its track in the immediate vicinity of woodlands. Any company operating a railroad through the Maine Forestry District between May 1 and November 10 must fasten down or secure screens or other obstructions in the windows of all cars or apartments of cars in which smoking is allowed in order to pre-

vent the throwing of burning matches or burning cigars or cigarettes from the windows. Whenever in the judgment of the forest commissioner the woodlands along the railroads traversing the forest lands of the state are in a dry and dangerous condition he may require the maintenance of a competent and efficient fire patrol at the expense of the railroads.

Taking the state as a whole, figures for the six-year period 1916-1921 show that "campers," under which term are included fishermen, hunters, motorists, and other travelers, were the cause of 26.3 per cent of the total number of fires. In the Forestry District, which includes that part of the state most frequented by sportsmen and tourists, the situation is still worse. Here 33 per cent of the fires were attributed to campers in 1921, and 35 per cent in 1922. For many years the Governor has had authority to suspend the open season for the hunting of any kind of game or game birds, and to proclaim a close season for such time as he may designate. This authority was invoked for the first time by Governor Baxter in the fall of 1922 with excellent effect.

Further action to assist in the control of "campers" was taken by the last legislature by the passage of an act extending the authority of the Governor to include the prohibition of fishing as well as hunting during dangerous periods. Since spring is undoubtedly the most dangerous season for forest fires, this authority may during dry years be of the greatest value. Another desirable change made by the last legislature was the postponement of the opening of the hunting season for big game in the northern counties from October 1 to October 16. In my judgment it would also be advisable to supplement these measures by a camp fire permit system, but this system is not looked on favorably by the majority of land owners.

Other laws applicable to forest fire protection within the state provide that:

Whoever kindles a fire on land not his own without the consent of the owner is subject to a fine of $10. If such fire spreads and damages the property of others, he is liable to a fine of not less than $10 or more than $500, or to imprisonment for not more than three years.

All fires must be totally extinguished before leaving under a penalty of a fine of $50.

Incendiary fires are punishable by a fine of from $20

to $1,000, or by imprisonment of from three months to three years.

In addition to the criminal penalties prescribed above, persons are liable for civil damages to all property injured by fires set by them whether by carelessness or intent.

Non-combustible wads must be used in the forests throughout the state.

Fish and game wardens are ex-officio fire wardens.

Non-residents while engaged in hunting or fishing on any unorganized or unincorporated township in the state during the period from May to November, inclusive, are prohibited from camping or kindling fires unless in charge of a registered guide. No registered guide shall at the same time guide or be employed by more than five non-residents when hunting. Violation of either of these provisions is punishable by a fine of $40.

It is unlawful to erect or move a portable sawmill without a license therefor approved by the forest commissioner. The forest commissioner, or forest fire wardens in organized towns, may at any time suspend or revoke the licenses of portable sawmills for violation of the slash laws, and may further suspend such licenses in time of drought.

Forest fire wardens and deputy wardens have authority to summon any person to assist in the control and extinguishment of forest fires.

Municipal officers are directed to inquire into the cause and origin of fires within woodlands, and in all cases where such fires are found to have originated from the unlawful act of any person to cause the offender to be prosecuted without delay. Stricter enforcement of the laws would undoubtedly have a very beneficial effect in decreasing the forest fire danger, and this phase of the fire protection work is being emphasized. Such enforcement will have a good effect in two directions, it will call the attention of that part of the fire-setting public which is merely careless to the fact that carelessness with fire is illegal as well as dangerous; and of that much smaller part which is malicious, to the fact that statutes mean what they say and that violators will feel the heavy hand of the law.

Taking the situation as a whole, I believe that the fire protective system in the Maine Forestry District compares favorably with that in other states. There are of course many possibilities for improvement in organization, equipment, and personnel, but taking it as a whole the work is

administered economically and efficiently. Much credit is due to the entire field force for their loyalty and for their efforts to give efficient service under the most trying conditions. Outside of the Forestry District, the work in my judgment does not compare so favorably with that in many other states, and should be strengthened along the lines indicated above.

Additional fire protection legislation is in general much less needed than an aroused and enlightened public opinion. Strange as it may seem, there are still many people in Maine who do not fully appreciate the value of the forests and the consequent necessity for adequate fire protection, and who because of ignorance or indifference are still criminally careless with fire in the woods. Adequate funds for the work, and the whole hearted co-operation of the general public, which is necessary to make it effective, will be secured when, and only when, this situation is corrected. Forest fires can never be prevented or controlled by laws alone. Still more necessary are an interested public opinion and an individual recognition of responsibility.

The Forest Fire Fighters

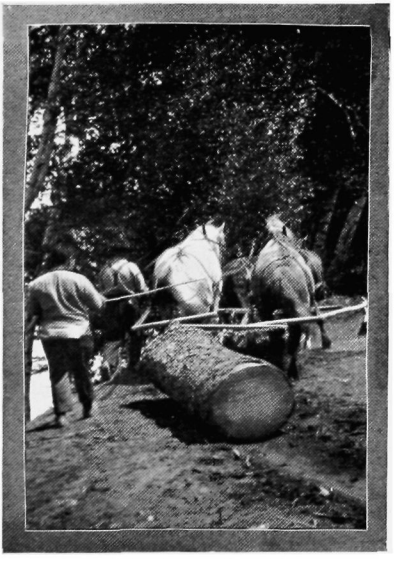
By Arthur Chapman

The wind sweeps off the spire-like peak,
And is whirling the cinders high;
While down in the stifling, deadly reek,
We struggle, and all but die.

We have felled the trees in the fire's path,
Till our hands are bleeding and sore;
But always it speeds, with a hiss of wrath,
And leaps the barrier o'er.

We have fought it back, with blaze 'gainst blaze,
And yet has the foe slipped past;
But slowly we yield, in the choking haze,
Till the victory's won at last.

Small pay do we get, and the thanks are gruff,
When we've fought the foe to his knees;
But, after all, the reward's enough,
When we hear the wind in the trees.



The Spruce Bud Worm in Maine

By H. B. Peirson, Forest Entomologist

For the third time in the history of Maine lumbering the spruce bud worm has swept through the forest region of the state, taking an appalling toll. Owing to the constantly changing type of the forest due to cutting, and insect ravages, each epidemic has been more severe than its predecessor, for fir, the principal food of the bud worm, is becoming more and more abundant in the forests. This is a positive criterion that the next large outbreak will, unless preventive methods are taken, be the most severe that Main has suffered. It was in an effort to forestall future outbreaks that work was started on the problem in the fall of 1921. At the present time the possibilities of success are very promising, providing the work can be continued. Cruising reports show that fully forty per cent of the merchantable spruce and fir in the state was destroyed in the last series of outbreaks. In a like manner serious damage has been done in Minnesota, New Brunswick, Quebec and Ontario, with other outbreaks in Nova Scotia, British Columbia, Vermont, New Hampshire, and New York.

The small brown moths flying over the forest lay their eggs on the needles in the tops of fir and spruce. These eggs hatch the latter pat of July and the young pale green caterpillars crawl into crevices where they pass the winter. In the spring they emerge and start feeding when

the new buds open. The color of the caterpillars gradually changes to a rich umber brown. When full grown they are slightly over one-half inch in length. During an epidemic they increase very rapidly in numbers and quickly defoliate large forest areas. This emphasizes the great necessity of putting control measures into effect as soon as an outbreak starts, for insect outbreaks are very much like forest fires in that they invariably start in small localities and if left alone rapidly spread over wide areas. The widespread outbreaks of bark beetles and wood borers, which invariably follow bud worm epidemics, only increase the percentage of loss.

Control measures are based upon the fact that outbreaks start in stands of spruce and fir in which fir is the predominating species, and also upon the fact that the winter is passed by first stage larvae, which upon emerging are so weak that unless suitable food is present the larvae will die of starvation. In order to carry these measures out a forest type map of the state is being made and is already nearly two-thirds complete. This map shows the size and area of the different stands of spruce and fire, hardwoods, birch, poplar, pine, etc. The second step is to patrol once a year the danger spots or areas of pure spruce and fir. When an outbreak is located the owner of the infested area is notified and if possible a small operation planned to clean cut the area, thus stamping out the infestation and preventing its spread over wide areas. To date this method of control seems to be working out very successfully, several outbreaks already having been stamped out.

Forest insects in Maine are yearly destroying over ten times as much timber as are forest fires. There are many forest insect problems connected with the raising and harvesting of hardwoods, larch, pine, spruce, and fir, that must be met from a practical forest management standpoint. With the supply of timber and pulp wood rapidly disappearing insect problems are becoming more and more acute.

HA'NTS OF THE KINGDOM OF SPRUCE

The sheeted ghosts of moated grange
And misty wraiths are passing strange;
The gibbering spooks and elfin freaks
And cackling witches' maudlin squeaks—

—They have terrified the nations, and have laid the bravest low,
But intimidate a woodsman up in Maine? Why, bless you, no!
Merely misty apparitions or some sad ancestral spook
Serve to terrify a maiden or to warn a death-marked duke.
But the P. I. scoffs their terrors, though he'll never venture loose
'Mongst the ha'nts that roam the woodlands in the weird domains of Spruce.
—He'll mock the fears of mystic and he'll scorn the bookish tales
Of the fearsome apparitions of the past, but courage fails
In the night when he awakens, all a-shiver in his bunk,
And with ear against the logging hears the steady, muffled thunk
Of the hairy fists of monsters, beating there in gristly play,
—Horrid things that stroll o' night-times, never, never seen by day,
For he knows that though the spectres of the storied past are vain,
There is true and ghostly ravage in the forest depths of Maine.

For even in these days P. I.'s shake
At the great Swamp Swogon of Brassua Lake.
When it glitters and glabbers the long night through,
And shrieks for the souls of the shivering crew.
And all of us know of the witherlick
That prowls by the shore of the Cup-sup-tic.
Of the Side Hill Ranger whose eyeballs gleam
When the moon hangs gibbous over Abol stream;
—Of the Dolorous Demon that moans and calls
Through the mists of Abol-negassis falls.
And many a woodsman has felt his bunk
Tossed by the Phantom of Sourdne-hunk.
There's the Giant Spook who ha'nted Lane's
Old wangan camp and rended chains
—Great iron links of the snubbing cable—
As thought they were straw—who was even able
To twist the links in a mighty mat
With which he bent the forest flat
From Nahma-kanta to Depsiconneag
—Acres and acres—league after league;
Striding abroad from peak to dale
And laying on with his mighty frail.

Oh, fie for the shade of the manored hall,
A fig for a Thing in a grave-creased pall,
—For wraiths that flitter and flutter and sigh,
With flabby limbs and sunken eye!
The woodsman recks not ye, frail ghosts,
But he knows and he bows to the deep wood's hosts,
Who sound their coming with giant breath,
Who mark their passing with storm and death,
Who shriek through blow-downs and howl o'er lakes,
—And he hide and trembles, he shivers and shakes
When he hears the Desperate Demons loose
In the weird dominions of grim King Spruce. *Holman F. Day.*

Go to Katahdin

By Archer L. Grover

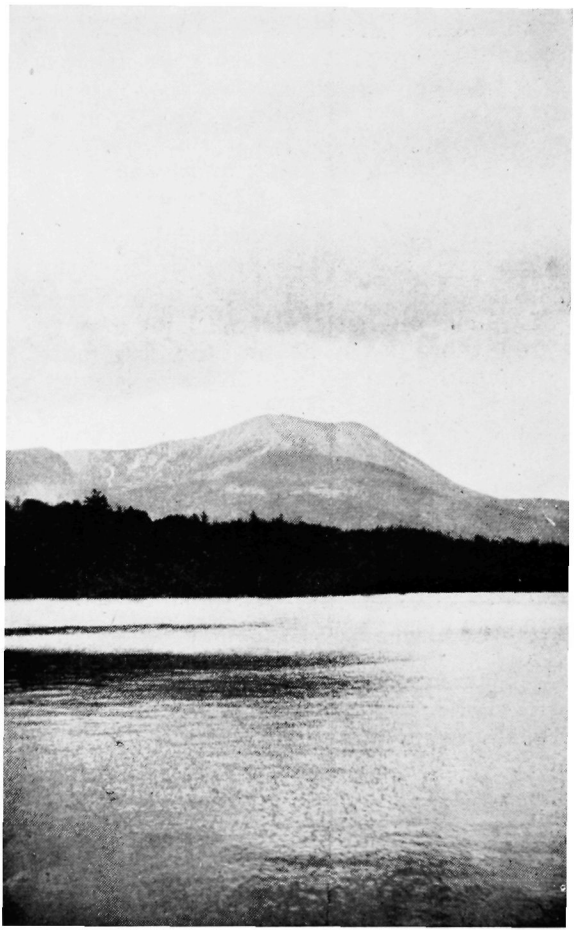
If you prefer "man's country" to "God's Country," then, by all means, take your vacation at Revere Beach or Coney Island and do not waste your time reading this article. But if, perchance, you love

> "The odors of the forest,
> The dew and damp of meadows,
> The curling smoke of wigwams,
> The rushing of great rivers,
> With their frequent repetitions,
> And their wild reverberations,
> As of thunder in the mountains,"

you can do no better than to spend your vacation in that portion of God's "big-out-of-doors" known as the Katahdin country and there learn at first hand something of the beauty, grandeur, and natural resources with which the Creator has so bountifully blessed our native state.

If you wish to get a glimpse of Katahdin from our own campus, go to the top of Wingate or Winslow Hall on a very clear day and look directly north. The mountain is visible from the summit down about 1500 feet; the remaining 3700 feet of its elevation being below the near-by horizon due to the curvature of the earth. During the winter and well into May, it looks like a white cloud lying on the horizon, and even until the middle of June, large patches of snow can be seen on this southern exposure.

The most impressive feature of Katahdin, when the traveler makes his first ascent, is its immensity. It rises a great, irregular plateau or table-land from the heart of the comparatively flat lake country of the Penobscot River drainage basin. The area of this table-land is about 1000 to 1200 acres; its elevation, 4400 to 5000 feet. The elevation of the highest of the several peaks rising above this table-land is 5273 feet. The mountain's roughest and most spectacular feature is the southermost of three big spurs extending about one mile eastward from this table-land. This is a curved, serrated ridge of vertically fractured granite called the "Saw-Teeth" or "Knife-Edge" which terminates in the most eastern peak called Pamola, it being named after the Indian avening spirit of the mountain. The top of this ridge is very narrow; in places not more than



MOUNT KATAHDIN

two feet wide. In traversing it, one looks down on the northern side into a two thousand foot abyss, at the bottom of which is Chimney Pond, the beauty spot of the mountain. The walls of the "Knife-Edge" are so steep on either side that one has to travel the crest of the ridge rather than attempt to crawl along the sides.

The view from the northern shore of Chimney Pond furnishes a combination of beauty and Titanic grandeur seldom surpassed. The precipitious mountain wall from Pamola to West Peak, in places 2500 feet high and scarred by hundreds of avalanches of rocks and ice, encircles the pond on the south and comes to the very edge of the water.

Many statements have been made regarding the number of lakes and ponds that can be seen from the summit. The writer once attempted to count them, beginning with those near by and then gradually taking in those in a more extended range of vision. It was not a particularly clear day and when he had reached ninety with a fair degree of accuracy his sight became bewildered in the haze and maze and he "gave it up as a bad job." This, however, is sure: There is not an equal area in the Western Hemisphere that is as "well watered" as the panorama here stretched before the observer's eye. This may seem like an extravagant statement, but any doubter can easily verify it by looking at the maps showing the geographical details of our hemisphere.

In *Sprague's Journal* of Maine History, Vol. X, No. 3, is an interesting article entitled "Mount Ktaadn Sometimes Mount Katahdin," written by George C. Wing, Jr. In Mr. Wing's "Record of Ascents" is the following:

"Williamson states that the first ascent of the mountain was in August, 1804, and was made by seven gentlemen from Bangor and Orono with two Indians for guides. This reference in Williamson is undoubtedly the excursion made by Charles Turner, Jr., Esq. * * * * In 1802, Charles Turner, Jr., was a surveyor and in this capacity engaged in locating the grants and sales of what are known as the Eastern Lands (of Massachusetts).

The summer of 1804 was one of the seasons in which he was employed in the interior and north of the District of Maine as a surveyor. During the summer he ascended Katahdin. His description is printed in the Massachusetts Historical Society collection, Second Series, Vol. 8, and it

is believed this is the first printed description of an ascent of Mt. Katahdin."

Although this article is very interesting, it is not my purpose to give it in full. I merely wish to call the attention of my readers to the authentic date of the first ascent, the names of the party, one or two observations they recorded, and that the two Indians who went with this party as guides were undoubtedly the first Indians to reach the summit.

"A Description of Natardin or Catardin Mountain"—"Being an extract from a letter, written by Charles Turner, Jun., Esq., in the summer of 1804, which was one of the several seasons in which he was employed in the interior, and north of the District of Maine as a surveyor."

"On Monday, August 13th, 1804, at 8 o'clock A. M., we left our canoes at the head of boat waters, which came in different rivulets from the mountain, the principal of which (as we afterwards found) issued from a large gully near the top of the mountain." * * * * "Having arrived at the highest point which is towards the east end, we found ourselves above all the mountains within our horizon. We could not determine our actual elevation, not having instruments, nor being otherwise prepared to measure the height of the mountain. From this point our view was enchanting; the air, however, had, during the day become a little smoky, which prevented our destinguishing distant objects with that clearness which we could have wished. The plane of the top of the mountain, being nearly a mile and a half in length, would have afforded a base or leg, by which, with correct instruments, we might have determined with a great deal of exactness, the situation and distances of all the principal highlands and mountains in the District of Maine, and the situation and extent of the principal lakes." * * * * "The sun was now declining in the west, and we took leave of the summit of the mountain, after having deposited the initials of our names (William Howe, Amos Patten, Joseph Treat, Samuel Call, Willliam Rice, Richard Winslow, Charles Turner, Jun.) and the date cut on a sheet of lead, and a bottle of rum on the highest part. We decended the mountain with cautious steps, until we came among the low spruces, and the next day at noon we reached our canoes." * * * *

"It is difficult by any orthography, precisely to express the name of this mountain, and convey the nasal

sound which the natives give. No-ta-dn or Ca-ta-din is as near, perhaps, as the powers of the letters will permit." * * * *

"The Indians have a superstition respecting this mountain, that the evil spirit, whom they call Pamola, inhabits it, at least in the winter, and flies off in the spring with tremendous rumbling noises. They have a tradition, that no person, i. e., native who has attempted to ascend it has lived to return. They allege that many moons ago, seven Indians resolutely ascended the mountain and that they were never heard of afterwards, having been undoubtedly killed by Pamola in the mountain. The two Indians whom we hired to pilot us and assist in ascending the mountain, cautioned us not to proceed if we should hear any uncommon noise; and when we came to the cold part of the mountain, they refused to proceed ahead—however, when they found we were determined to proceed, even without them, they again went forward courageously, and seemed to be anxious to be the first on the summit. On our return to Indian Old Town, it was with difficulty that we could convince the natives that we had been to the top of Mount Catardin, nor should we have been able to satisfy them to this fact, so superstitious were they, had it not been for the Indians who had accompanied us."

The mountain travelers of recent years, who are so fortunate as to reach the summit, enjoy the luxury of registering their names in a small book specially printed for this purpose by the Appalachain Mountain Club. This is in a water-tight, copper can and is deposited in a cairn. Neither is it considered good taste, since the adoption of the eighteenth amendment, to leave a bottle of rum stranded on the summit, there to "waste its sweetness on the desert air." Thus we see that fashion changes in mountain climbing as well as in wearing apparel, and that one cannot get away from the conventionality of civilization even on the summit of this wilderness.

The inaccessibility of Katahdin accounts for the comparatively small number of people who make the ascent. Moreover, a large proportion of those who spend their vacations in some of the sporting camps of the Katahdin Region prefer to "enjoy it from below" than to undergo the physical exertion necessary to behold the wonderful panorama unfolded from its heights.

The most satisfactory way to approach the mountain is from Norcross, via. the "Lower Lakes" and the West Branch of the Penobscot to the mouth of Abol Stream, and thence up Abol Trail; or one may continue by the mouth of Abol four miles up stream to the mouth of Sourdnahunk Stream and from there make the ascent by Hunt's Trail. This approach, with the twelve-mile steamboat sail from Norcross to the head of Abijijis Lake; the canoe trip from there up the tumultuous waters of the West Branch to the mouth of Abol or Sourdnahunk; then the climb to the summit gives a variety of scene and action not attained when ascending the mountain from the waters of Sandy Stream or Wassataquoik, either of which leads one up the Appalachain Trail on the eastern side.

The West Branch with its wooded shores, sometimes flat, sometimes receding into gently rising hills, but always clothed with the lighter greens of the deciduous hardwoods, or the darker and more somber hues of the conifers; the distant mountain becoming more and more dominating as each succeeding turn in the river unfolds a new vista; the changing moods of the stream, from the mirror-like surface of the "Deadwaters" where the canoe sails upon the image of the mountain, to the hoarse and tumultuous roar of the numerous falls, all combine to make the canoe trip from Ambijijis Lake to Abol Stream a journey that will linger in one's mind a lifetime.

There are two ways of making this trip. I will explain the difference between them for the benefit of my readers who may sometime be so fortunate as to take it. They will then be able to choose which method to pursue as the one better fitted to their own particular circumstances.

One way is to hire a guide, pay him six dollars per day and "find" him. The duty of your guide is to furnish a canoe; to paddle it where it is good paddling; to pole it where the paddle ceases to be effective and then, when both the paddle and pole fail to produce progress, to pick it up and "sack" it across the carries. He also "sacks" all the wangan on the carries; makes the camps; cooks the meals; cleans the fish; and last but not least, he does his best to influence you, without you knowing it, to plan your trip in such a way as to make it as easy as possible for him. Nor should you think that by paying six dollars per day for the above mentioned items that there is nothing left for you to do. You also have duties to perform. You are to sit in

the bow on a canoe chair and "look like a million dollars." On the carries, you carry your hat in one hand and (if you happen to be feeling unusually athletic) your fishing rods in the other. When your guide is poling you up through the rapids and is steering straight for a large rock as he is sure to do to take advantage of the eddy that always lies on its down-stream side, you should suddenly become terror stricken—expecting him to ram the rock—stick your paddle into the water and throw the bow of the canoe out into the strong water and maybe "swamp" the canoe.

The foregoing "de Luxe" method may be all right under certain circumstances, but if you enjoy a little more of "the spice of life" you can get that variety by paddling, poling, and "sacking" your own canoe; making and striking your own camp; swallowing the smoke of your own camp-fire; and eating flap-jacks inlaid with cinders, all of your own making.

Of course the canoe is made to carry human and other freight. But when the water has become so ill-tempered that it will be neither paddled nor poled, the canoe serves another very useful purpose. It becomes the "latest thing" in summer millinery and is worn up-side-down on the head thus making a very beautiful, elongated piece of headgear which protects one's head from the scorching rays of the noonday sun, or from a sudden and unexpected shower. This humane hat is no less thoughtful of wild life on the carries, for it not only offers the same protection to mosquitoes as to the wearer, but it also affords an excellent opportunity for these harbingers of devotion to get in and have a free ride.

One might read stories, or descriptions of Katahdin, or look at pictures of the mountain from now until Doomsday and still get only a hazy idea of its varied beauty and majestic grandeur. My advice, therefore, is, go and see it for yourself. If you cannot go "one way"—meaning "de Luxe"—then go the other; if you cannot do either, why then go "de shank's mare"; but, by all means, *go*.

A Camp Fire

I see the silent evening sky,
O'er snow capped copper peaks,
And feel the shelt'ring hand of God,
In the wind that almost speaks.

The trees are rugged, straight and tall,
The night is big yet near,
God and I are there alone
In silence I almost hear.

The roaring of the canyon falls
Comes splashing down the stream
And I am wond'ring by my campfire
If I live or only dream.

There's a spell about the campfire
That holds me to the trail,
Altho I never reach success
I never seem to fail.

Battles are fought and struggles won
Among the campfire's brands,
Secrets are told and secrets got
When sympathy a soul demands.

And memories both sad and sweet
Blaze in the cinder's gold
Youthful dreams and castles fine
This melting pot of life enfolds.

Oh, many maids and many men
The spell of embers bright
Have felt, and marveled at its call
But heeded not its wondrous light.

Yes, I'm dreaming of old campfires
'Neath a cultivated tree
And I thank God for my mem'ries—
Those, no one can take from me.

Stanley Bartlett.

Memorial Forests in Maine

By George O. York, Jr., '24

Which would you rather receive, a check from your town or a tax bill? The former of course. How can this be accomplished? Simply by planting memorial forests in every possible community. Every town, village and city certainly has some land which could be utilized for the purpose of planting a memorial forest.

What is a memorial forest? A memorial forest is a forest planted and cared for by the citizens of the nearby towns, and it is a beautiful memorial to the town's heroes who fought and died during the World War. It creates and maintains local interest in forestry. It combines the sentiment with utility. A certain tree may itself be a memorial to a certain hero, a group or avenue of trees a group of heroes. The town could pledge itself to renew any trees that die or that may be cut, thus assuring a perpetually renewing memorial, typical to the immortality of the hero.

Why do we need to plant these memorial forests? They are an everlasting tribute to the town's heroes. Moreover, we must provide for a future timber supply. The timber supply in the United States is being fast exhausted. More timber is used each year than is grown. This means that within the next fifty years, if the present conditions remain the same, our future timber supply will be a negative quantity. Providing for a future timber supply is merely another way of saying that we are providing for the future generations. You men and women of the United States, do you want your children's children to be without all the necessities of life? Of course you don't. Surely a future timber supply is one of the greatest necessities of life. You, and you alone, can forestall this impending catastrophe. In order to accomplish this, it may well be called a miracle, you must start planting trees and care for the forests which you already have.

England and Scotland are preparing to replant forests which have been cut to provide war supplies. They are not waiting for better financial conditions, but are replanting now. Never before have these countries been so bare of timber. Hunting ranges and sporting grounds have been sacrificed to supply the demands of war. England and Scotland realize that by planting these forests they will be pro-

viding for the future, and at the same time they will be receiving a certain income from them.

Every American citizen must know the deplorable condition of our timber supply. Every city, town and village must co-operate in forming memorial forests on every possible location. We must plan to conduct a systematic reforestration of denuded areas. In one Massachusetts township, a number of the citizens who own adjoining lots of brush land, sprout land or other non-productive soil which for years has been utterly unproductive, are planning to join in offering at the next town meeting to donate to the town all these tracts to be accepted for the creation of a town forest as a memorial to all its heroes who served in our nation's war. With the aid of the state, the town will thus be able to create, at almost no cost to itself, a community forest that will soon be useful in providing pleasure for the town's citizens, and a substantial income for the town's treasury.

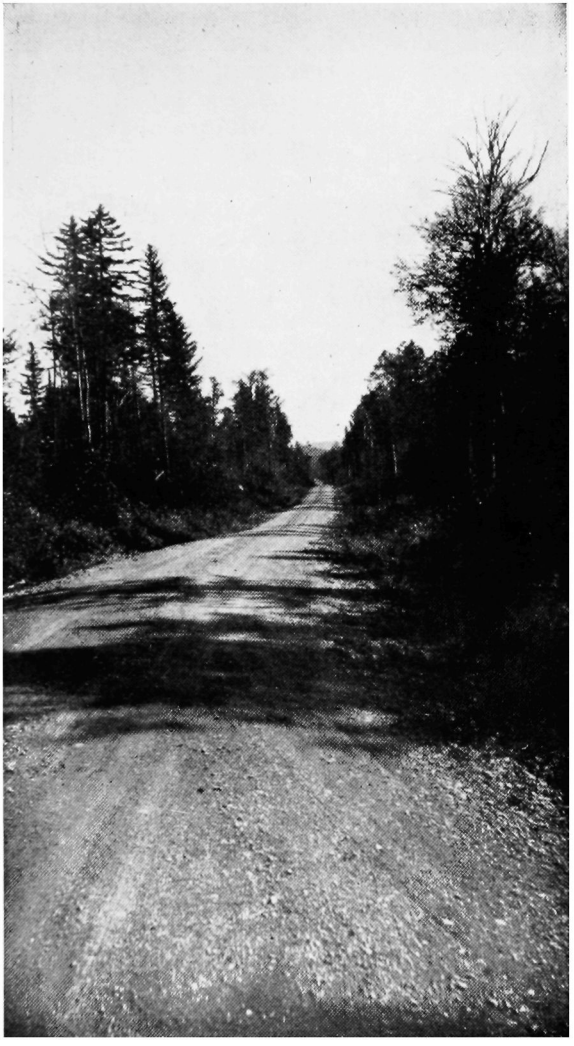
The city of Springfield, Mass., owes its beautiful Forest Park to similar action by public-spirited citizens. The city's annual report always prints a map of Forest Park on which is shown each different tract of land and the name of its donor. In this way the citizens are honored. Doubtless any town which receives donations for a memorial forest would gladly imitate this example and thus perpetually honor the donors in the town's annual report.

At the present time there are no memorial forests in the State of Maine. In Massachusetts there are three town forests. The first township forest in America was created at Fitchburg, Mass., December 29, 1914. This land has been planted to white pine.

The second town forest in Massachusetts is at Walpole, where 150 acres were donated near the center of the town. This forest has been made a bird and game preserve.

Brookline has a town forest on its watershed of 3508 acres, which is also planted to white pine. This is an example that should be followed by every city and town, by covering its watershed with growth of some commercial value that also will prevent contamination of water supply or injury to the forest floor.

What sort of trees should be planted on these memorial forests? Surely not those trees which are worthless from a financial standpoint. These forests must be so planted



THE LURE OF THE ROAD

that they will yield an income each year, and by so doing they will be adding money to the town or city treasury instead of causing money to be drawn out to provide for their care and protection. There are large tracts of land on which locust and walnut trees will grow to perfection. The Forest Service has charge of such areas in the Appalachian region in Virginia, North Carolina and in West Virginia. Why wouldn't it be a good business proposition for the Forest Service to form some memorial forests and to plant these lands in walnut and locust, not experimented lots here and there, but by the thousands and tens of thousands of acres? The land lies in the natural range of these trees, and there is no question that they will grow.

Does it pay to plant a memorial forest? The citizens of Forbach, in the Black Forest region of Germany, formed a town forest. The annual net profit from that town forest is $12.14 per acre. A number of citizens in Forbach received $36 each, annually, from the profits obtained from the town forest. Fifty-five years ago Christopher Carpenter, of Rehoboth, Mass., went out into an old pasture and dug up enough little white pine seedlings to plant seven acres, spacing them eight to ten feet apart. Practically nothing has ever been done to this plantation except to cut out the dead trees. Today there are on each acre of this tract 480 trees avering fifty feet high, which if cut into timber would yield nearly 44,000 board feet, on the seven acres at the present price per thousand feet that timber is now worth about $490 an acre. Several other instances, similar to this could be mentioned which would serve to prove that it does pay to plant a memorial forest.

The Forestry Course at the University of Maine

By Gregory Baker '24

The forestry department at the University of Maine has for many years labored along under the handicap of insufficient equipment and inadequate appropriations. Unlike the other departments of the University, the money for the forestry school comes directly from the state and not from the University budget. This year we received

an addition to the appropriation and at present things look a little brighter for the future. It is hoped that the coming year will see the advent of a new instructor in addition to those now employed.

Unlike many other forestry schools, the entire course is not encompassed within the forestry school itself. The students go to the College of Technology for their instruction in engineering, and to the College of Arts and Science for instruction in mathmatics, biology, English and other subjects. The forestry school itself is a part of the College of Agriculture.

Only the four-year undergraduate course is offered in forestry. The curriculum for this course is arranged to meet the requirements of the National Committee of the Conference of Forestry Schools, on Standardization of Instruction in Forestry. It will enable the graduate to qualify for technical and administrative positions in professional forestry work, and will admit to advanced standing in post-graduate schools of forestry of high standing. It will also make a student eligible for the civil service examinations for the position of forest assistant in the United States Forest Service. Completion of the curriculum leads to the degree of Bachelor of Science in Forestry.

The first two years are given very largely to fundamental and auxiliary subjects, which are basic for a proper understanding of the more highly specialized work in technical forestry in the last two years.

The first year's work consists of instruction in general chemistry, engineering drawing, trigonometry, zoology, botany, economics of forestry, English composition and literature, solid geometry, military and physical training. This gives a total of 39½ credit hours for the first year.

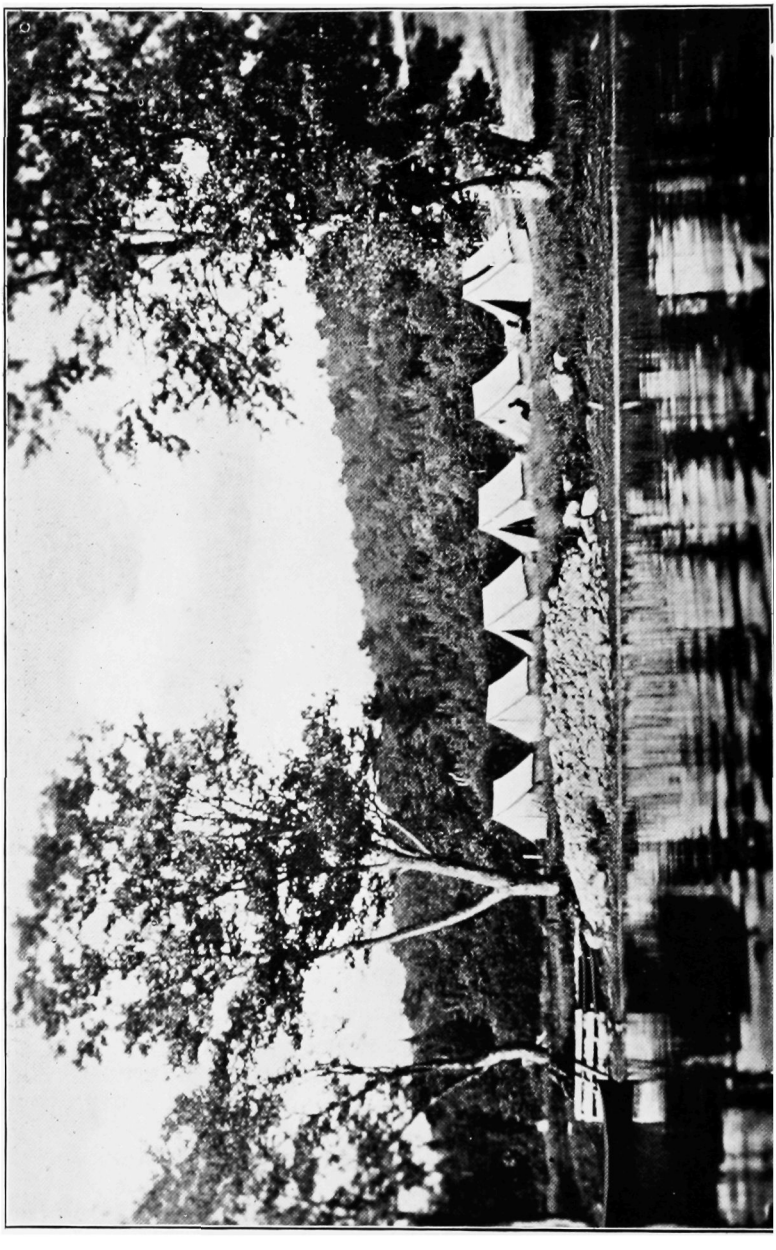
The second year the student is introduced to the engineering subjects and other advanced work. The courses taken are as follows:

Soils—A study of the origin, types, physical properties, distribution and relation to crop production.

Forest Botany—A systematic study of the commercial trees of North America, with field study and identification of Maine representatives.

Entomology—A study of structure, life histories, and classification of insects, particularly forest insects.

Plane Surveying Field Work—Elementary work in the



FORESTRY CAMP AT LUNKASOO

use of the chain, tape, compass, transit, level, and other surveying instruments. This is followed by:

Plane Surveying—A lecture and recitation course covering the general theory of plane surveying and other surveying operations.

Plotting—Consists chiefly of map drawing from field notes by the different methods in common use.

Technical Composition—Business correspondence, reports and summaries of investigations, and preparation of manuscripts for theses and technical journals.

Modern Literature—Given with the design of cultivating the appreciation and enjoyment of good literature.

Economics—A course dealing with the general principles of modern economic activity and taking up some modern economic problems.

Forest Protection—Instruction in the systems of fire protection practiced by the federal and state governments, individuals, and associations. It also takes up protection against other natural enemies of the forest such as insects, fungi, wind, and animals.

Military Training and six hours of some elective subjects. This gives a total of 40 credit hours for the Sophomore year.

The third year the student begins to put into practice some of the basic courses taken the first two years and begins his first real technical work. The courses offered are:

Plant Histology—Microscopic study of the cellular structure of the higher plants.

Plant Physiology—The study of the activities of plants such as absorption and transport of raw materials; growth; manufacture, transport, and storage of food.

Meteorology—A course covering the essential principles of the subject including a study of instruments and weather predictions.

Railroad Field Work—The survey of a railroad about two miles in length. The preliminary and location surveys are made, including running in the curves, obtaining topography, establishing the grade, and setting the slope stakes.

Simple Curves and Earthworks—A lecture course on the theory and practice of simple railroad curves, and on the field and office practice of staking out and computing earth work.

Railroad Office Work—The office work of mapping the notes taken in the field work, including calculations of the earth work.

Advanced Surveying—A course consisting of lectures, readings, and recitations on the theory and practice of base line measurement, triangulation, precise leveling, topographical surveying, use of the plane table, the theory and applications of least squares, and map projection.

This course is a preparation for:

Junior Field Work—A practical application of the principles given in the preceding course. This consists of six days of work, full time, the last week of school in the spring semester.

Geology—A study of the earth's history and development, with especial attention to dynamical, structural and physiographical geology.

Landscape Gardening—A study of the principles of landscape art and the materials used in making landscape pictures.

Wood Preservation—The durability and seasoning of native woods; preservatives in common use; methods of operation; and equipment of preserving plants.

Forest Mensurations—Instruction in the theory and application of forest measurements; calculations and computations from data obtained in field work; study of age, growth, taper, form factors, yield and volume tables. The field work consists of the use of instruments; scaling and estimating; collection of data for making a map of an assigned tract; studies of age, growth, and yield under different conditions and in various types; determination of form factors; construction of volume tables.

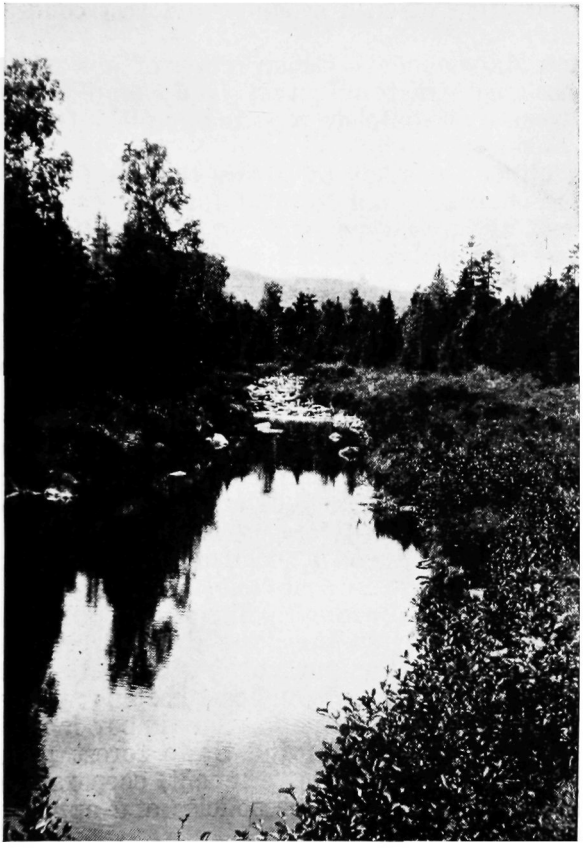
Forest Laws—Laws of the federal government and of the several states concerning forests and forestry.

Besides these subjects there is required six hours of some elective subjects, giving a total of 38 credit hours.

The subjects of the Senior year are practically confined to the forestry school. They are as follows:

Forest Pathology—A study of the diseases of trees, especially those caused by fungi; destruction of timber by fungi; methods of combating plant diseases.

Wood Identification and Uses—The identification and classification of the economic woods of the United States, based on simple lens inspection; the technical qualities of various species and their uses in the arts and trades.



BAKER STREAM

History of Forestry—The development of forestry in European countries and in the United States.

Forest Products—Dealing with the forest products other than logs and lumber; method of utilizing, market, and values.

Practice of Forestry—Applied systems of silviculture and management considered in relation to the commercially important species and types of forest in the United States;

discussions of the management as practiced in Europe, and of the application of such systems to forest conditions in this country.

Forest Management—Construction of a working plan for an assigned tract of forest land; map making for forestry work with complete reports and plans for the management of the same.

Silviculture—A study of silvics, the life factors determining the character and form of forest vegetation. The development of forest types and the silvical characteristics of stands. Cultural measures in the forest; the forest regions of the United States.

Nursery Practice—Tests of the germinating qualities of seeds of forest trees, and a study of seeds and seedlings. Planting and transplanting in the State Forest Nursery; practice in field planting.

Lumbering—The lumber industry in the United States considered from the economic standpoint; an account of the methods of logging and manufacture in different regions. Inspection of pulp mills and lumbering operations, during the first half of the semester. Inspection, detailed study, and report of an assigned typical logging operation. At least six ten-hour days in a lumber camp.

Forest Finance—Business principles applied to forest management; forest valuation; the theory of the normal forest; calculations for normal yield and continuous revenues; forms for accounts and cost keeping; preparation of reports for federal income tax on timber lands.

Forest Policy—National and State forest policy and administration; relation of government, corporations, and individuals in regard to forest policies and applied forest management.

This gives 34 hours credit for the senior year and a total of 151½ hours required for graduation.

Owing to the wide field covered by the curriculum both in arts and sciences, as well as in technology, the forestry course offers an excellent basis for a broad and liberal education.

SLUICE AT INDIAN POND DAM

LOAD OF LOGS AND LUMBERJACKS

The Scaler's Dream

I met a scaler old and grey
Who told me of a dream he had.
I think 'twas New Year's Day,
As he was snoozing in his shack
A vision came to view,
Having seen an Angel enter
Dressed in garments white and new.
Said the Angel, "I'm from Heaven.
St. Peter sent me down
To bring you up to glory
And put on your golden crown."
So the Angel and the scaler
Started up the Pearly Way.
When passing close to Hades
The Angel whispered, "Wait!
There's a place I want to show you.
'Tis the hottest in all hell
Where those who always crabbed you
In fiery torments dwell."
And behold the scaler saw there
Gyppos by the score and,
Leaning on his scale rule,
He wished for nothing more.
Said the Angel, "Come on scaler,
There the Golden Gates I see."
But the scaler only murmured,
"This is Heaven enough for me."

The Idaho Forester.

The Maine Forestry Association

By Harry R. Lovely, Secretary

The Maine Forestry Association is not a state institution, a state organization, nor a state supported bureau! This exclamation is due to the fact that about nine out of every ten people who hear the title of this organization immediately discuss it as a State of Maine affair. It is a State of Maine affair but not in the sense that it is sponsored by the state solons nor supported by state funds. The Maine Forestry Association was organized and is composed of persons and organizations, either within the state or without the state, who are interested in obtaining protection and perpetuation for the forests of Maine. These persons recognize the fact that Maine without her forests would probably not have endured as a state, and that if our forest resources continue to be devastated Maine will scarcely endure as a state. These persons and organizations dig into their own pockets to support the association and their only reward is the knowledge that they are doing a good thing. More people are seeking this reward, humble as it may seem, and the Maine Forestry Association continues to grow and to work.

Prior to the war, (if this is circulated south of the Mason-Dixon line, readers will please note that the war with Germany is referred to in this case) a group of Maine citizens seeing the trend of the times in forest matters and realizing the need of a steady, permanent supply of timber in this state, organized this association in Bangor to arouse public opinion to adopt a sane forest policy for Maine and attempt to put it in force that the prosperity which our forest resources bring to us may be ever continued. Some good work was done. During the war the organization became inactive as more pressing duties engaged everyone's attention. In 1922 it was felt that the association had a big duty to perform and it was reorganized at a meeting held in Augusta. Much enthusiasm was shown and the work was pushed again. However the officers of the organization were all busy men in their respective communities and there was no one to be in direct charge at all times to keep things going. Although more good work was done it was soon noted that to get more members; that the

association could be a real state-wide representative organization, and to carry on a campaign of education, someone should be at the helm at all times and keep the ship on her course. Hence in 1923 it was decided to engage a whole-time secretary and start the work to booming. Full steam is now on and results are being secured.

That you may see the calibre of the Maine men who are the leaders of this association here is a list of the officers of this organization:

President—Alfred K. Ames, Machias.
Vice-President—Harvey D. Granville, Parsonsfield.
Treasurer—D. A. Crocker, Bangor.
Directors—Blaine S. Viles, Augusta; Forrest H. Colby, Portland; Charles P. Barnes, Houlton; Louis Eaton, Calais; Mrs. W. R. Pattangall, Augusta; Mrs. F. P. Abbott, Saco.

County Vice-Presidents—Frank M. Winter, Auburn; James M. Pierce, Houlton; Leonard Pierce, Portland; Herbert S. Wing, Kingfield; A. R. Mace, Aurora; Frank E. Mace, Augusta; William T. Cobb, Rockland; Kendall M. Dunbar, Damariscotta; B. G. McIntire, Norway; Mrs. J. A. Thompson, Bangor; John F. Sprague, Dover; William B. Kendall, Bowdoinham; Roy L. Marston, Skowhegan; Mrs. Charles Bradbury, Belfast; Mrs. Charles F. Eaton, Calais; Cecil Clark, Hollis.

These officers are in earnest and are giving much of their valuable time to push the association's work along. They are well known by Maine people and no further comment is necessary.

Before the aims of the Maine Forestry Association come up for comment it would be wise to get a general view of the "whyness" of such aims. Fifteen million acres of Maine are forest lands, over 78% of Maine's total area; more forest land than in any other state, but one, east of the Mississippi river; a greater percentage of forest land than in any other state in the Union. About half of all the capital invested in manufacturing in Maine is invested in industries using wood as their chief source of raw material. One third of all employes in the state are employed in these industries. Nearly one-half of our railroad tonnage is composed of forest products. Our electrical development from water power (we are in the front ranks of the nation in this respect with only one-third of our possibilities as yet developed) is directly dependent upon our forest cover.

Our forests are the primary attraction for tourists to this state and last year they spent many millions of dollars within our borders. And lastly our farmers have been and are largely sustained by the forest products of their woodlots.

Briefly, now, the extent and importance of Maine's forest resources are spread before you.

These resources are beset by:

Fires In the last twenty years 2856 fires have burned over more than 800,000 acres with a damage of about $4,000,000. Please remember here that now the state is only organized to protect some 9,000,000 acres of our total forest area. The remainder is outside of the Maine Forestry District.

Insects During the last ten years "bugs" have killed about 40% of the merchantable spruce and fir timber within the state.

Fungi No definite figures can be given here but as a hint let it suffice that the banks in Massachusetts will not loan money upon white pine land unless the white pine blister rust has been exterminated and steps taken that it can not obtain any foothold. Bankers are hard headed citizens.

Man Man is always his own worst enemy and as this is generally recognized only one remark will be stressed here. It has been estimated that annually we are cutting in this state ten times as much as grows each year.

These various "besets" are still with us. Balance for yourself this ledger sheet. Does it not behoove everybody to act that the morrow may be safeguarded?

The object of this association then is to build up a state-wide representative organization within which ideas, views and plans can be exposed to the melting fire of discussion and a sane, practical solution of our forest problems fused into a policy that can be placed into force to protect and perpetuate our prosperity.

The association is trying to educate the people to these facts and to build up an organization, not political nor partisan, to act upon these facts and assure some 768,000

people (at present) that their livlihood will always endure. Only the active support of these very people can bring this about.

QUOD ERAT DEMONSTRATUM.

HARRY R. LOVELY,
Secretary.

Xi Sigma Pi

Xi Sigma Pi, the honorary fraternity in forestry, has a flourishing chapter at the University of Maine. The fraternity was founded in 1908 at the University of Washington. The second chapter was established at the Michigan Agricultural College in 1916. The University of Maine, the following year fell into line and established the third chapter. At present there are eight active chapters.

The purpose of the fraternity is to maintain a high standard of scholarship in forest education, and to encourage an active interest in the practice of forestry. Eligibility to this fraternity is based on scholastic ability, general character, and the interest shown in forestry work.

Gamma chapter is composed of fourteen students and two faculty members. The spring initiation was held Tuesday evening, May 22, admitting to membership ten members of the class of '24.

An organization of this sort is an important factor in college life. It offers a goal toward which underclassmen may work, and to upperclassmen it offers an opportunity to associate with those who are seriously interested in forestry and in its upbuilding.

Alumni and Former Students

The following are the graduates and former students at the forestry school with their present occupation and address as far as we know. Corrections and more recent information will be gladly received.

Class	*Name*	*Address*
1905	Harvey, Bartle T.	Avenida Rio Branco, 15-19 Andre, Rio de Janiero, Brazil.
1906	Churchill, H. L.	105 South Ave., Glens Falls, N. Y., care Finch, Pruyn & Co.
	Crowell, Lincoln	Sandwich, Mass., Forest Service.
	Frost, Walter O.	Augusta, Me., Forestry Department.
	Rogers, David N.	Quincy, Cal., Forest Super. U. S. Forest Service.
1907	*Cayting, Arno B.	
	Coffin, Roy S.	Bangor, Me., 128 Exchange St., Mgr. Coffin Amusement Co.
	Toner, Ernest L.	Portland, Me., 23 Fessenden St., Storky & Toner, Inc.
1908	Locke, Samuel B.	Ogden, Utah, 2867 Fowler Ave.
	Smith, Raymond J.	Skowhegan, Me., U. S. Forest Service.
1909	Carlisle, George T.	Bangor, Me., Consulting Forester, 27 Columbia St.
	Chandler, Bernard A.	Portland, Me., 120 Exchange St.
	Osgood, William T.	Lake Forest, Ill.
	Pike, Lewis F.	Boston, Mass., 15 Elkins St.
	Roberts, Benjamin L.	Richwood, W. Va., Cherry River Boom & Lumber Co.
	*Jewett, John N.	
1910	Bagg, William C.	Utica, N. Y., 406 Genesee St.
	Cruickshank, Robert B.	Columbus, O., Ohio State University.
	*Davis, Fred D.	
	Gardner, Leroy W.	Worcester, Mass., 34 Lincoln St.
	Reed, Marshall E.	Roxbury, Me.
	Shatney, T. Franklin	Orono, Me.
	Wakefield, George A.	Pittsburgh, Pa., 627 Oliver Bldg.
	Wentworth, William H.	Arnprior Ont., Box 771.
	Kimball, Winfield A.	Boston, Mass., 195 Huntington Ave., Suite 2.
1911	Bearce, George D.	New York City, 342 Madison Ave.
	Peckham, Wentworth	Fort Kent, Me.
	Pinkham, Niles C.	Fort Kent, Me.
	Wood, Harold G.	Bangor, Me., 398 Hammond St.
1912	Houghton, Lloyd E.	Bangor, Me., 6 State St., care Great Northern Paper Co.
	Hussey, Philip R.	Bangor, Me., 65 Harthorne Ave.

Class	*Name*	*Address*
1912	Miller, W. J. H.	New York City, 1380 Merriam Ave.
	Poole, James P.	Topeka, Kan., Washburn College
	Sweetser, Harlan H.	Portland, Me., R. F. D. 4.
	Thompson, Lynwood B.	Belfast, Me., 22 Miller St.
1913	Amadon, Arthur F.	Troy, N. Y., 314 Eighth St.
	Fiske, Raymond H.	Lincoln, Me., Surveyor.
	Savage, Ernest T.	Bangor, Me., 195 Garland St.
	*Webster, Ernest J.	
1914	Atwood, Charles R.	Rumford, Me., 582 Prospect Ave.
	Chapman, Chauncey W. L.	Orono, Me., Forestry Instructor U. of M.
	Smith, Leon C.	Hancock, Me.
	Towner, Wayland D.	Orono, Me., Alumni Secretary U. of M.
1915	Brockway, E. M.	Brockton, Mass., County Agent Plymouth County.
	Douglas, C. Hazen	Peabody, Mass., 110 Lynn St.
	Fogg, Harry W.	Eustis, Fla.
	Fowler, Henry W.	Chicago, Ill., Salesman, Borden's Farm Products Co.
	Hill, William B.	Milo, Me., American Thread Co.
	Norton, Chester H.	Somerville, Mass., 22 Warner St.
	Patten, Montford E.	Bangor, Me., R. F. D. 2.
1916	Rendall, Raymond E.	Melrose, Mass., Alfred, Me., 466 Lebanon St.
	Shaw, Earl E.	Bangor, Me., Box 923, Lincoln Pulpwood Co.
1917	Andrews, Harold P.	Winterport, Me., Prin. High School.
	Hanley, Edward K.	Thomaston, Me., Great Northern Paper Co.
	Hansen, George E.	Worcester, Mass., 692A Main St., Room 4.
	Libby, Philip N.	Gray, Me.
	O'Donoghue, William F.	Atlanta, Ga., care R. S. Meador, Pch. Tr. Rd.
	Wahlenberg, Wm. G.	Miles City, Mont., Forest Service, Custer Nat'l Forest, Dist. 1.
1918	Annis, Howard L.	Lincoln Center, Me.
	Calhoun, Lewis T.	Old Town, Me., care J. W. Sewall.
	Lemont, Herbert R.	Bath, Me., 564 Washington St.
	Parmenter, Robert B.	Boston, Mass., State Forestry Dept.
	Perkins, Carleton L.	Athens, Tenn., Forest Service.
1919	Anderson, Carl A.	E. Bridgewater, Mass., 147 Elm St.
	Faulkner, George	So. Hanson, Mass.
1920	Averill, Robert W.	
	Averill, Walter B.	
	Crawshaw, Thos. H.	Glens Falls, N. Y., Finch, Pruyn & Co.

Class	*Name*	*Address*
1920	Stevens, Wingate I.	Portland, Me., Oxford Paper Co.
	Upham, Warren P.	Spokane, Wash., 1308 Old Nat. Bank Bldg.
	Woodman, Roger F.	Plymouth, N. H., 35 Langdon St.
	Friend, Francis H.	Skowhegan, Me., Abitibi Power & Paper Co., Iriquois Falls, Ont.
1921	Barron, John Stehley	Spokane, Wash., 1308 Old Nat. Bank Bldg., Diamond Match Co.
	Stephens, Raymond D.	Auburn, Me., 155 Pleasant St., with J. W. Sewall.
1922	Demeritt, Dwight B.	Sangerville, Me., at Yale Forest School
	Dow, Robert W.	Biddeford, Me., 135 River Rd.
	Huckins, Leroy S.	Lubec, Me.
	Nickerson, Osgood A.	Bangor, Me., 67 Parkview Ave., Bond Salesman.
	Tabbutt, David W.	Sanford, Me., 307 Main St., Teaching.
	Watson, Myron E.	Sanford, Me., 118 Main St., Blister Rust Work.
	Woodman, Charles L.	Plymouth, N. H., 35 Langdon St., Mass. Conservation Commission.

*Deceased.

Roster of Students

The following is a list of students in actual attendance at the Forestry School during the year 1922-23. The information after each name is in the following order: I, name; 2, home address; 3, fraternity; 4, honors.

———1923———

Bisson, Adolph L., Skowhegan, Maine; Kappa Sigma; Xi Sigma Pi, Sophomore Owls.

Foss, William M., Bingham, Maine; Delta Tau Delta; Xi Sigma Pi, Sigma Delta Chi.

Jones, Clayton F., Randolph, Vt.; Xi Sigma Pi, Phi Sigma.

McKechnie, Ishmeal, Sanford, Maine; Phi Eta Kappa; Xi Sigma Pi, Football, M.

Stevens, Ronald C., Kingfield, Maine; Phi Kappa Sigma; Xi Sigma Pi, Sophomore Owls.

Wellington, William H., East Dover, Maine; Lambda Chi Alpha; Xi Sigma Pi.

———1924———

Baker, Gregory, Bingham, Maine; Phi Kappa Sigma; Xi Sigma Pi, Phi Sigma, Editor-in-Chief of *"The Maine Forester"* 1923.

Christopherson, Wilbur R., Gloucester, Mass.; Phi Gamma Delta; Xi Sigma Pi, Pres. of Forestry Club, 1922-23.

Hills, Frederick G., Bangor, Maine; Xi Sigma Pi, Sigma Delta Chi, Art Editor of 1924 *Prism*, Art Editor of *"The Maine Forester"* 1923.

Hutchins, Bently S., Bangor, Maine; Sigma Nu; Scabbard and Blade, Bus. Mgr. of 1924 *Prism*, Sigma Delta Chi.

Hutchinson, Ralph M., Houlton, Maine; Phi Kappa Sigma; Xi Sigma Pi, Sophomore Owls, Junior Masks, Mgr. of Varsity Baseball, 1923.

Lockwood, John E., Old Town, Maine.

McKechnie, Karl H., Fairfield, Maine; Delta Tau Delta; Xi Sigma Pi, Associate Editor of *"The Maine Forester"* 1923, Varsity Baseball.

Merrill, Julian H., Orono, Maine; Alpha Tau Omega; Sec. and Treas. of Forestry Club, 1922-23, Bus. Mgr. of *"The Maine Forester"* 1923.

Morrill, Paul M., Biddeford, Maine; Xi Sigma Pi, Associate Art Editor of *"The Maine Forester."*

Sargent, Philip A., Sargentville, Maine; Xi Sigma Pi, Phi Sigma.

Sewall, Rufus, Wiscattet, Maine.

Stearns, Drew T., Hebron, Maine; Sigma Nu; Track, "M", Capt. of Hockey, 1922-23.

Sweatt, Chester V., Andover, Maine.

Webb, George H., Bartlett, N. H.; Beta Theta Pi; Associate Editor of *"The Maine Forester"* 1923, Track, "M."

Wescott, Donald H., Jonesport, Maine.

Wiswell, Harry S., Machias, Maine; Phi Gamma Delta.

York, George O., Old Town, Maine; Phi Kappa Sigma.

———1925———

Adams, Thomas E., Jackman, Maine; Assistant Bus. Mgr. of *"The Maine Forester."*

Burton, Raymond H., Portland, Maine; Sigma Nu.

Campbell, Charles O., Gray, Maine; Phi Eta Kappa.

Connor, Lawrence C., Bangor, Maine; Kappa Sigma; Asst. Mgr. of Football 1923, Sophomore Owls.

Dawson, Leroy L., Vergennes, Vt.

Dressel, Donald B., Bangor, Maine.

Drisko, Sewall M., Harrington, Maine.

Fitzhenry, Raymond C., Lubec, Maine; Kappa Sigma.

Gross, Elroy H., Waldoboro, Maine.

Gruhn, George H., Columbus, Wis.; Kappa Sigma; Football, "M". Sophomore Owls.

Higgins, Marshall E., Townsend, Mass.; Lambda Chi Alpha.

Houghton, Amory M., Bath, Maine; Alpha Tau Omega; Asst. Bus. Mgr. of *"The Maine Forester"* 1923.

Kaakinen, Aaro, Fitchburg, Mass.

Kelleher, George F., Ware, Mass.

Linekin, Manard G., Thomaston, Maine; Sigma Adpha Epsilon.

Linscott, Paul H., Brownfield, Maine; Beta Theta Pi.

Mallory, Walter J., Gorham, N. H.; Theta Chi.

Moody, Charles F., Saco, Maine; Kappa Sigma.

Parmenter, Arthur N., Brockton, Mass.; Sigma Alpha Epsilon.

Phipps, Carl L., Gorham, N. H.; Kappa Sigma.

Savage, Hoyt B., Milo, Maine; Theta Chi; Football, "M."

Shermurne, Lauris N., Newport, Maine; Beta Theta Pi.

Smith, Hollis A., Haverhill, Mass.; Phi Kappa Sigma, Sophomore Owls.

Stowell, Hubert K., Dixfield, Maine.
Sullivan, Daniel L., Reading, Mass.
Tyndall, Balfour S., Brockton, Mass.; Delta Tau Delta.
Whitney, Sprague R., Framingham Center, Mass.; Xi Sigma Pi.
Winter, Harold L., Livermore Falls, Maine; Sigma Phi Sigma.

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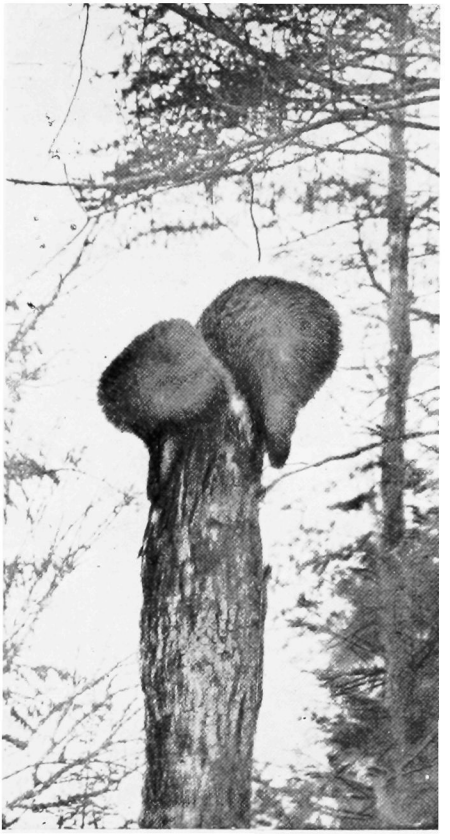
Anderson, John R., Bangor, Maine.
Atwood, Paul E., Bangor, Maine; Kappa Sigma.
Burr, Maurice H., Old Town, Maine.
Diehl, Richard B., New Britain, Conn.
Doerr, Albert H., New Britain, Conn.; Phi Eta Kappa; Football "M."
Dowd, Clarence M., Worcester, Mass.; Sigma Phi Sigma.
Eaton, Henry B. II., Calais, Maine; Phi Gamma Delta.
Hamer, Henry N., Methuen, Mass.
Jackson, Ralph C., Portland, Maine; Lambda Chi Alpha.
Johnson, Reginald F., Hancock, Maine; Kappa Sigma.
McFadden, Kenneth E., Wiscasset, Maine.
MacGregor, Clarence A., Calais, Maine; Sigma Chi House.
Magill, Eugene S., Caribou, Maine.
Schoeder, John K., Newcastle, Maine.
Small, Howard H., Portland, Maine.
Snow, Oliver R., Northeast Carry, Maine; Lambda Chi Alpha.
Somers, Vernon H., Bangor, Maine.
Standish, Myles H., Gardiner, Maine; Theta Chi.
Stewart, Robert C., Dorchester, Mass.
Turner, Robert E., Walpole, Mass.; Phi Eta Kappa.
Weatherbee, Francis E., Lincoln, Maine; Sigma Nu.
Wheeler, Gerald S., Bangor, Maine; Phi Gamma Delta.
Wilkins, Austin H., Hartland, Maine; Phi Kappa Sigma.
Wing, Gerald E., Flagstaff, Maine; Sigma Alpha Epsilon.

Editorial

The forestry club takes its maiden plunge into the literary pool. Whether it strikes the jagged rocks and quietly sinks to the bottom or makes a clean dive and comes up ready for the long swim is yet to be determined. In other words the future of "*The Maine Forester*" is still in the hands of the gods of fate.

We realize that this publication is far from perfect and are anxious for constructive criticism but offer no apologies.

We wish to express our sincere appreciation of the kind co-operation and assistance of the contributers and advertisers who have made possible the publishing of this magazine.



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