

The Profession of Forestry

INCLUDING

An Address

BY

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AND AN ARTICLE ON

Study in Europe for American Forest Students

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Also a List of Reference Books on Forestry

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PREFACE.

“As yet forestry in America is young. In its progress toward maturity it must develop new methods to meet the unfamiliar conditions with which it has to deal. Rules and practices which were devised without reference to American forests cannot always be counted on to fit American needs. Perhaps nothing has done more to retard the progress of forestry in America than the disregard of its intimate and friendly relation to lumbering—a relation which was almost wholly overlooked for years after the advocates of forest protection first brought their cause to public attention. In the eyes of many of its early friends the lumberman was a vandal whose inordinate greed called for constant denunciation, while to the lumberman the ideas of the forest reformer had no relation whatever to the affairs of practical life. Since that early day lumbermen and foresters have been drawing together, and much progress has been made toward the right opinion, which may be expressed by saying that lumberman and forester are as needful to each other as the axe and its helve. Without the axe the helve has little weight; without the helve the axe is lacking both in reach and in direction.”—*Gifford Pinchot: The Adirondack Spruce. Preface.*

THE PROFESSION OF FORESTRY.

An address delivered before the students of Yale University.

(Reprinted from the Yale Alumni Weekly by permission. Revised.)

BY GIFFORD PINCHOT, FORESTER OF THE U. S. DEPARTMENT OF AGRICULTURE.

THE subject matter of the profession of Forestry is equally distinct from street tree-planting on the one side and landscape architecture on the other. It has to do with wooded regions, with the productiveness of forests, chiefly through conservative lumbering, and, in the treeless parts of the United States, with planting for economic reasons. Except for a comparatively small area of desert land in the West, the whole land surface of the United States is included in the possible field of work for the forester. How extensive this field is will appear from the fact that the woodland in farms alone, in 1890, comprised more than 200,000,000 acres, or more than four times the area of the National forest reserves.

THE OPENING.

The first question asked by a man who has in mind forestry as his profession usually concerns the chance of finding work when his preparatory study is ended. The sources of demand for trained foresters at the moment are comparatively few, but they are increasing with remarkable rapidity. The great lumbering concerns, such as the International Paper Company, which controls more than 1,000,000 acres of Spruce land, are rapidly getting to see that it is worth their while to employ trained foresters. One Yale man has been employed by the company just mentioned; another college graduate, not a Yale man, has charge for a company of certain phases of its lumbering in Maine; and five lumber companies have already applied to the Bureau of Forestry for working plans for the management of their tracts. The demand from this source may be expected to increase very

greatly within the next ten years, as the great holders of timber land come to realize more generally that conservative lumbering pays better than the destructive methods now employed.

In a similar way mining companies will eventually find it to their interest to employ foresters. The owners of game parks have already taken steps in this direction. Private owners of large areas such as Biltmore Forest in North Carolina, the property of George W. Vanderbilt, Ne-Ha-Sa-Ne Park in the Adirondacks, owned by W. Seward Webb, a Yale man, and the contiguous land held by the Hon. Wm. C. Whitney, another Yale man, are already under the management of trained men. The need of foresters to care for the forest interests of the several States is already making itself felt. States such as New York, with its million and a quarter acres of forest reserves; Pennsylvania, with its newly-created Department of Forestry and its growing State forest reserves; Michigan, with its Forest Commission and its State reserves which are being rapidly formed; North Carolina, with its Geological Survey thoroughly interested in forest study; New Jersey and Maryland, of which the same is true; Maine, New Hampshire and several others, with their Forest Commissions; Minnesota, with its Fire Warden law, its State Park and the beginning of a system of State forest reserves, and other States are rapidly creating a demand for foresters, and would be doing so still more rapidly if men were available to do the work. Finally, the National Government already employs a considerable number of men, and is rapidly extending the work which requires them. The General Land

Office, to which is intrusted the police and patrol of the National forest reserves, has this year an appropriation of \$300,000 for the care and protection of about forty-seven million acres of forest reserves. At present there are no trained foresters among its officials, but in view of the vital importance of forest preservation, especially in the West, and of the great and growing public interest in its extension, this system of appointment cannot be expected to last.

The Bureau of Forestry, which is charged with the general progress of forestry and the interests of private forest lands, in the subdivision of the Government's forest work, is at this moment unable to find enough suitably trained men to supply its needs. It would be easily possible, it is true, to secure Germans or other foreigners, but a considerable experience has convinced me that, except in rare cases, such as that of the present forester to the Biltmore Estate, the attempt to use foreign-born men trained abroad is not likely to succeed.

COMPENSATION.

The second question asked by the prospective forester very often relates to the rate of pay. I cannot answer this question any more accurately than by saying that trained foresters now receive about the same rate of pay as instructors and professors at Yale. Those in the employ of the Bureau of Forestry receive from \$720 to \$2,500 a year. Scientific work under the Government is always underpaid, and it is most probable that those foresters who enter the service of lumber companies or other commercial organizations will fare better. It is even possible that a few men may develop such skill that they will be called in consultation over specially difficult problems. Such work will naturally pay well.

As with teaching, so with forestry; by no means all the compensation comes in the form of dollars. While the life of the forester in the field is often rough, many times exceedingly hard, and always without most of the comforts of life, it is to those of us who have been following it

the most delightful of occupations. Briefly stated, it deals, on the scientific side, with the life-history of forests and forest trees, with their behavior in health and disease, their reaction under treatment, and their adaptation to and effect upon their surroundings. On the economic side, it has chiefly to do with reconciling the perpetuation of the forest with the production of timber. Measurements of the stand of timber per acre, and of the rate of growth of single trees and whole forests by counting rings, and subsequent calculations, often form a considerable part of a forester's work. There is often a great deal of office work. It is by no means the easy existence it has often been supposed to be by the many men who have taken up forestry, and then have dropped it. But it has a charm which lies perhaps first of all in the fact that in the United States it is almost an untried field.

ORIGINAL WORK DEMANDED.

Unless forestry as a profession has qualities to recommend it other than those I have already mentioned, it would scarcely be worthy of consideration before many other lines of work. It has, however, two peculiarities in which it stands somewhat by itself. In the first place, because the field is practically untouched, a forester finds himself compelled to do original work at every turn. The pleasure of investigation of this kind is very real, and to those of us who are practicing forestry it is one of its two great attractions. The second lies in the fact that because forestry is almost unknown in the United States, in no profession is it easier for a man to make his life count. I need not dwell further on the vastness of the interests it touches nor the great utility of forestry to the nation, but I should like to emphasize this statement—in few other professions can a man lead so useful a life.

WHAT THE PROFESSION DEMANDS.

These are the things which forestry offers. Now as to what it demands. In the first place success in forestry, as in any other profession, must come largely from

the possession of what we know so well as "Yale spirit," the habit of accomplishment and the willingness to do the work first and count the cost afterward. It is interesting to note here that a majority of the young Americans who have fitted themselves for technical forest work are Yale men. Whatever the connection or the special fitness may be which brings Yale men into this line of effort and achievement, I should like to see the recruits from Yale come in fast enough to maintain something like the old proportion.

After the "Yale spirit" comes soundness of body and hardiness, for foresters must often expect the roughest kind of life in the woods. The helpmeet of hardiness is a contented spirit. There is no more pernicious character than a grumbler in camp, and nothing will help so much to get field work done as the willingness to bear privation cheerfully.

A man who takes up forestry will often find the field work exceedingly or even unexpectedly hard, for it combines severe mental work with severe bodily labor, under conditions which make each one peculiarly trying. Work in the woods differs profoundly from camp life as it is usually understood. Foresters get a certain amount of hunting and fishing, and every forester will do his work better for a wholesome love of the rod and gun, but the line between work and play is still sharply drawn.

I have been speaking of the fundamental qualities which are more or less necessary to success in any vigorous outdoor life. There are several additional capacities with which the forester should be well endowed. The first of these is the power of observation. It is often difficult to say *a priori* whether a man has it or not. In many cases it makes itself known as a love of hunting or fishing, or a general pleasure in all outdoors. To the forester it is one of the most essential qualities in his mental equipment. Finally, perseverance, initiative, and self-reliance are peculiarly necessary, because the forester is so often withdrawn from the inspection of his superiors and alto-

gether dependent on his own steadfastness and devotion to keep him up to the high standard he should set himself for his work. In a new field of effort this is especially likely to be true. It is one of the distinguishing characteristics of the profession of forestry.

PREPARATION.

The preparation for forestry as a profession should, as a rule, begin with a college or university course, and, as a rule, should be continued after graduation for not less than two years.

The first step in the preparation for forestry as a profession is for the possible forester to discover whether his conception of forestry is a right one. To do so he must get into the field. The Bureau of Forestry made some provision to meet this requirement when it established the grade of Student Assistant, with pay at the rate of \$300 a year. Men who take this position are required to assist in the work of the Bureau with the same steadiness and devotion to duty as in all its other members, and they are employed so far as possible in work of peculiar value to them and at the same time of use in the general progress. All their expenses are defrayed while in the field. In addition to the specific advantage this grade offers in enabling a man to take part in actual forest work under a trained forester, and so to discover what the profession really means, it has a special usefulness in enabling men who cannot at first afford fuller preparation to support themselves for a time while getting the first step in their forest education. It does not replace a forest school, nor is it the intention that it should. No future forester who can possibly afford to take a course, either at Cornell, under Dr. Fernow, at Biltmore, under Dr. Schenck, or at Yale, under Professor Graves should fail to do so. I repeat with all emphasis that work as a student assistant cannot take the place of study at a forest school.

The number of positions as Student Assistant is decidedly limited, and graduates or students of forest schools will always be preferred for appointment. No one will be received as Student Assistant

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who has not definitely made up his mind to take up forestry as a profession, although of course no pledge to that effect is required.

In my judgment the best course for the future forester to pursue, so far as his systematic training is concerned, is first, a full course at a university during which he should acquire some knowledge of the auxiliary subjects necessary in forestry; second, at a forest school, preferably where practical work in the woods goes hand in hand with theoretical instruction; and third, a year abroad. The latter is of the greatest value, because in this country forestry is too young to show the effect of silvicultural treatment on the various kinds of forests; yet it must be remembered that much of what is learned

abroad must be unlearned later. This experience in a region where forestry is of old date is, in my judgment, a most essential portion of a forester's education. It goes without saying that vacations, as far as possible, should be spent in the woods.

Forestry on its executive side is closer to lumbering than any other calling, and a good knowledge of the lumberman's methods is an essential part of a forester's education. But it must not be forgotten that it offers a field for pure research of the widest and most attractive character for those who are inclined and can afford to occupy it. It is so broad a subject that as yet we do not quite know what its development and its subdivisions are going to be.

GIFFORD PINCHOT.

STUDY IN EUROPE FOR AMERICAN FOREST STUDENTS.

BY OVERTON W. PRICE.

Superintendent of Working Plans, Bureau of Forestry.

THE training necessary for an American forester has not yet been fixed by hard and fast lines. The necessity, however, for a man to map out his course and to supply his deficiencies largely on his own responsibility has disappeared with the establishment of American forest schools. They have already done much to set a high standard for technical training and thereby to hasten greatly the sound development of forestry in this country. With the creation of opportunities for systematic study at home, it is natural for the forest student to jump to the comfortable conclusion that study abroad is no longer essential. He soon becomes aware also of the familiar fact that European forest methods can rarely be applied without modification here, and this may seem to him to remove all practical advantage from studying them on the ground. He sees, too, that there are now fewer trained men in this country to supply the need for foresters than there are likely to be in the future, and he naturally

wants to get his start with as little loss of time as possible.

It is true that there are few European forest methods which we can use entirely without modification. It is also true that European methods have been rich in suggestion in the application of practical forestry to American forests. The American forest student who puts aside a chance to see forestry in Europe makes the same sort of mistake that a medical student would be guilty of, who ignored an opportunity to walk the best hospitals. The work which falls to a forester here requires of him a more comprehensive grasp of his profession than is needed where forestry is already established upon a firm footing. In Europe, forest management, in order to be successful, has only to follow those methods which have been proved advisable. In this country, the forester must depend for the most part upon his own ability to make the most of forest problems. And since he has but few patterns to follow at home, it would seem that the more