

# FORESTRY as a PROFESSION

SEED BEDS  
IN NATIONAL  
FOREST

A NEW OCCUPATION  
FOR THOSE FOND OF  
OUTDOOR LIFE AND  
HARD WORK

ROAD IN  
NATIONAL  
FOREST

RANGER  
MEASURING  
TIMBER

RANGER'S CABIN

THERE are in round numbers nearly 195,000,000 acres of national forest land in the United States, an area more than six times as big as New York state. This vast territory is divided into 149 national forests, each in charge of a forest supervisor.

Forestry is a recent profession in this country. Ten years ago there were not a dozen professional foresters in the land. A man who wanted to study it as a science had to go to Europe to get his schooling. The business men of the cities did not understand how one could afford to invest money in the growing of trees. They did not differentiate between the preservation of trees and not cutting down trees.

Since the government has made a science of forestry the young man who is interested in the subject can become a forester just as he can become a doctor or a lawyer, except in becoming a student in forestry he must go farther from home to attend a professional school. And now many more trained men are needed than the schools are turning out.

The western part of the country is divided into six forest districts, each in charge of a district forester. Only the general administrative heads of the service and the men engaged in government forestry work in the eastern part of the country retain their headquarters in Washington. The practical management of the forests on a business basis is being pushed forward more effectively than at any time since the government began the work.

Thirty-nine young graduates of nine American forest schools were appointed forest assistants in the service in 1908. The appointments for the current year have not yet been made. The appointees last year were drawn from the various forest schools as follows: Yale, 18; Biltmore, 5; University of Minnesota, 4; University of Michigan, 4; Michigan Agricultural College, 3; Harvard, 2; Cornell, 1; University of Iowa, 1; University of Nebraska, 1. Their appointments were based on their passing the regular civil service examination, the only avenue to employment as a forester under the government. In addition to these graduates of forest schools, fifteen other candidates passed the examination.

Forest assistants are men who have completed their preliminary training for the profession of forestry, as the graduates of a law or medical school

have completed theirs, and are ready to enter on practical work. Until they have gained experience in their work, however, their positions are necessarily subordinate. They are at the foot of the ladder. In order to mount higher they must prove their fitness. The government pays them \$1,500 a year at the start.

For the general administration of the national forests the western half of the United States is divided into six districts, with headquarters at Missoula, Mont.; Denver, Colo.; Albuquerque, N. M.; Ogden, Utah; San Francisco, Cal.; and Portland, Ore. That the administration may be most effective the various offices have been established at Washington and at the district headquarters, each in charge of trained and experienced men directing specialized lines of work.

The object of the forestry service is to foster proper use of the forest resources of the country, including private and state as well as national forests. Upon the latter every resource is for use in the best interests of all citizens of the whole country.

To state it concisely, the forest service is endeavoring to bring about the practice of true forestry—"the preservation of forests by wise use." The keynote of the whole service and the watchword of every member is conservation, the devotion of every resource to the best possible end and the preservation of all renewable resources for future generations.

How to Become a Forester.

Mr. Gifford Pinchot, of the forest service of the United States agricultural department, who has devoted himself to the research of the profession and is an authority on the subject, lays down the general principle that the forester must study the laws of nature which govern the growth of trees singly and in mass. He must understand the life activities of the tree, how it produces and sows its seeds, what it needs in order to thrive and how it builds itself and builds up its structure. All this he calls tree botany. In addition, the forester must know the laws that govern the life of the forest itself—a society of trees. This, says Mr. Pinchot, is sylvestics, the science of the forest as a product of nature. Like the science of agriculture, forestry is a practical science. If a man thinks of buying or selling a piece of woodland he should know how much wood is on the land, how many board feet of lumber, how many telegraph poles or fenceposts, how much cordwood, the standing

trees will make. If one contemplates investing in a young forest he should know how long it will take the trees to grow up and how big a harvest he can count on when the trees are grown. This is the beginning. When one has made these steps a host of questions confront the investor. For example, where is the next generation of trees to come from? Which trees will it pay to cut now? How is the timber to be got out of the woods? What will it cost to get trees out with the least harm to the future forest? What steps should be taken to prevent loss by fire, that curse which so often follows lumbering and which has turned millions upon millions of acres of good timberland into barren wastes.

The element of business and the knowledge of the naturalist are necessary to the success of the forester. He must have the power of observation, a fondness for nature and the ability to penetrate her secrets. Good practical judgment and the ability to meet and handle men are necessary requisites to success in the profession of forestry.

As in other businesses, the forester should be a man of resources. The forester should command the respect of the rough and ready men whom he will meet. The native who has grown up in the fastnesses quickly recognizes virility and genuineness of character. He will never tolerate pretense and quickly resents the assumption of superiority. The successful forester should have a vigorous mind and a vigorous body. He should be willing to undergo the privations of rough life. He must insist upon things being done and never flatter when they are not going his way. He must be able to work out his own problems, always remembering that he must rely solely on himself.

Men with special experience are required to carry on the many lines of work in forestry. Those who prepare and tend the nurseries, for example, must be experienced in raising and caring for young trees. The lumber-

man who cruises and estimates timber, helps to plan logging operations and sees that the scaling is correctly done and that the rules for logging are properly observed must be an experienced and capable woodsman. To put it more plainly, he must be hard headed without being dogmatic, practical and always thoroughly honest and be an abashed citizen with an abundance of experience.

The trained foresters are usually forest school graduates. Their training is somewhat parallel to that of the civil engineer, and particular attention should be paid to the study of botany, to the life and growth of forests and to all that affects their development and usefulness. In addition to his scientific training, the American trained forester must have abundant practical experience in the woods, on the range and in the mills, for he must have a thorough understanding of all conditions before attempting to work out a system of good business management of any forest.

Sources of National Wealth.

Mr. Pinchot is correct in his statement that forestry is not merely a branch of landscape gardening; it is the art of making forests useful. The field of forestry is economic. Forests are one of the great sources of national wealth. Each year the forests of this country produce more than a billion dollars' worth of wood products, as much as if not more than the yield of all the mines in the country—gold, silver, copper, iron, coal and all the rest. The lamentable fact is that the country is gathering this enormous and most valuable product three times faster than the forests are growing, and very largely by methods which destroy the forests themselves. The only escape lies through the general practice of forestry.

In Mr. Pinchot's opinion, the timberlands of the country are suffering from neglect, just as an unweeded garden suffers from the same cause. The forests have been left devastated

and by more scientific cutting of the national growth. About the beginning of the eighteenth century plantings were begun in Scotland and later in Ireland. Now the artificially planted areas exceed the natural ones. About this time there was great activity in the introduction of foreign species of forest trees, many of which were so well adapted to their new condition that in places there are today more exotic than native trees.

In France, Belgium, Germany and other parts of Europe extensive areas of forests are now under systems of management that result in increasing rather than in decreasing production. Old native forests have been cared for and denuded areas reforested. In Germany and France the management of forests has been most systematically and scientifically conducted. Government schools are maintained for the education of skilled foresters, and special attention is paid to this important subject.

Governmental, communal and private forests alike are so managed as to provide the various objects for which they were designed. The use of forests as a means for reclaiming tracts of almost barren sand and for protecting regions against wind shifted sand are well shown by some of the forests of France.

PHILIP E. DARWIN.

THE RANGER AND HIS WORK.

A forest must be looked after by men who live in it or near it. These men are known as rangers. The duties of rangers consist in patrolling their districts, extinguishing fires, the conduct of local business, marking timber for cutting and supervising operations when lumbering is under way. The rangers are very appropriately called the noncommissioned officers of forestry. Most of the rangers in the government service of forestry have had no training in special schools, but they are under the classified service and are admitted only by passing examinations. These examinations are very practical. They include tests of a man's physical powers, of his ability to ride, shoot, handle pack horses and take care of himself in the woods, and also of his

knowledge of surveying, scaling timber and other subjects incidental to the proper discharge of his duties.

DEMAND FOR FORESTERS.

Timber land owners, lumber companies, educational institutions and states which are beginning to take up forestry for themselves are on the lookout for good men. The country has realized that it must have wood, that it is using up what it has, and that the conservative management of forests as investments by private owners and as public utilities by the state and nation are not dreams of a distant future, but practical matters of pressing importance. The young man who is interested in this work and desires to take it up need have no fear that the profession is overcrowded. The demand for young men who will apply themselves is such that the old cry so familiar in other walks, "No help wanted," will not be heard in forestry for many years to come.

INTERESTING ITEMS.

**England's Church Town.**  
Exeter has more churches for its size than any other town in England. It has one cathedral, thirty-four Anglican churches and seventeen Non-conformist churches, besides the Roman Catholic chapel.

**Money From Gallstones.**  
A Chicago slaughter house makes thousands of dollars monthly by saving the gallstones found in the gall bladder of animals and exporting them to Japan, where they command a high price.

**Standard Marks For Gold.**  
The standard mark for gold of 22 carats is in England a lion passant, in Ireland a harp crowned, for Glasgow a lion rampant and for Edinburgh a thistle.

**A Soap Bubble's Film.**  
The thinnest thing in the world is the film of a soap bubble, of which it would take 50,000,000 to measure an inch.



SOME TYPES OF HUMANITY AT A POPULAR SUMMER AMUSEMENT RESORT.

WILL JONES