

Education of The Forester and Specialization in The Government Enterprise

BY H. D. COCHRAN

YOU are in the serious business of getting an education. It costs money, time, and energy. Perhaps you have to earn part of the money. You know, then, that it does not always come easy. Four years, or five or six, possibly more—long hours, hard work. Others are earning a comfortable living, getting in on the ground floor. Yet current opinion is all in favor of higher education and you are following the approved procedure. But are you actually getting an education? What are the marks of an education? After a little thought you will decide the question is not a simple one.

Does your presence on the campus provide the answer? No. Does your record of credits—or even your degree, if you already have one? Hardly. Does your rapidly expanding store of knowledge settle the question? For our purposes, let's still say no.

An educated man needs knowledge—lots of it. But he needs it the way a doctor needs a stethoscope. In both cases it is the way the thing is used that counts. Many juniors in college, it has been said, know more about Physics than Sir Isaac Newton but there is a difference in the way they use what they know. In forestry especially it is the way you use your knowledge that counts—that shows whether you are educated or merely schooled.

Forestry is as broad and varied as living. That is one reason why we like it. It requires the textbook and the test tube, but it takes them out where they become a part of the everyday lives of men and women and children everywhere. Government forestry is no exception. In fact applied forestry in the woods was started in this country by the Government. It started neither as an impractical intellectual pursuit nor as a hard-boiled money-making enterprise, but as a practical public service to permit the maximum beneficial use of the vast resources in and related to our nation's forests. Gifford Pinchot set the keynote back at the turn of the Century when he organized the Forest Service, and he did it so firmly, clearly and convincingly, that the tradition still pervades the whole realm of forestry and has spread to other forms of conservation. In his book "Breaking New Ground" published shortly before his death, he said:

Our war had many fronts. My first great purpose was to start practical Forestry going in the woods. * * *

The business of foresters is to manage forests, as the business of farmers is to manage farms. The business of the new Division was to break away from exhortation, indirection, and inhibition, and get down to the brass tacks of spreading the gospel of practical Forestry by creating practical examples in the woods. * * *

The job was not to stop the ax, but to regulate its use. For that the whole stream of public thinking about the forest had to be shifted into a new channel—that of the few forest preservers no less than that of the many forest destroyers. A nation utterly absorbed in the present had to be brought to consider the future. The ingrained habit of mind of the best part of a hundred million people about a fundamental necessity of human life had to be changed.

There were two possible ways of going at it. One was to urge, beg, and implore; to preach at, call upon, and beseech the American people to stop forest destruction and practice Forestry; and denounce them if they didn't.

This method got onto the platform and into the papers, but it never got into the woods. It had been followed for at least a quarter of a century, and still there was not a single case of systematic forest management in America to show for it.

The other plan was to put Forestry into actual practice in the woods, prove that it could be done by doing it; prove that it was practicable by making it work.

My good luck led me to choose action instead of exhortation.

This is important because it points the way, in part at least, to what is still expected of a forester in any one of the many kinds of Government conservation work he may undertake.

Many Government agencies are employing foresters today. The largest single employer is the U. S. Forest Service in the Department of Agriculture. There are about 2,400 professional foresters in that organization engaged in practically every phase of administration, research and cooperative work related to forestry. Foresters are employed by the Extension Service; the Soil Conservation Service also employs foresters—a very much smaller number—not only for straight forestry work but also for other, related, forms of land use. Then in the Department of Interior there are the Bureau of Land Management, the Indian Service and the Park Service that employ foresters for various kinds of administrative work. Other Federal agencies have forest properties that require the administrative services of foresters.

Among these are the Army and Navy. The Internal Revenue Service needs tax evaluation experts trained—and experienced—in forestry. Then there is a whole new field of Government activity in foreign cooperation forestry where the services of experienced foresters are required. There is "Point IV"; activity under MSA; and other more or less similar work under the Department of Agriculture's Office of Foreign Relations. Related to this work as carried on by Federal Government agencies is the international program of the United Nations (Food and Agriculture Organization) that offers opportunities for the employment of American Foresters. Government forestry, of course, is not limited to Federal agencies. Nearly all States and some cities and counties carry on programs that require the services of foresters.

Government forestry is equally varied as to functions. You can work in the lab or in the woods, in research or administration, or in teaching (most of our forest schools are in State Land Grant institutions) or extension. You can work with timber, forest influences, range, recreation, wildlife, products, or in any one of many combinations of these. You can work in a big organization that covers the nation or in a small local group. You can work alone if you insist, but usually it is team work. Certainly with all this variety you will find just the kind of a job you are most interested in. Perhaps it suggests the opportunity for specialization. There are many opportunities for specialization in forestry but they should not ordinarily be allowed to influence your undergraduate course very much.

In the first place you cannot cover all the courses and do all the things that make up an education and at the same time perfect a technical specialization in a four or five year college course. Since that is the case your first choice should be a broad education. It will better fit you to get a job and, usually, provide you with more satisfaction in your job than a highly developed specialization alone. Of course some specialization is unavoidable such as for the forestry and range options of the junior forester examination. Or perhaps you are interested only in logging engineering or products. In general, however, there are ten jobs for the general forester where there is one for the more narrow specialist. In the second place, you can probably better select and develop a specialization later, after a few years of employment. Perhaps you can develop it on the job, although advanced study is almost necessary and is encouraged for the research forester. In any case you should provide the broad preparation first, just as the builder finishes the whole foundation before he installs the plumbing or decorates the front hall. It is well to put the foundations down deep and make the footings broad.

Maybe we had better get down to cases and talk about what a Government forester actually does, regardless of where or with whom he works. Is there any common denominator that will enable us to do so briefly and simply? Yes. There are several. The first is THE LAND, and applies equally to all forestry, Government or otherwise. Everything a forester does, as a forester, is related directly to the land. His business is to make the land produce. All forms of making land productive—whether for trees, water, forage, game, or recreational uses—are present in Government forestry.

The Forest Service, for example, has 180,000,000 acres of producing land in the national forests. The annual cut of timber is 4,500,000 M board feet, or about 10% of the total in the United States, with a value on the stump of \$50,000,000. That is nearly ten times what it was fifteen years ago. It is not yet up to the maximum capacity of the national forest timber stands but is to the point where there are many new and increasingly complex problems of management to challenge the full professional competence of the technically, trained foresters. Surveys, plans, appraisals, contracts, access road planning, marking and general supervision are all made much more intensive as the cut approaches local limits and as competition becomes keener for these products of the land. New problems arise in fire control and—fortunately with them—new opportunities for increased efficiency in meeting them. Timber use is developing more or less the same on other forest lands.

There is pasturage on National Forest land for nearly 10,000,000 head of livestock and hundreds of thousands of big game animals. There are the big game animals themselves and innumerable smaller game animals—a resource of the land—and the fish in the streams and lakes. Their value as a resource in themselves and the value of the scenic, health-giving surroundings in which they are found is attested by the millions of people that visit the national forests every year for hunting and fishing and other forms of outdoor recreation.

A glance at any relief map will show that most of the stream-flow in the United States has its source in the highlands included in the national forests, especially in the West. Conserving usable water and increasing its availability is an integral part of every resource management problem on national forest land whether it is tree planting, timber cutting, grazing, wildlife management or recreation.

For every phase of administrative resource management there is roughly a counterpart in research. Thus we have at the Forest Service experiment stations, divisions of forest management re-

search, range, forest influences, flood control, fire, economics, and utilization (products). Similarly, in State and Private Cooperation, as carried on by the Forest Service, we have divisions of forest management and fire control. Over all, there are numerous service divisions such as engineering, operation, information and education, and personnel management. Thus, in addition to a wide variety of organizations and functions there are at least four general approaches to forestry: (1) administration, (2) research, (3) cooperation, (4) over-all management. But let's not forget the common denominator, maintaining and improving the productiveness of the land. Silviculture and agriculture are alike in more ways than the sound of their names.

There is another common denominator, and that is PEOPLE. Land, water, forests, people—what a magnificent combination to work with! That is the lot of the forester. It is hard to compare the importance of these and other elements in our scheme of things. But as to people, it seems self-evident that the answer is *sine qua non*, and it makes little if any difference whether we are thinking of the co-worker or the customer. They are all the same species. So we had better think about this side of forestry and its relation to education.

The place of people in forestry lends particular point to our initial question as to how we are going to use the knowledge we acquire and as to whether that will support the claim that we are really getting an education. Are we learning to appreciate the needs of people as individual human beings; are we learning to understand that regulations serve, and people govern; that people will accept and follow true leadership; are we learning what true leadership is; do we understand the proportion of firmness and kindness that gets results through leadership; do we appreciate the importance of speaking and writing clearly and persuasively? We could go on indefinitely, but perhaps it is clear we are trying to say that with all we may be learning about a number of technical and scientific specialties—there are lots of them and they are important—and with all we are learning about their application to the management of forests, we must also understand the relation of all this to people and how to make that relation effective. That means we must understand something about human nature—how to communicate ideas and get a response. Perhaps this will indicate some studies to pursue in the classroom—psychology, literature, philosophy, writing, public speaking—and some activities to get into on the campus.

Land and people are common denominators of all forestry. There is a third common denominator that applies primarily, but by no means exclusively, to Government forestry and is closely

related to people. That is PUBLIC SERVICE—the Government of, by, and for the people. Without it, Government forestry is pointless. First it calls for an attitude of mind, a zeal for fair play and social welfare. But that zeal may be pointless or even dangerous unless documented with a knowledge and an understanding of the principles that govern public service. These are unfolded by a study of history, political science, economics, sociology, public administration. They are important adjuncts to the forestry curriculum.

There is a fourth common denominator, and that is down-to-earth, practical MANAGEMENT. Successful management calls for the ability to identify and define and analyze a problem to be solved, or a job to be done; to prepare a sound plan; to go after—and get—the results that make up the solution or achievement. This we may learn from the study of science and mathematics and applied management, and from experience in campus activities. Successful management calls for more—the ability to work with others; to lead and to follow; to keep one's eye on the ball in spite of distractions and frustrations. These are some of the outstanding marks of an education. They are not to be acquired from any one course or group of courses, but from a synthesis of all the knowledge that is acquired and the thought that is put into it.

We have pointed out the almost unlimited variety of activities and working conditions that are characteristic of Government forestry. We have recognized the opportunity for specialization, but we have emphasized a few common denominators that point to the need for a broad, liberal education for foresters, and make it clear that the ultimate value of an education depends not on the amount of knowledge that we acquire, but how we use it.

FACTS ABOUT OUR AUTHOR

Mr. Cochran, who is presently employed as Chief of the Division of Personnel Management, U. S. Forest Service, has held that position since 1942.

He was born in Keokuk, Iowa, the son of a physician. He attended high school in Jacksonville, Illinois, and received his A.B. degree from Illinois State College in 1918, where he majored in Modern languages. He was granted a B.S. degree in Forestry in 1920 from Colorado State College and on April 20, 1945 the same school conferred upon him the honorary degree of Doctor of Science.

He served as a member of the City Club of Denver, the Colorado Engineering Council, and the Illinois State Alumni Association. While in college, he was affiliated with Phi Delta Theta social fraternity and Alpha Zeta, an honorary agricultural fraternity. He is a member of the

Society of American Foresters and for many years was active in the Boy Scouts of America.

He began his career in the Forest Service in 1920 on the Routt National Forest in Colorado and later served at Forest Assistant, Forest Examiner, Regional Forest Inspector, Chief of Public Relations and Associate Director on the Prairie States Forestry Project. He was promoted later to the position of Assistant Regional Forester in the Rocky Mountain Regional Office in charge of the Division of Timber Management, and later in charge of the Division of Personnel Management there, before transferring to his present position.

Mr. Cochran is married and the father of three sons.