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FOREST EXPERIMENT STATION FOR THE SOUTH

BY E. H. FROTHINGHAM, ACTING DIRECTOR

APPALACHIAN FOREST EXPERIMENT STATION

[Read before the Southern Forestry Congress at Atlanta, July 22, 1921.]

LESS than six months ago the Appalachian Experiment Station, like its twin sister in the South, was in the category of things hoped for but not confidently expected. Today they are a fact. The "neatness and dispatch" which characterizes this achievement are apparent rather than real. There is a hidden background of hard and persistent effort by public-spirited and determined advocates to whom the friends of forestry in this region must ever be grateful; for the final establishment of these long-cherished stations must be highly gratifying to those who have at heart the broad economic development of the South, and particularly to those who know something of the difficulties with which the management of the forests has contended in the lack of precise knowledge of the requirements and response to treatment of the many different tree species and forest types.

No forest region in North America, it may be confidently stated, presents so great a variety of forest problems or, as a result of their solution, such large promise of real benefit in money returns, as the Southern Appalachian region. Its forests, in which northern and southern species mingle and in which many of the finest trees of the East are abundantly represented, are the most complex, botanically and silviculturally, in the United States. With a copious rainfall, moderate temperatures, long growing season, and deep soils, it is admirably fitted for tree growth. Its rugged topography and high relief result in a profusion of forest sites and types unequalled elsewhere in the East. Potentially this region is a vast self-replenishing storehouse capable, if properly handled, of yielding a perpetual supply of diverse forest products for consumption by the great population which surrounds it.

This is, briefly, the subject matter with which the Appalachian Experiment Station will have to deal. The station comes into the region at a time when the virgin forests that once covered it have been reduced by lumbering to a small fraction of their former extent. Recurrent fires have crippled much of the second-growth on logged-over lands, have reduced the reproductive vigor of the virgin forest, and have left some large areas in a badly depleted or wholly wrecked condition. The chestnut blight threatens the entire destruction of one of the most valuable and abundant species. It will be the function of the station to discover, by intensive study and experiment, the ways and means of restoring tone to the forest, of reclothing the coves, slopes, and ridges with the most valuable and rapid-growing species, and of striking the delicate balance between the various uses of the forest which will yield the highest aggregate benefit to the entire region.

This is obviously a set of ideals that cannot be attained in a short time or without large effort. The methods of scientific research will be used. Research supplants conjecture by fact. It does so by means of experiment, which may be called concentrated experience. The old negro who said that "good jedgement am de results from experience, and experience am most ginerally always de results from po' jedgement" did not have the experimental method in mind. We are going after a basis for "good jedgement" in a different way. Forest research, in and out of experiment stations, has already advanced far enough to show how a great many of the problems in forestry may be attacked with good promise of success. Some of the methods of approach are round about and highly technical. Others are just ordinary common sense and close observation. We are fortunate in being able to begin our work by drawing upon an already existing experience in methods of forest research and the principles derived from them. With this as a starting point we hope to build up a knowledge of the forest requirements and the factors governing tree reproduction and growth in the Southern Appalachians that can be applied directly towards perpetuating the stands and improving them in quantity, quality and variety of wood products.

We are going to co-operate to the fullest extent possible with the private timber owners in the region. It happens, however, that this region contains large areas of national forest lands, which afford a splendid laboratory for field studies. It is too early in the history of the station to outline any definite program of investigations. This will involve a very thorough consideration of the needs of the region. So far as the national forests are concerned, these needs are already objects of administration, and can be stated under three general heads: (1) the development and upkeep of a continuous supply of lumber and other wood products, with reference also to their improvement in quality; (2) the restoration and maintenance of protection forests on the watersheds of streams rising in this region; (3) the development of incidental uses of the forests, such as grazing and recreation. It will fall to the experiment station to determine for different parts of the region and for different forest types how these results can best be accomplished. In general, therefore, the subjects we are going to study will probably be found mostly in the following classes: the characteristics and requirements of the different tree species, with a view to the encouragement of the better at the expense of the poorer; the classification of forest types and sites as a step toward the better management of each; the methods of cutting best adapted to securing the natural reproduction of desirable species; forest fires, introducing a wide range of questions in-

cluding their effects upon reproduction and young stands, and the use of controlled burning as a means of facilitating and protecting reproduction; methods of management which will produce forests offering the greatest protection to watersheds, the greatest regulation of stream flow, and the prevention of erosion; studies of the rate of growth of different species of trees under different conditions as a basis for determining the length of rotation and estimating the income from private or public forestry; tree measurements, to determine the volume in terms of various products; the development of methods of artificial reforestation, including both nursery practice and field planting; problems connected with the death of chestnut from the blight, and its replacement by other species; the proper place of grazing in the scheme of forest management; methods of brush disposal; and other subjects connected with the protection and rejuvenation of the forests and the increase of their value. In short, the problems ultimately to be covered are expected to develop the whole technical basis for the practice of forestry for the species, types and conditions of the region. The results obtained will apply not only to the administration of the national forests, but also to the handling of privately owned commercial tracts and even farm woodlots.

Manifestly this is a large order. With the small force of men and the scanty funds available a rigid selection of problems, in order of importance, must be made. Furthermore, not all the problems to be undertaken are susceptible of early solution. In many of them results can be obtained only after 5 or 10, perhaps more, years of periodic observation and measurement of sample plots. After all, however, these periods are not long, and the investments are small in comparison with the possibilities of increased productivity of the great areas which the experiment station will serve.

Just a word more about the station. Its technical force consists of three men in addition to the writer: Mr. E. F. McCarthy, Mr. C. F. Korstian, and Mr. F. W. Haasis. Our staff is quite cosmopolitan, combining training in forest investigations in Canada and New England, the Inland Empire, the Southwest, and the Southern Appalachian region itself. Its members bring a collective experience in practically all kinds of technical outdoor forestry, silvicultural and economic, theoretical and practical.

THE annual normal production of lumber in France is about 2,000,000,000 board feet, with nearly 4,700,000 cords of firewood. Total annual production of maritime pine in southwestern France is about 644,500,000 board feet according to a late report of the U. S. Consul at Bordeaux. Maritime pine is an important source of wealth to this district, next to vineyards and naval stores.

FURNITURE wood, to the value of $402,963, was exported to Egypt from the United States in 1920, compared with $178,875 in 1919 and $267,244 in 1913.

A CONCERT ON HARNEY PEAK

DURING the past many unusual things have occurred on and near Harney Peak, highest point in the Black Hills of South Dakota; but it remained for a troop of Boy Scouts of America to set the precedent of giving a band concert on this loftiest pinnacle between the Rockies and the Himalayas, on June 6.

AMBITIOUS MUSICIANS

Proving their desire to rise in the world, this Boy Scout Band decided to give a concert on Harney Peak, 7,240 feet high—the highest point in the United States east of the Rockies.

The two to three thousand tourists who visit Harney Peak each summer usually feel that carrying their own weight up and down the three miles of mountain trail is effort enough, hence the Scouts in bringing their instruments, including bass drum and large horns over the trail, marks a decided innovation in Harney Peak history. The organization, which was made up of twenty members of Troop One, of Lemmon, South Dakota, made a tour of the Hills in charge of Scoutmaster E. Dickinson and Assistant Charles Olson, the musical programs being arranged by Bandmaster Dave Clark.

The itinerary of the trip, which was made in motor trucks, includes Newell, Belle Fourche, Spearfish, Deadwood, Lead, Sylvan Lake, Hot Springs, Wind Cave, Sturgis and other well-known points of the Hills. An added feature of the concert on Harney Peak was that it was enjoyed also by guests at Sylvan Lake and the Forest Service officers at Custer, who listened in by telephone.

FRANCE it is estimated, lost 10 per cent of its lumber and 6½ per cent of its firewood in the World War. Before the war the forest area of France was 24,430,000 acres or about 18.7 per cent of the total land area. Of this 29 per cent was in oak and 19 per cent in beech.

The Service of Forests of the French Department of Agriculture estimated early in 1919 a loss of nearly 1,500,000 acres of wooded area due to the war, and the destruction of more than two billion board feet of lumber.