

By Henry Clepper
SOCIETY OF AMERICAN FORESTERS

FOREST CONSERVATION IN PENNSYLVANIA: THE PIONEER PERIOD, FROM ROTHROCK TO PINCHOT*

As we know, Pennsylvania is the only one of the fifty states that commemorates in its name the forest wilderness which once characterized its terrain. It was a typical northern forest of mixed conifers and hardwood, principally white pine and hemlock mixed with beech, yellow birch, sugar maple, black cherry, and white ash, and in the southern counties were the valuable white oak, black walnut, chestnut, and many other species.

From the beginning of settlement, forest clearing was necessary to provide land for agriculture and for homes. Wood was needed for fuel, for construction of all kinds, for fencing fields, for furniture, for implements, for shipbuilding, and for hundreds of other uses.

During the early 1800s the lumber industry began logging off the extensive forests of interior Pennsylvania. The logger's axe and saw felled, in a matter of hours, trees that nature had taken hundreds of years to grow. By midcentury, timber cutting had decimated thousands of acres in northern and central Pennsylvania. By the period of the Civil War, Pennsylvania was the leading lumber producing state in the Union.

For this industrial progress, the commonwealth paid an exorbitant and ruinous price. In their wake, the loggers left vast acreages of devastation. All cutover land, strewn with waste tree limbs, bark, and unwanted logs, was dry and inflammable. Fires swept over the mountains, destroying timber, creating soil erosion,

*This paper was originally prepared for presentation at the Eighth Rose Hill Seminar on 16 June 1979.

silting streams, and causing incredible destruction to what we today recognize as the ecosystem. So ravaging were these forces of cutting and burning that millions of acres of once productive and beautiful sylvan landscape became acres of desolation. Joseph Trimble Rothrock called this area "the Pennsylvania Desert."

Joseph Trimble Rothrock was born in McVeytown, Mifflin County, on 9 April 1839. The son of a physician, Dr. Abraham Rothrock, he attended Freeland Seminary (now Ursinus College), then went to Harvard where his education was interrupted by the Civil War. In 1862, he enlisted as a private in the 131st Pennsylvania Volunteer Infantry. Wounded at Fredericksburg, he recovered and was later promoted to the captaincy of Company E, 20th Regiment, Pennsylvania Volunteer Cavalry.

His health was not robust, hence he spent much time outdoors botanizing. His interest in botany was influenced by his mother who was related to William Darlington, a well-known Pennsylvania botanist. While at Harvard the young Rothrock was also influenced by the teachings of Asa Gray, one of the foremost botanists of America, who visited his student friend in Mifflin County.

After receiving the bachelor of science degree from Harvard in 1864, Rothrock went to the University of Pennsylvania to study medicine. His studies were interrupted in the next year on his joining a party of exploration to British Columbia and Alaska for the Smithsonian Institution. Returning to the University of Pennsylvania, he was awarded his medical degree in 1867.

For the next two years he taught botany at the Pennsylvania State Agricultural College, now Pennsylvania State University. In 1869, he began the practice of medicine in Wilkes-Barre, but his medical practice was relinquished four years later on his appointment as surgeon and botanist to a government survey in the West under Lieutenant G. N. Wheeler. Dr. Rothrock enumerated over one thousand species in some six hundred genera. The plant genus *Rothrockia* was named for him.

The next advances in Dr. Rothrock's career were indirectly influenced by Francois André Michaux, a Frenchman with an international reputation as a botanical scientist. He was the author of the monumental three-volume *The North American Sylva*, published in 1819. On his death in 1855, he left a legacy of 648,000 French francs (then approximately \$12,000) "for the extension and progress of agriculture, and more especially of silviculture in the United

States." The American Philosophical Society of Philadelphia was designated custodian of the fund, which later shrank to \$6,000 owing to the low rate of exchange. Nevertheless, the fund enabled the Philosophical Society to appoint Dr. Rothrock as Michaux lecturer in forestry in 1877. In the same year, he had been elected professor of botany in the Auxiliary Faculty of Medicine at the University of Pennsylvania. His forestry lectures continued for fourteen years.

In 1881, following botanical study at the University of Strasburg, where he observed at first-hand the results of scientific forestry in the well-managed forests of Germany, he wrote an essay titled "Forestry in Europe and America." The essay was entered in a competition held by the Pennsylvania Board of Agriculture and was awarded first prize.

When offered the chair of botany at Harvard, he declined it in order to devote his career to the cause of forest conservation. To advance the movement, he undertook a strenuous campaign of lectures and public education throughout the state.

On 30 November 1886, the Pennsylvania Forestry Association was formally organized in Philadelphia with Dr. Rothrock elected president. Henceforth, his lectures and educational work for forest conservation were carried on under the auspices of the Association. Immediately, the Association began publishing a magazine named *Forest Leaves*. It has had a remarkable record of continuous publication since that year and, in 1951, was renamed *Pennsylvania Forests*.

In 1887, the Pennsylvania legislature authorized a commission "to examine and consider the subject of forestry in Pennsylvania." Although the commission's report was favorable to forest conservation, nothing came of it. It was significant only as the first tentative step taken by the commonwealth that led later to a constructive forest policy.

In 1893, the legislature authorized another commission "to examine into and report the forestry conditions of the State." One member was to be a botanist "practically acquainted with the forest trees of the Commonwealth." Dr. Rothrock was appointed to the position. The comprehensive report, completed in 1895, was largely his work and gave the first complete and official information on the extent of forest depletion in Penn's Woods.

On 13 March 1895, Governor Hastings approved an act which created a Department of Agriculture in the state government. In

the department was a Division of Forestry, of which Dr. Rothrock was named the head and thus became the first Commissioner of Forestry.

Dr. Rothrock's energizing influence was soon manifested by an act of the legislature in 1897 that provided for the acquisition of state forest reservations. The law authorized the acquisition of three reservations, now state forests, each of 40,000 acres, on the watersheds of the Delaware, Ohio, and Susquehanna rivers. Introduced at the request of the Pennsylvania Forestry Association, the law established the policy of acquisition of land, not only for forestry purposes, but for watershed protection, wildlife conservation, and parks.

Although the commonwealth began promptly to acquire forest lands, no provision had yet been made for the training of technical foresters to manage the lands. Instruction in forestry, but only as an adjunct to education in agriculture, botany, and horticulture, was offered at twenty-two land grant colleges before 1897.

At Penn State, Dr. William A. Buckhout, a professor of botany, offered courses in forestry as early as 1889. But his forestry lectures were part of the curriculum in agriculture. He never claimed that his instruction was professional in character or prepared students for the management of forest land or the practice of silviculture.

Dr. Rothrock unsuccessfully tried to induce the Pennsylvania State Agricultural College to institute a professional curriculum in forestry. Meanwhile, Cornell University offered a four-year forestry curriculum leading to the bachelor degree, beginning in 1898. In the same year, courses in forestry were given at the Biltmore Forest School in North Carolina. Although technical in nature, these courses were of only a year or two in duration, and the school was not of collegiate grade. Yale began offering its instruction in forestry at the graduate level in 1900. The Yale School of Forestry, incidentally, was initially endowed by the Pinchot family. Pennsylvania had state forests but no foresters to manage them. No institution of collegiate rank in the state was willing to provide the necessary professional education.

In 1901, Pennsylvania employed its first technically trained forester. He was George H. Wirt, born in McVeytown in 1880, a graduate of Juniata College who then studied forestry at Biltmore and in Germany. Appointed state forester with headquarters at Mont Alto, he was put in charge of the South Mountain State Forestry Reservation of some 33,000 acres in Franklin and Adams Counties.

In May of 1902, Mr. Wirt with some student assistants started a tree nursery. Within a few years this nursery—subsequently named for its founder—was producing a million trees annually for planting on the reservations. Another milestone was reached when in May of 1903 the legislature directed the Commissioner of Forestry to establish a school for instruction in forestry to prepare “forest wardens” for the management of the state forests (then called state forestry reservation lands). Governor Pennypacker, together with Dr. Rothrock and other members of the State Forestry Reservation Commission, visited Mont Alto in the summer of 1903 and “sanctioned” the opening of the school in September. According to *Forest Leaves*, thirteen young men reported for instruction.

Practically all the technical instruction was given by Mr. Wirt, who was in charge. Additional lectures were given by Dr. Rothrock and by Miss Mira L. Dock of Fayetteville, a member of the State Forestry Reservation Commission. Of the thirteen first classmen, largely recruited from the region around Mont Alto and appointed without formal examinations, only six were graduated in 1906. Later, the school was officially named the Pennsylvania State Forest Academy.

Six years after the creation of the Division of Forestry in the Department of Agriculture, Dr. Rothrock succeeded in having the division raised to departmental status. He was designated Commissioner of Forestry as head of the new Department of Forestry, and held the office until June of 1904 when he resigned because of failing health. It is worthy of recording that when Dr. Rothrock resigned on 31 May 1904, Pennsylvania was in actual possession of 443,592 acres of state forests.

Pennsylvania's early forest conservationists were not solely interested in woodlands. A resolution adopted by the State Forestry Reservation Commission on August 5, 1904 set forth rules for the government of the reservations. Two rules required that the game and fish laws of the state must not be violated and that bird nests must not be destroyed or interfered with.

Dr. Rothrock's successor as Commissioner of Forestry was Robert S. Conklin, formerly Deputy Commissioner; he was also president of the commission. Although no longer an officer of the Department of Forestry, Dr. Rothrock continued his active participation in the work as secretary of the State Forestry Reservation Commission.

Another instance of participation by the Department of Forestry in wildlife conservation occurred in 1905 when authorization was provided by law for the establishment of game preserves or refuges in the forest reserves. The Board of Game Commissioners in cooperation with the Commissioner of Forestry began to set aside refuges for deer, wild turkey, partridge, quail, woodcock, and wild pigeons. No hunting or shooting was permitted in the refuges, although fishing was allowed.

During the first decade of state forest acquisition, the commonwealth had taken title to 933,000 acres. The lands were purchased at prices which today are almost unbelievable. Some were obtained through tax sales of lands which, cut over and burned over, were considered practically worthless; all the state forests were bought for less than \$5 per acre.

Through the year 1910, thirty-nine men had been graduated from the Forest Academy at Mont Alto, and were promptly assigned to manage the newly acquired state forests. Assisted by a corps of non-technical forest rangers, the forests were given such protection from fire as the almost nonexistent road and trail system afforded. Denuded land was reforested as rapidly as planting stock became available from the state nurseries. Forestry—for timber products, for watershed protection, and for recreation, as conceived by Dr. Rothrock—was on the march in Penn's Woods.

Robert Conklin, who had entered the Department of Forestry as a clerk, had Dr. Rothrock's confidence and intended to carry forward the Rothrock policies. Under Conklin state forest acquisition continued actively, so much so that during his administration the state forest area exceeded one million acres. Reforestation was stepped up also.

But what is essential to permanent and efficient forestry is statewide protection from fire. George Wirt was moved from Mont Alto to Harrisburg and named inspector of the department and put in charge of the expanding fire protection organization.

A law of 1909 provided for a force of forest fire wardens to be appointed by the Commissioner of Forestry. All expenses for fire control were to be paid by the state. Another law in 1911 provided penalties of fines and imprisonment for setting fires in the forest preserves and on private land as well. Then in 1915 an act was passed creating a Bureau of Forest Protection in the Department of Forestry. George Wirt became the state's chief forest fire warden.

When Mr. Wirt left Mont Alto, he was succeeded as director of the Forest Academy by Dr. Edwin Allen Ziegler, who had been with the U.S. Forest Service where he had acquired a reputation as a forest economist. Dr. Ziegler was born in Rebersburg and was educated at Franklin and Marshall College, where he received the honorary degree of doctor of science in 1922.

Another native son who made signal contributions to forestry in Pennsylvania was Dr. Joseph S. Illick, who was born in Easton and who was a graduate of Lafayette College. He went to the Forest Academy in 1907 to teach biology. Becoming interested in forestry as a career, he took leave to attend the Biltmore Forest School, then studied forestry at schools in Germany. During World War I, Dr. Illick was acting director of the academy while Dr. Ziegler served as a commissioned officer in the Army. On Colonel Ziegler's return, Dr. Illick was appointed chief of the Bureau of Silviculture in the Harrisburg office of the Department of Forestry, subsequently becoming state forester. He ended his career as dean of the College of Forestry at Syracuse University.

In 1915, there was published a report titled *Areas of Desolation in Pennsylvania*, written by Dr. Rothrock. It dealt with lands in the central part of the state—lands which were formerly forested then impoverished, and which comprised one-seventh of the state's acreage. He urged immediate action to reforest these lands and restore their usefulness.

Under Commissioner Conklin the Department of Forestry established a third forest tree nursery in Clearfield County, in addition to two already producing trees at Mont Alto and Greenwood Furnace. Nursery production was stepped up to twenty million seedlings annually when many private and industrial landowners began extensive reforestation programs. Among the private planters were farmers, municipalities, mining companies, railroad companies, and water supply companies which planted trees to protect their watersheds. For example, in the spring of 1912, the Pennsylvania Railroad planted 370,000 trees on its holdings in the state.

By September of 1910, fifty technically educated foresters were in the employ of the Department of Forestry. All except four had received their educations at the Forest Academy at Mont Alto. In addition, there were about ninety rangers, usually local experienced woodsmen without technical training, working in the state forests. It is interesting to note the modest salaries paid the foresters in the

department. Mr. Wirt was paid the highest salary, \$175 monthly. The field foresters' compensation varied from \$60 to \$100 monthly.

At the time the United States entered World War I, the roster of foresters in the State Forest Service totalled seventy-one. In addition, several railroad companies, mining companies, and water companies were employing professional foresters. Since the beginning of state forest acquisition, some twenty-five million trees had been planted in them.

But if reforestation of waste lands and technical management of the state forests were progressing rapidly, protection against fire was still Pennsylvania's main forest problem and the main deterrent to sound silviculture. From 1,000 to 2,000, or more, fires were reported annually. About 1,500 fire wardens were commissioned and functioning. But the protection forces were handicapped by lack of fire observation towers, inadequate telephone communication for reporting fires, and insufficient roads and trails for access into remote areas.

Although not a professional forester—indeed, not a college graduate—Robert Conklin was a competent commissioner of the Department of Forestry. This assertion is based on numerous statements by George Wirt, a man of the highest integrity whose entire career in forestry was spent in the State Forest Service. It should be remembered also that Commissioner Conklin was the choice of Dr. Rothrock for the commissionership when Dr. Rothrock retired.

When Robert Conklin himself retired in 1920 the event marked the end of the pioneering era in state forest conservation. According to the book *Forests and Forestry in the American States* (1968): "It would be hard to find another state in which such superlative leadership had been sustained over such a long period of time and with greater effectiveness by leaders untrained in forestry. During that period from 1895 to 1920, an effective state forestry agency had been established, a million acres of state forest land acquired, a fire protection system inaugurated, and the largest corps of trained state foresters then in existence recruited, trained, and put to work."

Gifford Pinchot, who had been unsuccessful in ventures in national and state politics, was appointed by Governor William Sproul as a member of the Pennsylvania Forestry Commission in August of 1919. Commissioner Conklin was chairman of the commission. On the basis that the Forestry Commissioner should now be a trained forester, Pinchot criticized Conklin's alleged mismanagement of the

department. The upshot was that Conklin resigned and "G. P." was appointed commissioner by the governor on 10 March 1920.

Immediately, the new commissioner began a campaign of publicity, both for the department and especially the need for improved forest protection against fire. Having been appointed a field forester in the anthracite region in September 1921, I can testify that the fire situation was serious. Numerous fires burned uncontrolled and, indeed, many were even unreported.

Pinchot brought new and experienced personnel into the department. A notable addition was Robert Y. Stuart, originally from Carlisle, a Yale forestry graduate, who had attained high position in the U. S. Forest Service. He was appointed deputy commissioner and became commissioner himself in 1922, when Pinchot resigned to run for governor. On the creation of the Pennsylvania Department of Forests and Waters from the Department of Forestry, Stuart became its first secretary, a cabinet position.

Twenty-four forest districts were set up, covering the entire state; each district was in charge of a forester with one or more foresters as assistants. Each district forester was made responsible for fire prevention and control as well as all other activities of expanding management of the state forests. Periodic inspections were made of performance by departmental officers from the Harrisburg headquarters.

For fire control, the department had 2,600 salaried and per diem employees, fifty new steel observation towers, and telephone communication between fire observers and the extinction forces. Access to the state forests was expedited by 500 miles of new roads and trails and the repair of 2,500 miles of existing roads and trails.

Distribution of state-grown planting stock to private and industrial landowners was increased. In 1921, some three million seedlings were planted on private land.

Commissioner Pinchot was interested also in research and education. Studies were undertaken in silvics, timber supply, and fire control techniques. He endorsed a revised four-year curriculum at the Forest Academy, which in 1923 was renamed by the legislature the Pennsylvania State Forest School. Moreover, the faculty was increased so that forestry courses were strengthened and essential courses in the arts and sciences were added.

Pinchot resigned as Commissioner of Forestry on 13 April 1922, to launch his successful campaign for governor. During his two-year term as head of the state forestry work, his outstanding success was

in gaining public support—as well as the support of the legislature—for increased funds, legislation, and capable personnel.

Harold Pinkett in his biography *Gifford Pinchot: Private and Public Forester* (1970) sums up Pinchot's commissionership thus: "... establishing an effective fire protection system was perhaps the greatest of his achievements in advancing the forest work of Pennsylvania."

JAMES A. BARNES—1898–1980

Dr. James A. Barnes, professor of history emeritus at Temple University, president of the Pennsylvania Historical Association from 1960 to 1963, editor of this magazine from 1941 to 1945 and its book review editor from 1937 to 1941, died October 17, 1980, in South Miami, Florida. He was 81.

Dr. Barnes, whose former home was Elkins Park, taught at Temple from 1930 until he retired in 1966. A student of history and economics, he wrote articles, book reviews and two books, *John G. Carlisle, Financial Statesman* and *The Wealth of the American People: A History of Their Economic Life*. He edited, with his wife Elinor, a two-volume work, *Naval Surgeon: The Diary of Dr. Samuel Pellman Boyer*. Mrs. Barnes died in 1957 and in 1968 he married Doris Engstrom, who survives him.

Dr. Barnes was born in Prentiss, Kentucky, November 17, 1898, was awarded his PhD from the University of Wisconsin in 1928, and taught at the Universities of Wisconsin and South Dakota before going to Temple. He served in both World Wars, in the first as a soldier and the second as a War Department historian. At Temple, graduate students honored him with the establishment of a history club to which they gave his name. In turn a graduate student in history has been honored each year at the university by an award contributed by Dr. Barnes.