

# RISE OF THE FOREST CONSERVATION MOVEMENT IN PENNSYLVANIA \*

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**A**LTHOUGH Sylvania was acceptable to William Penn as a name for the new province, Charles II made the decision as kings were accustomed to do in those days. In choosing Pennsylvania he gave us the only state in the Union embodying the word forest in its name. Another feature of significance about the King's grant to Penn is that this transaction involved what was until that time perhaps the biggest timber deal in history.

At this distant perspective of time we have little conception of the grandeur and sweep of those primeval forests, but Dr. Joseph T. Rothrock, to whom we shall have occasion to refer later, has given us a word-picture:

Pennsylvania, under original natural conditions, was one of the best wooded States, if not the very best, in the entire eastern half of the Union. Not only were her forests dense and her trees large and valuable, but they comprised a variety that were of greater commercial value than could be found, probably, in any other State. To say that for years Pennsylvania stood first as a lumber producing State, and then second on the list, is but another way of expressing the same truth.

To illustrate this we have but to call to mind the fabulous quantities of white pine, hemlock, hickory, black and white walnut, chestnut, oak (of various kinds), ash, elm, beech, cherry, black and yellow birch, and latterly pitch pine, that have been consumed within the limits of the State, or exported.

It is true that a portion of her area was treeless. Here and there a lake or an open meadow occupied the surface, but these formed a very small proportion of her territory.<sup>1</sup>

\*Read before the Pennsylvania Historical Junto, Washington, D. C., December 29, 1944. The author is Executive Secretary of the Society of American Foresters and Managing Editor of the *Journal of Forestry*.

<sup>1</sup> Annual report of the Pennsylvania Department of Agriculture; Part II, Division of Forestry, by Dr. J. T. Rothrock, Harrisburg, 1896.

Of Pennsylvania's land area of 28,828,800 acres, it is estimated that the original forests covered not less than 99 per cent. Now, after nearly three hundred years of settlement, clearing, and exploitation, followed by some farm abandonment and natural re-conversion to forest, the woodland area is estimated to total about fifteen million acres, or 52 per cent. Considering the fact that one-half the original area is still wooded, we might assume that the state has not too prodigally squandered this valuable natural resource. Unfortunately, at least 1.5 million acres are unproductive and practically idle as a result of fire and discontinued agricultural use.

Notwithstanding the fact that the dense and apparently limitless forests offered an obstacle to the expansion of agriculture and settlement, one of the early acts of the proprietary government was an attempt to maintain timber supplies. This provision was a part of the document entitled *Certain conditions, or concessions, agreed upon by William Penn, Proprietary and Governor of the province of Pennsylvania, and those who are the adventurers and purchasers in the same province, the eleventh of July, one thousand six hundred and eighty-one*. It has been recorded as follows:

"XVIII. That, in clearing the ground, care be taken to leave one acre of trees for every five acres cleared, especially to preserve oak and mulberries, for silk and shipping."<sup>2</sup>

In his *Report on Forestry* (1877), Dr. Franklin B. Hough, special agent for the United States Department of Agriculture, commented, "It is probable that this law was not observed in a single instance."

#### EARLY LEGISLATION FOR FOREST PROTECTION

During the colonial period and on into the first half of the nineteenth century, little official attention was given to forest conditions. Pennsylvania was not more backward than other states in this respect; there was simply no public sentiment for forest conservation. The woods were so extensive, so dense, so abundant

<sup>2</sup> *The Federal and State Constitutions, Colonial Charters and Other Organic Laws of the States, Territories, and Colonies*, compiled by Francis Newton Thorpe (Government Printing Office, Washington, D. C., 1909), Volume V, pp. 3044-3047.

with numerous species of high quality that they were ruthlessly cut and burned without more than a few people realizing that the supply of virgin timber might eventually be exhausted.

An act of the assembly passed in 1700 provided penalties for felling trees "on another's land without leave." On March 29, 1735 an act was passed "to prevent the damages which may happen by firing the woods." This law was repealed by the act of April 18, 1794 which provided fines "for firing woods, not exceeding \$50, and not less than \$20." An interesting feature of this latter act was contained in Sec. 4 which provided that "if the offender be a servant and his master do not pay the damage, the punishment to be imprisonment at hard labor for three months."

Again on March 29, 1824, the assembly enacted a law which provided damages for timber trespass. Setting woods on fire was punishable by a fine of not over \$500. Firing woods was declared a misdemeanor by the act of March 31, 1860 and made punishable by a fine not exceeding \$100; cutting timber on lands of another was declared a misdemeanor also.

On April 9, 1869 an act made the firing of mountain or other wild lands in Union County punishable by fine not exceeding \$50 or imprisonment not exceeding one year. This law was extended by act of June 2, 1870 to certain other counties with the following interesting declaration, "it is important to the people of the State that timber lands should be protected from fire, which, owing to malicious conduct and carelessness of individuals, is causing vast havoc to the young growing timber, especially upon our mountains."

Although the legislature enacted the institution of Arbor Day, which went into effect April 15, 1885, an act of June 1, 1887 appears to be the first legislative attempt to encourage state-wide reforestation. "In consideration of the public benefit to be derived from the planting and cultivation of forest or timber trees," owners of land planted with such trees not less than 1,200 to the acre were entitled to receive a rebate on taxes, not to exceed 45 cents per acre for the first ten years, 40 cents per acre for the second ten years, and 25 cents per acre for the third and final ten years.

None of the foregoing legislation appears to have accomplished the desired result, which was to protect and rehabilitate the wood-

land of the state. We have seen numerous examples in America of legislation which was worse than useless when not supported by public sentiment, and Pennsylvania's early attempts to stem the tide of forest devastation were of that category.

It is difficult, if not impossible, to fix upon a date when public sentiment began to support the forest conservation movement in Pennsylvania. Certainly, such sentiment was not greatly in evidence prior to the Civil War, but that it began to crystallize shortly thereafter can be adduced from the writings of individuals such as Dr. Joseph T. Rothrock and by increased activities among citizens' groups which resulted in the organization, in Philadelphia in 1886, of the Pennsylvania Forestry Association.

Writing in an official report in 1897, Dr. Rothrock, then Commissioner of Forestry, stated, "For twenty years past public sentiment has been shaping itself in favor of protective measures." Let us briefly review some of the developments which influenced and hastened public interest in forestry.

#### DEVELOPMENT OF PUBLIC SUPPORT

In messages to the legislature in 1873 and again in 1874 Governor Hartranft "called attention to the rapid destruction of the forests within the state and suggested the possible need of regulatory legislation."<sup>3</sup> Although no immediate action resulted, it may be assumed that his comments made some impression; at least they marked a trend of the times—a growing awareness of the ruthless, wasteful destruction of forests by axe and fire and the need for a state policy of protection and conservation.

Although, as will be seen, Pennsylvania was in time to establish a forestry policy designed specifically for its own needs and to solve its own forest problems, the growth of public support was not wholly an internal development. Several external influences might be cited as contributing factors to the interest in, and demand for, public action in the state.

One of these factors was the creation in 1873 by the American Association for the Advancement of Science of a committee "to memorialize Congress and the several state legislatures on the importance of promoting the cultivation of timber and the preser-

<sup>3</sup> George H. Wirt, "A Half Century of Forestry in Pennsylvania," *Journal of Forestry*, October 1943.

vation of forests." This action followed the presentation at Portland, Maine, by Dr. Franklin B. Hough of New York of a paper "On the Duty of Governments in the Preservation of Forests," which proposed that the association "bring the subject of protection of the forests, and their cultivation, regulation, and encouragement, 'to the notice of our several State governments, and the Congress with respect to the Territories.'"<sup>4</sup> The committee's recommendation, made to the Congress in February 1874, brought about the appointment of Dr. Hough as special forestry agent in the United States Department of Agriculture by act of 1876.

The foregoing example is only one of several that could be cited to illustrate the effect of scientific thought in shaping public opinion for forest conservation. Conspicuous among the scientists was George P. Marsh whose book *Man and Nature* or *Physical Geography as Modified by Human Action*, published in 1864 and reissued ten years later under its better known title *The Earth as Modified by Human Action*, exerted a powerful influence on contemporary scientific Americans. In France and Italy studies of the effects of deforestation on streamflow and local climate, particularly in the Pyrenees and Alps, were causing alarm. His book set thinking men to considering the possibilities of radical changes in regional climatic conditions, in water supplies, in power and navigation as a result of continued forest destruction.

In 1875 occurred another event which was to have a profound influence on forest conservation in Pennsylvania. On September 10 of that year the American Forestry Congress (now the American Forestry Association) was organized in Chicago. Then, as now, a citizen's organization, it has aggressively espoused for nearly seventy years the cause of forest conservation by wise use. To it more than to any other agency belongs the credit for having created the public sentiment of the nation and for having given life to the early conservation movement of America.

One year later, on September 15, 1876, a group of persons interested in forestry attended a meeting in the Judge's Hall of the Centennial Exposition in Philadelphia. A paper was read by Dr. Franklin B. Hough who that year had been appointed a special agent of the United States Department of Agriculture to study

<sup>4</sup> *A National Plan for American Forestry* (United States Government Printing Office, Washington, D. C., 1933), Vol. 1.

the forestry conditions in the United States as they then existed. His appointment, it will be noted, reflected the increasing recognition of the need for a national forest policy.

Another paper was read at this meeting by Mr. Burnett Landreth, a nurseryman of Bristol, Pennsylvania, who had been appointed chief of the Bureau of Agriculture for the exposition. Published in the 1876 report of the Pennsylvania Agricultural Society, his paper is significant because it contains one of the earliest proposals that courses in professional forestry be offered in agricultural colleges. "Among other things," he stated, "I wish to start the inquiry, whether in our classification of agricultural instruction the time has not come to teach forestry as a science—I say science because it is susceptible of exact results." As we shall see, twenty-seven years were to pass before Mr. Landreth's proposal finally materialized.

In the meantime, however, the teaching of the scientific principles of forestry as they were understood in that day was not wholly neglected. In 1855 the great French botanist F. Andre Michaux left a legacy of \$14,000 to carry out a provision of his will "for the extension and progress of agriculture, and more especially of silviculture in the United States." The custodian of the fund was the American Philosophical Society of Philadelphia.

Dr. Joseph T. Rothrock, who had been elected professor of botany in the Auxiliary Faculty of Medicine at the University of Pennsylvania in 1877, was in that same year appointed Michaux lecturer by the American Philosophical Society of Philadelphia. This appointment marks a milestone in science as well as in conservation; it was to have an immediate as well as a continuing effect on Pennsylvania forestry for his lectures continued for fourteen years.

Although Pennsylvania unquestionably profited from the stimulus of the general conservation movement, it did not rely on outside leadership. The growth of forestry in the commonwealth was essentially an indigenous development, principal credit for which belongs to Dr. Rothrock, who gave more than half his life to it.

#### DR. JOSEPH T. ROTHROCK

No account of forestry in Pennsylvania or, for that matter, of medicine or education, could be written without mention of Dr.

Joseph Trimble Rothrock. He was the father of Pennsylvania forestry.

The son of a physician, Dr. Abraham Rothrock, he was born April 9, 1839 in McVeytown, Mifflin County, Pennsylvania, and died June 2, 1922 in West Chester, Pennsylvania.

His preparatory education was obtained at Academia, Juniata County, and at Freeland Seminary (later Ursinus College). He received the bachelor of science degree from Harvard University in 1864. His college career was interrupted, however, when in 1862 he enlisted as a private in the 131st Pennsylvania Volunteer Infantry. Wounded at Fredericksburg, he later won promotion to the captaincy of Company E, 20th Regiment, Pennsylvania Volunteer Cavalry.

Delicate health made it desirable for him to spend much time out of doors. His mother, who was related to William Darlington, a noted Pennsylvania botanist, doubtless influenced his early interest in botany. At Harvard he was attracted by the work of Asa Gray, who visited his student friend in Mifflin County.

From Harvard he went to the University of Pennsylvania in 1864 to study medicine, but his course was interrupted the following year on his becoming a member of a party of exploration to British Columbia. Returning to the university, he was graduated in medicine in 1867. During 1867-1869 he taught botany at the Pennsylvania State Agricultural College, and in the latter year he began the practice of medicine at Wilkes-Barre, specializing in surgery.

Appointed surgeon and botanist in 1873 to an exploring expedition west of the 100th meridian, commanded by Lieutenant Wheeler of the Corps of Engineers, he made numerous botanical collections in Colorado, Arizona, New Mexico, and California during the period 1873-1875. Volume VI of the reports of the Wheeler expedition gives an account of his work. He discovered and described numerous new species of plants.

Dr. Rothrock's active interest in forestry, as distinct from botany, may be said to date from 1877 when he was appointed Michaux lecturer. His audiences are reported to have increased from three persons to the capacity of the auditorium. In order to hold their attention he found it occasionally desirable to combine forestry with lectures on botany.

In 1881, following botanical study in Europe where he doubtless learned about scientific forestry from observation of the well-managed forests of Germany, he presented an essay, "Forestry in Europe and America," in a competition held by the Pennsylvania Board of Agriculture and was awarded the prize.

The urgent need for forest conservation in the United States, particularly in Pennsylvania, had become so firmly fixed in his mind that he began a strenuous platform campaign of education. Although offered the chair of botany at Harvard, he declined it from a conviction that forestry should be his life career. He was a leading spirit in the organization of the Pennsylvania Forestry Association.

#### THE PENNSYLVANIA FORESTRY ASSOCIATION

Many, if not all, progressive movements in the course of American History have been actively supported by women, and conservation in Pennsylvania is no exception. Their influence was recognized editorially in the first issue of *Forest Leaves* which merits quoting. "In the winter of 1886 a few prominent women of Philadelphia were impelled by the increasing destruction of the noble forests of Pennsylvania to some concerted action in the way of forest preservation and the replanting of waste lands, in order to supply the timber for the absolute needs of the near future. After a few informal meetings, held at the residence of Mrs. Brinton Coxe, a public meeting was called at the Hall of the Historical Society, on the evening of May 26th, at which Mr. Clayton McMichael presided."<sup>5</sup>

At this meeting addresses were made by Dr. Rothrock and Mr. B. E. Fernow, chief of the Division of Forestry, United States Department of Agriculture. So immediate and so enthusiastic was the interest aroused by this meeting that it was decided to form an association. At a second meeting held in the Historical Society on June 2, a committee was appointed to draft a constitution which was accepted at a subsequent meeting on June 10. Among other projects, the members voted to raise \$5,000 to carry on the work of the organization.

<sup>5</sup> *Forest Leaves*, Pennsylvania Forestry Association, Philadelphia, July 1886.

The first formal meeting for the formation of a permanent Association was held in the Young Women's Christian Association of Philadelphia in the evening of November 30, 1886, with Dr. Rothrock formally elected president, in his absence because of illness. Thereafter, his campaign of public education in forestry was carried on under the auspices of the Association, and from 1891 on he devoted most of his time to this work.<sup>6</sup>

#### STATE FORESTRY COMMISSIONS

California became the first state to create, in 1885, a state board of forestry, to be followed within a few months by Colorado, Ohio, and New York. For the most part they were abortive efforts; of these four attempts all, except that of New York, had been discontinued by 1893.

Pennsylvania's first forest inquiry by a special commission, authorized by the legislature, was appointed by Governor James A. Beaver, April 28, 1887, with instructions "to examine and consider the subject of forestry in Pennsylvania." Although the commission itself accomplished little, its creation was significant as marking the first tentative step taken by the Commonwealth along the road leading toward a constructive forest policy.

Commenting editorially on the report, *Forest Leaves* said, "The fact that the services of the Commission were given gratuitously should excuse them from criticism, and we thank the individual members for the work which they have done. It would seem almost unkind to find any fault with the results of the Commission's investigations, when the great State of Pennsylvania, through its Legislature, expresses itself as interested in preserving or propa-

<sup>6</sup> For the purpose of focusing attention primarily on events rather than on personalities, the author has failed to mention by name many other Pennsylvanians who gave generously of their time, talents, and money to the cause of conservation. For the most part these individuals were members of the Pennsylvania Forestry Association into which organization their united efforts and enthusiasm were forcefully channeled. Failure to give them individual credit does not imply lack of appreciation for their manifold contributions. For example, Gifford Pinchot, who was to become chief of the United States Forest Service (1898-1910), later Commissioner of Forestry and Secretary of Forests and Waters for Pennsylvania, and subsequently Governor of the Commonwealth, became a member of the Association in 1887. It is interesting to note that he, a Pennsylvanian, was the first technically educated American forester. In the absence of a professional school of forestry in the United States, his training was obtained in Europe.

gating forests to an extent which is measured by the information which can be obtained without pay.”<sup>7</sup>

A bill was drafted by the Commission to authorize the creation of a permanent Forestry Commission with officers in every county “who should discover the causes of the destruction of our forests, procure the punishment of offenders who start forest fires, and ascertain the best means of replacing forests in the wasted districts.”

Submitted by the governor to the legislature with his commendation, the bill was referred to a committee which returned an adverse report, and the subject received no further consideration. The situation was summed up by the Hon. Washington Townsend of West Chester at a meeting of the American Forestry Congress held in Philadelphia October 16, 1889. “Pennsylvania is not ready to adopt a proper system of forestry,” he said. “When the people thoroughly understand the matter it will come.”

“The first Legislature, however, to measure the magnitude of the problem was that of 1893, which authorized the appointment of a commission to examine into and report upon the forestry conditions of the State.”<sup>8</sup>

An act of the legislature approved May 23, 1893 by Governor Robert E. Pattison authorized him to appoint a forestry commission, one member of which was to be a competent engineer; the other, “a botanist practically acquainted with the forest trees of the Commonwealth.” The salary of each commissioner was \$2,500 per annum and expenses, and that of a statistician \$1,000 per annum and expenses. An appropriation of \$20,000 was made available, and the commission was directed to report to the legislature not later than March 15, 1895. This forestry commission was charged with the following duties:

To examine and report upon conditions of slopes and summits of important watersheds for the purpose of determining how far the presence or absence of forest cover may be influential in producing high and low water stages in the various river basins.

<sup>7</sup> *Forest Leaves*, Pennsylvania Forestry Association, Philadelphia, April 1889.

<sup>8</sup> *Third Annual Report of the Pennsylvania Department of Agriculture; Part II, Forestry*, by Dr. J. T. Rothrock, Commissioner of Forestry, Harrisburg, 1898.

To report how much timber remains standing of such kinds as have special commercial value, how much there is of each kind, the part or parts of the state where each grows naturally, and what measures, if any, are being taken to secure a supply of timber for the future.

To suggest such measures as have been found of practical service elsewhere in maintaining a proper timber supply.

To ascertain as nearly as practicable what proportion of the state not now recognized as mineral land is unfit for remunerative agriculture and could with advantage be devoted to the growth of trees.

To ascertain what wild lands, if any, now belong to the commonwealth, their extent, character, and location, and what part or parts of such lands should be suitable for state forest reserves; and should such lands be insufficient for such purpose, to ascertain and report what other suitable lands there may be within the state, together with their extent and value.<sup>9</sup>

Dr. Rothrock was the botanist member of this commission. The first engineer member to be appointed, Colonel A. Harvey Tyson of Berks County, was succeeded by William Findlay Shunk of Harrisburg who was unable satisfactorily to complete his part of the report because of illness.

The commission, however, presented a comprehensive, and somewhat remarkable, report to the legislature of 342 pages, on March 14, 1895, one day before it was due. It was largely the work of the botanist member.

Not only did the commission's report cover the assignment given it by the legislature, but it presented to the people the first reasonably complete information on forest depletion in the commonwealth. It contained facts on the enormous and widespread damage done annually to the woodland by fire; an estimate of the extent, location, and species in the remaining timbered areas; the relation of forests to streamflow; a discussion of state forest reservations; an account of German forestry practice; and many other pertinent and important data.

During the period when the commission was studying the forest situation, citizens who supported the movement had prepared for

<sup>9</sup> George H. Wirt, "A Half Century of Forestry in Pennsylvania," *Journal of Forestry*, October 1943.

additional legislation in 1895. As mentioned previously, the report had been presented to the legislature on March 14, 1895. But on March 13, Governor Hastings had approved an act which created the Department of Agriculture and which furthermore provided for a Division of Forestry within the department. Following presentation of the forestry commission's report, a joint resolution of the legislature directed that it be printed as a part of the first report of the newly created Department of Agriculture.

It was logical that Dr. Rothrock should be named as the head of the Division of Forestry. Certainly, in the entire commonwealth there was no one better qualified than he; and he became the first Commissioner of Forestry in 1895. Six years later he succeeded in having the division raised to departmental status. From 1901 until 1929 it was officially the Department of Forestry, and in the later year, under the administrative code, it became the Department of Forests and Waters.

### STATE FORESTS

"The Legislature of 1897," Dr. Rothrock said, "took vigorous hold upon the work, and in one session laid a solid foundation for the forestry interests of the future. It passed a law which he considered "the most distinct advance . . . in public sentiment in favor of the forestry work."

This law provided for the acquisition of three state forestry reservations, each of not less than 40,000 acres, on the watersheds of the Delaware, Susquehanna, and Ohio Rivers. Thus a policy of acquisition and administration of forest land became an important keystone in Pennsylvania's early forestry program.

The bill had been introduced at the request of the Pennsylvania Forestry Association, the members of which organization were becoming greatly concerned over the rapidly increasing area of land which was later to be designated "the Pennsylvania desert." Dr. Rothrock later acknowledged that "there were grave doubts as to its passage. But these soon disappeared and it then for the first time became evident how strong and how general the sentiment in favor of the most active forestry legislation had become."

Although the bill was passed by a large majority, another bill was introduced in the senate to repeal it, but was dropped in

committee for all political parties had joined in the legislation. Moreover, the lumber interests of the state, if they did not actually support the bill, at least did not actively oppose it. Dr. Rothrock noted that "the lumbermen, who once looked upon all forestry agitation as an interference with their business, have come to be among the warmest friends of the movement, which is intended to perpetuate, not to limit, their vocation."

At the turn of the century "New York and Pennsylvania were the only states which had actually embarked on policies of permanent forest land ownership and administration."<sup>10</sup> By the time of Dr. Rothrock's resignation as Commissioner of Forestry, June 1, 1904, the commonwealth had acquired state forests totalling 443,592 acres. He continued his active interest, however, by serving as secretary of the State Forestry Reservation Commission; and on his resignation from this body in December 1913, the commonwealth had acquired nearly one million acres of state forests.

It is noteworthy that this legislation of 1897 marked the beginning of Pennsylvania's state-forest system which now totals 1,655,822 acres. In addition the Allegheny National Forest, established in 1923, with an area of 461,343 acres, the state game lands and refuges with an area of 755,489 acres, municipal and community forests totalling 67,414 acres, together with other publicly owned forest lands to the extent of 75,236 acres, bring the total of Pennsylvania's public forests to 3,015,304 acres.

Mere acreages in themselves are not important. What is of the highest importance is that these lands are managed and protected in accordance with improved forestry practices. In the chapter "State Accomplishments and Plans" of the voluminous document entitled *A National Plan for American Forestry* (1933) may be found this interesting comment (page 764): "Of all the States, Pennsylvania has achieved most in putting into effect actual forest management and reclaiming to economic productiveness through state acquisition and administration extensive areas of depleted and degenerated forest and idle cut-over land."

<sup>10</sup> *A National Plan for American Forestry* (United States Government Printing Office, Washington, D. C., 1933), Vol. 1, p. 772.

## FORESTRY EDUCATION

As was previously mentioned, a public meeting was held in the Historical Society of Philadelphia, May 26, 1886, at which Dr. Rothrock gave an address; in it he compared forest conditions in the United States with those in Europe, where most of the nations, except England, each had one or more technical schools of forestry.

The first issue of *Forest Leaves* of July 1886, published by the Association, predicted that "Forestal study in our colleges will eventually become an important branch of a general collegiate course." At a meeting of the Association held November 30, 1886, Dr. William Pepper, provost of the University of Pennsylvania, spoke on forestry education and suggested the establishment of a chair of forestry in one or more of our colleges. About this same time the Association was asked to provide the Scientific Society of the University of Pennsylvania with a course of lectures on forestry which were given early in 1887, and which "were well attended and much appreciated." A second series, "more comprehensive than those last spring," was scheduled for the coming winter.

That rising public sentiment in Pennsylvania at this period was not only a power in helping shape a forest policy for the state, but for the nation as well, is evident from the fact that the American Forestry Congress (now the American Forestry Association) held its eighth annual meeting at Horticultural Hall in Philadelphia, October 15-18, 1889, by invitation of the Pennsylvania Forestry Association.

One of the highlights of this congress was an impressive address delivered by the Hon. Carl Schurz on the need for a national forest policy, "in the course of which he referred to his own unsuccessful attempts, as Secretary of the Interior, to inaugurate such a policy."

A resolution adopted unanimously by the congress is worth recording here because it anticipated the development of America's splendid forestry educational and research systems. When we recall that at this time there was not a single school of forestry, not a single forest experiment station, in the entire western hemisphere, we begin to realize with what prophetic influence a comparatively small group was molding public opinion.

"It is the sense of this Congress," the resolution read, "that our Agricultural Colleges should regard it as one of their most manifest duties to give the subject of Forestry a prominent place in their curricula of instruction, and that every Experiment Station should engage in investigating and making experiments in those branches of Forestry which have special importance in the localities in which they are situated, or which are of general interest to Agriculture and the Arts."

The trustees of the University of Pennsylvania in 1889 acceded to a request of the Pennsylvania Forestry Association to establish a chair of forestry "so soon as an adequate endowment for such a chair can be secured." In the issue of *Forest Leaves* for March 1890 was published a suggested forestry curriculum for the university. But the chair was never established, presumably because the necessary funds were not raised.

It must not be assumed that up to this time instruction in forestry had been wholly neglected. "Prior to the development of professional education in forestry in the United States, forestry had indeed already gained a certain recognition as an adjunct of agricultural education. No fewer than twenty-two land grant colleges gave some instruction in forestry before 1897."<sup>11</sup>

Professor William A. Buckhout of the Pennsylvania State College, who was a member and secretary of Governor Beaver's forestry commission of 1887, was one of the group of educators in the agricultural colleges who were giving lectures on various phases of forestry. His were offered as part of his work in the Department of Botany. Unfortunately, most of those in the agricultural colleges who attempted to lecture on forestry had themselves no training in the subject, and consequently were unable adequately to teach the art of silviculture and the technical and economic factors affecting forest protection and management.

In 1898 Cornell University began its excellent course in forestry, and the Biltmore Forest School in North Carolina began training students under an eminent German forester, Dr. C. A. Schenck. Yale University started its professional course in forestry in 1900. Still Pennsylvania had none, though Dr. Rothrock and other in-

<sup>11</sup> Henry S. Graves and Cedric H. Guise, *Forest Education* (Yale University Press, New Haven, Conn., 1932).

fluent members of the Pennsylvania Forestry Association had vainly tried to interest the Pennsylvania State Agricultural College for several years, and in 1898 had formally asked for such a course at State College or at the University of Pennsylvania. For various reasons, neither institution took action, much to Dr. Rothrock's disappointment.

In the issue of *Forest Leaves* for October 1901, he outlined a plan for establishing "a school for practical instruction in forestry"—not at State College, not at the University, but on some desirable location on state-owned land. "It will guarantee to the State in the promptest and most certain manner, and without any pecuniary risk to the Commonwealth, a body of trained foresters who will be intimately acquainted not only with forestry principles, but with the ground upon which these principles are to be applied, and it will create a self-respecting, cultivated body of men, with the *esprit de corps* which will enable the American forester to take rank with the forester of any other country."

Finally in 1903, the legislature passed an act which provided for a school of forestry at Mont Alto, to be known as the Pennsylvania State Forest Academy "with the traditions of West Point and Annapolis as ideals." The state forester at Mont Alto, Mr. George H. Wirt, was named as director of the school.

Mr. Wirt, born in McVeytown, November 28, 1880, had been graduated from Juniata College with the M.E. degree, and from the Biltmore Forest School in 1901, following instruction in Germany. He was therefore the first technically educated forester to be employed by the commonwealth, having been appointed April 1, 1901. Incidentally, he still serves in the Department of Forests and Waters as chief of the Division of Forest Protection and as such is the chief forest fire warden of Pennsylvania. He has been an able and devoted servant of the commonwealth for more than forty-three years.

In 1907 the Pennsylvania State College established a Department of Forestry and began instruction on the professional level. Thus beginning in 1907 there were two technical schools of forestry in the state. The name of the State Forest Academy was subsequently changed to the Pennsylvania State Forest School, but it continued in the policy under which it was established, to train

foresters for service in the state forests.<sup>12</sup> In 1929 it was merged with the Department of Forestry at the Pennsylvania State College, so that now there exists only one school of forestry in Pennsylvania. It is, however, rated by the Council of the Society of American Foresters as an approved school.

In presenting this brief historical sketch of the rise of the forest conservation movement during the latter part of the past century, I have attempted to show how enthusiastic and unselfish public sentiment shaped the development of forest laws and forest policy in Pennsylvania. But this movement had a social and economic significance far beyond the conservation of forests alone. It helped establish the concept of conservation as an instrument of public policy for other natural resources—soil, water, and wild life.

Pennsylvania became a great industrial commonwealth through the exploitation of her natural resources. She can only continue to be great through their wise use and preservation.

<sup>12</sup> The Report of the Committee on Conservation to the Pennsylvania State Grange, Tyrone, December 11, 1918, contains an interesting statement (page 8): "The high integrity, skill, and devotion to duty of the state foresters constitute a remarkable tribute to the spirit and efficiency of the training at Mont Alto."