

Henry E. Muhlenberg, Botanist

By HERBERT H. BECK

THE subject of this biographical sketch, was happily qualified by rights of lineage and birth for the position of enduring fame he was destined to win in the world of science. He was a son of Henry Melchior Muhlenberg, who arriving at Philadelphia in 1742, began a life course on American soil which eventually won him the honored title of Patriarch of the Lutheran Church in the United States. He was a son of Anna Maria Weiser Muhlenberg, daughter of Conrad Weiser, and as such he was a grandson of a man who as interpreter and diplomat among the Indians goes down as an outstanding figure in the history of the colonies in general and of early Pennsylvania in particular. He was a younger brother of Pastor Johann Peter Gabriel Muhlenberg, who was a major-general in the Revolutionary War, Vice-President of Pennsylvania, a member of the House of Representatives of the United States and later a United States senator. He was also a younger brother of Pastor Friedrich August Muhlenberg, member of the Continental Congress, a member and speaker of the Pennsylvania Legislature, and a member of the House of Representatives.

Born at New Providence, Montgomery County, Pa. on November 17, 1753, Henry Ernest Muhlenberg, the third son and the scientist of this distinguished family, attended schools in his native place and in Philadelphia, whither his family removed in 1761. When Henry was ten years old he was sent in the packet ship Captain Budden to Germany with his two brothers, to continue his studies and prepare for the ministry. The three boys were placed in an orphan school at Halle, where Henry passed through four German and then through the Latin, Greek, Hebrew and French classes. He entered the University of Halle in 1769 and remained there for one year.

The profound influence of Linnaeus in making natural history descriptive and systematic and thereby crystalizing chaos in potentially attractive subjects like botany, with little doubt was a prime determinant in the destiny of young Henry Muhlenberg at this period of his life; for the great Swedish naturalist's methods were penetrating and stimulating the world of science and learning at this time.

In 1770 Henry returned to Pennsylvania and in October of that year he was ordained at a meeting of the synod in Reading, and became his father's assistant. In 1774 he was elected minister of a Lutheran Church in Philadelphia and the same year he was married to Mary Catharine Hall, daughter of Philip Hall of that City. When Howe's Army entered Philadelphia in September, 1777, Henry Muhlenberg fled with his wife and child to his Montgomery County home, there to remain until the British evacuated the city in June, 1778, when the young pastor returned to his post, Zion's Church, which had been converted into a military hospital (by the enemy) during his absence.

In 1779 he left Philadelphia to take charge of the congregation at New Hanover. In March, 1780, he was transferred to Lancaster to become pastor of Trinity Lutheran Church, where he remained in pastoral service until his death, which was on May 23, 1815.

From the time of his arrival in Lancaster and throughout thirty-five years of active and efficient service as pastor, scientist and educator, Muhlenberg lived in the stone house at the northeast corner of North Duke and what is now Grant Street. This building, practically unchanged today from its original outer form, according to its property deeds, was erected by Melchior Snider on the lot purchased by him in 1748. Snider, who was a stone mason, probably built the house soon after 1748. In 1773 Snider sold the property to the Trustees of Trinity Lutheran Church. For eighty years this venerable building, now No. 33 North Duke Street, was the parsonage of the old church on

the square below. The church trustees sold it by public outcry in 1853, the year the courthouse was being built opposite. This old house is well worthy of a bronze tablet to mark it as the home and to perpetuate the memory of a leading American botanist.

The size and demands of Muhlenberg's charge and the way he faced his pastoral problems, with a reflected touch of his character, are indicated in parts of two letters addressed to his father, and printed in the "Hallische Nachrichten" of the day. These letters were written in 1785, five years after Muhlenberg entered the pastorate of Trinity Lutheran Church. "I am still engaged in the duties of my office. As usual I preach twice each Lord's Day I cannot visit as much as I wish, because I have no time. But I do not neglect to visit the sick, as soon as their sickness is known I also publicly and privately invite my members, to visit me, while they are well; and some of them gratify me by so doing.

You will be able to understand the outward condition of the congregation, when I inform you that during the past year I baptized 179, confirmed 72, administered the Lord's supper to 627 and buried 48 persons I cannot speak of any change in the spiritual state of the congregation. Sincere souls grow in grace, and old sinners continue settled in their lees my catechumens approach me unreservedly and, I must say, love me with a filial and fraternal affection, instead of fearing me."

Muhlenberg's Amts Journal written by him and preserved in the archives of the congregation he served throws light on the earnestness of his purpose as pastor and his faithfulness in his labors; and it also indicates his intelligent and progressive recognition of the fact that the community could and should be benefited by increased educational advantages. He fully records his views on the necessity of establishing a German High School or College at Lancaster, for the benefit of the German population of Pennsylvania, Maryland, etc.

In the pulpit Muhlenberg used the German language almost entirely. He is reported never to have preached an English sermon in his own church. His note in his journal (1788) says "I must apply myself more to the English language, so that, if necessary I may be able to preach or speak it fluently."

Physically the most important change that took in Trinity Lutheran during Muhlenberg's pastorate was the erection of the steeple, with the four evangelists on the corners of its platform, which was finished in 1794, and which still remains one of the architectural features of Lancaster. The "steeple debt" which this spire incurred, must have been a burden on Muhlenberg's shoulders, for it remained unpaid for thirteen years and eventually induced him and his trustees to apply to the legislature for a lottery. This request for a lottery (a record of which is preserved in Muhlenberg's handwriting) was granted and it solved the problem of the "steeple debt".

Muhlenberg's interest in education and his unusual equipment and talent as an educator were so intimately connected with the new college, which was forming in Lancaster that, when it was officially established in 1787, he was elected principal. He, therefore, was the first president of Franklin College. As recorded in the History of Franklin and Marshall College by Dr. Joseph H. Dubbs, the institution was practically started in what was known as the "Brew House" on Mifflin Street, west of Duke Street and near the Trinity Lutheran Church. That a school with which Muhlenberg was associated must have been kept there at an earlier date is evidenced in a letter of Dr. Muhlenberg's (as he was then known) to Dr. Benjamin Rush, dated June 25, 1787, in which the writer says that it is proposed to begin instructing the students "in the Brew House, the former house" and to ask the Assembly for a gift of the Store House. The store house Muhlenberg mentions had been built during the Revolution for government stores. It was turned over to the petitioners by an Act of the Assembly of the 27th of February, 1788 "vesting the public Store House and two lots of ground in the borough and county of

Lancaster, in the Trustees of Franklin College for the use of said institution." This brick building, one hundred feet in length and thirty-five in breadth, is still standing on the western side of North Queen Street immediately south of James. It has been divided into four dwellings the southern one of which, No. 438 N. Queen, is used by the National Guard of Pennsylvania.

The Pennsylvania Gazette (Philadelphia) published the following notice:
Lancaster, June 8, 1787.

Tuesday last being appointed by the charter of the German College for the meeting of the Trustees, they assembled at ten o'clock in the Court House and unanimously elected:

The Rev. Henry Muhlenberg, Principal of the College;
The Rev. William Hendel, Vice-President;
The Rev. Frederick Valentine Melsheimer, Professor of Latin, Greek and German Languages;
Mr. William Reichenbach, Professor of Mathematics;
and the Rev. Joseph Hutchins, Professor of English Language and Belles Lettres.

Dr. Benjamin Rush said of this faculty "A cluster of more learned or better qualified masters, I believe, have not met in any university."

Among these Melsheimer was a scientist of distinction. He has frequently been called "the father of American Entomology." His **Insects of Pennsylvania**, published in 1806, contains a description and classification of 1363 species of beetles and was the first work of its kind published in America. It was succeeded by a more extensive work entitled **American Entomology, or Description of the Insects of North America**, Philadelphia, 1810. His collection, augmented by his sons, who continued his work, is now part of the Agassiz collection of Harvard University.

Our knowledge of Henry Muhlenberg, Scientist, is further supplemented by a description of him which was furnished by his son, Dr. F. A. Muhlenberg, who studied medicine under Benjamin Rush. This description is taken from an address delivered at the Centenary Jubilee of Trinity Lutheran Church in 1861 by Henry Muhlenberg's grandson, Professor F. A. Muhlenberg.

This direct information describes Henry Muhlenberg as "a person of medium stature, robust frame and florid complexion. He was a great pedestrian. Part of his regular schedule was to walk to his rural charge, Conestoga Centre, attend to his duties there, and then spend some hours rambling among the hills on botanical explorations. He frequently started on foot from Lancaster to Philadelphia, regarding the walk as a trifling feat. His manners were easy and affable, but dignified. He enjoyed the uninterrupted regard not only of his own congregation but of the whole community. He regarded the young, especially, with the most tender interest and zealously labored to promote their good. He was a versatile man. In his professional career he was generally recognized as a sound theologian. He was a good linguist. He was extremely fond of music and on several instruments performed with much skill. While botany was his favorite science his attainments in medicine, chemistry and mineralogy were considerable."

That he took more than passing interest in Ichthyology and was an observer in this field of natural history is recorded in his letter of January, 1815, to William Baldwin in which, inquiring about the fishes of Georgia, he says "Long ago I made a catalogue of our Susquehanna and Conestoga fishes. We are very poor, and have few more than 20 species."

Curiously out of physiological accord with Henry Muhlenberg's physical strength and intellectual superiority was a recurrent pathological tendency which finally caused his death. As early as 1786, when he was but thirty-three years old, Muhlenberg had attacks of giddiness, which were frequently repeated with greater severity in subsequent years. He often complained of weakness of memory connected with, and consequent upon, these attacks. Later there

was a partial paralysis, and in the latter part of his life, in his sixtieth and sixty-first year (he died at sixty-two) he had repeated returns of the disease which affected him very singularly. After one of them he lost the power of articulation and communicated his thoughts by writing; at another time his hand was paralyzed, so that he was unable to carry on his extensive correspondence; and again he seems to have forgotten all his stores of knowledge and lost the ability to read. With all this he retained consciousness and believed that the loss was a pathological product and that he might succeed in acquiring knowledge afresh. For this purpose he took up the spelling book, and began to learn his letters and to spell words of one and two syllables. When he reached this point the veil suddenly lifted, the lost treasures of memory were again restored, and he was able to read as usual and to make use of his great store of information with his former facility.

In May, 1815, Henry Muhlenberg in his last attack, died in his son's arms. He was buried near the church, in which he had preached for thirty-five years. Later his remains were transferred to Woodward Hill cemetery. His large tombstone now lies within a few yards of and in line between those of James Buchanan and William U. Hensel.

Henry Ernest Muhlenberg, as a botanist, was probably unsurpassed by anyone in the United States of his period. That he was the leading botanist of the country was the opinion of at least one of his contemporaries in the same field of science, Dr. William Baldwin, who in a letter to Muhlenberg's son soon after the father's death said: "Many lovers of Botany, throughout the United States do honor to his memory by walking in his footsteps. He was not only worthy of imitation, for that most active zeal and industry which characterized him the Linnaeus of our Country, but also for that unbounded liberality of sentiment which he uniformly manifested toward his contemporaries; and which ought ever to distinguish the genuine Christian Philosopher, and Naturalist, from the narrow-minded despot in science who would exalt all his own fame at the expense of those around him. However, we must deplore the loss of such a character, it is consoling to reflect that he has left a name behind which will be transmitted along with those of Linnaeus, Willdenow, and others, to the end of time."

In another letter Dr. Baldwin says: "Has no one yet undertaken to write a biography of the American Linnaeus? to which appellation your father was so justly entitled."

Dr. Baldwin, of Chester County, was a Navy Surgeon during the war of 1812 and a botanist who is remembered today for numerous contributions he made to the science. Younger than Muhlenberg by twenty-six years, Baldwin was a follower and an admirer of the Lancaster botanist. In 1811 a correspondence began between the two which continued until Muhlenberg's death. A considerable part of this correspondence was brought into book form under the title *Reliquiae Baldwinianae*, which reveals much of interest and value on the characters and scientific methods of the two men. The above quotation and some other documentary data used in this paper were taken from this book. One of Muhlenberg's letters to Baldwin is of more than passing interest as it reveals the status of medical practice in early Lancaster. It says (February, 1811) "In Lancaster we have at least a dozen physicians good and bad; and if it were not for the neighboring country they would not make a living."

Muhlenberg's interest in and study of botany (according to his letter of January, 1811, in which he says that he has been a great friend of botany for near forty years) began when he was eighteen or nineteen years old, and seems to be coupled with that period of his life when as his father's assistant he preached in Philadelphia, Barren Hill, and in the churches on the Raritan. His work was probably intensified and organized into scientific form as the result of the leisure which followed his flight into Montgomery County. Dr. John W. Harshberger, in his authoritative book on the Botanists of Phila-

delphia, says of Muhlenberg:—"He pursued the science earnestly after his return to Philadelphia (July, 1778) and became intensely interested in the less conspicuous flowering plants and cryptogams." By the time Muhlenberg moved to Lancaster, which was in 1780, when he was in his twenty-seventh year, he was evidently a botanist of considerable experience and knowledge.

Then began the thirty-five years of intensive, though avocational, study of plant-life in the Conestoga Valley, which was destined to bring him into a position of recognized leadership among American botanists.

Truly for this reason (quoting Thomas C. Porter, of more recent local and general prominence in the science) "Lancaster County is classic ground in the annals of American Botany."

It may be added to this that almost continuously for the past century and a half Lancaster County has been prominently connected with leadership in American Botany. For, beginning with Muhlenberg in 1780, it is intimately coupled with Benjamin Smith Barton, who was born here; with Thomas C. Porter, who held a professorship here for thirteen years; and with John Kunkel Small, a Franklin and Marshall graduate. It is doubtful if there are four men connected with any similar region in the United States who have contributed as much to American Botany as have Muhlenberg, Barton, Porter and Small.

Like a true Scientist, Muhlenberg exercised the greatest care and thoroughness in observation and research. He was able to inform Dr. Cutler, in the Spring of 1791, that he had collected more than eleven hundred different plants within a radius of three miles of Lancaster. This scientific character of his work is evidenced in his letter of November 8, 1791, in which he says "I am collecting, as far as possible, all I can learn concerning the medicinal and economic uses of our plants, and am writing it down. If the medicinal application seems to be sufficiently confirmed from different sides, and agrees with the character of the plant, I either try it on myself or commend it to my friends. I raise most of the grasses in my garden, and experiment how often they can be cut, and whether they are readily eaten by horses and cattle."

Muhlenberg frequently refers to his botanical garden, as in his letter of July, 1813, to Dr. Baldwin, in which he writes "My little garden in which I cultivate North American plants from other parts, gives me daily some entertainment. But how little can a small garden contain."

Conjecturally this garden was in the rear of his parsonage home and therefore east of North Duke Street. A valuable relic of this famous garden is in the Franklin and Marshall museum, It is the dried stalk of a Century plant which, started by Muhlenberg in the year 1808, was transferred, probably by his son, to the Grubb home at the corner of East Chestnut and North Lime Streets, where it remained until it came to glorious bloom by happy fate, (for they are not always on time) a century later in 1908.

This Century plant which is now in the Franklin and Marshall museum, is probably the only relic in Lancaster County of Muhlenberg's field material.

He had an extensive herbarium for he was a busy collector in his home region and he added greatly to his collection by numerous exchanges with other botanists, notably with his friend, Dr. Baldwin, who on account of pulmonary troubles had left Chester County and gone to Georgia whence he sent Muhlenberg many specimens of the flora of the Carolinian and Louisianian life zones. The range of this collection was considerably broadened by Christian Dencke, a Moravian Missionary among the Indians at Fairfield, Canada, who sent Muhlenberg many plants from the Canadian life zone.

This valuable herbarium was bought by some of Muhlenberg's friends for a little more than five hundred dollars and presented to the American Philosophical Society in February, 1818—three years after the Botanist's death. It was then in good condition but it has, unfortunately, been allowed

to suffer from neglect until (according to Dr. Harshberger) it is no longer of any value.

Muhlenberg made it a point to keep in close touch with the active botanists of his day—as close at least as the tardy mail system and the difficulties of travel allowed. He persistently tried to widen his horizon of friendships, correspondents and “exchanges”, always apparently finding time for that which was near his heart. He had in his extraordinary list of correspondents the names of most of the men who were extending the paths of botanical knowledge abroad, and those who were cooperating with him to do the same in North America. Among his foreign correspondents were Persoon, Palisot deBeauvais and F. Andre Michaux of France; Frederick Pursh and Smith of England; Dillenius, Hedwig, Hoffman, Schopf, Schreber, Sturm, Willdenow, Batsh, William Aiton, Schkuhr, of Germany; Henrich Adolph Schrader of Gottingen; Kurt Springel of Halle; Acharius and Prof. Olaf Schwartz of Sweden—the latter one of Linnaeus’s most eminent pupils.

Among his many home correspondents in botany were Isaac Hiester, of Reading, Dr. Jacob Bigelow, Boston; Dr. Romayne Beck, Albany, and Charles Whitlow, Genesee, N. Y.; Stephen Elliott, Charleston, S. C.; Dr. William Baldwin, St. Mary’s, Ga.; Christian Muller, Harmony, Pa.; Rev. Samuel Krampf, North Carolina and three Moravian ministers: Bishop Jacob Van-Vleck, of Salem, N. C.; Christian Dencke, of Fairfield, Canada, and Lewis David deSchweinitz, also of Salem, who was a talented mycologist and later became famous in his botanical specialty. (David deSchweinitz—a great grandson of Count Zinzendorf on his mother’s side, was an ancestor of Dr. George Edmund deSchweinitz, of Philadelphia, a leading oculist of America today).

During his seven years of ministry in and about Philadelphia, Henry Muhlenberg came into frequent personal contact with old John Bartram, whose famous botanical gardens he learned to know well; and later on, in his visits to Philadelphia he came in touch with botanists William Bartram, Benjamin Smith Barton, Humphry Marshall, Zacchius Collins, Bernard McMahan, John Lyon, and Dr. Adam Kuhn (who, appointed to the position in 1768 at the University of Pennsylvania, was the first Professor of Botany in the United States). There, too, he started a friendship with Correa de Serra, of Portugal, who was visiting America to study its botany.

Muhlenberg entertained largely at his Lancaster home where he had many guests distinguished in their day and way. Among these none was more prominent than Alexander VonHumboldt, who, returning home from five years of intensive study of Natural History in South America, came by way of the United States and in 1804 visited Henry Muhlenberg at Lancaster. (The information on this visit comes direct from Muhlenberg’s son, Dr. F. A. Muhlenberg.)

The data of Muhlenberg’s work as a Botanist is recorded chiefly in three publications. He presented to the American Philosophical Society in July, 1785, an outline of “Flora Lancastriensis” containing the results of his observations on plants and their habits, and at the same time a manuscript calendar of flowers. In February, 1791, he added his “Index Flora Lancastriensis.” This is arranged according to the system of Linnaeus and contains 454 genera with nearly 1,100 species, including both feral and cultivated plants. A supplement to this Index, which appeared in the “Transactions of the American Philosophical Society” in September, 1796, contained 44 additional genera, with 62 species of phanerogams; while the cryptogams were represented by 226 additional species belonging to 29 genera. These lists show that up to the summer of 1796 Muhlenberg had found himself, or confirmed from the observations of others, about 1,380 species of native or cultivated plants within Lancaster County.

In 1809 Muhlenberg began compiling a catalogue of the flora of his continent. It came from the press four years later under the title A Catalogue of the Hitherto Known Natural and Naturalized Plants of North America,

arranged according to the Sexual System of Linnaeus. By Henry Muhlenberg, D.D., Minister at Lancaster, in Pennsylvania. Lancaster, William Hamilton, 1813, octavo pp. IV, 112.

In this catalogue, the author conscientiously referred to the books which he had used in the determination of his collected plants, and gave credit to correspondents in different parts of the United States, who had assisted him in his researches by sending him plants or seeds.

He also made, at the same time, a complete description of the plants growing around Lancaster, and likewise a complete description of all other North American plants, which he had himself seen and arranged in his herbarium. Unfortunately this work, which would have been his masterpiece, was never published.

The third publication, which was a treatise on Muhlenberg's specialty, the grasses, came from the press in 1817, two years after the author's death. Its title is "Descriptio uberior Graminum" (Commenting on this work Dr. Baldwin regrets that it could not have been published during Muhlenberg's lifetime for the general treatment of the subject would have been better if the original author could have sent it to press and proof read it himself.)

In the Linnaean binomial method of naming biological species the special descriptive word which follows the name of the genus is invented and placed by the naturalist who first studies and reports the species; and science gives this discoverer of the species credit by placing his name (usually abbreviated) after the officially recognized binomial. Thus *Marila valisneria* (Wils.) is the scientific name of a bird, commonly called **canvasback duck**, which was first descriptively reported by Alexander Wilson.

Of the 1,400 recognized plants of Lancaster County, as listed in the Flora of Lancaster County—an excellent treatise by Small and Carter—sixty-one were discovered and named by Muhlenberg; while in the Flora of North America by Britton and Brown about 100 species and 5 genera are ascribed to Muhlenberg. The local plants named by Muhlenberg are mostly rare species or supposed variants, which he was very keen to differentiate.

Most of our common species of plants as well as animals are named by Linnaeus, the author of the binomial system of nomenclature, (Sweden, 1707-1778) from specimens sent or brought to him by foreign observers or travelers. A good example of the breadth of Linnaeus as a naturalist is the fact that of twenty-five kinds of wild ducks which are now known to inhabit Eastern United States thirteen species were named by Linnaeus, who never visited America. To a lesser extent the plants are named by European Botanists, like Schreber and Willdenow, with both of whom Muhlenberg frequently corresponded. Of the 1,400 plants listed in Lancaster County in 1913, but sixteen were named by that leading American Botanist, Asa Gray (1810-1888), which is forty-five less the number credited to Muhlenberg.

Muhlenberg's letter to Baldwin in 1813 in which the writer says "grasses remain my favorites", is confirmed by the fact that nine grasses and twenty sedges which occur in Lancaster County have the parenthetical (Muhl) after their names.

That European botanists grievously imposed upon the original field data of Muhlenberg is an unfortunate fact that is deplored by his friend, Dr. Baldwin. In a letter to Dr. Darlington, written soon after Muhlenberg's death, Baldwin says:—"I hope the time is not far distant when we shall possess something like a standard work of our own—in which we ought fairly to assert our botanical independence and rescue from oblivion the names and labors of our native botanists—who have been treated with injustice by foreigners. It is greatly to be regretted that Dr. Muhlenberg did not long ago publish his works. Had his love for **fame** been equal to his love of the Science, European Botanists would have been obliged to have quoted him instead of changing his names. A mere catalogue was not sufficient to prevent him being plundered of his well earned fame."

This tendency of many scientists to fail to give credit where credit was due was shown during Muhlenberg's lifetime by Dr. John Schopf.

Dr. Schopf, a Hessian, stationed in New York during the revolutionary times, who traveled through the Eastern States to Florida after the conclusion of War in search of medicinal plants, became acquainted with Muhlenberg and was aided by him. Muhlenberg furnished Dr. Schopf with notes on the medicinal properties of plants, some of these for use in a contemplated work on American *Materia Medica*. When that work was published in 1787 the author most ungratefully omitted to mention his indebtedness to Muhlenberg. Similarly when Muhlenberg first saw a copy of Bigelow's "*Medical Botany*", he could not help remarking after looking through it: "This gentleman has appropriated to himself all my explanations, without making any acknowledgements." (Harshberger).

In general, however, Muhlenberg's service to science has been well recognized by botanists. A golden rod was given by Forrey and Gray the name *Solidago Muhlenbergii*; a small willow was called by Barrett *Salix Muhlenbergii*; Gray gave the name *Muhlenbergii* to a species of reed or sedge, and Schreber the name *Muhlenbergia* to a genus of grasses. Two mosses of the genera *Pascum* and *Funaria* were named in honor of Muhlenberg by Olaf Schwartz; two lichens of the genera *Umbelicaria* and *Gyrophora* by Acharius; and by Elliott, a fungus of the Genus *Dothidea*. Nash named a species of grass *Paspalum Muhlenbergii*. Schweigger named a local turtle *Chelopus Muhlenbergii*, and it is still known as Muhlenberg's tortoise. This would indicate that Muhlenberg was a student of reptilia and that possibly he was the first naturalist to call attention to the species.*

The local feature of the plants named for our botanist is *Quercus Muhlenbergii*. This tree, the yellow oak, was given its scientific name by Engelmann, who very appropriately called it *Muhlenbergii*, possibly also because it is most distinctive of Muhlenberg's County within Pennsylvania. Illick, in his *Trees of Pennsylvania*, describes its range as rare and localized within man, who very appropriately called it *Muhlenbergii*, possibly also because distributed along the banks of the Conestoga from Brownstown to below Millersville. Probably the most impressive stand of this rare oak is along the Conestoga near its Lititz Creek confluence, where there are several venerable and stately individuals, well above eighty feet in height, which apparently came to growth during their Muhlenberg's lifetime.

The yellow oak is a tree that can easily be overlooked by the ordinary observer, for it is garbed in a bark closely resembling that of the common white oak, and it is only when the eye is caught by the small chestnut oak leaves, curiously quivering in the breeze, that the tree's difference and distinctiveness are usually noted. Of fourteen species of oaks in Lancaster County, *Quercus Muhlenbergii* is the only one which carries the name of a botanist.

The writer, to whom nothing of the field seems more in harmony with happiness or more in sympathy with sorrow than the tree, has come to be fond of the yellow oak. With its rugged pearl gray bark, its unusually heavy branches and its stately form it has a personality, which, by virtue of its distinctiveness as well as its beauty, happily qualifies *Quercus Muhlenbergii* to be the botanical monument of the Linnaeus of America, Henry E. Muhlenberg.

That the high value of Muhlenberg's contributions to botany were recognized by the scientific institutions of his day is shown by the number of these which enlisted him into membership or conferred degrees upon him. The

*Lancaster, Pennsylvania, is given as the type locality of Muhlenberg's tortoise in Barbour and Stejneger's Check List of North American Amphibia and Reptilia. Within a limited range the species seems to be highly localized. Dr. H. J. Roddy has found it only in the swamp in eastern Providence Township. This swamp, almost unique locally in its flora, is probably the place where Muhlenberg found the unreported tortoise as he was studying the rare swamp plants which grow there.

University of Pennsylvania gave him the degree of master of Arts in 1780, and Princeton College that of Doctor of Divinity in 1787. He was made a member of the American Philosophical Society in 1785. He received diplomas and awards from the Imperial Academy at Erlangen, 1791; the Society of Friends of Natural History, Berlin, 1798; the Westphalian Natural History Society, 1798; the Phytographic Society of Gottingen, 1802; the Academy of Natural Sciences of Philadelphia, 1814; the Society for the Promotion of Useful Arts, Albany, N. Y., 1815; the Physiographical Society of Lund, Sweden, 1815; and the New York Historical Society, April, 1815, not quite six weeks before his death. (Harshberger).

A brief analysis of the character and life of Henry Muhlenberg reveals him as a talented, resourceful botanist, fairly impelled into diligence and persistent application by his energy and enthusiasm. With little doubt he was a naturalist, like most of the scientific ramblers of upland and marsh the writer has known, who are not only stimulated but rejuvenated by the thrills of discoveries and renewed acquaintances afield. Muhlenberg can safely be followed rambling along the wooded hillsides of Mill Creek or wading through the swampland a mile northwest of Lancaster, gleaning in plantlife the joys of being a boy again.

Along these well known routes and many others we can feel with him those touches of lightheartedness with which beneficent Nature rewards the naturalist afield.

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