B U L L E T I N O F

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QUAKER BOTANISTS

By Francis W. Pennell[1]

THERE are several reasons why the observation and study of plants should have appealed to the early Friends. In those days, far more than now, people prepared their own medicines, and there was practical worth in the ability to recognize different kinds of plants.[2] But there must always have been those who were primarily motivated by intellectual curiosity, who felt an urge to learn more of the world about them. Such interest could be given a religious warrant, since the world of Nature was God's world, and they were contemplating the wonders of His creation.

How early were Friends interested in botany? In the very beginnings of our Society there was Thomas Lawson of Westmoreland in northern England, who was convinced by the preaching of George Fox in 1652 and became an active writer on behalf of the new religious movement. He was born in 1630, had attended the University of Cambridge, and at twenty-two was vicar of Rampside, Furness. Fox tells in his *Journal* how Lawson yielded

[1] Elaborated from an address on the "Botanical Interests of Friends" delivered at the Spring Meeting of Friends Historical Association at the Academy of Natural Sciences of Philadelphia, May 19, 1945. Dr. Pennell is Curator of Plants at the Academy.

[2] Both Howard H. Brinton and Frederick B. Tolles have called my attention to George Fox's bequest of a plot of land in Philadelphia to form a botanical garden that was to be planted "with all sorts of physical plants, for lads and lasses, to learn simples there, and the uses to convert them to, — distilled waters, oils, ointments, &c." See letter of Thomas Lower to David Lloyd, 13 February, 1716, in Maria Webb's *The Fells of Swarthmoor Hall* (London, 1865), p. 367.

to him all the time at his "steeple house", and that Lawson and many of his congregation were won by "Truth". After that event we hear of Lawson as master of a Friends' School at Great Strickland in Westmoreland, where he remained until his death in 1691. It was from there, under date of "April 9, [16]88" that he sent to John Ray a list of Westmoreland plants that contributed many records to Ray's *Synopsis Methodica Stirpium Brittanicarum* of 1690.[3] It is pleasing to find botanical observation so congenial to the Friendly temperament established so early among us. (There is a genus *Lawsonia,* but Linnæus so named it for Isaac Lawson, a non-Friend who lived in the following century.)

Nearly as early another Friend, of whose background and education one would like to know, was collecting plants under very different skies. In the herbarium of Sir Hans Sloane that is carefully preserved in the British Museum, there is a collection labeled "Plants from Barbados by James Reid the quaker sent hither on King W^ms^ account, 1692." The entry in ames Britten and George S. Boulger's *Biographical Index of Deceased British and Irish Botanists* (second edition revised by A. B. Rendle, London, 1931) corrects the family name to "Reed", and records three packages of specimens, numbered 55, 184, and 284. It appears that Reed also sent specimens to James Petiver, a London apothecary, and to William Courten, a London barrister, both of whose herbaria were later acquired by Sloane. Sir Hans Sloane was a grand figure in the life of England in his day, and, on his death at ninety-three years of age in 1753, his vast accumulation of treasures, bequeathed to the British nation, led to the establish-

[3] Dr. Tolles supplies me with an excerpt from a letter written by Lawson to Sir John Rodes in 1690 that tells of an unfulfilled project. "Now some years ago, George ffox, William Pen, and others were concerned to purchase a piece of land near London for the use of a Garden Schoolhouse and a dwelling-house for the Master, in which garden, one or two or more of every sorte of our English plants were to be planted, as also many outlandish plants. My purpose was to write a book on these in Latin, so as a boy had the description of these in book-lessons, and their vertues, he might see these growing in the garden, or plantation, to gain the knowledge of them: but persecutions and troubles obstructed the prosecution thereof, which the Master of Christ's Colledge in Cambridge [Ralph Cudworth] hearing of, told me was a noble and honourable undertaking, and would fill the Nation with philosophers." For this letter see *A Quaker Post-Bag,* edited by Mrs. Godfrey Locker Lampson (London, 1910), pp. 20-22.

ment of the British Museum. In his young manhood he had been in the West Indies, a voyage lasting from 1687 to 1689 and on which he had himself visited Barbados. One suspects that the young physician Sloane stimulated James Reed's activity, and perhaps there is evidence of it somewhere in the elaborate two-volume report of the voyage that appeared in 1707.

Thomas Lawson and James Reed were observers of the plant world about them, and we find that Friends have been predominantly observational scientists. But the speculative and reasoning mind existed also among early Friends. Thomas Story (1670-1742), the eloquent minister, was, according to Norman G. Brett-James[4], "an enthusiastic botanist", and he tells of Story's influence on Peter Collinson. Most interesting is a letter from Story to James Logan, in which in 1738 he said: "Last summer . . . at Scarborough . . . I further learned, and was confirmed in some things; and that the earth is of much older date, as to the beginning of it, than the time assigned in the Holy Scriptures," and "as to six days' progressive work, by which I understand certain long and competent periods of time, and not natural days."[5]

I know of nothing botanical that Story published, but James Logan (1674-1751), the busy man of affairs and Penn's Secretary of Pennsylvania, found time to make some remarkable experiments. At this day it seems simple enough to prove by suitable removal of the tassels or male flowers that our Indian Corn or Maize requires pollen to fertilize the female flowers, the corn grains to which the "silks" convey the male element. Then the experiment was needed, and Logan's essay, *Experimenta et Meletemata de Plantarum Generatione (Experiments and Considerations on the Generation of Plants),* was a notable contribution to the developing idea that sex characterized plants as well as animals. The work appeared in Latin at Leyden, Holland, in 1739, and in 1747 was reissued in London, with facing pages of Latin and English. The English text was a translation made by Dr. John Fothergill.

[4] *The Life of Peter Collinson* (1925), p. 73.

[5] Wilson Armistead, *Memoirs of James Logan* (London, 1851), pp. 153-156.

After Story and Logan came long periods of quietism in our Society and later work is almost wholly of the type inaugurated by Lawson. Such observational study fitted well these later Friends.[6] Through the eighteenth and nineteenth centuries there was a long succession of those who collected plants and studied their identities with much discrimination. But sparks of speculative interest flashed at times in Peter Collinson and John Bartram, self-made naturalists whose activity was at the beginning of this period.

Peter Collinson (1694-1768), was a haberdasher and mercer, or in a single phrase a cloth-merchant, of London, who attained considerable financial affluence. His scientific curiosity was broad, though it tended most strongly to botany. He became a member of the Royal Society in 1728 and was on its council from 1732. To its *Philosophical Transactions* he contributed some original papers, but all short and none of much profundity. The most interesting to us are those in which he took issue with the great Linnæus concerning the hibernation of swallows. Linnæus, for all his learning, gave credence to the popular idea that these birds winter in the mud at the bottoms of streams and ponds, but Collinson insisted that they migrated to a warmer climate. Of much greater importance were papers by other persons that reached the Royal Society through Collinson, and thus found publication in its *Transactions*. Such were James Logan's first report on his experiments with maize that appeared in 1735, and, more especially, Benjamin Franklin's researches on electricity, a study that resulted from information that Collinson had sent to the Library Company of Philadelphia in 1745. Collinson himself helped finance various scientific works, of which the most notable was Mark Catesby's, *Natural History of Carolina* (1754), with its beautiful paintings of both animals and plants; except for Collinson's generous loan to the author its profits "must have fallen a prey to the bookseller." Collinson's interest in botany centered largely on the importation and cultivation of desirable American

[6] The gathering and observation of plants is a gentle and fascinating pursuit, and you may recall that Robert Louis Stevenson in *Virginibus Puerisque* speaks of the desirability of a young lady's selecting a botanist for a husband. He does not chance to mention a Quaker swain.

plants, and his successive gardens at Peckham and Mill Hill contained these treasures. For their obtaining he subsidized several collectors, but especially John Bartram. It was from Bartram that he received the aromatic plant of our Pennsylvania woodlands that Linnæus named *Collinsonia.*[7]

Strict chronological sequence requires the insertion here of the record of John Rutty (1697-1775), an English Friend who obtained an M. D. from the University of Leyden in 1723, and the following year settled in Dublin, Ireland. In 1772 he published, *An Essay towards a Natural History of the County of Dublin,* and, posthumously in 1777, there appeared his *Materia Medica.*

Best known of the botanists of American colonial days is John Bartram (1699-1777). The story has been often told of how this Pennsylvania farmer, living at Darby near Philadelphia, decided to learn about flowers, of his self-taught effort to master the Latin necessary to read the books about them, of his building with his own hands a stone farmhouse above the Schuylkill River and around it forming a garden of choice native plants, of his commission from Peter Collinson to obtain for him and others in England desirable plants, of his various travels through the colonies from Lake Ontario and the Catskill Mountains of New York to South Carolina, and of his appointment in 1765 as "King's Botanist in America" with the resultant trip of that season to the St. John's River in Florida. His plants were largely gathered as roots and seeds, but he also made dried specimens that were sent to Collinson and still survive in the British Museum (Natural History) at London. In his lifetime there were published in London portions of his journals of 1743 to the Onondaga country and Lake Ontario (1751), and to Florida (1769). Bartram's Garden has since been included in an expanding Philadelphia; it was for a century or more operated as a private industry, but is now part of the city's park system and under the special oversight of the John Bartram Association. This group was responsible for the celebration on June 5, 1931 of its Two

[7] For a special consideration of Peter Collinson see Norman G. Brett-James, *Life of Peter Collinson,* (London, 1925). Included is a "Hortus Collinsonianus", or enumeration of all the plants known to have been introduced to England by Collinson; this largely reproduces Lewis Weston Dillwyn's, *Hortus Collinsonianus* of 1843, a work mentioned below.

Hundredth Anniversary[8] and for the recent employment of Dr. Francis Harper on the study of John and William Bartram.[9]

In England Peter Collinson found a keen younger collaborator in his zeal for cultivating choice plants. His fellow-Friend, Dr. John Fothergill (1712-1780), a prominent London physician and the author of various medical papers, developed botanical gardens first at Upton, West Hampshire, in 1762, and then from 1765 at Lea Hall in Cheshire. After his friend's death three years later, he prepared in 1770 an "Account of Peter Collinson" that survives among the manuscripts at the Royal Society. Fothergill's herbarium passed to Sir Joseph Banks, and so is now preserved at the British Museum. In 1774 the German botanist of Scotch ancestry, Andreas Murray, gave the name *Fothergilla* to a tree of our southeastern states.[10]

It was at the request and expense of Dr. Fothergill that William Bartram (1739-1823), John's son, made his travels. He had accompanied his father on his Florida journey, and now, from 1773 to 1777, traveled from Carolina through Georgia and Florida westward to the Mississippi River in the present state of Louisiana. By the time of his return to Philadelphia early in 1778 his father had died, while the Revolutionary War prevented communication with his patron in England; fortunately, Fothergill had received dried specimens which had been sent him directly from the southern colonies and these survive today in the

[8] For an account of this event, with biographical articles on John Bartram by Dr. Rodney H. True and Dr. John H. Barnhart, a "Bartram Bibliography" by the latter, and an account of the "Restoration of Plants in Bartram's Garden" by Samuel N. Baxter, see *Bartonia* 12, *Supplement,* issued December 31, 1931, by The Botanical Club, of Philadelphia. The "Bartram Bibliography" also contains papers by and about William Bartram, and the issue has a special account of William Bartram by Dr. Witmer Stone. The most intimate picture of John Bartram and his cousin accrues from a perusal of their letters as published in the *Memorials of John Bartram and Humphry Marshall,* edited by William Darlington (Philadelphia, 1849).

[9] In the *Transactions of the American Philosophical Society* Dr. Harper published in 1942 John Bartram's *Diary of a Journey through the Carolinas, Georgia, and Florida from July 1, 1765, to April 10, 1766,* and in 1943 William Bartram's *Travels in Georgia and Florida, 1773-74, A Report to Dr. John Fothergill.* Both reproduce verbatim the original texts, and are copiously annotated and indexed.

[10] For a special account of Dr. Fothergill see, *Dr. John Fothergill and his Friends,* by R. Hingston Fox, M. D. (London, 1919).

British Museum (Natural History).[11] William Bartram had kept a journal that was to have passed to Fothergill; the first part did so, and it is this that Dr. Francis Harper has recently annotated. A copy of it and all the remainder stayed with the author, and these were elaborated into the celebrated *Travels through North & South Carolina, Georgia, East & West Florida, the Cherokee Country, the extensive territories of the Muscogulges, or Creek Confederacy, and the country of the Choctaws,* which was first published in Philadelphia in 1791. It has gone through many editions, and even now on behalf of the John Bartram Association, Dr. Harper has just prepared another edition, the first to be adequately annotated. It is surprising that after such experiences of travel, and without ever a report on the material that he had sent to England, William Bartram should have settled down for nearly fifty years of uneventful life in Philadelphia. Such retirement is in sharp contrast to the activity that characterized John Bartram to the end of his days.

It is interesting to compare father and son. John was self-taught and his words were crudely spelled, but they expressed vigorous thought. In reply to Collinson's urge that he read more religious books, he wrote: "My head runs all upon the works of God, in Nature. It is through that telescope I see God in His glory." On a stone block of the house that he built he engraved this distich:

[11] It is unfortunate that neither John nor William Bartram's specimens were adequately studied in their time nor since. The John Bartram Association has hoped to have them carefully reviewed by Dr. Harper, but that has been impossible because of the recent war and the removal of such treasures to safe storage at a distance from London. Little that the Bartrams collected ever reached Linnæus in Sweden, with the result that few species were based by him on their collections. Linnæus did, however, with characteristic cosmopolitan outlook, honor John Bartram as early as 1747 with a genus *Bartramia* applied to a weedy plant from Ceylon; but posterity, acting long subsequently through the German, Johann Hedwig, has chosen to commemorate him by another *Bartramia* assigned to a widespread though obscure genus of mosses. Botanists of Bartram's time did not know that all valid nomenclature was to commence with the names assigned by their contemporary Carolus Linnæus in his *Species Plantarum* of 1753, with the result that few species accepted by later generations would be based upon the widespread collections of the Bartrams, whereas very many would trace to the plants gathered by John Clayton, clerk of the county of Gloucester, in Virginia, a man who traveled little beyond that colony.

"'Tis God alone, Almyty Lord,
The Holy One, by me adored.
John Bartram, 1770."

This date is so late as to make it seem his answer to Friends, who were then disowning him because of his supposed deistical views.[12] It is said that disownment did not discourage this rugged soul from continued attendance at Friends' meetings, and his children seem to have remained in the Society. William's religious expressions were less personal, and concerned a beneficient deity who cared for his whole creation.

In their opinion of the Indians John and William Bartram are in contrast. For certain Indians, John thought that the right course was to "bang them a plenty", and yet on his last trip south the sick man stayed up long to observe an Indian conference. To William they were naïve children of nature, and his facile pen did much to color the romantic picture, then in process of development, of the untainted goodness of the primitive man.

Perhaps we can say this of father and son. While John sought Truth, William reveled in Beauty. William's *Travels* are replete with the loveliness of the southern forest, the color of its waters, the song and plumage of its birds, its glorious flowers—all that his sensitive eye could see or his spirit feel. No wonder the rising poets of England turned to William's book as an inspiration.[13] Yet it was a serious scientific book too, and only now are we trying to bring to proper scientific recognition the many species of plants[14] and animals that William Bartram incidentally described in his *Travels*.

[12] See "The Disownment of John Bartram", by Henry J. Cadbury in *Bulletin of Friends Historical Association*, 17 (1928), 16-22.

[13] About this consult especially Professor John L. Lowes, *The Road to Xanadu*, (1927), wherein we see how much of Coleridge's imagery, both in the "Rime of the Ancient Mariner" and in "Kubla Khan", grew out of Bartram's word pictures. The *Travels* also are reflected in some of Wordsworth's poems.

[14] In *Bartonia* 23 (1945), 10-35, Dr. E. D. Merrill gives an appraisal of these plant-names under the caption, "In Defense of the Validity of William Bartram's Binomials." He claims that many of these should be adopted, their incidental presentation having been due to Bartram's lifelong expectation of some report coming to him from England. Various zoologists are similarly reviving Bartram's names for birds and other animals.

John Bartram's cousin, Humphry Marshall (1722-1801) next claims our attention. He was a farmer at Marshallton in Chester County, Pennsylvania, and he followed John's example by making a garden, this an arboretum or collection of living trees. Like John, he collected American plants for English patrons, a business in which his nephew, Moses Marshall (1758-1813), aided and succeeded him. The latter traveled, more commercially bent than his cousin William, to the Southern States, and it was for him especially that the German botanist, Schreber, in 1791 named a curious southern Composite genus, *Marshallia.* But the great achievement of the Marshalls was primarily Humphry's, his *Arbustum Americanum,* or, as translated and elaborated on the title page, *The American Grove, or, an Alphabetical Catalogue of Forest Trees and Shrubs, Natives of the American United States,* published in Philadelphia in 1785. This was the first descriptive botanical work printed in this country, and in it appeared the first account of many of our trees and shrubs. Humphry had hoped to proceed to an account of our herbaceous plants as well, but the sale of the *Arbustum* was too slow to warrant a second work.[15]

Turning again to England we find in the later eighteenth century a number of Quaker botanists. Stephen Robson (1741-1779) published in London in 1777 the *British Flora,* a work that in spite of its imposing title appears to be little known. Dr. John Coakley Lettsom (1744-1815) was like Dr. Fothergill a successful London physician. Though born in the West Indies, where his father owned a small island, he was educated at a Friends' school in Lancashire, and on the death of his father came under the guardianship of Samuel Fothergill, John's younger brother, and so under the influence of John himself. Lettsom likewise developed a botanical garden, but he is remembered botanically as the author in 1781 of *Hortus Uptonensis,* a record of the plants cultivated by Dr. Fothergill in his Upton garden, and in 1782 of *Some Account of the late John Fothergill,* read before a

[15] For an account of "Humphry Marshall, Botanist" see *Bulletin of Friends Historical Association,* 24 (1935), 77-82. This address I gave at the Association's meeting at the Marshall house at Marshallton on May 18, 1935. In this paper is explained how the first word of Marshall's title "Arbustum" was inadvertently printed "Arbustrum".

medical society and then published. Contemporary botanists proposed *Lettsomia* for two different genera of plants, but neither is in use today. Although born as early as Lettsom, Joseph Cockfield (1740?-1816) of Upton, in Essex, where he was a friend of Fothergill and Lettsom, did not publish his anonymous *Botanist's Guide* until 1813.

Far more important was the work of William Curtis (1746-1799). He was a London apothecary, who brought out a flora of the vicinity of London, *Flora Londinensis,* in parts from 1777 to 1798, a work on *British Grasses* in 1787, and, also in 1787, inaugurated the long career of *The Botanical Magazine,* a journal with colored drawings accompanied by descriptions of plants. Today, over a century and half later, this journal still continues, being the longest-lived of all botanical publications. In honor of Curtis did William Aiton (or actually the botanist, Daniel Solander, whose scholarly work mostly passes under Aiton's name) give the name *Curtisia* to a South African member of the dogwood family (Cornaceæ).[16]

Although, according to the symbols used in Joseph Smith, *A Descriptive Catalogue of Friends' Books* (2 vols., London, 1867), William Curtis did not retain his membership in the Society of Friends, he seems to have been the center of an active group of scientifically-minded members. His successor as editor of *The Botanical Magazine* was a fellow-Friend, John Sims (1749-1831). He was a physician, whose name is perpetuated in *Simsia,* a genus proposed by Robert Brown for an Australian tree of the peculiar austral family of Proteaceæ. Eleven years younger than Curtis was Robert Barclay (1757-1830), the actual originator of *The Botanical Magazine,* as is acknowledged in the dedication to volume 54. This Robert Barclay, although living in England where he developed a large botanical garden at Bury Hill in Surrey, was the son of Alexander Barclay of Philadelphia, and a great-grandson of the Apologist. For him the botanist Wallich named an Indian genus of water lilies, *Barclaya.* As to the further history of *The Botanical Magazine,* from Sims the editorship

[16] For a recent account, with portrait, see "William Curtis, founder of *The Botanical Magazine,*" in *Endeavour,* 5 (London, 1946), 13-17.

passed in 1826 to William Jackson Hooker, who became Director of Kew Gardens in 1841, and now for over one hundred years the *Magazine* has been issued from the greatest of all botanical institutions. But its inception, and its course for nearly forty years, lay with members of the Society of Friends.

Flora Londinensis by William Curtis passed through a second edition from 1817 to 1826 under the editorship of George Graves, a Friend who, like Curtis, seems to have left the Society. Also like Curtis, Graves took a special interest in grasses, publishing a *Monograph of the British Grasses* in 1822; he also brought out a *Hortus Medicus* in 1834.

(To be concluded)

THE ANNUAL REPORT for 1947 of the Friends Historical Library of Swarthmore College speaks in particular of the advantages which have resulted from the exchange visits of Dorothy G. Harris, their Assistant Librarian, and Muriel A. Hicks, Assistant Librarian of Friends Library in London. The Quaker Collection of the Haverford College Library also profited from a two-months visit by Muriel Hicks, and hopes that Anna B. Hewitt, Assistant Curator at Haverford, will be able to go to London at some future time. All three libraries profited not only in finding new sources of material opening up for them, but particularly in learning about each others' ways and special knowledge and skills. Besides the books and pamphlets which Dorothy Harris brought back from England, Swarthmore also reports the gift of additional Lucretia Mott letters; a file of the rare Quaker antislavery periodical, The *Philanthropist* (1817-1818); many Yearly Meeting *Proceedings* from the Middle West; as well as books and periodicals from Friends in several European countries. The Haverford report for 1946-1947 lists a substantial gift of books from the Friends' Select School, and a number of important additions to the William H. Jenks Collection of seventeenth century Quaker tracts. Some rare Dutch Quaker tracts of the same period were also acquired, as well as a hitherto unknown copy of a letter of George Fox and one of Margaret Fell, his wife. Haverford was also the recipient of three pictures of unusual interest, two pastel portraits of Joseph John Gurney and Eliza P. Gurney, by Amelia Opie, and the original of one of Egbert van Heemskerk's most striking "Quaker Meetings," — a woman preaching from an upturned tub — which had long been lost to view, but was discovered in London by John L. Nickalls, Librarian at Friends House, and purchased by friends of the College. Both the Swarthmore and Haverford reports show an increasing use of their libraries, and indicate a special need for more assistance in cataloguing their books and manuscripts.