JOHN BRADBURY (1768-1823), KENTUCKY'S FORGOTTEN NATURALIST

CHARLES BOEWE

If any public notice was taken in Kentucky of the death of John Bradbury when he expired in Middletown in 1823, no record of it has been found. The *Louisville Public Advertiser*, the only newspaper that might have noticed his death, was published twice weekly but rarely found space for obituaries—and then only for those of the most prominent people. Unless he was mentioned in its issue of 2 April, which is absent in the microfilm of that newspaper, his death went unrecorded locally. It was referred to, however, in the 7 May issue of the *Missouri Republican*, published in St. Louis, a city where Bradbury had lived for a short time on at least two occasions. After remarking that the naturalist died at Middletown, Kentucky, on 16 March after a short illness, that newspaper went on to say in its brief notice that "Mr. Bradbury is known to the scientific world as among the first botanists and mineralogists."

The scientific world also knew him then as a Kentuckian, though his professional work had been done elsewhere and Britain had been his birthplace. It was Kentucky where he finally chose to locate his family after it became possible for his wife and at least some of their children to emigrate and join him. And Kentucky remains the residence of most of his numerous descendants who can be traced today.

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This essay is dedicated to the late Joseph Ewan, who blazed a trail through the wilderness of botanical history.

His tombstone, which correctly states that he was born 20 August 1768, only says that he "departed this life in 1823, aged 55 years." The tombstone, which otherwise does not mention his place of birth, also calls John Bradbury "the much famed botanist of England," but in 1995, when the place of his nativity in England dedicated a memorial plaque to him, a pamphlet published for the occasion called him a "celebrated botanist, intrepid explorer of the interior of America" who "is now better remembered in his adopted land of America than his native England."[1]

He is, in fact, so little remembered in his adopted land that his name never appears in any of the numerous histories of Kentucky, in *The Kentucky Encyclopedia* (Lexington: University Press of Kentucky, 1992), in the multi-volume *Dictionary of American Biography* (New York: Charles Scribner's Sons, 1928-36), nor does it appear in the recently published *American National Biography* (New York: Oxford University Press, 1999), which was intended by Oxford University Press to supplement and correct the *Dictionary of American Biography*. Nor does his biography appear even in Clark A. Elliott's *Biographical Dictionary of American Science* (Westport: Greenwood Press, 1979), much less the multi-volume *Dictionary of Scientific Biography* (New York: Charles Scribner's Sons, 1970-1978) which has a worldwide purview.[2] It would be hard to find a more neglected famous scientist.

[1] *A Tribute to John Bradbury and Jethro Tinker*, an eight-page, anonymous brochure published on the occasion of the dedication of "Blue Plaques" in honor of Bradbury and Tinker. The dedication ceremony, "in the presence of the Mayor and Mayoress of Tameside," was held 16 November 1995, at the Astley Cheetham Art Gallery in Stalybridge, Lancashire. Stalybridge, where Bradbury was born, is about six miles east of Manchester. The brochure states that "Blue Plaques feature throughout Tameside to honor famous people and places connected with the locality." The brochure further states that Bradbury's actual birthplace was Souracre Fold, Stalybridge, but the plaque was being mounted at the entrance to the Stalybridge Country Park.

[2] *The Biographical Dictionary of Rocky Mountain Naturalists* (Utrecht: Bohn, Scheltema & Holkema, 1981), by Joseph Ewan and Nesta Dunn Ewan, was the first general biographical reference to mention Bradbury (25), though the authors agree that his travels really did not stretch far enough westward to warrant his inclusion. More recently, my own sketch appeared in Keir B. Sterling, Richard P. Harmond, George A. Cevasco, and Lorne F. Hammond, eds., *Biographical Dictionary of American and Canadian Naturalists and Environmentalists*, (Westport: Greenwood Press, 1997), 99-102. This essay now corrects a few minor errors made there. An entire chapter is devoted to Bradbury in Susan Delano McKelvey's *Botanical Exploration in the Trans-Mississippi West, 1790-1850* (Jamaica Plain: Arnold Arboretum, 1955), though on inspection one finds this is largely a summary of the narrative of Bradbury's *Travels*. No reference to Bradbury appears in the general index to will books for Jefferson County, nor are there references to him in any other types of probate records in the county court order books of Jefferson County for the period 1821 to 1827.

Bradbury should be better known for at least two reasons. With fellow Englishman Thomas Nuttall, he was one of the first two professional naturalists to explore any part of the Louisiana Purchase. Unlike the botanist Nuttall, who concentrated on gathering plants for his own herbarium, who classified and gave them scientific names, and who then published the results and took credit for his discoveries, Bradbury sought new species of both flora and fauna and was the first plant hunter to try to bring back to propagate elsewhere living examples of exotic plants from the trans-Mississippi West. Despite setbacks and disappointments, his success as a plant hunter was measurably greater than that as a field naturalist. But for reasons no longer clear, he never published scientific descriptions of any of his discoveries of new species, either plant or animal, and hence his name has become all but obliterated in the history of natural science.

In general, such has been the fate of many who have brought back from wild and often dangerous lands new plants for the gardens and orchards of more settled regions.[3] Much credit goes to those who add to our knowledge of plants; little to those who give us the plants themselves. Nor have these explorers usually fared much better financially. In the eighteenth century, Quaker John Bartram was content to accept reams of paper in payment for the seeds he shipped to England to his friend Peter Collinson, who in turn sold the seeds to rich patrons at five guineas a box, though Collinson himself claimed that he hardly covered his expenses. Many of these forgotten collectors performed heroic labors for European patrons. Joseph Van der Schott, before his death in 1812 in Pittsburgh, had dispatched two hundred and fifty barrels of sugar-maple seeds, to be planted in Austria and Hungary on the estates of Prince Liechtenstein. And transporting potted live specimens, as Bradbury tried to do, could be hazardous both to the plants and to their caretaker. Captain Bligh learned this lesson when he watered the Tahiti breadfruit plants under his protection with fresh water his sailors believed should be theirs, and thus furnished at least one of the causes for the mutiny on the *Bounty*.

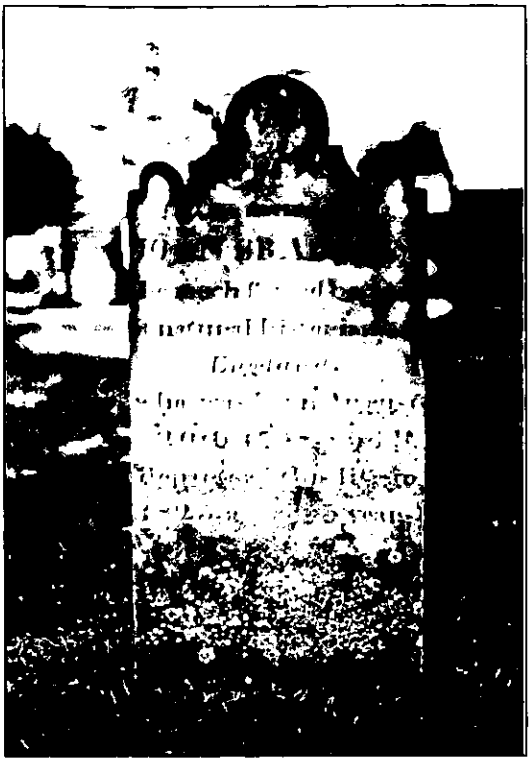
[3] One study which has tried to render some justice to the collectors is that of Alice M. Coats, *The Quest for Plants: A History of the Horticultural Explorers* (London: Studio Vista, 1969). It mentions Bradbury (296-99) but has nothing to add to our understanding of his life. A good summary of the work in America of Bradbury's fellow naturalists appears in John C. Greene, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984), 253-319.

Because of Bradbury's present obscurity, many of the alleged facts thought to be known about his life turn out on investigation to be ambiguous, spurious, or resistant to confirmation. For instance, Middletown's historian Edith Wood wrote fifty years ago that "his grave is in the front part of the old section of the Middletown Cemetery," and she was sure it was marked by a tombstone "until about thirty years ago."[4] But even while she wrote, the mortal remains of John Bradbury lay interred in the Simpsonville Masonic Cemetery beside those of one of his daughters, Mary Brinly (1799-1856). And, if we can accept Edith Wood's assertion that the original tombstone had disappeared, then the present tombstone, despite its appearance of antiquity, would date back only to 1906 when Bradbury's remains were shifted to the Masonic Cemetery that had been established in Simpsonville in 1854.

Carefully preserved by Kentucky descendants of Bradbury is a clipping of eight inches of newsprint, sans date, sans source, that recounts how his remains were exhumed "after eighty-five years" and moved to the cemetery in Simpsonville. According to this anonymous journalist, Bradbury not only was a "noted botanist" but also had become by this time a "national historian"—whatever that may mean. The writer added the macabre information that when his grave was opened "the skull, thighs and other parts of the skeleton were intact, and that the gray hair remained on the head." This writer went on to say—in contradiction to Edith Wood—that the tombstone in Middletown "also was removed and placed over the newly-made grave" in Simpsonville. The same writer quoted the tombstone inscription, which agrees with what may be read on the stone today, but added: "an unusual feature was that it contained a rough outline of the head of Mr. Bradbury, it being the custom in those days to inscribe a likeness of the deceased on the tombstone." No trace of such a portrait can be discerned on the stone now.

Of course we would like to know something about the appearance of our hero, for whom the only description we have is that "in the prime of manhood"—say, his forties—he was "swarthy, broad-shouldered, and of medium

[4] Edith Wood, *Middletown's Days and Deeds: The Story of 150 Years of Living in an Old Kentucky Town* (Anchorage, Kentucky, 1946). Her privately published book was reprinted by photo-offset in 1990 by Historic Middletown, Inc. All the author has to say about John Bradbury appears on pages 45-46. Her assertion that Bradbury "organized a party of naturalists . . . which left Philadelphia in 1809 for the far West to study and collect specimens" is so remote from reality, as will be seen, that it encourages skepticism about her observations on matters closer to home that she might reasonably be expected to have known more about.



John Bradbury's Tombstone
Teresa L. Reed

The inscription reads:

Sacred
to the memory of
John Bradbury
the much famed botanist
& natural historian of
England,
who was born August
20th 1768 and
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height," a man "amiable yet stubborn in disposition, temperate in his habits and a most excellent marksman."[5] The dedication ceremony in 1995 in England of a Blue Plaque to the memory of Bradbury was personalized by the display of the portrait of a man who very well fits the bill. With a neatly trimmed beard, sidewhiskers, and a generous mustache, a broad-brimmed flat-crowned hat at a rakish angle and a loose cravat that leaves the spread collars of his shirt a bit open at the neck, the figure in the portrait has octagonal wire-rimmed glasses on a rather prominent nose, and he holds a forefinger between the pages

[5] On page four of the referenced dedication brochure this description is attributed to " 'Bygone Stalybridge' by S Hill." *Bygone Stalybridge, Traditional, Historical, Biographical,* privately printed by Samuel Hill in Stalybridge in 1907, is of the same genre as Edith Wood's book—amateur antiquarianism—though it is considerably more resourceful than hers. Hill got Bradbury's date of birth wrong by a year, and his account of Bradbury's death was wildly—if romantically—erroneous. Much of what appears between these terminal events is subject to doubt. Hill's book is exceedingly rare—only three copies are listed in this country—so it is cited as quoted in Rodney True's more accessible article (see footnote 8). True himself had to use a transcript made from a copy in San Francisco and loaned to him by the Missouri Historical Society.

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of a book to mark the place where he stopped reading to sit for his portrait. There is a determined set to his mouth and the far-off gaze of an explorer in his eyes. The portrait is the very image of a forceful, self-reliant scholar-naturalist.

Reproduced on the cover of the dedication brochure, the portrait has been described as a large tintype. This tintype came to the late David Beall of Harrodsburg from his mother, née Maude Brinly. The Brinlys and Bradburys have been linked in consanguinity ever since the naturalist's son Henry P. Bradbury married Eve Brinly and his daughter Mary (next to whose bones his now repose) married John W. Brinly. It was Lyle Brinly, vice president of the Brinly-Hardy plow factory in Louisville and Maude Brinly's father, who had shifted the remains of his great-grandfather from Middletown to Simpsonville. According to an anonymous "Bicentennial History Lesson" in the 29 January 1992 issue of the *Shelbyville Sentinel-News*, Bradbury's bones were reinterred in the Masonic Cemetery because "he helped to organize Abrahma Lodge, at Middletown, one of the first five lodges organized in Kentucky"—which, if true, adds another distinction to John Bradbury's list of accomplishments.

As for the tintype, sad to say, we still do not know what John Bradbury looked like. Although the early history of photography is confused and complicated, in France it was Louis Jacques Mandé Daguerre, whose pictures were taken on silver-plated copper not tin or iron, who both collaborated with and was the rival of Joseph Nicéphore de Niepce, the other contender for the honor of inventing photography. The problem with the earliest pictures made by both experimenters was that they were not "fixed" but faded away in a short time when exposed to light. It was not until 1826 that either investigator succeeded in fixing a photograph that has survived.[6] This was three years after Bradbury's death; therefore, the tintype cannot be a portrait of John Bradbury.

The tangled posthumous attempt to unravel the events of Bradbury's life is only slightly less equivocal than the story of his burial. Intrinsically interesting, this effort to construct a biography also is worth reviewing because the slow accretion of reliable information does provide self-correction for mistakes of the past. Yet despite the effort that has gone into the construction of the House of Bradbury, many of its apartments still teeter on rickety foundations for lack of anything better to support them.

[6] See William Ivins, *Prints and Visual Communication* (Cambridge: Harvard University Press, 1953) and James J. Gibson, *Perception of the Visual World* (Boston: Houghton Mifflin, 1950).

The earliest historian of botany in America, John W. Harshberger, whose book *The Botanists of Philadelphia and their Work* (Philadelphia: T. C. Davis & Sons, 1899) is usually a good place to start, has it that Bradbury was "a Scotch naturalist" (153). A decade later, when an official of the federal Department of Agriculture essayed to write "A Biographical History of Botany at St. Louis, Missouri," he accepted in good faith the Scottish origin and added quite rightly that "comparatively little seems to be known about Bradbury."[7] It was not until 1929 that the botanist Rodney H. True began to gather some reliable and also some not-so-reliable information about Bradbury's early life and his scientific career. True's sources were Samuel Hill's *Bygone Stalybridge* (Stalybridge, 1907) and a number of manuscript letters written to and by Thomas Jefferson.[8]

Most of what Hill has to say about Bradbury's youth and about his life in England has not been verified from other, independent sources; but in the absence of anything better, much of it has been accepted by subsequent writers on the naturalist. Some of it will be repeated here, too, though it is cautionary to remember that Hill's heated imagination caused him to conclude his account with the fanciful story that:

> in the spring of 1825 [i.e. two years after the naturalist's actual death] a strange desire took possession of Bradbury to revisit the haunts of the Red Men, and he forthwith started from the city of St. Louis for that purpose. It may be that the trials of his early years had left their mark; it may be that his life was cut short by accident. Be that as it may, the last record of him states that he is supposed to have died, and been buried with great solemnity by the Indians somewhere in the valley at the head of the Red River.[9]

Characteristically, Hill does not bother to identify this "last record"; it may be hoped that the earlier records available to him were more accurate.

For what it is worth then, according to Hill, John Bradbury was born into a family of slender means; he had three brothers and one sister; and he was

[7] Perley Spaulding, "A Biographical History of Botany at St. Louis, Missouri," *Popular Science Monthly* 73 (1908): 488-99; 74 (1909): 48-57, 124-33, 240-58. Everything Spaulding has to say about Bradbury appears in 73 (1908): 493-95.

[8] Rodney H. True, "A Sketch of the Life of John Bradbury, Including His Unpublished Correspondence with Thomas Jefferson," *Proceedings of the American Philosophical Society* 68 (1929): 133-50.

[9] Quoted by True (150) but, of course, not accepted by him.

favorably influenced by his first teacher, a man named John Taylor, who inculcated in the lad a great love for nature and the out-of-doors. Though the family was so poor the boy had to leave school at a tender age to augment the family's income by working in a cotton factory, his father nevertheless found the means to purchase for him "a copy of the works of Linneus, which, his biographer says, 'he studied fervently,'" according to True, quoting Hill. The boy's thirst for education could not be restrained; he continued studying independently, even teaching himself to read and write French, and, at age eighteen, he organized a night school for young men for which he was the teacher.[10]

There must be some truth in this Horatio Alger tale, for at the 1995 Stalybridge ceremony earlier alluded to, equal honors were bestowed on Jethro Tinker (1788-1871), one of Bradbury's pupils, a botanist and entomologist who stayed in Stalybridge his whole long life and whose modest scientific attainments were known from sources other than the imaginative Mr. Hill's book. Some specimens of dried plants collected by Tinker and mounted in his herbarium are still extant in the Stalybridge Library.[11]

True goes on to say of Bradbury that "at the age of twenty-two his writings and discoveries came to the attention of the naturalists of London" and that through the interest in him of Sir Joseph Banks he was made a member of the Linnean Society of London. There is no reason to doubt his membership (the initials FLS appear after his name on the title page of his one book), but the only publications of his at this early period which have been noted are his contributions of "Cheshire records to [Dawson] Turner and [L.W.] Dillwyn's *Botanist's Guide [through England and Wales* (London: Phillips & Fardon, 1805)], published when he was thirty-seven,"[12] not twenty-two. So it remains unknown what he might have written fifteen years earlier to excite the interest of the London naturalists. He is also said to have been engaged in landscape gardening, an activity which led to his acquaintance with such movers and shapers as the Duke of Leinster. He certainly must have married, for when we come to the first wholly reliable documentary evidence he is the father of eight children. At some time in his young manhood "he made a walking tour of Ireland which is said to have yielded him many new plants."[13] It is tempting to speculate that it

[10] Ibid., 134.

[11] *A Tribute to John Bradbury and Jethro Tinker*, 6-8.

[12] H.W. Rickett, "John Bradbury's Exploration in Missouri Territory," *Proceedings of the American Philosophical Society* 94 (1950): 59.

also yielded his wife Elizabeth, for it was from Cork that she dated letters in 1810 when her husband was far away in St. Louis.

Though we do not know when the Bradburys were married, the early years of their marriage must have involved a peripatetic life which alternated between Manchester and Liverpool, the result perhaps of John's varied landscape commissions. It was in Liverpool that he made several acquaintances who would help to shape the course of his later life. As corresponding secretary of the Liverpool Philosophical Society, he came to know influential mill owners, such as the Earl of Derby, who were interested in finding a better source of raw cotton than that coming to their factories from the West Indies. They believed it worthwhile to scout out new sources in the southern part of the United States.

Also among his Liverpool acquaintances were William Bullock and William Roscoe. Bullock, who grew rich as a goldsmith and jeweler, was the colorful proprietor of a commercial museum of natural "curiosities" in Liverpool. True's reference to him as "head of the Liverpool Museum" may imply greater gravitas than is warranted. Bullock was the sole owner of the miscellaneous natural-history collections, and he exhibited them for an entrance fee in much the same way that Charles Willson Peale exhibited in Philadelphia his natural curiosities in the building later generations would call Independence Hall. When Bullock transferred his holdings to London in 1812 they became known as the "London Museum," and seven years later, when he auctioned off his treasures over the course of twenty-three days in 3,369 lots, we get some insight into the magnitude of his accumulation. Although plants had been listed in earlier catalogs of the museum, the catalogs for the sale listed only quadrupeds, birds, fishes, reptiles, insects, fossils, and shells—presumably all dead, preserved specimens. The collection of birds, which Bradbury had worked to arrange while it was still in Liverpool, has been described by an ornithologist as a remarkable one, containing at least one unrecognized new species of a petrel and the skin of a Great Auk, a bird destined for extinction in less than two decades.[14] Bullock made two trips to North America, the first in 1822 to Mexico to collect more natural curiosities, which he also auctioned, and the second five years later which resulted in his settling with his wife near Cincinnati where he

[13] True, "A Sketch," 134.

[14] J. M. Chalmers-Hunt, compiler, *Natural History Auctions, 1700-1972: A Register of Sales in the British Isles* (London: Sotheby Parke Bernet, 1976), 24, 77-80.

tried with little success to promote a real-estate venture much in advance of its time. This was a retirement village; it was named Hygeia because of Bullock's faith in the peculiarly salubrious aspects of Cincinnati's environs. But in the second decade of the nineteenth century few Americans felt the need for Golden Ponds.

William Roscoe had many varied interests and talents. An attorney by profession, he also served briefly in the House of Commons; a liberal, he published pamphlets opposing slavery; he wrote poetry and well-received biographies of Lorenzo de Medici and Pope Leo X; and he was one of the founders and first president of the Liverpool Botanic Garden. He contributed to both the *Transactions* of the Royal Society of Literature and to those of the Linnean Society. He published a monograph on the *Monandrian Plants of the Order Scitamineae* (Liverpool: G. Smith, 1828), that is, plants in Linnaeus's Class I. It was Roscoe who would serve as spokesman for the group in communicating with Bradbury. He especially would be interested in the exotic plants Bradbury was expected to discover on his travels, travels which were supposed to focus on the Commonwealth of Kentucky and whatever portions of the trans-Mississippi West the explorer was able to traverse.

The combined interests of all these people propelled Bradbury on a quixotic journey having so many disappointments that he finally abandoned natural history altogether. However, his own story of the part of it he chose to tell has become one of the classic narratives of Western travel. Published in Liverpool in 1817, this is *Travels in the Interior of America, in the Years 1809, 1810, 1811*, etc., Bradbury's only book.[15]

[15] Like many travel books of the time, this one's title continues like a kite's tail: *Including a Description of Upper Louisiana, together with the States of Ohio, Kentucky, Indiana, and Tennessee, with the Illinois and Western Territories, and Containing Remarks and Observations Useful to Persons Emigrating to Those Countries.* This subtitle relates to the appendix of about a hundred pages. What Bradbury has to say there about Kentucky could all have been observed during his trip down the Ohio River. After the author had returned to the United States, his book was reprinted in London in 1819 with the addition of a "Map of the United States of America, Comprehending the Western Territory with the Course of the Missouri." Bradbury tried to arrange for an American edition but failed. Not until the London edition was reprinted as volume five in Reuben Gold Thwaites, ed., *Early Western Travels* (32 vols.; Cleveland: A. H. Clark, 1904-1907) was an American edition available. The London edition was again reprinted in 1986 by the University of Nebraska Press. Apparently little bibliographical notice has been taken of the reprinting of a small portion of the Liverpool first edition in 1818 in Dundee, Scotland, as a fourteen-page pamphlet, now very rare, under the title *Hints for the Use of Persons Intending to Emigrate from the British Islands to the United States of America.* Here, because of its general availability, the Thwaites edition (1904) will be cited whenever Bradbury's book is quoted.

To document Bradbury's preparation for these American adventures we now have another source of published letters in addition to those found by True. These are letters exchanged with William Roscoe by Bradbury and members of his family. They were uncovered in Liverpool by H. Stansfield and published in Philadelphia by H.W. Rickett.[16] Since these letters as well as those published by True are available in print, they will not be quoted extensively here; it is enough now to document reliable information in them by citing the articles by True and Rickett. These letters, Bradbury's own book, and whatever can be gleaned from records left by Bradbury's associates constitute the most trustworthy materials from which the outlines of his life may be pieced together.

Bradbury originally proposed to his patrons to "transmit to New Orleans whatever I may find which I deem not described throughout the whole range of Nat. History" in his exploration of both Kentucky and those parts of the Louisiana Territory he hoped to explore. At New Orleans he planned to "establish my Son as a Gardener to receive & send to Europe from time to time whatever is valuable—to propagate the plants and send them in quantities in a Mature State."[17] When the Liverpool sponsors were willing to provide no more than one hundred pounds a year—which had to supply both travel and subsistence for Bradbury, while any remainder contributed to the support of his wife and eight children who stayed home—the naturalist decided to travel alone, landing in Charleston, South Carolina, late in September 1809.

There is no doubt about the straitened circumstances of the Bradbury family. When he proposed the project John Bradbury himself wrote that he needed "to provide in a humble way for a numerous family," but we do not know the ages of the eight children. As will be seen later, at least one of the sons was already earning a living; and, since Bradbury pledged that should his own death thwart the plan, his "Healthy and athletic" sons—"fond of the science"—would carry on the work and thus provide "a good collateral security" to the investors,[18] it is reasonable to believe there were more than two breadwinners in the family.

[16] Rickett, whose article is cited above, also was a botanist. In addition, Stansfield published an article titled "Plant Collecting in Missouri: A Liverpool Expedition, 1809-11," *Liverpool Libraries, Museums & Arts Committee Bulletin* 1 (1951): 17-31. It would have surprised John Bradbury to know he was a one-man "Liverpool Expedition."

[17] Rickett, "John Bradbury's Exploration," 60.

[18] Ibid., 61.

From Charleston, Bradbury went by sea to Baltimore, and from there shipped his baggage on to Wheeling while he traveled by land to Washington, D.C., and then on to Monticello. Bearing a letter of introduction from Roscoe to Jefferson,[19] he was the ex-president's guest for several weeks. While tramping around the neighborhood of Monticello he discovered what he took to be eight new species of plants. He also learned from Jefferson that the flora of Kentucky already had been covered to some extent by André Michaux in his *Flora Boreali-Americana* (Paris: Levrault, 1803), which ranged over the vegetation of the vast region Michaux himself had covered in his travels, extending from northern Florida to Hudson's Bay and as far west as the Mississippi River. Although Michaux had little more than sampled the botanical riches of Kentucky, Bradbury let himself be persuaded to set his sights on the land drained by the Missouri River, which had "not as yet been explored by any Botanist"[20] and was a region Jefferson also had hoped Michaux would visit. Somehow, along the way the notion of finding new cotton lands more or less got lost in Bradbury's acquiescence to Jefferson's enthusiasm for the leisurely visit of a professional naturalist to the region Lewis and Clark had passed through hurriedly and Michaux never got to. To be sure, Lewis and Clark had brought back a formidable load of specimens still to be analyzed, catalogued, and understood, but Meriwether Lewis was a professional army officer who had been given only a crash course—for which he was an apt student—in the fundamentals of the natural sciences by the savants of the American Philosophical Society in preparation for the trip. For the initial cross-continental dash Jefferson had not wanted the expedition tied down by the methodical collecting a professional naturalist would expect to carry out. Now, however, it was time to consolidate gains and expand the nation's knowledge base for its new territory. Bradbury had providentially appeared to tackle the work.

Apparently unknown at this time to both Bradbury and Jefferson, in Philadelphia another Englishman, eighteen years Bradbury's junior, was being coached by Professor Benjamin Smith Barton in the fine points of natural science with an emphasis on botany. This was Thomas Nuttall (1786-1859), who had come to America as a journeyman printer, would spend much of his life here, and would turn out to be the most indefatigable botanical traveler of

[19] True, "A Sketch," 136.

[20] This change of plans is explained in a letter Bradbury wrote, 12 August 1809, from Monticello, to William Roscoe; Rickett, "John Bradbury's Exploration," 62-63.

them all. The two men were fated to meet in St. Louis, toward which Bradbury had turned his steps.

After tramping across what he estimated to be about two hundred and forty miles of the rugged Appalachians, Bradbury took to water transportation, passed down the Kanawha River in what would become West Virginia, bought a skiff when he reached the Ohio, and rowed himself all the way to Louisville, where, not surprisingly, he came down with the ague. Illness delayed him there nearly two months, but when he recovered he proceeded on down the river to Shawneetown, where he next obtained a horse and rode overland through the wilderness of the Illinois Territory to Kaskaskia, crossed the Mississippi, and worked his way up the right bank to St. Louis.[21] He reached there on the last day of 1809; the rigors of the trip had hardened his muscles, and the need to find food had proved that where game was plentiful he could support himself with his rifle. Meriwether Lewis, governor of the Louisiana Territory, to whom Jefferson sent a letter of introduction declaring Bradbury "a botanist of the first order,"[22] was not there to receive him. Lewis had died on 11 October, in Tennessee, under mysterious circumstances—either the victim of murder or more probably by his own hand.

The winter of 1809-1810 was very cold in St. Louis; the mighty Mississippi froze so solid that farmers from the Illinois side crossed over the ice with loaded wagons. During the winter Bradbury collected birds and by May had obtained specimens of nearly sixty species, eight or nine of which he believed were new to ornithology. In remembrance of his sponsors' concern about finding a new source of fiber for their mills, he sent to Liverpool a sample of buffalo wool and offered to ship hundreds of packs of it a year if the weavers could find a use for it. As they did not, the American bison never stood in the way for the Scots to invent Harris Tweed.

By the time he wrote to Roscoe on 10 May, Bradbury had laid out a garden three miles from St. Louis.[23] In a later letter, his wife reported that she had had a letter from him, also written in May, in which he told her that in little more than half an acre he had planted more than one hundred and fifty species of American trees, shrubs, and other plants; moreover, in addition to the new species of birds, he also had found, according to Elizabeth, a new quadruped

21 Ibid., 64-65.

22 True, "A Sketch," 137.

23 Rickett, "John Bradbury's Exploration," 65-66.

and a new genus of insects. But his health had continued to be precarious; Elizabeth was writing to Roscoe to beg for additional funds, including an advance on next year's one hundred pounds, so that she and the children could travel to St. Louis, where she and their daughters would nurse John back to health and he could instruct their sons in the business of the garden so that they might carry on the work even if their father faltered.[24]

The family was split up in more ways than one. Elizabeth had written from Cork in Ireland; John had written again in November from St. Louis, explaining that more money was needed to outfit him to explore the unknown lands adjacent to the Arkansas River, never before investigated by a naturalist; and in February 1811 their son, John Leigh Bradbury, also addressed Roscoe on the subject of more funds for his father. Hitherto it has not been noticed that when John Leigh Bradbury wrote, he was on his way to London and had stopped off in Gloucester, where, he said, he was striving "to effect a revolution in a business that has not received any improvement, I suppose, for 2 Hundred years." Knowledge of what this business was will, in due time, help to resolve one puzzle about the elder Bradbury. John Leigh Bradbury went on to reaffirm in this letter his willingness to join his father in St. Louis, but it also is clear that by this time he had reached man's estate and was out in the world cutting deals on his own. He at least should have been no drain on the family's income.[25]

Meanwhile, armed with a double-barreled gun, a pistol, and a dirk, Thomas Nuttall set off from Philadelphia on 12 April 1810, bearing written directions from his patron, Professor Barton, to collect "animals, vegetables, minerals, Indian curiosities, etc." in the West, for which he was promised the princely salary of eight dollars a month plus expenses. The directions for his proposed itinerary betrayed the geographical ignorance of both men; while Nuttall strove to carry them out, he was often forced to deviate from Barton's plan that, nevertheless, did take him from Philadelphia to Pittsburgh, north to Lake Erie, west to Detroit, the full length of Lake Huron to Mackinac Island, down the Green Bay portion of Lake Michigan and up the Fox River, then a portage into the Wisconsin River and onward to the Mississippi at Prairie du Chien, then down the Mississippi past Dubuque and on to St. Louis, which he reached late in September. At Mackinac he had met an expedition fitting out to

[24] Ibid., 68.
[25] Ibid., 70.

follow the route of Lewis and Clark to the mouth of the Columbia River on the west coast. The aim of this party was to establish a trading post for John Jacob Astor's American Fur Company in order to ship beaver pelts across the Pacific to the lucrative market in China. Nuttall was happy to accept the invitation of their leader, Wilson Price Hunt, to accompany them to St. Louis. But after such a grueling roundabout trip he was even happier to rest up for a while in St. Louis while Hunt and his men traveled another four hundred and fifty miles up the Missouri to quarter for the winter.[26]

During the late autumn of 1810 and the winter of 1810-1811 Nuttall and Bradbury made several excursions from St. Louis together, one of them being to the southwest along the Meramec River. It seems to have escaped the notice of writers on his career that six years later Bradbury published a short article in Samuel Latham Mitchill's *Medical Repository* titled "A Description of the Minerals and Plants Found at the Lead Mines in the Missouri Territory" based on observations made on this trip.[27] He discussed the character of the soil, mentioned the kinds of rocks visible to inspection, explained the process of mining lead, and concluded with a double-column, page-long list of plants growing in the vicinity of the mines, nine of which are marked "Sp[ecies] Nov[a]"—i.e. new species; hence, his own discoveries. However, the alleged new species were not described, so Bradbury gained no credit as their discoverer. In his *Genera of North American Plants* (Philadelphia: D. Heartt, 1818) Nuttall did publish a number of new species which *are* described scientifically but are listed as first seen by Bradbury on the Meramec River. It is not known what Bradbury, who also aspired to be known as a field botanist, thought of this anticipation of discoveries he himself might have published. Later, he must have been even more vexed when he heard that Nuttall, having just published his *Genera*, set out late in the same year to explore plant life in the drainage of the Arkansas River, a venture that occupied him through 1818-1820—one Bradbury had originally proposed—and that resulted in another book by Nuttall published in 1821. Perhaps it was some melioration of the sting to know that Nuttall had been turned back by hostile Indians less than a third of the way to his objective, the Rocky Mountains.

[26] Jeanette E. Graustein, *Thomas Nuttall, Naturalist: Explorations in America, 1818-1841* (Cambridge: Harvard University Press, 1967), 9-54.

[27] John Bradbury, "A Description of the Minerals and Plants Found at the Lead Mines in the Missouri Territory," *Medical Repository* 18 (1816): 135-38.

At the end of February 1811, Bradbury wrote to Roscoe to alert him that a substantial shipment of plants and seeds had been dispatched during the summer. The boat on which the shipment was stowed ran aground about eighty miles below St. Louis. Not getting news of the accident until January, the frantic Bradbury rode downriver through bitter sub-zero weather to see what could be salvaged. Despite the adverse effect of the trip on his health, its outcome was favorable; he found the boat had proceeded after all. When finally received in Europe, the shipment netted the Liverpool Botanic Garden more than a thousand living, potted specimens. In his letter of 27 February Bradbury also announced his intention to "set out in a few Days along with a Hunting party who ascend the Missouri in their route to the Pacific." He told Roscoe that he intended to accompany the Astorians—as they became known to history—about sixteen hundred miles, spend the summer with the Sioux or Mandan Indians searching the country for plants, and return with his discoveries to St. Louis in the autumn. He was embarking on this journey up the Missouri in the company of the Astorians, he said, only because his sponsors had not provided the funds needed for him to explore the Arkansas country on his own.[28]

Bradbury and Nuttall left St. Louis on 13 March 1811, and soon caught up with Hunt, who had gone on before. Although Nuttall apparently did not keep a journal—as he did later on his trip up the Arkansas River—from this date forward we do have the record of Bradbury's *Travels*. The first few pages of it record little of botanical interest, since the growing season was not advanced, and as a result Bradbury resolved to botanize in this stretch of country on the return journey, nor do they record much of interest about the fauna observed. These pages do, however, have much of human interest, including Bradbury's visit with the aged but still spry Daniel Boone and his meeting with John Colter, discoverer of the Yellowstone geysers. They also help us better understand the cool relations between the two botanists. While there is every reason there might have been professional jealousy between them, it also becomes clear that the men were temperamentally incompatible. Bradbury must have considered the younger man a comical tenderfoot, unsuited to rough life in the wild. When they came to a stream together, Nuttall, unable to swim and unwilling to let the older man carry him across, forced a tedious detour upstream until they found an acceptable crossing place. The Canadian voyageurs, whose muscles

[28] Rickett, "John Bradbury's Exploration," 70-71; True, "A Sketch," 140.

provided the motive power that carried them all up the Missouri, called Nuttall *le fou*, but they admired Bradbury for his woodcraft—even though he was engaged in the same non-practical pursuits of the field naturalist. The story may be apocryphal, but it is said that on one occasion when threatening Indians caused every man to look to his weapons, the barrel of Nuttall's gun was found clogged with dirt, for he had been using it to uproot plants.[29]

The first settlement of any note, Fort Osage in present-day Missouri, was reached on 8 April, and there Bradbury wrote that "we found several squaws assembled . . . for the same purpose as females of a certain class in the maritime towns of Europe crowd round vessels lately arrived from a long voyage, and it must be admitted with the same success" (61)—success, presumably, with the roistering voyageurs.

Bradbury had quickly learned to correct many of the Noble Red Man illusions he had brought from Europe, and what he has to say about the manners and customs of the various tribes he came into contact with is among his best writing. He also saw, and recorded, aspects of Indian behavior not often subject to comment by travelers. For instance, at Fort Osage he came across squaw men for the first time—those gentle souls who either had opted out of the violent life of the warriors or had been excluded by them from the brutal masculine chauvinism of Plains Indian society and "were condemned for life to associate with the squaws, to wear the same dress, and do the same drudgery" (64).

Bradbury's narrative is punctuated by occasional descriptive passages giving accounts of natural events never to be duplicated again. He tells of the rolling thunder made by the hoofs of thousands of buffaloes drumming the prairie in frantic stampede. He tells of passenger pigeons so abundant before the bird became extinct that a flock would cover several acres of ground, the birds themselves being packed together so closely that the earth was scarcely visible. While feeding, the outermost rank would fly up, then settle down ahead of the first, only to be succeeded in turn by another rank. "They succeed each other with so much rapidity, that there is a continued stream of them in the air; and a side view of them exhibits the appearance of the segment of a large circle, moving through the woods" (69).

[29] Graustein covers Nuttall's participation in the expedition; see Graustein, *Nuttall*, Chapter Five, "West with the Astorians," 42-77.

At Fort Osage the party was joined by Ramsay Crooks (1787-1859), later to become president of the American Fur Company, who had wintered upstream with most of the expedition's men. He and Bradbury often went out on side expeditions together, and they seem to have had more interests in common than Bradbury had with Nuttall. Early in June, Bradbury acquired an even closer companion when a boat bearing Manuel Lisa, a rival fur trader from St. Louis, and Henry Marie Brackenridge (1786-1871) caught up with the Astorians. Brackenridge also kept a journal, later published in his *Views of Louisiana, together with a Journal of a Voyage up the Missouri River in 1811* (Pittsburgh: Cramer, Spear and Eichbaum, 1814).[30] Brackenridge's memoir and the parallel account in Bradbury's *Travels* provided most of the material for eight chapters of Washington Irving's *Astoria* (Philadelphia: Carey, Lea, & Blanchard, 1836), thus giving this journey a small niche in American literature.[31] Brackenridge wrote that, having known Bradbury in St. Louis, he accompanied Lisa mostly for the pleasure and educational benefit he expected to find in the older man's company. The same age as Nuttall, he resonated very differently with Bradbury. When Bradbury was bent over and distracted by his study of a strange plant, Brackenridge stood guard to protect him from hostile Indians. Late in their respective narratives, they both recounted a violent storm they experienced together. Bradbury wrote of his friend: "Poor young man, his youth, and the delicacy of his frame, ill suited him for such hardships" (188), while Brackenridge wrote: "Poor old man [Bradbury was forty-three], the exposure was much greater than one of his years could well support" (149). Each, of course, had no doubt about his own stamina in the face of hardships.

[30] Brackenridge's book also has been reprinted, most recently by Quadrangle Books in 1962. The journal Brackenridge kept of the voyage up the Missouri appeared as an appendix in the original 1814 edition of his *Views of Louisiana*, along with numerous other pieces from the same pen, mostly reprinted from newspapers. However, two years later the journal alone, revised and enlarged by the author, was printed as a second edition in Baltimore, and that in turn was reproduced in volume six of Thwaites's *Early Western Travels*. The Thwaites edition is cited here.

[31] Nuttall also achieved a kind of apotheosis in American literature. He too is mentioned in *Astoria*, and he probably was the inspiration for the bumbling character called "Dr. Battius" in James Fenimore Cooper's novel *The Prairie* (Philadelphia: Carey, Lea & Carey, 1827). A more sympathetic view of him, but nonetheless one that emphasizes his eccentricity, was that of Richard Henry Dana. Later in life, after crossing the continent and penetrating the Pacific as far as Hawaii, Nuttall was found wandering about the beach at San Diego, where he was picked up by the *Alert*—in whose crew Dana was serving as an adventure—taken round the Horn and back to Boston. He figures in Dana's classic *Two Years before the Mast* (New York: Dodd Mead, 1840) as "Old Curious."

They both had an eye for pulchritude, too. Having a need to cross the Knife River, Bradbury and Brackenridge summoned an aged squaw who conducted a canoe ferryboat service. As the old squaw paddled the canoe and an Indian man swam the horses across the river, three Indian maidens, aged about fourteen or fifteen Bradbury estimated, stripped to the buff, threw their clothes into the canoe, and swam alongside. In a passage as charming as a famous one by William Bartram published two decades earlier about sportive nubile Indian girls "wantonly chasing their companions" in a North Carolina strawberry patch,[32] Bradbury describes how these western Susannas of the wilderness teased their libidinous elders by restraining the old squaw's paddle, pushing the canoe off course, and playfully splashing water on the passengers, the two white men. "On landing," Bradbury writes, "by way of retaliation, we seized their clothes, which caused much laughing . . ." (164-65). It is hard to imagine Nuttall, whose *innocence* was underscored in letters of recommendation written by his patron Barton, laughing with a gaggle of wet, naked Indian girls.

One may wonder whether the man who had fathered eight children acquired an even more intimate knowledge of female indigenous Americans. If he did not, it was not for lack of opportunity. Observing that "no people on earth discharge the duties of hospitality with more cordial good-will than the Indians," he mentions that whenever he was the guest of Indians and was invited to stay the night the offer of a bed "was accompanied by that of a *bedfellow*" (178). One of the Aricara tribe to whom Bradbury gave silver ornaments was so overwhelmed by hospitality that he offered his sister as a bedfellow (Bradbury says he declined, 134), while a Mandan Indian bargaining for Bradbury's shirt proposed to throw in the amatory services of his squaw as part of the deal. When this generosity was refused, both incredulous Indians blurted out, "*sacre crapaud!*" (166)—and who could blame them?

It was at the Arikara villages, located in the northern part of what is now Corson County, South Dakota, that Hunt's party made their headquarters while they prepared for the great overland push that would take them finally to the mouth of the Columbia River on the Pacific coast. This trip required more horses than the Arikaras could supply, so to obtain them it was decided that two parties would travel farther up the Missouri about two hundred miles, to

[32] Francis Harper, ed., *The Travels of William Bartram* (New Haven: Yale University Press, 1958), 225-26.

the Mandan villages, where Lisa's Missouri Fur Company had a fort. Hence Bradbury and Brackenridge now split up for a time; Brackenridge and Nuttall accompanied Lisa by boat, while Bradbury, Ramsay Crooks, and a few others aimed for the same destination by traveling overland.

Since the overland party could not be sure of finding enough game on the treeless plains to feed themselves, they did what the Indians did, took an ambulatory supply of meat with them—in this instance, Indian dogs fattened for the purpose. As it turned out, the hunters did bring in both deer and bison, but the party's breakfast bacon for the first day was canine. Fearing roving bands of rapacious Sioux, they traveled as much as possible through such valleys as the prairie afforded. Though Bradbury's horse gave out, by forced marches from dawn to dusk they did reach the fort in only four days. This blockhouse fort was enclosed in a palisade and provided living quarters as well as warehouse space for furs. It even had a kitchen garden, where Bradbury was able to store temporarily the living plants he had managed to gather despite the speed of their trip.

This was as far north as Bradbury ever got, in Mercer County, North Dakota, and it was in this region during a stay of about ten days that he and Brackenridge had their adventure with the naked Indian maidens. We do not know the kinds of adventures Nuttall may have had in Mandan country, where he remained alone nearly four months after the others left, but he certainly had a greater opportunity than Bradbury to collect plants, both in flower and with their fruit. We do know that he ranged great distances from the fort and on one occasion resigned himself to death when, more than a hundred miles from other Caucasians, he collapsed on the open prairie. But a friendly Indian happened along and, like other Indians, considering the plant collector a paleface medicine man worthy of regard, carried him in a canoe back to the fort and safety.[33]

The two-day return of Bradbury and Brackenridge downriver was very rapid, though even then Bradbury managed to collect a few plants. Crooks had already returned, and altogether the expedition now had eighty horses for the trek westward, which Hunt was eager to begin. Again he invited Bradbury to accompany him. Tempting as the offer was, Bradbury had to decline since there was no assurance he could find transport by sea back to the United States

[33] Graustein, *Thomas Nuttall*, 71.

and, in any event, he would have had to abandon all his plant collections, both living and preserved.

It happened that Lisa was sending down to St. Louis two boats loaded with furs, and there was still room for Bradbury and Brackenridge as passengers, along with seventeen *caisettes* or trunks Bradbury had bought from the voyageurs to contain his living specimens, of which he had "now collected several thousands" (168). The trip downriver with the current took only two weeks as compared with the three months it took to ascend against the current, a rapid progress all the more distressing to Bradbury because he hoped to stop and collect in July plants that had not even sprouted in March. But Lisa's instructions had to be obeyed: there were to be no unnecessary stops.

Back in St. Louis on 29 July, Bradbury took up residence at the plantation of a Manchester immigrant who gave him a plot of land where he set out his collection of living plants. In a letter to Roscoe written in mid-August he remarked that these plants had originally consisted of four to five thousand roots, but he added the further information that four-fifths of them died for lack of attention since he had been required to seek immediate employment.[34] This explanation is somewhat at odds with the book Bradbury wrote five or six years later, where we are told that he could not tend the garden because he fell ill with a fever he was unable to shake off for the next four months, and nothing is said of his need to seek employment. At any rate, we do know that the Liverpool people, perhaps dissatisfied with the return they had had, first "determined to withhold" their remittance (197), then relented and grudgingly sent him the final one hundred pounds.[35] This dispute is instrumental in Bradbury's later standing as a naturalist; since he felt no further obligation to his sponsors, neither did they consider that he had any longer a proprietary interest in the specimens they had bought and paid for. They could dispose of the specimens as they saw fit.

The remainder of Bradbury's life that is revealed in his *Travels* can be summarized briefly. He left St. Louis on 5 December in charge of fifteen tons of lead a friend was shipping to New Orleans, a voyage made hazardous because of the weight of the cargo, as Bradbury well knew. He could not have anticipated, however, an exceptional danger that awaited him downstream. On 14

[34] Rickett, "John Bradbury's Exploration," 74.

[35] Bradbury's son was instrumental in the negotiation; see his letters in ibid., 75-76.

December Bradbury's boat tied up at New Madrid, Missouri, to take on needed supplies. Proceeding downstream the next day, the boat was moored on an island so the boatmen could rest up for the exertion of navigating the perilous "Devil's Channel" the next morning when, about 10:00 p.m., the earth seemed to be coming apart. This was the opening cataclysm of the celebrated New Madrid earthquake, one of the most devastating earthquakes recorded in American history, when the little town of New Madrid was completely destroyed and, as some said, the rivers ran backwards. Afterwards, Bradbury attributed his survival to having been on the river when fissures were opening in the earth, the river banks were falling in, and trees were crashing all around. Shocks continued intermittently for a week, and Bradbury's description of his experiences during that time (204-211) is one of the best eyewitness accounts we have of the great New Madrid earthquake.

The narrative of Bradbury's *Travels* ends with the author reaching New Orleans, where he had a final meeting with his friend Brackenridge. It is likely that Nuttall had preceded Bradbury down the Mississippi, and at any rate he was in New Orleans in time to take passage on a ship bound for Liverpool, a fortuitous but unlikely opportunity since in March 1811 Congress had passed its second nonintercourse act with Britain. Bradbury was not so fortunate. He did manage to dispatch his plants to Britain, then, on 20 January 1812, he himself set sail for New York.

While the ever-fortunate Nuttall got safely back to his native England, star-crossed Bradbury was trapped in the United States by the War of 1812. Meanwhile, his plants had reached England and, perhaps through a misunderstanding on the part of Bradbury's son, some of them came into the possession of Aylmer Bourke Lambert, vice president of the Linnean Society, who cultivated Bradbury plants and other exotics in his garden at Boyton. It was there that Frederick Pursh (1774-1820), a native of Saxony who had himself lived in the United States about a decade, used Bradbury's plants along with those of several other collectors to write his *Flora Americae Septentrionalis; or, A Systematic Arrangement and Description of the Plants of North America* (London: White, Cochrane, and Co., 1814).[36] "This man," Bradbury bitterly complained,

[36] The disposition of Bradbury's herbarium specimens (some of which are still extant), has been treated extensively by historians of botany and need not unduly detain us here. If of interest, see McKelvey, *Botanical Exploration in the Trans-Mississippi West*, 131-33; Rickett, "John Bradbury's Exploration," 77-89, where specimens now available in Philadelphia are listed and the story of how they

was "suffered to examine the collection of specimens which I sent to Liverpool, and to describe almost the whole, thereby depriving me both of the credit and profit of what was justly due me" (100). That is, Bradbury had lost scientific credit for the plants he had discovered and preserved, since he was not the first to publish descriptions of them. What profit he expected to reap is hard to say. Perhaps he believed he might more readily have obtained patronage for subsequent expeditions had discovery of the Missouri plants gone to his credit.

From this point forward—except for two letters—whatever we can learn of Bradbury's life has to be pieced together from the writings of others. It is not clear how he supported himself; we only know of remunerative schemes that failed. Writing from New York on 5 March 1812, which must have been shortly after he arrived there, he asked his friend Thomas Jefferson to recommend him as superintendent of the botanic garden which, he understood, was going to be established in the nation's capital. Jefferson promptly replied that the rumor was false.[37]

The last known document from Bradbury's pen was a letter written from Montgomery, New York, the same place and written in the same year as the essay on the lead mines mentioned earlier. In this letter to Thomas Jefferson, he mentioned that "the turpitude of the man with whom I am connected in business as a partner" had caused him to turn his eyes again toward the West and had revived in him his long-standing desire to "explore the Arkansas and Red Rivers with a view to collect (at least) the materials for a Nat. History of that country." Having seen reports that the Congress was considering laying out a road from St. Louis to the Arkansas River, he asked Jefferson's help to get him

got there is narrated; and Joseph Ewan, "Frederick Pursh, 1774-1820, and His Botanical Associates," *Proceedings of the American Philosophical Society* 96 (1952): 599-626. Rickett also published "Specimens Collected by Bradbury in Missouri Territory," [Kew] *Bulletin of Miscellaneous Information* (No. 2; 1934): 49-61. More recently, O.A. Stevens, in "Bradbury and Nuttall, Pioneer Dakota Botanists," *North Dakota History* 26 (1959): 159-69, reprinted Bradbury's "Catalogue of Some of the More Rare or Valuable Plants" included as an appendix to his *Travels* (317-20) and related Bradbury's Latin plant names to those of current usage.

[37] True, "A Sketch," 142-43. There had been proposals for a national botanic garden since the time of President Washington, and they were always defeated by Congresses unwilling to commit public funds to such schemes. See Richard Rathbun, *The Columbian Institute for the Promotion of Arts and Sciences: A Washington Society of 1816-1838, which Established a Museum and Botanic Garden under Government Patronage* (Smithsonian Institution, United States National Museum, Bulletin 101; Washington, D.C.: Government Printing Office, 1917). In his reply to Bradbury, Jefferson mentioned the well-founded "suspicion that it would be converted into a mere kitchen-garden for the supply of the town market."

appointed a commissioner for the project, promising to produce a complete natural history survey of the route covered. Jefferson did try—unsuccessfully, as it turned out—but his letter of 29 February 1816, telling Bradbury what he was doing on his behalf was docketed in Jefferson's own hand "ret'd from N. Y. because *not found.*"[38]

This has caused True and others to conclude that Bradbury had left for England. Bradbury did finally manage to return home in 1816 but probably not until mid-summer. There is an unpublished letter by C.S. Rafinesque to James Edward Smith, written 15 July 1816, containing the sentence, "I avail myself of Mr Bradbury's departure for England to drop you a line."[39] At this time Rafinesque was living in New York City but was soon to embark on his own Ohio River voyage of natural history exploration that would lead eventually to his settling in Lexington, where he became Transylvania University's most renowned—some would say most notorious—professor.

While Bradbury was in England, Rafinesque wrote to another friend that he was preparing a *Florula Missurica* for publication, remarking that he had "rec'd the assist[ance] of Mr Bradbury" for it and that it would contain "over 400 sp[ecies] of which 60 N[ew] Sp[ecies are] not in Pursh."[40] While in England, Bradbury published the book of his travels, dating the preface from Liverpool on 1 August 1817, and then he returned to the United States. According to True, who could swallow some of Samuel Hill's whoppers without choking, the publication of the book so "severely taxed Bradbury's slender resources" and he was so despondent over the lack of appreciation for his efforts that he "resolved to quit his native land forever" and "while wandering through the streets of Liverpool one day," he "met an American sea captain" who was so struck by his sad plight that "the captain forthwith offered Bradbury and his family free passage on his boat."[41] Maybe so.

The anonymous author of the newspaper article reporting the exhumation of Bradbury's bones, which was cited earlier, had an ingenious explanation for why Bradbury left England for good. According to this account, after

[38] True, "A Sketch," 143-47.

[39] Rafinesque-Smith, 15 July 1816, Linnean Society of London. As editor of Rafinesque's unpublished correspondence I was led to look into Bradbury's life because of their personal contacts on several occasions. One indication of the significance of their friendship is the appearance of Bradbury's name in fifteen of Rafinesque's letters, though no letter has been found that passed between them.

[40] Rafinesque-Collins, 1 November 1817, American Philosophical Society.

[41] True, "A Sketch," 147-48.

Bradbury's return to England "he invented the machine making the common round-headed pin. Because of his losing the patent on the machine he became disgusted with his mother country and brought his family to America . . . ." Either this story is pure moonshine or it represents a family tradition based on facts that grew hazy and became garbled through the passage of time. As it turns out, the latter is true.

It happens that quite a lot has been written about the mechanization of pin-making, probably because Adam Smith used the process of drawing the wire, cutting it, pointing one end, putting a head on the other, and finally mounting the finished pin along with others in a crimped paper as an example of the division of labor in his celebrated study *The Wealth of Nations* (1776). Because the manufacture of pins was a labor-intensive industry, the attempt to invent a machine to carry out the various stages of the task began as early as 1797. And because the United States was the principal export market for British pins, inventors on both sides of the Atlantic vied to produce a practical machine.

It will be remembered that in 1811, while Bradbury was still in St. Louis, his son, John Leigh Bradbury, was writing to William Roscoe from Gloucester, a center for pin-making. The "revolution in a business that has not received any improvement" for two hundred years, which young Bradbury was seeking to effect, was the business of making pins. He dated his letter from the premises of Charles Weaver, whom he called in his letter "one of the first *Pin makers* in England."[42] In the most detailed study of early pin-making yet published, we may read that a machine "was patented in 1812, the result of a marriage of talent and capital between John Leigh Bradbury, an engraver and calico printer, and Charles Weaver, a pin manufacturer with a factory at Gloucester." We do not know whether or not patent infringement was a factor, but the machine they produced was "a dismal failure, never actually entering commercial production. [John Leigh] Bradbury, it seems, was little affected by the lack of success, for in subsequent years he prospered both as a calico printer and as an inventor."[43] His continuing prosperity is all the more reason to believe John Leigh Bradbury never came to America with his parents and siblings. In 1824, a year after his father's death, he was awarded in England the last of his six

[42] Rickett, "John Bradbury's Exploration," 70.

[43] H. I. Dutton and S. R. H. Jones, "Invention and Innovation in the British Pin Industry, 1790-1850," *Business History* 57 (1983): 175-93. The citation is pages 178-79.

patents, the earliest having been dated 1807. But it is just possible that during that period of unknown employment in New York, when the elder Bradbury had an unscrupulous business partner, he was trying to help his son invent a successful pin machine. Moses Morse of Boston did patent a pin machine in the United States in 1814, and another American, Seth Hunt, who was living in England, patented one there in 1817.[44] But nothing has been found so far to link either of the Bradburys with these two men.

At any rate, in a letter written only five days before the close of 1817, Rafinesque revealed that Bradbury had returned to Philadelphia from England.[45] After his return to the United States, the verifiable outline of Bradbury's life is almost a blank slate. He surely did not stay long in Philadelphia, for less than a year later Rafinesque visited him in Middletown, Kentucky, though Rafinesque also added that "he is soon to go to St. Louis."[46] William Baldwin (1779-1819), the botanist of the Long Expedition to the Rocky Mountains, died of tuberculosis in Missouri but before his death spent a profitable day with Bradbury in St. Louis. In a letter dated 11 June 1819, he reported that:

> since [Aylmer Bourke] Lambert had pirated from him his former collections, it was not his intention to publish independently,—and that he would, with great pleasure, place in my hands all that he possessed, for publication:—and that he should continue to pursue the Science for the intrinsic love he had for it . . .[47]

We do not know Bradbury's occupation in St. Louis, but the redoubtable Mr. Hill—again according to True—affirmed that he "became curator and

[44] Ibid., 179-81.

[45] Rafinesque-Collins, 27 December 1817, American Philosophical Society. It is extremely doubtful that the entire family returned with Bradbury. Family records have confirmed the names of only six of the children—the sons John Leigh, Henry, Edward, James, and the daughters Mary and Martha. Only the presence in America of Henry and Mary is confirmed through their descendants. Since it is almost certain that John Leigh Bradbury remained in England, it may be that he penned the brief anonymous preface to the second edition of Bradbury's *Travels*, dated from Liverpool in 1819 when the book was reprinted in London and its author was in St. Louis.

[46] Rafinesque-Collins, 6 November 1818, American Philosophical Society. The exact date of the visit can be established. In a manuscript notebook at the Smithsonian Institution Library, Rafinesque noted that he reached Middletown on 19 September 1818.

[47] William Darlington, ed., *Reliquiae Baldwinianae* (Philadelphia: Kimber and Sharpless, 1843), 316. The letter was written to Darlington, a fellow botanist. Bradbury also relinquished his proprietary interest in two rattlesnakes he had discovered in "Upper Missouri," leaving Rafinesque to name them *Crotalinus catenates* and *Crotalinus viridis* in *The American Monthly Magazine and Critical Review* 4 (November 1818): 41.

superintendent of the Botanical Gardens at St. Louis where he was not only placed beyond the fear of penury but was honored and respected by the residents of the city."[48] A troublesome impediment to this rosy scenario is the intractable fact that the Missouri Botanical Garden was not founded until 1889, sixty-six years after Bradbury's death.

Thanks to True's research, it has been known for some time that Bradbury had returned to Middletown at least by January 1823. Now that date can be pushed back another four months. Rafinesque wrote from Lexington that his friend had repaid the 1818 visit: "Bradbury is now returned in Kentucky, he lives at Middletown near Louisville, employed in a cotton manufactory. I saw him lately here, he has left Botany for Mineralogy."[49] If Rafinesque's understanding was correct, this is the only information we have about Bradbury's employment after his return to the United States. Bradbury both began and ended his active career in cotton mills.

Within six months of Rafinesque's report, Bradbury was dead, and there the story would end—except for the need to explain why this talented man turned his back on the science that had been so dear to him and might have brought him at least the recognition later generations have accorded to such contemporaries as Michaux, Pursh, Nuttall, and Rafinesque. The customary explanation, beginning with Baldwin as we have seen, is that Bradbury was so distraught over the loss of credit for his discoveries that, in effect, he cut off his nose to spite his face.

It is true that there were precious few avenues for publication available to Bradbury while he was trapped in the United States by the War of 1812. England was the natural place he would look toward; but even if he had returned there as soon as possible after the Treaty of Ghent was signed in December 1814, he could not have beaten Pursh into print. It is true also that American publishers were not very receptive to such books. It was not until 1818 that Nuttall was able to print his *Genera* in Philadelphia, and that was such an under-funded and speculative venture that, according to tradition, journeyman printer Nuttall set type for it himself.

[48] True, "A Sketch," 149.

[49] Rafinesque-Collins, 24 September 1822, American Philosophical Society. Whether or not there ever was a cotton mill in Middletown remains an open question. However, Henry McMurtrie, *Sketches of Louisville and Its Environs* (Louisville: S. Penn, 1819) mentions in a footnote on page 141 that "a cotton spinning and two wool carding manufactories have been established" in nearby Shelbyville.

It is questionable whether Bradbury had enough material to make a whole book devoted to nothing but the descriptions of new plants, though of course he could have written a *Flora* of the region he had studied, including his new plants among those already described by others. And there were few periodicals available had he decided to describe his new plants in an article. Benjamin Silliman's *American Journal of Science and Arts* had not yet begun publication and neither had the *Journal of the Academy of Natural Sciences of Philadelphia*, both of which did contribute greatly to disseminate taxonomic information about American plants and animals. However, Samuel Latham Mitchill's *Medical Repository*, which despite its name carried more articles on natural history than it did on medicine, was in full operation. There Rafinesque had already published botanical articles, which Mitchill (who was a United States senator as well as a physician) received through the diplomatic pouch from Sicily, where Rafinesque worked at that time for the American Consulate. There, too, as we have seen, Bradbury's own article on the lead mines of Missouri was published later, in 1818. Why did he not avail himself of this medium to claim priority for his botanical discoveries?

There seems to be no good answer. Despite his early acquaintance with the writings of Linnaeus and despite his linguistic ability (if he could learn French on his own, surely he was capable of getting up botanical Latin), there are no known plant descriptions from the pen of John Bradbury. He was able to bestow Latin names on new plants, but he seems to have been very reluctant to describe them. To be sure, it was after Pursh already had stolen his thunder that he turned over specimens to Rafinesque and offered them to Baldwin.

One might suppose that Bradbury could not describe his new plants because, having dispatched his specimens via New Orleans to England before he himself got trapped in New York, he no longer had the material at hand. However, long afterwards Rafinesque told the Swiss botanist A.P. de Candolle that: "In 1817 Mr Bradbury gave me a Collection of Plants from upper Missouri without names. I described them under the title of Florula Mandanensis."[50]

[50] Rafinesque-Candolle, March 1830, Conservatoire Botanique de Genève. "*En 1817 Mr Bradbury me donna une Collection de Plantes du haut Missouri sans noms. Je les decrivis sous le nom Florula Mandanensis.*" Rafinesque's "Florula Missurica" mentioned earlier and his "Florula Mandanensis" must have had more or less the same content, and they suffered similar misfortunes. Rafinesque sent the Mandanensis manuscript to Belgium for publication in a journal that folded before the article could be printed, and he sent the Missurica manuscript to his friend William Swainson in England, who never received it. There is, however, a printed "Index of the Florula Mandanensis of

Therefore, unless Bradbury brought back from England in 1817 Missouri plants he had collected in 1811—which seems improbable—he *did* have specimens to describe while he was an unwilling resident of the United States.

Published the same year, perhaps in recognition of Bradbury's gift, was the genus *Bradburya* in Rafinesque's first book printed in the United States, *Florula Ludovicina*. Dedicating a new genus to him was an honor Baldwin also wished to bestow on Bradbury but did not live to accomplish.[51] "I dedicate this new genus to Mr. Bradbury," Rafinesque wrote, "who in his travels up the Missouri discovered so many new plants,"[52] describing and naming the vine with beautiful lavender flowers whose genus a year later would be designated *Wistaria* by Nuttall and is now generally corrupted to "Wisteria." Despite the priority of Rafinesque's publication,[53] once again Bradbury was deprived of recognition, for botanists accepted *Wistaria* and rejected *Bradburya*.

Bradbury and Rafinesque" in *Herbarium Rafinesquianum* (Philadelphia. 1833), 37-40, which lists, but does not describe, seventy-five plants, sixteen of which Rafinesque designated as belonging to new genera. Of these sixteen, four of the generic names are now generally accepted by botanists; but of course they go to Rafinesque's credit, not Bradbury's. There is also an unpublished Rafinesque manuscript titled "Florula Mandanensis" at the American Philosophical Society giving in four pages the names of "new Plants collected by Mr. Bradbury." In 1832 Rafinesque offered to sell John Torrey "about 100" of "Bradbury's plants of Missouri" (Rafinesque-Torrey, 2 January 1832, American Philosophical Society). Still later (Rafinesque-Torrey, 24 September 1838, Boston Public Library) he accused Torrey of having burned some Bradbury specimens that Rafinesque had loaned him for examination.

[51] Baldwin's letter to Darlington, dated 25 June 1819, *Reliquiae Baldwinianae*, 318-19.

[52] C. S. Rafinesque, *Florula Ludoviciana* (New York: C. Wiley & Co., 1817), 104. In their *Flora of North America* (1841), John Torrey and Asa Gray named one of the Compositae plants *Bradburia*.

[53] Rafinesque's Swiss friend A.P. de Candolle led the effort to establish accepted principles for priority, but until the first international code for botanical nomenclature was promulgated in 1867 consensus by usage determined plant names. Even now, however, under the exception of *nomina generica conservanda*, a generic name may be conserved—despite the priority of an older name—because it has long been in common use and botanists do not want to be troubled by having to learn a new one.