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PLANTING A NEW WORLD:
LETTERS AND LANGUAGES OF TRANSATLANTIC
BOTANICAL EXCHANGE, 1733-1777

By

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ABSTRACT OF THE DISSERTATION

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My dissertation describes an important change in the accepted understanding and imagination of nature. This change took place over the course of the eighteenth century, when nature, from being conceived of as a settled state subject to cyclical change, came to be seen as mobile and mutable. The sense of a mobile, mutable nature--the dissertation's central trope--arose from the experience of travel and discovery, which was accompanied from the first by a vigorous process of transplantation. Plants and seeds were carried across oceans, having been dug up on one continent to be replanted often in another. From being static and predictable, plant life therefore became, for scholars and poets alike, dynamic, mutable, and adaptable.

I focus on the writings of a small group of men in the Anglo-American world, including John and William Bartram, Peter Collinson, Alexander Garden, John Ellis, and Carl Linnaeus, who were engaged in the work of transporting, planting, writing about, and classifying botanical objects. All were men of science (by inclination if not profession) and men of letters, and it is in their actual letters--their epistolary exchanges--that the transformation emerges most clearly. Indeed, letters nurtured the rhetorical and

conceptual work of natural history in the Enlightenment, and thus provide the clearest expression and reflection of the cultural changes in the idea of nature itself. The mobility of botanical objects opened up new imaginative, rhetorical, organizational, and material possibilities for the individuals I discuss in this dissertation. Through their letters and related natural history writings, I trace the paradox by which nature came to be seen as the embodiment of change, even as it was being categorized and classified in new ways.

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Introduction

We know that Nature has disseminated her Bounties variously through the habitable World so that some species of fruits and herbs arise spontaneously in one country and others in another but that most of them are capable of being transplanted and will thrive in the most Distant Regions. It is the business of the Philosopher and Naturalist to explore these treasures of Nature and spread the knowledge and use of them for the benefit of mankind.

-- Peter Templeman (Secretary of the Society for the Encouragement of Art, Manufactures & Commerce) to John Bartram, September 16, 1760¹

There are numerous delights in doing archival research, including the unexpected discovery, the fortuitous connection, the lucky break. This dissertation is a result of my own experience with unexpected discoveries and lucky breaks in the course of research and writing, as well as a study of the unexpected discoveries, fortuitous connections, and delights experienced by the men I discuss in the following pages. All of the individuals I talk about were engaged in the project of transatlantic botanical exchange in the eighteenth century: John and William Bartram in Philadelphia; Peter Collinson, John Ellis, and John Fothergill in London; Alexander Garden in Charleston; Carl Linnaeus in Uppsala. In pursuit of some understanding of the relation between their work with mobile plants and their forms of expression, I found myself digging into archives on both sides of the Atlantic Ocean.

I had become acquainted with these figures through their epistolary exchanges, some of which had been published. After reading their letters, I wanted to get a deeper sense of the linguistic and conceptual frameworks they used in their natural history endeavors. I wanted to learn how they responded to natural objects, formulated ideas, and, in a sense, spoke to themselves about the natural history work they were conducting. I wanted to explore the textual ground of transatlantic botanical exchange in this transitional period in the history of natural history. My research uncovered some

important documents for primary study--for example, draft letters for which the original is no longer extant, and detailed journal-like writing--and provided useful biographical and historical information that deepened my understanding of the eighteenth-century project of exploring and classifying the natural world. Still, it was the unexpected discoveries during my research that capture the spirit and in some ways define the scope of my project. Let me provide a few examples.

* * *

The archives at the Linnean Society of London are rich with materials on the subject of natural history generally and botany specifically. The Society was founded in 1788 after Sir James Edward Smith (1759-1828), the first president, successfully negotiated the purchase of Carl Linnaeus's entire manuscript and specimen collection. The Linnaeus materials formed the foundational collection of the Society, whose holdings have grown immensely. I made a visit in the summer of 2005 in order to examine the papers of Peter Collinson (1694-1768) and John Ellis (1710?-1776). Both Collinson and Ellis were London merchants and amateur naturalists who were involved in the transatlantic exchange of natural objects and who functioned as mediators for naturalists in the American colonies. Having read the published letters of both men, my hope was that their notebooks would enrich my understanding of how they conducted their natural history work. On my first day of research at the Society, the librarian told me about another scholar who had emailed her with a request for images pertaining to the transportation of botanical specimens in the eighteenth century. Knowing that I was researching a similar topic, she showed me one of the prints she had found in *Le Musée d'Histoire Naturelle*,² which depicted the French botanist Bernard de Jussieu on the deck

of a ship. His hat is in his hand, and in his hat is a plant. The image [**Appendix, Fig 1**] was a wonderful example of the ingenuity and determination of naturalists. More important, it was a perfect illustration of the mobility of botanical objects.

A week or so later, I was in Paris and planned to visit the Jardin des Plantes, established by Louis XIII and first opened to the public in 1640. I checked my guidebook for directions, and was amazed to find that the description of the Jardin mentioned the fact that Jussieu had been the laughingstock of Paris when he arrived home from a trip to England with a plant in his hat. According to the book, the plant--a specimen of Cedar of Lebanon planted in 1734--was still thriving in the Jardin. Finding this tree was, of course, my first objective upon reaching the garden. When I did find it, there, nailed into the trunk, were two plaques with the following inscriptions: “Cedre du Liban (Cedrus Libanotica) (Link.). Rapparté d’Angleterre Par Bernard de Jussieu en 1734 Issue de graines venues du Liban. Donné á de Jussieu par Collinson médecin anglais” and “Arbre historique. Cedrus libani. A. Rich. Cédre du Liban. Liban, S. Turquie. Pinaceae. Planté en 1734.” These words evoke the interpersonal and international network of collectors integral to botanical exchange and classification, and I discuss the historical specificities of this situation in chapter 1. Still, the real drama of this story concerns the Cedar of Lebanon itself. There, still thriving in the middle of Paris, in the northeast corner of the Jardin, is an object that occupied the care and attention of Jussieu, as well as his English hosts, including Collinson. And it is a lovely tree. [**Appendix, Fig 2**] There is a circular bench around its base, where one can sit and enjoy the shade. In addition, the Jardin’s “labyrinthe” (designed by the Comte de Buffon) is adjacent to the tree and climbs high enough that when one reaches its summit, it is possible to look out over the top of the

tree, as if a full view of this prized plant is part of the reward for reaching the center of the maze.

Such specific botanical objects are crucial elements in this study. My formal and textual analyses are rooted first and foremost in the enthusiasm and curiosity that such natural objects provoked in men like Collinson and Jussieu. Jussieu's commitment to the Cedar seedling reflected a new cultural situation in which rooted botanical objects were uprooted, transported from one part of the world to another (traveling in boxes more often than hats), and rerooted in new environments. In such stories, the dynamic between the mobility and rootedness of natural objects in the eighteenth century begins to take vivid shape.

My second example involves the mobility not of live plants but of dried botanical specimens. The conservator at the Linnean Society had on her desk a box of miscellaneous Ellis materials waiting to be cleaned and properly conserved. Learning of my interest in Ellis, she allowed me to examine the contents of the box, which contained six folders. In each folder was a dried plant specimen wrapped up in paper and labeled: “Pimento or Jamaican Pepper called Allspice”; “Eugenia”; “Browniae”; “Ellisia—Linnai”; “Mynica cerafina—candle berry or myrtle [] tree”; “Chlamydia from New Zealand.” Distributing such dried samples was essential to the task of taxonomic classification that preoccupied many naturalists in the eighteenth century. Ellis and Collinson both corresponded with Carl Linnaeus (1707-1778), whose sexual system of classification and development of binomial nomenclature made him the center of botanical studies in the period. In chapters 3 and 4--which examine letters exchanged between Ellis, Linnaeus, and Alexander Garden (1730-1791) during the 1750s, 1760s,

and 1770s--I trace the relationship between letterwriting and taxonomic classification, but all of my chapters consider the "botanical chatter"³ of naturalists provoked by their examination of dried specimens. To have the conservator at the Linnean Society place such dried specimens in my hand, specimens that had in fact belonged to Ellis, was exciting.

The first thing I noticed was that different sorts of information had been written on the packets. In some cases, the handwriting clearly belonged to Ellis, but in other cases, the source was less certain. I was especially intrigued by two of the packets. One had written on one side "Theobroma augusta from the D & D of Portland" and, on the other side, "A branch of the Theobroma augusta with a flower open'd before its Time in order to preserve it the better upon the sample because the full blown ones are extremely deciduous. The large leaf is one that grows remote from the flowers, design'd to show the difference between them."⁴ Lying in the packet were a large leaf and some smaller ones, as well as a tiny folded packet exhibiting the outline of a five-petalled flower inside.

[Appendix, Fig 3] Written on the outside of this smaller packet was the following: "A flower of the Theobroma augusta full blown, taken out of the calyx [the part of the plant that contains the unopened flower] & expanded. The Antherae [the part of the plant that contains the pollen] may be seen between the Lobes of the [minor?] nectarium [the part of the plant that contains a nectar-secreting gland]—one of the petals is unfortunately broken off." Along with the packet, the folder contained a sheet of paper with a character description of the plant, written in Ellis's hand, titled "The Generic Characters of a Plant which flower'd in the Hot House in Bullstrode in August 1768." Morphological character descriptions, an important component of systematic botany, outline each part or

"character" of a botanical specimen; through the description of each part, it was possible to identify the specimen. Such character descriptions, sometimes written in Latin, sometimes in English, appear throughout the writings of the network of naturalists I study here.

Ellis's character description of the *Theobroma augusta* concludes:

As the Antherae grow in five distinct Bodies or Clusters I apprehend this plant must belong to the Class of Polyadelphia [a class in the Linnean system whose flowers have stamens united in three or more groups], tho' for want of visible filaments it is somewhat irregular. There is no known genus with which the characters agree, tho' the *Theobroma* comes the nearest, as having a Nectarium; but this has a double Nectarium, a Calyx divided into five leaves & five styles & therefore it cannot properly be a *Theobroma*. It had the habit of an hibiscus & grew to the Height of 7 or 8 feet, & branching. It died after flowering.

Here was a glimpse of botanical work in progress. This dried specimen had clearly engaged Ellis's curiosity, and his writing shows a sense of his puzzlement in the process of working through the challenges of classification. The character description gave Ellis empirical data with which to determine one stage of classification, and his empirical methods, basing a theory on the facts before him, were sound: he placed the specimen in the class of Polyadelphia because the antherae "grow in five distinct Bodies."

Ellis's words point to the difficulties facing systematists in this period. Mobile botanical objects enlarged the world by making more plants available for analysis. This expansion excited and fueled naturalists, even as it was a constant struggle (especially in the realm of botany) to order the specimens and contain and consolidate the information they presented. Ellis's description of the *Theobroma augusta* reflects the desire to order and the desire to be attentive to the possibilities of the as-yet-unknown. The exceptions and uncertainties of the systematic process are written into his empirical character description, in his acknowledgement that the specimen is "somewhat irregular" as a

member of the class of Polyadelphia and, most obviously, in the hesitation expressed in the grammar of the following sentence, which nevertheless strives to be true to empirical detailed observation: "There is no known genus with which the characters agree, tho' the Theobroma comes the nearest, as having a Nectarium; but this has a double Nectarium, a Calyx divided into five leaves & five styles & therefore it cannot properly be a Theobroma." In attending to the specifics of the material object, Ellis confronted the limits of observation and classification: even with the dried specimen before him, he was unable to determine its genus. Although the work of classification with which Ellis and other figures in this study were engaged is present in their letters and publications, seeing that work directly attached to a dried sample--in which the paper that records the information also envelops the specimen--underscored both the difficulties and the pleasures of working with botanical objects in this tangible way.

In addition to illustrating the material work of botanical classification, Ellis's packet deepened my understanding of the expansiveness of the wider community of which he was a part. The fact that the samples originated from the Duke and Duchess of Portland is a piece of empirical data, but it also suggests the role of patrons in the history of botanical collection. An interest in botanical objects allowed people to communicate across class differences and, in fact, had the power to collapse all sorts of distances between people, including geographical, educational, and social. Most of the long-standing correspondents I study here never met in person, but they nevertheless considered themselves part of the same tightly connected community of "curious individuals" working to understand the natural world.

The second packet that caught my interest in the Ellis folders was larger than the first, with the words “Chlamydia from New Zealand” written on the outside. I carefully unfolded the packet, and discovered that it was actually a folio-sized sheet of newsprint containing “The Election List of the Royal Society MDCLXXI (1771).” The packet contained some leaves, part of the flower stem, some seeds pods, and a bit of woven cloth. **[Appendix, Fig 4]**

I was reluctant to touch these dried samples, now more than 230 years old. But, as it happened, a botanist from the Natural History Museum of London was working at the Linnean Society that day, and his curiosity was piqued. He came over, and immediately started picking up the samples and examining them closely. He looked first at the plant labeled “Theobroma augusta.” The first thing he noticed about the contents of the packet was that there were in fact leaves from two different plants in the packet—the large leaf was the one connected to all the other plant parts, but the smaller leaves were not. The botanist did not believe that either sample was actually *Theobroma augusta*, and promised to look it up on IPNI (the International Plant Name Index). He then turned his attention to the “Chlamydia from New Zealand.” Almost immediately he declared it to be a sample of *Phormium tenax*, which is indeed New Zealand flax. The small piece of cloth, he said, was woven from the plant, and was an example of one of its many uses, including the making of rope.

After examining the specimens, the botanist checked their names in the IPNI database. He learned that the *Theobroma augusta* (L, *Systema naturae* 12th edition, 1766-67) had later been reclassified as *Abroma augusta* (L.f.); *Theobroma augusta* is now a synonym. One of its common names is “Devil's cotton” and its bark is fibrous, suggesting

a link--perhaps a coincidence--with the Chlamydia specimen. The Chlamydia, or what the botanist identified as Phormium tenax, presented more of a taxonomic mystery. Botanist Joseph Gaertner identified the plant as Agavaceae chlamydia in 1788 in *De Fructibus et Seminibus Plantarum 1*. Before then, the plant was known as Phormium forster (still listed in IPNI as an illegal synonym), and was listed under the genus Liliacea and then Phormiaceae. The botanist became quite intrigued. Why, he asked, was Ellis using the name Chlamydia in 1771 (the date of the newsprint in which the dried samples were wrapped) if that name wasn't connected to the specimen until 1788—by which time Ellis had been dead for twelve years? The handwriting on the packet certainly resembled Ellis's, but could the packet have been labeled at a later date by someone other than Ellis? On a hunch that Gaertner himself may have labeled the packet, the botanist referred to a handbook of handwriting samples of scientists and checked the writing against Gaertner's. It clearly was not his. Out of time, he decided that the mystery would have to wait for another day. He recorded all of our discoveries on a slip of paper, signed and dated it, and carefully tucked it into the folder with the seed packet. The information we had gathered would not be lost. Our work with the natural object became part of its material history.

The entire process was thrilling because it allowed me to experience something I had read about in the letters of Ellis and Collinson, Garden and Linnaeus: the practice of examining and identifying botanical specimens. (Indeed, as I discovered later, Ellis wrote a letter to Linnaeus on January 14, 1772 about his work with the Chlamydia specimens.⁵) The experience collapsed the time between the 1770s and 2005, showing me that the methodological procedures of botanical classification have remained much the same and

suggesting that botanical objects themselves determine a particular mode of response—in 1771 and in 2005, one must examine the object closely and think comparatively, considering the object in relation to other objects and in relation to what is known. Checking the name of a specimen in a computer database like IPNI is of course easier than cross-referencing it in multiple taxonomic manuals, but the goal is the same. For me to be able to glimpse such scientific practices at work--examining a dried sample, considering the written information that accompanies the sample, judging it against one's information and understanding--was just a matter of chance. And yet it was the sort of fortuitous circumstance that gave me a clearer sense of the material work with which Collinson, Ellis, Linnaeus, and other figures of this study were engaged.

The writing on the seed packets, along with the other writings by Ellis and Collinson I examined at the Linnean Society, added an important dimension to my reading of their letters and published reports. The category of *natural history* tends to lump together an array of textual forms--letters, promotional tracts, journals, reports, catalogues, "natural histories"--even though different forms of writing produce different kinds of knowledge, have different purposes, rely on different styles. One of my goals in studying natural history exchanges in the eighteenth century was to develop a sharper understanding of the distinctions between different forms of natural history writing, and my work in the archives yielded two significant results. First, I realized that while different forms of natural history writing perform different rhetorical and conceptual work, they are all intertwined. The relation between the writing in a letter and on a seed packet and in a notebook in some sense represents at the textual level the kind of collaboration inherent in the work of transatlantic botanical exchange. Second, I realized

that I had to expand my understanding of "forms" beyond the verbal to include visual forms like sketches and pictures as well as material forms like gardening.

I discovered at the Linnean Society that both Collinson and Ellis frequently sketched in their notebooks, including, among other things, drawings of specimens, garden plans, and hothouse designs. **[Appendix, Fig 5]** The visual was another form through which they processed observations; it was another way to organize information and deepen their familiarity with nature. This discovery acquired additional meaning when I examined some of the books in Collinson's library, thanks to another bit of luck. With the assistance of the Society librarian and some of her contacts, I planned a trip to Liverpool to visit Knowsley Hall, home of the Earl of Derby. The 13th Earl (1775-1851) was an avid natural history enthusiast, who used his resources to acquire a significant collection of natural history book, prints, specimens, and artifacts (in addition to opening a menagerie that still exists). The Derby collection contains Collinson's edition of Mark Catesby's illustrated *Natural History of Carolina, Florida, and the Bahama Islands* (published in sections in the 1730s and 1740s, and the first significant illustrated work on the flora and fauna of the American colonies), as well as Collinson's notebook of collected prints and drawings. One example from Collinson's copy of the Catesby volumes will serve to show the importance of visual information to naturalists.

On page 85 of volume 2 is Catesby's drawing of the Anona (pineapple) plant. Under Catesby's description, a small (perhaps 6 by 6 inch) scrap of paper with a drawing of a lovely pinkish-purple blossom had been glued. Around the drawing, Collinson had written, "My Friend Mr. Ehret has most [curiously] painted the blossom of the anona as it flowered in England—by the different colors of the flowers, it is probable there is some

with white, & with purple flowers, for Mr. Catesby drew his [on the spot?]. P. Collinson May 22, 1754. This flower was [taken?] a plant in the Oxford Garden July 6, 1751 & it flowers annual at the Duke of Argyles with the same coloured flower.”⁶ "Mr. Ehret" refers to Georg Dionysius Ehret (1710-1770), one of the most renowned and prolific botanical artists in the period.⁷ In Catesby's illustrated plate the flower is white, while in Ehret's small drawing the flower is purple. Like Ellis's commentary on the *Theobroma augusta*, Collinson's annotation records his observation of the (pictorial) botanical object, attending to the color difference between the two flowers in an effort to make sense of it. What could account for the difference? Collinson suggests that both Catesby and Ehret drew their illustrations from life, in order to eliminate the possibility that one of the artists had taken artistic liberties with nature or that one was working from a dried specimen, which would affect the specimen's appearance. In this instance, the drawings stand in for the object itself, allowing Collinson to attach his observations and commentary to the visual object by surrounding it with verbal description, just as Ellis attached his observations and commentary to the actual dried specimen.

This small pasted drawing is not the only example of Collinson's reliance on Ehret's work. His Catesby volumes contain numerous Ehret drawings that have been bound in, and Collinson annotated many of them with extensive information about where specific plants came from, where and when they bloomed, and other information of natural historical and horticultural importance:

#3: This beautiful fringed-flowered gentian I raised from seed sent by J. Bartram from Pensilvania. It flowered at Peckham in Autumn 1740 and in the year following Sept. 25 with Mr [Tom?] Brewer in York. Here is a biennial, produced no seed [. . .]

#7: Great Martigon.....From Pensilvania G.D. Ehret Pinn. This noble Martigon was sent from Pensilvania by John Bartram in spring 1736. It is named by him the great marsh martigon it being found in moist ground. The Flowers are much larger and it grows taller than the common American sort. It Flower'd in the garden of P. Collinson att Peckham in September 1736 which is much later than the other sort commonly known by the name of the Virginia Martigon and call'd by the [Dutch?] catalogues Canada Martigon. Both sorts are described by M. Catesby in his natural history of Carolina etc. In the years 1739 & 1740 it produced a stem 6 feet 2 in high with a pyramid of 30 flowers, which was a most beautiful sight [. . .]

#9 "This curious plant was procured from Barbadoes by John Warner Merct. From him all the curious has been furnished with plants. It has been some years in England but never Flower'd till June 1739 in the noble Stoves of Lord Petre at Thorndon in Essex where being planted in a border of earth and having a great deal of room to ramble was probably the cause of its flowering.

#10 "This pretty [] flower was sent by John Bartram 1740 and flower'd that year. Doc'r Gronovius names it Phlox [from] Docr Linæus Hort Clift pag 53 being an old name given by Theophrastus.

Ehret's botanical illustrations were a trusted and valued resource for Collinson, a fact made visible in the handwritten annotations found in his books. What most struck me in looking at Ehret's drawings and in reading Collinson's annotations was the sense of immediacy and specificity that these annotations convey: this plant flowered at this time in this garden; this plant was drawn from life, and it doesn't match the written description perhaps because it was raised in a hothouse instead of in the wild; this plant came from this person in this year. What was the value in recording information about when and where a particular plant bloomed? Was it for posterity or for personal satisfaction? Was such information put to scientific / horticultural use or was it forgotten? Who was the intended audience of such commentary? Collinson's annotations are a form of record keeping, and his scrapbook-style of gathering and consolidating information in such picture captions, and in his commonplace books, affirms the interconnection between

private, informal modes of writing and methods of building natural knowledge in this period. As I was discovering, this interconnection becomes most visible in the archives.

Collinson's annotations also impressed on me the fluid movement between a visual representation of a botanical object and the horticultural life of that object as it existed in a specific garden at a specific time. Connoisseurs of eighteenth-century botanical illustration valued naturalistic representation, fostering the effortless association between the representation and the real evoked by Collinson's annotations. Just as there were conventions of verbal character descriptions of plants, so there were conventions of visual character depictions that outlined each component part of a plant. One of the reasons people valued Ehret was for his skill in producing accurate natural history drawings, which depicted all features of a specimen.

The Earl of Derby also possesses Collinson's notebook of prints and drawings (many of birds), which contains annotations similar to the ones found in his Catesby volumes. It includes drawings by Catesby, clippings of drawings from books by George Edwards (author of *A Natural History of Uncommon Birds* [1743-1751] and *Gleanings of Natural History* [1758-1764]), as well as some prints by Ehret. For me, the highlight of examining this volume at Knowsley Hall was getting to see many of the drawings that William Bartram sent to Collinson throughout their relationship. William (1739-1823) was the son of John Bartram (1699-1777), who was Collinson's primary botanical collector and most attentive correspondent in North America (I describe their epistolary exchange in chapter 2). The world of natural history nurtured William Bartram's talents as an observer and artist of nature, and Collinson frequently made use of Bartram's artistic talents in his pursuit of botanical knowledge.

I had seen various drawings by William Bartram reproduced in scholarly editions of his work,⁸ but such reproductions did not compare to paging through a notebook of his original drawings--to seeing the way ink had rubbed off on facing pages, to feeling the texture of the paper, to noting the irreproducible colors of the inks, to being able to peer closely at his brief captions, even something so short as "William Bartram, his performance."⁹ Looked at in this way the drawings were much more real to me as art objects, not just visual illustrations to accompany a naturalist's description. I found myself spending more time thinking about the aesthetic qualities of the drawings, noting William's tendency to embed his initials within the natural settings he was creating, presenting them not simply as perfunctory or conventional bits of information and authorship but as aesthetic elements of the drawings themselves. And yet at the same time the drawings were powerful precisely because they were Collinson's personal artifacts, because they were part of one man's history of natural history, gathered together with a variety of Collinson's other visual and textual artifacts.

The writing on the drawings--traces of William Bartram's and Collinson's response to nature--shows how such visual representations stimulated Collinson's engagement with the natural world. The drawings were another place to accumulate information about the object(s) depicted; even if he did not possess them, drawings brought Collinson one step closer to them. Drawings of natural objects were in general preferable to verbal descriptions, especially when the objects could not be made mobile for one reason or another. An incident from Collinson's correspondence with John Bartram impressed me with new significance as I considered Collinson's collection of William Bartram's drawings. In 1760, Collinson asked John to send him a specimen of

what he called a water lily.¹⁰ Bartram was unable to fulfill the request because of the fragility of the plant; they tried various ways of transporting it, but none succeeded.¹¹ Eventually Collinson wrote to Bartram, "I want much a perticular Description [of this beautifull plant] but much more a drawing from Billys Inimitable Pencil," and a few letters later he is more explicit: "Suppose a drawing [of] the Faba was made & sent to the King--of the leaf, flower & seed-vessel, in a picturesque figure as growing in the water."¹²

Collinson was satisfied a few months later with a dried sample prepared by John Bartram and with Billy's "exquisite Drawing," which "gives us a complete idea of that wonderful plant."¹³ Collinson's directive to draw the flower "in a picturesque figure as growing in the water"--in other words, in its natural setting--and his description of the drawing as "exquisite" suggests that drawings satisfied various desires. Collinson required a pictorial representation of the absent object in order to know something about it, but his enthusiastic response to William Bartram's drawing suggests that pictorial representations were preferable to verbal descriptions not only for the information they conveyed but also for the pleasure they provoked in stimulating an aesthetic engagement with the natural world.

Such aesthetic evaluation and appreciation of nature was fundamental to the natural history enterprise, especially in the eighteenth century when there was fluidity between scientific and aesthetic ways of knowing. I am concerned throughout the dissertation with how the aesthetic and the natural historical share similar concerns: What is the role of the self in relation to the material world? Can disinterested modes of perception be cultivated? Can standards of judgment be established? These questions

achieve a specificity and concreteness when considered in the context of a world in which natural objects were moving around the globe. Theories of the aesthetic emerged in the eighteenth century in response to the same affirmation of the powers of observation and sensory awareness that gave rise to the empirical methods of the "new science." Such theories--as elaborated by Addison, Hume, Hutcheson, Allison, Shaftsbury, and Kant--developed at the same time that the naturalists I discuss here collected, analyzed, exchanged, and responded to botanical and other natural objects.

Collinson, Ellis, Garden, and the Bartrams did not investigate "the aesthetic" as such, but their work with natural objects entailed considerations of qualities that we associate with it: form, shape, size, smell, judgments of beauty, associative relations. Aesthetic considerations were important not only to William Bartram, as he nestled his illustrated birds in naturalistic settings, but also to Ellis, as he counted the antherae and the divisions of the calyx of the *Theobroma augusta*, and to Collinson, as he reflected on the different colors of a flowering anona and measured the stem and the pyramid of flowers on the Great Martigon. Aesthetic terminology also infiltrated the vocabulary of naturalists, as, for example, when Collinson chides Bartram for showing a lack of "curiosity" and "taste" by not attempting to cultivate the lovely water lily¹⁴--the same water lily, incidentally, that was so fragile Collinson eventually had to settle for William's "picturesque" rendering. Aesthetic matters are a sometimes explicit but always tacit component of their responses to botanical and other natural objects. My archival research was illuminating in this regard as well. If, at the broadest level, my dissertation investigates how letterwriting naturalists came to know natural objects in the eighteenth century--a period of radical transition in the Anglo-American cultural conception of

nature--then my archival research showed how complex, varied, and yet related were the verbal and visual attempts at such understanding.

My trip to England dramatized another way that aesthetic qualities figure into my study of mobile natural objects in the eighteenth century, through another form of knowledge and beauty akin to natural history illustration: the landscape garden. The fascination that men like Collinson and the Bartrams felt for specific natural objects took material shape in gardens. The eighteenth century was a period of dramatic changes to the English landscape, a time of horticultural acquisition that changed the English sense of natural beauty. Indeed, when Dr. John Fothergill (1712-1780) agreed to support William Bartram's exploration of the southern colonies in the early 1770s (the subject of chapter 5), he requested plants notable for their beauty for his garden. In my visits to various gardens around London, I was able to see vivid illustrations of these changes, and to see firsthand the material life of some of the natural objects described in my study.

In Surrey, southwest of London, lies Painshill Park, a landscape park created between 1738 and 1773 by the Honorable Charles Hamilton, the fourteenth child of the sixth Earl of Abercorn. Hamilton took the information gleaned during his first European Grand Tour in 1725 and followed the trend toward a more naturalistic style when designing his 250-acre pleasure garden. A walk through the park takes one to a Ruined Abbey, a Gothic Tower, a Temple of Bacchus, a Grotto. Hamilton and his gardener designed each spot as a place for visitors to stop and admire a specific view that the landscape works to frame, artificially but naturalistically. For example, the Gothic Temple is a circular structure set on a hill, which allows a viewpoint of many of the other natural (the Cedar of Lebanon tree, for instance) and artificial (the Turkish Tent, for

instance) features of the park. [**Appendix, Figs 6 and 7**] Combining landscape design, architecture, and horticulture, the park drew many noteworthy visitors including Horace Walpole and Thomas Jefferson.¹⁵ Hamilton was forced to sell it in 1773 to pay his debts. Eventually the park fell into disrepair, but since 1980 the Painshill Trust has been working to restore the park to its previous state.

Coincidentally, in the summer of 2005 the park was running an exhibit called “American Roots,” designed to show how Hamilton capitalized on the transatlantic trade in botanical objects in developing plans for his new landscape park. As the guide to the exhibit says, “American Roots tells the story of how American plants transformed British gardening at Painshill Park and other 18th century landscape gardens.”¹⁶ Hamilton was in fact a recipient of some of the seed boxes collected by John Bartram in the middle Atlantic region of North America and distributed by Collinson in England and Europe for scientific and horticultural purposes. (Documents show one box received in 1748 and another in 1756, and there may have been others.¹⁷) Bartram and Collinson were largely responsible for establishing an Anglo-American “nature trade”¹⁸ in the eighteenth century. The effects of this trade are visible in the landscape of Painshill Park today, now almost fully restored to its eighteenth-century appearance. The park itself is in a sense a living artifact from the eighteenth century, in that it reconstructs popular features of English landscape design and cultivates botanical objects that were necessary for that design to take shape.

The American Roots exhibit was fascinating because it presented, live and growing, many of the specimens that would have been sent by Bartram to his English correspondents. It also presented replicas of various boxes and crates used in the

transportation of botanical objects. [**Appendix, Fig 8**] (Indeed, many of the figures I discuss here experimented with different methods of transport; John Ellis, for example, reported on the subject in the pages of the *Philosophical Transactions* and published a pamphlet in 1770 titled *Directions for Bringing Over Seeds and Plants from the East-Indies and Other Distant Countries, in A State of Vegetation*.) In wandering around the exhibit, I encountered something identified as “The Theater of Plants.” According to the guide, such theaters were a feature of eighteenth-century landscape design, and “displayed treasured plants in a graduated arrangement similar to seats in a theater.”¹⁹ There, sitting in a pot on the second tier, was *Phormium tenax*—Ellis’s “*Chlamydia* from New Zealand.” [**Appendix, Fig 9**]

In my visits to Painshill Park and to other gardens in the London area, including the walled Chelsea Physic Garden (founded in 1673) and the expansive Royal Botanical Gardens at Kew (which came into prominence in the 1760s), I once again felt the collapse of time between the eighteenth century and today. In their spatial layout and in their attention to the historical specificities of botanical objects--when and how and from where they were introduced, how they were cultivated in England, their useful and aesthetic value--these gardens retain some of the features of the eighteenth-century experience. In the libraries and archives, as well as in the gardens, I glimpsed the empirical puzzles, the aesthetic achievements, and the private and shared pleasures emerging from an engagement with mobile botanical objects.

¹ Edmund Berkeley and Dorothy Smith Berkeley, eds., *The Correspondence of John Bartram, 1734-1777* (Gainesville: University Press of Florida, 1992), 494.

² M. Paul-Antoine Cap, *Le Muséum d'Histoire Naturelle* (Paris: L. Curmer, 1854).

³ This phrase appears in an index accompanying Collinson's commonplace book. Courtesy of the Linnean Society of London.

⁴ This and all subsequent quotations from the seed packets courtesy of the Linnean Society of London.

⁵ James Edward Smith, ed., *A Selection of the Correspondence of Linnaeus and Other Naturalists from the Original Manuscripts*, Vol. 1 (London: Longman, Hurst, Rees, Orme, and Brown, Paternoster Row, 1821; Arno Press Reprint, 1978), 277.

⁶ This and all subsequent quotations from Collinson's copy of the Catesby volumes courtesy of the Earl of Derby, Knowsley. The transcriptions of Collinson's annotations are my own. Where I am uncertain about the transcription, I have included possible words in square brackets; a question mark after the word signals my attempt to hazard a guess about the word; no question mark signals my relative certainty about the transcribed word or phrase.

⁷ See Gerta Calmann, *Ehret: Flower Painter Extraordinary* (Boston: New York Graphic Society, 1977).

⁸ See, for example, Joseph Ewan, ed., *William Bartram: Botanical and Zoological Drawings, 1756-1788* (Philadelphia: Memoirs of the American Philosophical Society 74, 1968) and *William Bartram, Travels and Other Writings*, selected by Thomas P. Slaughter (New York: The Library of America, 1996).

⁹ Courtesy of the Earl of Derby, Knowsley.

¹⁰ This plant is also called "colocasia" and "Faba egyptica" in their correspondence.

¹¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 683.

¹² *Ibid.*, 683, 685.

¹³ *Ibid.*, 700.

¹⁴ *Ibid.*, 479.

¹⁵ Walpole describes Painshill Park in his *History of the Modern Taste in Gardening* (1780), referring to it as a "forest or savage garden." Jefferson, using Thomas Whateley's *Observations on Modern Gardening* (1770) as his guide, mentions it in his "Memorandums Made on a Tour to Some of the Gardens in England" (1786); his response is generally critical ("there is too much evergreen" and the house is "ill situated") except for a comment on the "beautiful" Doric Temple.

¹⁶ *American Roots at Painshill Park: A Guide to the Exhibition and Associated Plantings in the Park*, 5.

¹⁷ *Ibid.*, 10.

¹⁸ Thomas P. Slaughter, *The Natures of John and William Bartram* (New York: Alfred A. Knopf, 1996).

¹⁹ *American Roots at Painshill Park*, 21.

Chapter 1

Of Ships & Seeds & Pirates & Plants:

An Introduction to the Mobility of Nature

The Spanish Broom with Double Flowers was first Introduced by me. It was sent me from Nuremberg anno 1746. It cost there a Golden Ducat--came down the Elbe to Hambrg so on to London in a pot well secured & was immediately forwarded to Gray and Gordon, from whom the Public were afterwards supplied.

--Peter Collinson, annotation in his copy of Philip Miller's *Gardener's Dictionary* (seventh edition)

These Plants we see are not only of vastly different Natures, but also Vary as much in their outward Appearance, so that by the Produces of different Climates, we behold, as it were, a new World.

--Society of Gardeners, *Catalogus plantarum*, 1730

The perception and evaluation of natural objects went through a period of intense change in the eighteenth century, effecting a transformation in the idea of nature itself.

The phrase “as it were, a new World,” as used in my epigraph from the Society of Gardeners' 1730 catalogue of plants cultivated in London nurseries, expresses a sense of this transformation in the way it blurs the line between foreign and local spaces, between the *discovery* of new worlds and the *creation* of new worlds through the activity of planting. A 1741 letter from Peter Collinson in London to John Bartram in Philadelphia particularizes this idea. In the letter, Collinson described the experience of “[beholding]...a new World” during a walk through Lord Petre’s wooded estate at Thorndon in Essex. He told Bartram that “Last year Ld petre planted out about Tenn thousand Americans...about Twenty Thousand Europeans, & some Asians,” which combined to make “a very beautifull appearance great Art & skill being shown in consulting Every one’s pticular growth & the blending the Variety of Greens.”¹ The effect of this plantation was to transport Collinson himself, for he wrote, “when I walk

amongst them, One cannot well help thinking He is in North American thickets—there are such Quantities.”

Collinson's formulation implies that the eventual result of transplantation was the successful replication of natural environments, and North America was not the only region evoked on Lord Petre's estate, for he went on to say, “but to be att [Lord Petre's] Table one would think South America was really There to see a Servant come in Every Day with Tenn or a Dozen pine apples as much as He can Carry.” Within this single paragraph, Collinson imagines that he has been transported to “North American thickets” and that South America has been transported to England, that it is “really There,” a notion supported by the sheer number of pineapples harvested on a daily basis. Lord Petre and his gardeners successfully created “a new World” through the cultivation of botanical objects transported across the seas, and Collinson's language shows how the mobility of such objects opened up new imaginative and rhetorical--as well as material--possibilities. Suddenly the distinction between actual specimens of North American evergreen trees and the idea of “North American thickets” was fluid, reflecting a new appreciation for the adaptability of nature.

The mobility of plants contributed to this emerging awareness of nature's dynamism, and Collinson played an important role in establishing methods for transporting them. At the time of his letter describing his experience on Lord Petre's estate, he and Bartram had been corresponding and exchanging botanical and other natural objects for more than seven years.² Transporting and transplanting plants were not newly discovered activities in eighteenth-century England, but naturalists, gardeners, philosophers, aristocrats, merchants, farmers, clergymen, princes, nurserymen, and others

pursued them with new intensity and increasing cultural support from the 1730s onward.³ Their efforts were part of an unprecedented period of transatlantic movement, and in the following chapters, I use the trope of mobility to describe the relation between that movement and botanical natural history in the eighteenth century: the movement of plants and people, of letters and lists, of information and directions, of books and newspapers, of seeds and specimen sheets.

All aspects of Anglo-American natural history were in a state of transition in this period: its analytical modes, its institutional shape, its methods of collecting and synthesizing objects and information, its forms of expression, its accessibility, its popularity.⁴ In the realm of botany, the effects of this transition were visible in landscapes as well as in language, in the Society of Gardeners' dream of creating "a new world" through planting and in Collinson's vision of North America in Essex. The trope of mobility illuminates such material and rhetorical transformations, and highlights a paradox of the eighteenth-century quest for natural knowledge: even as the natural world was being categorized and classified in new ways and with a new sense of purpose, nature came to be seen as the embodiment of change.

This paradox emerges most clearly in natural history letters. As mobile plants moved into new cultural and environmental contexts, various forms and categories emerged, or acquired new potency, in order to assimilate and organize them. Letters were well suited to mediate a cultural situation in which nature was expanding through the discovery of new worlds and new objects, and naturalists made good use of them. Mobile letters accompanied specimens from one side of the Atlantic to the other, and made it possible--as an ongoing, collaborative, and open-ended form--to follow the movement of

those specimens through new settings. Reading and writing letters nurtured objective modes of empirical analysis as well as an awareness of the pleasures of familiarity with the natural world, marking a shift in the relationship between nature and the self.

The following chapters examine various features of the unfolding transformation in the idea of nature from static and predictable to dynamic and mutable. I focus on the letters and related natural history writings of Collinson and Bartram, Alexander Garden, John Ellis, and Carl Linnaeus, John Fothergill and William Bartram. Collinson was at the center of the transatlantic network connecting these men, and in this chapter, I use his words as a lens with which to magnify several aspects of the cultural context for the mobility of plants. What motivated networks of people to move botanical objects from one place to another? What challenges did they face? What were some of the ramifications of their work? Collinson was in many ways a "representative man," and in the events and textual records of his life, we glimpse a unique and transitional period in the history of natural history.

* * *

Peter Collinson died on August 11, 1768 at the age of seventy-four. He had been visiting Lord Petre (whose father planted the trees that transported Collinson to "North American thickets") when illness struck, and he died a few hours after arriving home. After his death, Collinson was remembered largely for his contributions to natural history. His friend, Dr. John Fothergill, wrote a memoir of Collinson in 1769, saying that when they first became friends, in 1740, Collinson was already "considered as one of the ablest natural historians and botanists in England."⁵ Collinson's nephew Thomas published an account of his death in the *Gentleman's Magazine* in September 1809,

concluding, "He had lived pleasantly, usefully, honestly, and was an unwearied promoter of knowledge in general and of Natural History in particular."⁶ Benjamin Franklin wrote a letter to Collinson's son Michael in February of 1770 expressing his gratitude for his father's "Zeal and Usefulness in promoting Knowledge" in the colonies.⁷

Franklin had particular reason to feel grateful to Collinson. Collinson encouraged Franklin's experiments in electricity by providing important information and the glass tube, and he (along with Fothergill) promoted the publication of Franklin's findings in England and Europe. Collinson also served as the chief correspondent for the Library Company of Philadelphia, newly formed in 1731 by Franklin and his friends, supplying books and other materials. The first two books Collinson donated to the fledgling subscription library in 1732 were "Sr Isaac Newtons Philosophy & Philip Millers Gardening Dictionary,"⁸ representing different but related kinds of eighteenth-century knowledge. Newton had been president of the Royal Society of London from 1703-1727; his *Philosophiae Naturalis Principia Mathematica* appeared in 1687, introducing his three laws of motion and the theory of universal gravitation, and launching new directions in mathematics and physics. Miller was the Head Gardener at the Chelsea Physic Garden in London (a post he held from 1722-1770), and he published the first of eight editions of his *Gardener's Dictionary* in 1731. Collinson's gift to the Library Company thus exhibited the endeavors of two of the guiding English forces behind the transatlantic mobility of natural objects in the eighteenth century--the Royal Society and the Chelsea Physic Garden.

The Royal Society and the Physic Garden represent different branches of Enlightenment learning, broadly characterized as theoretical and useful knowledge. Each

organization was devoted to the acquisition of knowledge about nature, and there were many links between them. One of Collinson's earliest friends and patrons, for instance, was Sir Hans Sloane. Sloane took over the presidency of the Royal Society in 1727, after Newton's death, and served until 1741. More than a decade before he took over the presidency, in 1712, he had purchased the Chelsea Physic Garden (then known as the Apothecaries Garden), leasing it to the Apothecaries for the price of five pounds a year and requiring that each year, they send fifty dried specimens grown in the garden to the Royal Society. Through this arrangement, the Royal Society received more than three thousand plant specimens, all of which were listed in the *Philosophical Transactions*⁹ (and most of which are still extant in the General Herbarium of the Department of Botany at the British Museum of Natural History). In this way, the Fellows of the Royal Society, and the public, were informed about the introduction, cultivation, and uses of new botanical specimens.

Collinson bridged the worlds of the Royal Society and the Physic Garden because of his skill in importing new and unusual plants. In a piece of writing left unfinished at the time of his death--"An Account of the Introduction of American Seeds into Great Britain by Peter Collinson"--Collinson recorded his role in the project of botanical exchange.¹⁰ He describes the importance of his position as a fabric merchant in establishing connections with colonists in Carolina, Virginia, Maryland, Pennsylvania, and New England. Driven by a "love for gardening" and for "new and rare plants," he gradually built up an extensive trade in botanical objects, eventually settling into a partnership with John Bartram, "whose business it should be to gather seeds, send over plants." Collinson's professional mercantile connections thus enabled him to pursue his

more personal interests in plants and natural history, with far-reaching consequences for himself and for his country.

The fluidity between commerce, a disinterested pursuit of knowledge, and pleasure represented in Collinson's experience was characteristic of Enlightenment natural history.¹¹ Collinson's position as a Fellow of the Royal Society and as a merchant engaged in the nature trade linked him to two motivations for the mobility of plants in eighteenth-century England: the acquisition of knowledge about nature and the commodification of nature. These motivations were not mutually exclusive, and in fact it is almost impossible to describe one without invoking the other. Following his own predilections, Collinson used his merchant status to acquire rare and unusual natural objects from around the world, and many of these he ferried to powerful men like Sloane. The nature trade thus facilitated Collinson's own upward social mobility. His sphere of influence and acquaintance grew beyond the mercantile world because of his ability to acquire and distribute exotic specimens of all kinds. Collinson's nomination to the Royal Society was most likely due to Sloane's patronage, and through his connection to the Royal Society, Collinson encountered an expansive and well-connected community of natural philosophers, with broad natural history horizons.

Collinson was elected a Fellow of the Royal Society in 1728 and was an active participant throughout his life, serving on the board, providing contributions from his correspondence, and publishing eleven papers in the *Philosophical Transactions* on topics ranging from the hardness of shells to distemper among cows to the North American cicada. The principles of the Royal Society, founded in 1660 by Charles II, were based on Francis Bacon's empirical philosophy, characterized by direct observation

of nature. As Thomas Sprat wrote, in his institutionally sponsored history of the Society, the members of the Society "have studi'd, to make [knowledge of nature], not onely an Enterprise of one season, or of some lucky opportunity; but a business of time; a steddy, a lasting, a popular, an uninterrupted Work. They have attempted, to free it from the Artifice, and Humors, and Passions of Sects; to render it an Instrument, whereby Mankind may obtain a Dominion over *Things*, and not onely over one anothers *Judgements*."¹² The word "things" appears frequently in Sprat's history, a testament to the prevailing cultural interest in material objects that was directly related to the epistemological concerns of the Royal Society: how do we respond to and come to know the material world?¹³

The first step, according to Bacon, was to compile a "Universal Natural History," a dream that inspired the Royal Society to enlist the help of travelers and ships' captains in collecting information and unusual materials from all around the globe. With knowledge of nature as their "instrument" (as Sprat says), the Royal Society organized such efforts, working to educate travelers in methods of empirical observation and collection. Robert Boyle's "General Heads for the Natural History of a Country, Great or Small: Drawn Out for the Uses of Travellers and Navigators," published in 1666, was one of the earliest attempts to generalize an approach to the study of nature in order to make the work of observation and collection more accessible to untrained individuals. John Woodward's 1696 "Brief Instructions for Making Observations in All Parts of the World" was also widely distributed.

These published works provided a model for what might be called the genre of instruction, which filtered into the letters of individual Fellows corresponding with

foreigners and travelers. Collinson, for instance, provided John Bartram with directives and instructions in the late 1730s regarding all aspects of plant collection. Even Fothergill, writing forty years later to William Bartram, still laid out the goals and methods of botanical collection, emphasizing not only how to collect plants, but also how to see the natural world. The project of transatlantic botanical exchange as carried out by men like Collinson, Fothergill, and the Bartrams thus represented just one effort among many toward compiling a universal natural history. The organized mobility of plants and the various instructions that facilitated it provided more objects for analysis as well as more opportunities for communication, yielding knowledge, pleasure, and profits of both a material and intangible kind.

Collinson's efforts, starting in the 1730s, to acquire new plants and unusual natural objects from the colonies, then, must be viewed as an extension of the Royal Society's goals. He was particularly keen on botanical specimens, but he understood this personal interest in terms of the larger philosophical project of acquiring knowledge of the natural world. This ability to subsume a personal approach to nature into a disinterested approach was a hallmark of the period. It was not only that objective modes of empirical analysis relied on subjective ways of knowing, but also that there were distinct pleasures in the attitude and method of disinterestedness.

Collinson wrote this selfless purpose into his "Account of the Introduction of American Seeds into Great Britain," saying that despite all the "trouble," he pursued the work "without the least grain of profit to myself in hope to improve or at least to adorn my country." Collinson's self-abnegating tone in fact reflects a sense of his importance, but such conventions of rhetorical disinterestedness were part of the language and

methods of the Royal Society, allowing for the pursuit of individual goals often unselfconsciously framed as beneficial to the public. Collinson's desire to improve his country through, as he says, "transacting this business of procuring foreign seeds" expresses one way natural history, categorized as "business," could be viewed as a respectable enterprise and not merely a dilettantish activity.

This growing understanding of the public benefits of the close study of nature was manifested in the transition from privately owned curio cabinets to publicly accessible museums in the eighteenth century. Curio cabinets, popular in the sixteenth and seventeenth centuries, represent one formal response to the increasing appreciation of nature's particular objects, but, with the formation of the Royal Society and with the expanding cultural interest in natural objects in England, the eclectic conjunction of exotic objects peculiar to curio cabinets gave way to more systematic modes of acquisition and exhibition. Collecting gradually became a less privileged activity as new aims and motivations emerged, as well as new systems of organization.¹⁴ Here again, Sir Hans Sloane serves as an example in that upon his death, his private collection of natural objects and cultural artifacts was donated to the nation to become the foundation of the British Museum. Sloane acquired his collection through his own travels, but he received many contributions from people like Collinson (such as "curious creatures [bottled] in spirits" and a woodchuck) and Benjamin Franklin, who sold an asbestos purse to Sloane on his first visit to London in 1725.

One important development emerging from the influx of new natural objects was a move toward more accurate systems of classification in all spheres of natural history. In botany, in particular, there was a great deal of taxonomic and methodological confusion,

and Collinson, like the other figures in this dissertation, was directly involved in efforts to create order. He was an early supporter of Carl Linnaeus, who made a lasting impact on the botanical world with the publication of his sexual system of classification in *Systema naturae* in 1735 and his method of binomial nomenclature in *Species plantarum* in 1753.¹⁵ Linnaeus's ideas found a receptive audience in England, even though many of his correspondents disagreed with him on matters of classification and nomenclature.¹⁶ Such issues provide the subject matter for many of the writings discussed in this dissertation, as natural history correspondents deepened their familiarity with nature in the process of classifying mobile plants. Indeed, their writings highlight the pleasure of this work and give rhetorical shape to the paradoxical claim that an awareness of the dynamic mutable quality of nature emerged in part from the process of systematically classifying discrete objects.

The work of classification was itself dynamic and circuitous, especially with regard to its terminology. The discovery of new plants required the creation of new names, and many eighteenth-century arguments about classification were arguments about language and naming. Collinson, for example, complained to Linnaeus about his tendency to abandon established names used by the ancients or by earlier taxonomists in favor of new names determined by his own principles. In one letter, dated April 20, 1754, written after examining Linnaeus's *Species plantarum*, Collinson wrote, "Wee that admire you are much concern'd that you should perplex the Delightfull Science of Botany with Changing Names that have been well received and adding New Names quite unknown to us. Thus Botany, which was a pleasant Study, and attainable by Most Men, is now

become by alterations & New Names the Study of a Mans Life, & none now but real Professors can pretend to attain it."¹⁷

In a similar complaint written a year later, Collinson wrote, "[I]f you will be for Ever Making New Names & altering Old & Good Names--for such Hard Names that convey no Idea of the plant--It will be Impossible to attain to a Perfect Knowledge in the Science of Botany."¹⁸ Collinson expresses his concern, despite the fact that Linnaeus had already given him "as species of eternity (Botanically speaking)": the honor of *Collinsonia canadensis* in 1739, published in *Hortus Cliffortianus*. Indeed, every figure in this dissertation had a plant genus named after him (chapter 4 pursues this subject in detail), a fact that offers another perspective on the personal pleasures of Enlightenment natural history and the transformations in the relationship between nature and the self.

In making an argument for names that the English community was already familiar with and for names that will "convey [an] Idea of the plant" in the pursuit of "Perfect Knowledge," Collinson gestured toward an ongoing debate between those concerned with establishing a theoretically rigorous vocabulary and system in botany and those concerned with ease of communication and accessibility. Such debates reflected hierarchies within the philosophical community, demonstrated also in the range of terms available to describe those who worked with plants: horticulturalist, botanist, taxonomist, gardener, plantsman, seedsman, nurseryman, philosopher, collector.¹⁹ Determining the agricultural and medical uses of plants was important, for instance, but it was in a different category of experimental rigor than Boyle's experiments with air pressure, Newton's experiments with gravity, or Franklin's experiments with electricity. Still, systems of classification augmented the theoretical work of botany, and the dissemination

of Linnaeus's systematic approach and vocabulary contributed to advancing the scientific importance of botanical collection.²⁰

The work of Philip Miller illustrates what was at stake for participants in accepting Linnaeus's system and taxonomic methods. Miller published the first edition of his *Gardener's Dictionary* in 1731 (it was this first edition that Collinson sent to the Library Company of Philadelphia in 1732). Miller intended the dictionary to be a guidebook, providing practical gardening advice to other gardeners and helping them sort through the nomenclatural confusion in the period, which became more evident with the introduction of more specimens. Miller resisted Linnaeus's system through several editions of his *Dictionary* because he felt that the introduction of new Latinate names--while imposing order--impeded the acquisition of knowledge and clear communication among gardeners. Like Collinson, he wanted gardeners to communicate easily and effectively, and did not want to see botany become a science attainable only by "real Professors," as Collinson put it.

The fact that most new botanical introductions came through the Physic Garden meant that Miller was in a powerful position to influence gardeners, nurserymen, and others working on the ground and in the dirt. He published eight editions throughout the century (1731, 1733, 1737, 1743, 1747, 1752, 1756-59, 1768), but it was only in the last edition, published in April 1768, that Miller finally adopted Linnaeus's binomial nomenclature for species, realizing perhaps that it was fruitless to resist the change that was happening all around him.²¹ Still, Miller's example suggests that the triumph of binomial nomenclature in the field of botany was not a foregone conclusion, and the

contingencies apparent in the classificatory work of Ellis, Linnaeus, Garden and others highlight the dynamism of their endeavors.²²

Collaboration shaped the work of botanical exchange and classification. Despite the all-encompassing (and therefore complex and inexact) term *natural history*, the movement toward specialization began relatively early in the century, with the formation of numerous societies dedicated to specific interests and goals. The Society of Gardeners, for instance, formed in part because many gardeners felt excluded from the mathematical pursuits of the Royal Society, especially during Isaac Newton's tenure as president from 1703-1727. The Society of Gardeners participated in the project of synthesizing new horticultural information in characteristic eighteenth-century fashion, meeting once a month at Newhall's Coffee House in Chelsea to discuss rare plant specimens provided by the members. In the preface to their 1730 *Catalogus plantarum* (which Philip Miller helped produce), they emphasize the need for such reference works in order to manage the influx of new specimens from abroad.²³

The preface to the *Catalogus plantarum* describes the aims of the Society as "ascertaining the true Name of each particular Species by which it is known amongst the Botanists in all the different Parts of Europe, which can be no otherwise effected than by establishing a Correspondence with all the Professors of that Science, whereby the Errors of each other are corrected." This passage evokes the collaborative aspect of botanical exchange in accentuating the benefits of correspondence, even as it confronts the taxonomic challenges of the task. It also reflects a principle that guided the work of botanical exchange: they believed they were unfolding nature's order and that, by accumulating enough information and objects of study, they would expose and

comprehend that order. "Ascertaining the true Name of each particular Species" was possible, one plant at a time. "True" here slides between "that which all botanists agree upon" and "that which nature dictates," reflecting a belief in a static, classifiable natural world. The analytical and collaborative work fueled by botanical of exchange moved gardeners toward determining the true names of plants, even as it slowly disclosed a dynamic and mutable nature.

The publication of *Catalogus plantarum*, the eight editions of Miller's *Dictionary*, and other works of practical gardening advice reflects the changing status of gardening as a profession in the first half of the century.²⁴ Douglas Chambers attributes this change to two reasons: "the need for gardeners to master the new botanical knowledge represented by Linnaeus and the rage for 'place-making' (i.e., landscape designing) that came to the fore in the early eighteenth century and demanded a greater expertise in design."²⁵ The transformations in English landscape design in the eighteenth century were dramatic (and have been well documented),²⁶ reflecting emerging preferences for large, expansive, "natural" landscapes over traditional formally ordered garden beds. Collinson's experience of wandering through North American thickets on Lord Petre's estate illustrates the achievements of "place-making," made possible by the influx of new mobile plants.

Collinson's commitment to transatlantic botanical exchange is evident in the available statistics. Of the sixty-one new trees and ninety-one new shrubs introduced to England between 1701 and 1750, many were from North America.²⁷ Collectors like John Bartram and disseminators like Collinson supplied gardeners with specimens to cultivate and sell, and approximate figures record their impact: between 1736 and 1766, Collinson

procured at least sixty subscribers for the seed boxes that Bartram put together every year, each box containing one hundred different seeds. Initially Bartram received twenty guineas from each subscriber, but as the commercial viability of the seed boxes increased so did his compensation, with each box costing five pounds, five shillings.²⁸ Figures of introduction offer another way to gauge the impact of mobile plants: for instance, Collinson is credited with introducing approximately 180 foreign species of trees, shrubs, and flowers into English gardens,²⁹ while Philip Miller is credited with introducing 200 American plants to England. Although it is difficult to track these figures with precision, one point is clear: North American trees, shrubs, and plants dominated English gardens and landscape design through the middle decades of the century.

Several literary luminaries of the period--such as Joseph Addison, Alexander Pope, and James Thomson--gave voice to the cultural impact of the new directions in landscape design and to the increasing appeal of the natural aesthetic.³⁰ "In all, let Nature never be forgot," wrote Pope, in his *Epistle to Burlington* (1731). By his own account, Collinson's love of gardening and his appreciation for "place-making" was not the result of a new cultural fashion. He claimed an early interest in gardening in his "Account of the Introduction of American Seeds," confirmed by an entry in his diary: "Being sent at two years old to be brought up with my relatives at Peckham in Surrey, from them I received the first liking to garden and plants. Their garden was remarkable for fine cut greens, the fashion of those times, and for curious flowers. I often went with them to visit the few nursery gardens round London, to buy fruit and flowers and clipt yews in the shapes of bird, dogs, men and ships"³¹ By the time Collinson engaged in a botanical partnership with Bartram, the fashion for "fine cut greens" and topiaries was in decline. Pope, in fact,

railed against the topiary vogue in an essay published in the *Guardian* in 1713, creating a satirical catalogue of sculpted shrubs (such as "St. GEORGE in Box; his Arm scarce long enough, but will be in a Condition to stick the Dragon by next *April*. A *green Dragon* of the same, with a Tail of Ground-Ivy for the present. *N.B. These two not to be Sold separately*. EDWARD the *Black Prince* in Cypress") to emphasize his point.³²

Collinson's reference to "curious flowers" provides a clearer indication of his personal preferences. His correspondence is full of his passion for flowers; he often described the state of his garden and was justly proud of the many rare specimens growing there. His Quaker affiliation no doubt influenced his valuation of the activity of gardening, and in a letter to Linnaeus, Fothergill (also a Quaker) attributed his own love and knowledge of gardening to "Our Collinson."³³ In his memoir of Collinson, Fothergill provided a more detailed description of Collinson's understanding of the complex pleasures and benefits of gardening:

Planting, [Collinson] used to say, and gardening, supply a fund of entertainment, the most constant and reasonable of any other, and not to be purchased at any rate; the trees we have planted ourselves, the plants we have introduced and raised, the fruits we have ourselves cultivated, supply a feast to the possessor, that no purchase can afford us. What a pleasing scene lies open to a young planter; every succeeding year discloses beauties, discovers use, and brings most distant profit from early beginnings; by observing the rising groves, barrenness itself made fertile, and adorned, our country improved, our lives made useful, our posterity enriched, all at the same time.³⁴

This passage, appropriately enough, given Collinson's merchant status, uses the language of business to describe the personal benefits of introducing and cultivating plants.

Fothergill, giving voice to Collinson, suggests that what makes the benefits of gardening so valuable is that they cannot be purchased, marking a distinction between the world of the market and the world of nature that the vocabulary of the passage blurs.

In fact, these worlds were utterly entwined. The passage refers to beauty, usefulness, and improvement as some of the "profits" of planting that emerge through time, yet activities such as gardening and planting were bound up in the world of commerce in various ways. Plants and seeds from North America or the East Indies traveled on boats carrying various kinds of cargo, including, possibly, human cargo. The mobility and circulation of plants was not distinct from the grim history of slavery and colonial conquest, although this history makes few explicit appearances in the textual history of botanical exchange I chart in the following chapters.

More directly, the link between plants and the market was shaped by a burgeoning commercial interest in plants. Classifying botanical specimens had scientific advantages, since it enabled professors of botany all over the world to communicate with one another, but it also had commercial advantages, since a unified taxonomy was in the interest of a market where plants and seeds were becoming valuable commodities. The *Catalogus plantarum* expresses its debt to the international community of botanists working toward a unified system of taxonomy and nomenclature; meanwhile, gardeners and nurserymen also worked, sometimes for years, with botanical samples in order to make them reproducible, and thus marketable, objects. A profitable nursery trade sprang up for seedsmen and gardeners such as James Gordon, Christopher Gray, John Williamson, and John Webb, all of whom received seeds from John Bartram that they germinated for trade.³⁵

The market prices for exotic plants reflected their enhanced cultural status. Through nursery lists and estate records, researchers have been able to uncover some of this information, enriching the history of natural history. For instance, the market for

North American flowering shrubs and forest trees remained constant throughout the eighteenth century. Flowers, popular in the seventeenth century and again in the nineteenth century in England, were out of vogue throughout much of the eighteenth century in gardening generally (although Collinson had a special love for flowering plants).³⁶ Documents from nurseries provide the most illuminating indication of the value placed on botanical samples that were not only moving across the Atlantic but through various markets and gardens. Prices for exotic specimens were based on their rarity and their size, and varied from nursery to nursery: John Williamson's nursery prices in the 1750s for seeds that Bartram supplied included North American Maples for 1s a tree; scarlet oaks (*Quercus rubra* or *Q. coccinea*) at 2s a tree; the arbor vitae (*Thuja occidentalis*) for 1s; and the Benjamin tree (*Lindera benzoin*) for 3s. Christopher Gray's prices in 1759 included sumacs (*Rhus typhina*, *R. glabra*, *R. copallina*) at 1s a plant; the persimmon (*Ptelea trifoliata*) at 1s 6d; the anona or papaw (*Asimina triloba*) for 5s; the chinquapin (*Castanea pumila*) for 5s; and the *Magnolia grandiflora* at an impressive L2 2s.³⁷

The nurseryman James Gordon (1708-1780) was most closely connected to Collinson and his network of friends and clients. Gordon had served as Lord Petre's gardener before opening his own nursery at Mile End in 1742 and establishing a seed shop in London.³⁸ The somewhat limited evidence suggests that Gordon excelled at helping exotic botanical specimens adapt to their new climate. As Collinson wrote, in a note recorded in his copy of Miller's *Gardener's Dictionary* praising Gordon's accomplishments in raising healthy plants from "dusty seeds": "His Sagacity in Raiseing all sorts of plants from Cuttings, Roots, & Laying, surpasses all others by which our

Gardens are Enriched with an Infinite Variety." ³⁹ One explanation for Gordon's success was that he experimented with different methods and technologies of propagation and cultivation (Collinson's commonplace book, for instance, describes experiments he and Gordon conducted together on bean reproduction⁴⁰), using empirical methods for horticultural purposes.

The market measured Gordon's experimental success. Both Collinson and Ellis (as I will discuss in chapters 2 and 4) referred to the exorbitant prices Gordon was able to set for live exotic plants as evidence of his skills as a nurseryman, reflecting the comfortable fluidity between a disinterested and a self-interested relationship to nature that was characteristic of the Enlightenment. Market price was a mode of defining nature that was more than pecuniary. Gordon, like other nurserymen, played an important role in incorporating mobile plants into new environments, enriching his own pockets, of course, but also the gardens of England. In so doing, he made it possible for others to experience the more intangible personal profits (described by Fothergill in his memoir of Collinson, for instance) of planting and gardening.

The mobility of plants and seeds necessitated communication between nurserymen and aristocrats, between merchants and gardeners, as people like Gordon worked to naturalize and sell exotic botanical specimens. Collinson was adept at facilitating such communications. He wrote that he and Bartram made collecting seeds "a Settled Trade & Business" in 1740, and in his "Account," he describes some of the work involved: writing letters, placing orders, going aboard ships to collect cargo, distributing the specimens to the right people, collecting money and compensating Bartram and others. Along with managing the business, Collinson often offered gardening advice to

recipients, from nurserymen to Dukes. Initially, only aristocratic planters could afford the expense of the endeavor, and, during the 1740s, it was they who patronized Collinson and Bartram's trade.⁴¹

First and foremost among these early patrons was Lord Petre, who began supporting their enterprise in the late 1730s and became a close friend of Collinson's. Collinson wrote the following disconsolate lines to Bartram after Lord Petre's untimely death from smallpox at the age of thirty in 1742: "All our Schemes are broke. He that gave motion is motionless—all is att an end. Send no more seeds for now."⁴² Lord Petre's death literally stopped the flow of seeds across the Atlantic—"He that gave motion is motionless." The poetic association of Lord Petre's liveliness with the motion of seeds implicit in "our Schemes" shows Collinson's awareness of the inherent interconnection of economic and intellectual interests within the project of botanical exchange.

Fortunately, as the English appreciation for exotic North American specimens grew, other people supported Collinson and Bartram's endeavors, including the Dukes of Norfolk, Richmond, Bedford, and Argyll, Lord Bute, the Earl of Lincoln, Charles Hamilton (of Painshill Park), Philip Miller, and John Blackburne of Orford Hall.⁴³ Aristocrats not only patronized the project of botanical exchange, but they also experimented with plant reproduction and garden design. They collaborated with some of the most important gardeners and designers of the period, men like William Kent and "Capability" Brown, who took advantage of the influx of new specimens to devise new sorts of botanical plantings. Gradually, the taste for North American forest trees and flowering shrubs infused the general culture, leading to material changes in the landscape. One such change that emerged in the 1750s and 1760s was the creation of a

new feature of the landscape garden—the shrubbery --a creation directly linked to the introduction of North American flowering shrubs in the 1740s.⁴⁴ (The transatlantic epistolary exchanges I explore often underscore the importance of flowering trees and shrubs, in the repeated requests for such specimens in the letters of the Londoners to their colonial contacts.)

Landscape gardening turned plants into profitable commodities, but the mobility of plants was connected to a longer history of commodifying nature in the form of the agricultural promise of the colonies. In 1730, when Collinson was thirty-six years old, he wrote a letter to William Byrd II in Virginia, wishing him success in the planting of his vineyard: "what a noble produce that province [North Carolina] would yield if rightly cultivated. I cou'd be glad you'd made the experiment of a quarter of an acre with the best & choicest of your country grapes. That wou'd be enough to see the produce."⁴⁵ The letter is full of recommendations for experimenting with the cultivation of native (as opposed to foreign) grapes, as well as general encouragement. Collinson's obvious investment in viticulture illustrates the economic advantages to controlling agricultural products marketable to an increasingly powerful consumer class.

All of the figures I discuss in the following chapters dabbled to greater or lesser degrees in the agricultural development of the colonies. Collinson recommended the cultivation of such crops as indigo, tea, and nicotine in the American colonies, and promoted the introduction and cultivation of hemp, flax, silk, and grapes. Fothergill tried to introduce coffee, tea, and bamboo while Philip Miller promoted the cultivation of cotton in Georgia.⁴⁶ Garden and Ellis, working through the auspices of the Society for the Encouragement of Art, Manufactures & Commerce (sometimes called the Royal Society

of Arts)--founded by William Shipley in 1754 specifically to pursue practical knowledge in engineering and the mechanical arts, promote technological and agricultural innovation, and enlarge England's commercial empire--attempted to establish a provincial garden in South Carolina for horticultural experiments. (Garden's letters frequently criticized the narrow-minded thinking of planters who planted huge crops for the most profitable yield without considering long-term issues of production.) William Bartram even attempted to establish an indigo plantation in East Florida, which was a miserable failure, and his later travels through Florida were intended in part to produce information about the agricultural promise of the region.

These brief examples provide a glimpse of the way the mobility of plants in the eighteenth century intersected with the expansion of empire and with an increase in capital. John and William Bartram and Alexander Garden in North America sent seeds for English gardeners and botanists, while Collinson and his cohorts sent grape and tea seeds from Italy and China to their colonial correspondents.⁴⁷ The analytical and experimental spirit, fueled by the influx of new plants and given rhetorical shape through words like *use*, *practical knowledge*, *improvement*, and *public benefit*, rebounded in many directions, including economic agriculture. Throughout the period, nature's adaptability and mutability thus emerged as a matter of scientific, aesthetic, and economic importance.

By the end of the century, Archibald Alison, in his *Essays on the Nature and Principles of Taste* (1790), would say that the husbandman, the man of business, and the philosopher are oblivious to the beauty of nature, because each is an interested percipient. The example of Peter Collinson belies Alison's limiting definition. In all aspects of his

life, Collinson engaged with the eighteenth-century project of finding new ways to know, make use of, and delight in nature. For him, as for the other figures I discuss in this dissertation, the pursuit of useful knowledge and delight was in harmony with the pursuit of more material gains. In facilitating the work of botanical exchange, Collinson moved fluidly between the worlds of experimental investigation and horticulture, of tradesman and aristocrat, of merchant and gardener, of Old World and New World. In his writings, he wove together the imperatives of use and delight with the desire for knowledge and profit that sustained the mobility of botanical objects in the eighteenth century.

* * *

I want to turn now from this general description of the motivations for collecting and transporting plants in the eighteenth century to some of the more specific challenges of the task. The mobility of plants must always be understood in dynamic relation to a desire for fixity, rootedness, and stability. This dynamic was especially vivid in taxonomy and gardening, where the influx of new specimens fueled the impulse to order. The efforts to insert new specimens into the right place in a gardener's dictionary, to ensure that all gardeners and botanists knew the "true name" of each specimen, and to plant evergreens in pleasing combinations, reflected that desire for order. However, the various contingencies Collinson faced in the process of exchanging plants dramatize the tension between mobility and rootedness that was inscribed in the eighteenth-century impulse to reveal, and define, the shape of nature.

The most obvious challenges Collinson faced were the many and varied risks of transoceanic travel. Privateers, for instance, posed a recurring threat. On March 30, 1745, Collinson wrote a letter to his friend Cadwallader Colden, the Governor of New York:

My Dear Friend,

It gives Mee Concern that I am Deprived the pleasure of yours by the Unfortunate Loss of Capt Bryant. I commend your prudence in Directing your Seeds for the Paris Garden. The professors are Messrs Jussieu. Without that precaution a hundred to one but that they had been thrown into the Sea. But if you had Improved that precaution & Divided the Seeds into Two parcells & Sent by Two ships, then in all probability I should have had the Delight of shareing in the pains that you had taken to oblige Your Friends. Whilst these perilous Times Last I recommend it to you for the future.⁴⁸

Most of the period during which Collinson conducted his work could have described as "perilous Times." England engaged in several military campaigns against France, Spain, and their allies throughout the century--the War of Austrian Succession and the related War of Jenkins' Ear in the 1740s, the Seven Years' War in the 1750s and early 1760s, and the War of American Independence in the 1770s--and many of the conflicts were waged on the high seas. English ships carrying cargo across the Atlantic were routinely involved in skirmishes, and natural history cargo traveling aboard captured English ships was often a casualty of such encounters.

In one instance in 1745, John Bartram took comfort in the hope that pirates did not dump his cargo of plants overboard, but rather delivered it to "men of learning and curiosity": "Though they [the French and Spanish] are what is commonly called our enemies, yet, if they make proper use of what I have laboured for, let them enjoy it with ye blessing of God."⁴⁹ Both letters by Bartram and Collinson refer to one of the solutions devised by Anglo-American naturalists to prevent French or Spanish privateers from dumping their natural history collections into the sea: they addressed their cargo to naturalists at the Jardin des Plantes in Paris, thereby saving it from destruction in the event of a raid. Although the practice was motivated by precaution, the consolation that Bartram, Collinson, and others describe from its success reflects an Enlightenment ideal

that scientific investigations transcended national interests.⁵⁰ Whether Collinson or the Messrs Jussieu received Colden's or Bartram's botanical packages, the product of their collecting labors would be put to use and would not be lost at sea.

Pirates represent the contingencies of travel in a literal and dramatic way, but Collinson and Bartram endured other instances of the unpredictability of botanical exchange, tingeing the pursuit of natural history with a sense of procedural uncertainty that only emphasized nature's mutability. In 1751 a ship carrying a box of seeds from Bartram to a correspondent (Arthur Dobbs) in Ireland was lost most likely because the sailors, having just purchased "some goods and Spirits to run into Ireland" from the Isle of Man, were too drunk to navigate a narrow channel off Dublin's coast.⁵¹ In another case, Collinson complained to Bartram about a negligent ship's captain, who ignored instructions for the maintenance of the "Curious Collection of living plants" with the result that a family of rats nested in the plant boxes during the voyage.⁵² Collinson also lamented the work of a hungry "Mischievous Insect [that] has Eaten thy Letter in large holes in four places."⁵³ He recommended that Bartram wrap the paper in "dry tobacco Leaves" to discourage insects from nibbling their epistles, providing another use for a mobile botanical object and demonstrating their ability to adapt to the vagaries of exchange. This ability was central to their task. For instance, Collinson once asked Bartram to wrap his seeds in cloth bags rather than paper bags, since the paper bags tended to rot due to the damp travel conditions with the result that seeds became hopelessly mixed together and thus unsuitable for sale.⁵⁴

In some cases, the contingencies of travel affected the botanical objects themselves, which were often not dormant but living samples. In one memorable

instance, Collinson describes a skunk plant that was in full bloom when he unpacked it, due to the unusual warmth in its location on board ship. Every seed box, every plant, every letter, every report risked not reaching its intended recipient, but participants simply absorbed this fact into the work. Such possibilities for failure were implicit in natural history investigations generally, although they manifested in particularly explicit ways in the process of botanical exchange across the Atlantic. Indeed, in one of the few instances in which Bartram expressed a desire to travel to England, his primary goal was to accompany the plant boxes and take "particular care of them in their pasage," safeguarding them and preventing them from being "tumbled about."⁵⁵

When the plants finally arrived in England, though, other complications emerged. In a letter dated December 1, 1751, Collinson reported to Bartram that some of their boxes had been stolen from a shipyard: "I fancy some of the sailors having relations [who are] gardeners—seeing those plants so carefully Boxed up thot them for Rarities so was tempted to steal them to give to their friends."⁵⁶ The theft of Collinson's cargo indicates the elevated cultural status of rare botanical specimens. Collinson wrote that all would have been well if the "Collection of growing plants" had simply come to "[his] Hand," a conventional idiom that suggests that the plants were vulnerable only while they were in transit.

However, shipyards were not the only scenes of such crimes, and Collinson's "Hand" could not always protect his botanical possessions. In 1749, Collinson moved with his wife and two children to an estate called Ridgeway House in Mill Hill, ten miles northwest of London. His father-in-law willed the estate to him, and for several years before the move had permitted Collinson to plant in the garden.⁵⁷ The garden became a

repository for many rare specimens, and Collinson labored over his rarities, keeping extensive records of their growth and the appearance of his garden. The garden, however, was not secure from threat. On March 20, 1766, Collinson wrote to John Bartram's son, thanking him for sending a collection of plants: "it was kind to add Loblolly Bay; for the rogues came twelve miles to rob my garden about two months ago, and stole two fine Loblolly Bays, all I had, and many other curious American plants, too long to mention."⁵⁸ Thieves regularly pilfered botanical rarities from Collinson's garden: records indicate thefts in 1756, 1762, 1766, 1768, and there may have been others. After one such occurrence, Collinson posted signs throughout his neighborhood offering ten guineas in reward for information regarding the persons who had "unlawfully plucked up [the] exotick plants."⁵⁹

In the 1766 case, the thieves were eventually caught, for Collinson goes on to report to Bartram's son that "we are now getting an act of Parliament to punish [the rogues], by transporting them to you, which you will not thank us for."⁶⁰ The implicit irony in Collinson's report is that upon arrival in the New World, the rogues would find American plants in abundance, although they would no longer be considered exotic. Collinson's words--that the rogues "unlawfully plucked up [the] exotick plants" and that the sailors saw the plants "carefully Boxed up"--suggest another of the contingencies attendant on the work of botanical exchange: Just as Bartram could uproot plants from American soil, so thieves could uproot those plants from Collinson's English garden; the mobility that allowed Collinson to collect exotic plants also allowed him to be robbed, just as the commercial values that made it worth Collinson's investment also made his

specimens an attractive target. The cultural value and commodification of nature began to be inextricably linked to nature's dynamism and mobility.

As these examples illustrate, the history of botanical exchange in the eighteenth century is bound to the history of transportation. The shipping industry and the postal service underwent vast improvements in the early decades of the eighteenth century, each operating at more regular and timely intervals, and these advances helped make botanical exchange possible. Boston, New York, Philadelphia, and Charleston were the four dominant ports in America, and each had its own strengths and weaknesses with regard to transatlantic communication. For instance, Boston and New York could send information to London more often than Philadelphia because Philadelphia's ports were usually closed in the winter and because there were fewer direct voyages from London to Philadelphia. It took almost twice as long for a ship to travel from England to North American points as vice versa, which favored Collinson and Bartram's trade, giving Bartram more opportunities to ship samples: the voyage from Philadelphia to London, for example, was approximately four and a half weeks, while the journey from London to Philadelphia was closer to ten weeks.⁶¹ (This difference also explains, perhaps, Bartram's occasional peevishness about the delays between Collinson's letters.) As the number of Atlantic crossings increased and as intercolonial postal routes were established, the volume increased in all ports. In the early 1730s, for example, twenty-seven ships entered Philadelphia's ports each year from England, but nearly forty ships were entering each year by the end of the decade.

Modes of transportation were a crucial factor in the transformation of the idea of nature into the embodiment of change. Through the processes of botanical exchange,

nature intersected with culture in new ways, as cargo consisting of seeds and roots and potted plants accommodated timely and regular shipping schedules. Collinson and Bartram considered nature's cyclical temporal rhythms--characterized by seasons of growth and life, of decay and death--and adapted them to new forms of temporal management.⁶² Bartram still had to collect seeds and samples in the right season of course. In one instance, he describes having to "stand up to ye knees in snow to pluck off[f]" pinecones requested by the Duke of Norfolk after the sudden onset of winter in 1742.⁶³

At the same time, he and Collinson had to consider nature's seasonal growing cycles in relation to the seasonal shipping cycles. Collinson advertised this connection in 1751 in the *Gentleman's Magazine*, when he praised the "present excellent taste of the nobility and gentry to embellish their plantations" with North American plants, which gave "great encouragement to the annual importation of plants and seeds, which arrive here in the spring months."⁶⁴ In working to make the fixed schedules of shipping and of horticulture overlap, Collinson and Bartram implicitly loosened the sense of nature's fixity in time as well as in space, adding another dimension to the mobility of the natural objects with which they worked.

Collinson's description of creating "a new World" through transporting and transplanting expresses the tangible and pleasurable impact of nature's adaptability in spatial terms, but he also had a similar interest in temporal adaptability. In another letter to Bartram, Collinson wrote, in December of 1767, that the "Ingenious Artists" have found ways to have "Cucumbers at Xmas, Green Peas & Beans in feby, March & April ripe Grapes in plenty in May, I have myself seen more than once some hundred Bunches

of the finest ripe grapes in May, and Cherries ripe in March, or April, at a guinea or two a pound This golden gain stimulates every artist to be first at Market.”⁶⁵ This passage celebrates the ways growers could adapt plants to new schedules, demonstrating art and ingenuity, with a resulting profit. Through various “ingenious” technologies--such as the hothouse, new methods of forcing growth, and grafting experiments that produced more hardy plants--it was no longer necessary to wait for the summer harvest. Because people were willing to pay for these products, this “golden gain stimulate[d] every artist to be first at Market.”

It is characteristic of Collinson's writing that he appreciates the “Ingenious artists” not only for their horticultural skill but also for their capacity to reap financial reward for their work, and, indeed, that the financial reward should be the measure of the value of the work. Collinson wrote this passage in 1767, the year before his death, and it registers how different the cultural market for botanical goods had become from the one that he encountered in the 1730s and 1740s when he and Bartram were concerned about finding patrons to support their enterprise. What is more striking is Collinson's acknowledgment that nature's temporal rhythms were no longer fixed. Nature's rhythms could be manipulated to dramatic, delicious, and profitable effect.⁶⁶

Setting plants in motion and releasing them somewhat from spatial and temporal constraints made it possible to think about nature in abstract terms. Plants and seeds were being boxed up, classified, inserted into created landscapes, and grown for profit. The Society of Gardeners articulated the benefits of this work in the 1730 *Catalogus plantarum*, where they justify their efforts to collect, cultivate, catalogue, and sell botanical specimens by saying that it would release people from expending time and

energy traveling in search of new specimens. This justification implicitly suggests that there is nothing essential about seeing a particular plant growing in its native setting, what was called its "soil and situation."⁶⁷ Nature could travel to you. The process of botanical exchange was, therefore, a process of abstraction or "dehabitation," in ways that contributed to conceptual and rhetorical forms of abstraction such as the packing list, the catalogue, and the taxonomic entry.

Still, there are important distinctions between Collinson and his colonial contacts in this regard, some of which may be attributed to the impact of viewing plants in their growing environment as opposed to seeing them boxed up or isolated as roots or seeds that would not yield flower or fruit for a season or two. Both John and William Bartram, for example, attended to the details of soil and situation, and their lively descriptions of location are the rhetorical expressions of gifted observers and collectors of nature. They saw botanical objects in their native setting before uprooting them and making them mobile, and attempted to use language in ways that would fix that habitat in place, attaching it to each specimen. (William Bartram was more self-conscious than his father in this regard, advancing the rhetorical function of the category of "soil and situation," a subject of chapter 5.)

Collinson, meanwhile, was the Old World recipient who often first saw exotic samples boxed up with their roots wrapped in mold. Collinson could aestheticize the idea of native habitat through the practices of "place-making," as he did when he described the creation of "North American thickets" through the activity of planting North American evergreens, a practice augmented by but not dependent upon the descriptive place-making of his contacts.⁶⁸ In another letter, this one to Bartram in 1756, Collinson sounds

almost exasperated by the process: "after this Rate England must be turned up side down & America transplanted Heither."⁶⁹ Collinson's conception of "America" as a movable environment did not mean that he did not have a material interest in the soil and situation from which his botanical cargo hailed or that he was not enamored of the idea of their American origin. In fact, he relied on his correspondents' to describe such information in detail, using it to classify plants or to naturalize them to their new home. Both conceptions of location, as fixed and yet as mobile, were important to him.

Collinson witnessed nature's adaptability in the way that American plants were naturalized to English soil, and he celebrated the subsequent transformations to the English landscape. However, the effects of nature's adaptability were not always so positive. Plants were traveling west as well as east across the Atlantic, and in an example of the unpredictability of transplanting botanical objects, Bartram complained to Collinson in a 1759 letter about "the English plants that hath escaped out of our garden and taken possession of our fields & meadows very much to our detriment."⁷⁰ Some of the plants he mentions, such as the yellow linaria, arrived through the processes of organized botanical exchange. Others found their way to America independently. The scotch thistle, according to Bartram, arrived in the bed stuffing of a Scottish minister who turned out the thistle stuffing to replace it with feathers (a funny example, perhaps, of the corrupting influence of the plenitude of the New World).

The idea of movement--of mobility--is embedded in Bartram's brief complaint about invasive plants and their capacity to "escape" and to "take possession" of a place. Like the thefts from Collinson's garden, these "troublesome plants" represent forms of uncontrolled mobility. Focusing on the transportability of natural objects and the

numerous new landscapes into which they were introduced shows that moving natural objects could produce “a new World,” as the Society of Gardeners put it, or it could be “very much to [the] detriment” of the “fields and meadows” of the New World of America.

While John Bartram may have seen some negative consequences to the botanical trade, the tools to interpret those consequences did not yet exist.⁷¹ By the last third of the century, however, the situation was somewhat different. Bartram's son William, exploring and writing as a naturalist himself, worked within a shifting paradigm, which was a result of the cultural impact of more unified systems of classification, the increasing professionalization of the sciences, the political realignments of the period, the articulation of theories of the picturesque and the sublime, and the advent of Romanticism. By fostering the younger Bartram's career as a naturalist, Collinson served as a link between markedly different conceptions of nature. Collinson took an active interest in “Billy's” development and encouraged his gifts with natural history observation and drawing. William Bartram's exploration of Florida under the patronage of Dr. John Fothergill between 1773 and 1777 was the pivotal event in his professional life, and although Collinson died before William Bartram made the trip, it was through his influence that Fothergill underwrote it.

England had acquired Florida from Spain in 1763 (trading it for Havana, which it had captured in the Seven Years' War), and Collinson actively encouraged the exploration and settlement of the region in letters to the Earl of Bute and others. In part through Collinson's efforts, George III appointed John Bartram “King's Botanist” in the colonies in 1765, and one of his first assignments was an expedition to the east coast of

Florida in 1765-1766, which he undertook in the company of twenty-six-year-old Billy. By the time William Bartram explored the region himself in the early 1770s, collecting plants and specimens and sending reports to Fothergill, he was able to articulate an anxiety about the changes to the landscape along with an implicit defense of nature's rootedness. In his "Report to Dr. Fothergill," as I discuss in chapter 5, Bartram elaborates an appreciation for place as it *was*, rather than as it could be *made*.

The shifting dynamic between mobility and rootedness is at the center of the history of botanical exchange, and it is, etymologically, at the center of the colonial enterprise that served as foundation of that exchange. The word *transportability* means the capacity to be carried or conveyed, and it evokes a suggestive network of meanings. The word *transplant* includes the word *transport* as one definition, and the capacity of botanical specimens to be transported was inseparable from their capacity to be transplanted. Yet *transplant* refers not just to the treatment of plants but also to the movement of people, and it opens onto colonial history, which is a history of travel as well as a history of place. Explorers such as Thomas Hariot and John Smith and John Josselyn and William Wood described what they call the natural productions of a place in part to encourage settlement, the transplantation of people from one place to another. Moreover, *settlement* is one definition of the word *plantation*, which also means an "assemblage of growing plants of any kind which have been planted."⁷²

The slippage in these definitions between movement and rootedness reflects one aspect of the history of nature in the seventeenth and eighteenth centuries. It also reaffirms the connection between the mobility of plants and voyages of exploration and discovery. In the writings of Collinson and his cohorts, the idea of nature as static,

predictable, and classifiable gave purpose to their endeavors, even as their efforts to classify and organize natural objects engendered the idea of nature as mobile, mutable, and adaptable.

Collinson's response to Bartram's list of "troublesome plants" demonstrates this tension between mobility and rootedness. Collinson was intrigued by the list, and in a letter to Bartram expressed surprise that plants that he found to be mild-mannered in England were running rampant in America. "See what Climate & Soil does," he wrote. "The Yellow Linaria is no pest with us--I keep it in my Garden & it is very orderly, for the sake of its fine Spike of orange & yellow flowers--The Hypericum keeps always on the border of our Fields--but the Leucanthemum or Ox-eye Daisie over runs some fields--but then it makes a fine show for that reason I give it a proper place in my Garden as I love all flowers."⁷³ Collinson's letter makes clear that he and Bartram did not in fact inhabit the same world. The cultivation of the plants they shipped back and forth across the Atlantic connected them, but they were located in time and space, even if the botanical specimens were not.

However, the distance between Collinson and Bartram--and the differences in their evaluation of plants--was mitigated through writing. The richness of the story of the mobility of nature emerges in the textual forms that were generated and manipulated to manage it, including letters, journals, reports, and various more "scientific" forms like specimen sheets and botanical character descriptions. As Collinson made clear in his "Account of the Introduction of American Seeds into Great Britain," he relied on epistolary exchange in order to capitalize on and collapse the distance between his colonial correspondents and himself. In this too he was representative of the natural

history endeavors of the period, following a practice institutionalized by Henry Oldenburg, first Secretary of the Royal Society.

Letters--dialogic, accumulative, striving toward organization through reporting, synthesizing, and categorizing, simultaneously informal/private and formal/public--in some sense constituted the primary working method of natural history in the eighteenth century, and chapters 2 and 3 attempt to show why this was the case.⁷⁴ Letters created a discursive environment for naturalists on both sides of the Atlantic, one that contained the careful explication of evidence alongside poetic expressions of the beauty of nature. Letters were an art form as well as a scientific instrument, and in this fluidity between the aesthetic and the natural historical, letters reflect eighteenth-century Anglo-American cultural conceptions of nature on the whole.

Collinson concluded his "Account of the Introduction of American Seeds" by saying, "It hath pleased God to prolong my Life to just 72 to see the Reward of all my Labours crowned with Success in the numerous Plantations spread over this Delightful Island which gives infinite pleasure to, Peter Collinson, Decem. 16, 1766." The transformations to the "Delightful Island" occurred slowly, over time, and required the successful collection, exchange, and cultivation of one botanical object at a time. The changes to the landscape corresponded to changes in the practices and descriptive languages of natural history and to changes in cultural conceptions of nature. Letters both reflect and helped produce those changes. The persistent trope of mobility in the writings of Collinson and his colleagues--especially as these writings address specific botanical objects--expresses, I believe, an emerging sense of nature's adaptability and even mutability, an image of a world that is ever-changing and yet ultimately explicable.

¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 167 (see intro., n. 1).

² I focus throughout the dissertation on flora, but all of the figures I discuss dedicated some of their time to the exchange and investigation of fauna as well. To provide a few examples, John Bartram sent Collinson, among other things, frogs, turtles, various insects, birds, mollusks, and a groundhog; John Ellis published work on corals and is credited with proving their animal nature; Alexander Garden discovered the Siren lacertina (L.), an amphibious creature, and researched and collected the cochineal insect; William Bartram's encounters with alligators are famous, as are his many drawings of birds.

³ Botanical collectors in the colonies, especially Virginia and Maryland, in the seventeenth century include the Reverend Hugh Jones (d. 1702), David Krieg, William Vernon (d. 1706), John Banister (1650-1692), John Clayton (1657-1725), and James Lawson (d. 1711). Their efforts were supported by the scientific community in England, especially Bishop Henry Compton (1632-1713), Hans Sloane (1660-1753), James Petiver (1663-1718), and many of the specimens they collected were classified by John Ray (1627-1705) and Leonard Plukenet (1642-1706). Together, Ray, Plukenet, and Petiver proposed nearly seven hundred new scientific names. There are some dramatic stories in this early history: Lawson, for instance, was killed by Tuscarora Indians during an expedition up the Neuse River, and Banister was accidentally shot while botanizing along the Roanoke River; and the competition for specimens between Ray and Plukenet introduced some intrigue to the movement of the dried specimens once they arrived in London. See Raymond Phineas Stearns, *Science in the British Colonies of America* (Chicago: University of Illinois Press, 1970); James L. Reveal, *Gentle Conquest: The Botanical Discovery of North America with Illustrations from the Library of Congress* (Washington D.C.: Starwood Publishing, 1992).

⁴ For a concise introduction to the English context for these changes, see D. E. Allen, "Natural History in Britain in the Eighteenth Century," *Archives of Natural History* 20, no. 3 (1993): 333-347. For a more detailed introduction see D. E. Allen, *The Naturalist in Britain: A Social History* (London: Penguin Books, 1976) and G. S. Rousseau and Roy Porter, eds., *The Ferment of Knowledge: Studies in the Historiography of Eighteenth-Century Science* (Cambridge: Cambridge University Press, 1980). General histories of early American scientific endeavors and achievements include Brooke Hindle, *The Pursuit of Science in Revolutionary America* (Chapel Hill: University of North Carolina Press, 1956); Daniel J. Boorstin, *The Americans: The Colonial Experience* (New York: Vintage, 1958); Stearns, *Science in the British Colonies of America*; Joseph Kastner, *A Species of Eternity* (New York: Alfred A. Knopf, 1977); David Scofield Wilson, *In the Presence of Nature* (Amherst: University of Massachusetts Press, 1978); John C. Green, *American Science in the Age of Jefferson* (Ames: Iowa State University Press, 1984). Important contributions to the field, intent on shifting away from older models of scholarship that subordinate both the value of colonial scientific endeavors and natural history itself, include Marco Beretta, *The Enlightenment of Matter: The Definition of Chemistry from Agricola to Lavoisier* (Canton, MA: Watson Publishing, 1993); John Gascoigne, *Joseph Banks and the English Enlightenment: Useful Knowledge and Polite Culture* (Cambridge: Cambridge University Press, 1994); Nicholas Jardine, James A. Secord, and Emma C. Spary, eds., *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996); David Philip Miller and Peter Hanns Reill eds., *Visions of Empire: Voyages, Botany, and Representations of Nature* (Cambridge: Cambridge University Press, 1996); William Clark, Jan Golinski, and Simon Schaffer, eds., *The Sciences in Enlightened Europe* (Chicago: The University of Chicago Press, 1999).

⁵ John Fothergill, *Some Anecdotes of the late Peter Collinson, Fellow of the Royal Society, and of the Society of Antiquaries, in London, and of the Royal Society of Berlin and Upsal. By the late Dr. John Fothergill, from the original manuscript, in a letter to a friend* (London, 1785), 6.

⁶ Quoted in Norman Brett-James, *The Life of Peter Collinson, F.R.S., F.S.A.* (London: Edgar G. Dunstant & Co., 1926), 39.

⁷ William B. Willcox, ed., *The Papers of Benjamin Franklin*, Vol. 17 (New Haven and London: Yale University Press, 1974), 65-66.

⁸ Peter Collinson to the Gentleman of the Library Company (22 July 1732), in Alan Armstrong, ed., *"Forget not Mee & My Garden...": Selected Letters of Peter Collinson, F.R.S., 1725-1768* (Philadelphia: Memoirs of the American Philosophical Society 241, 2002), 9.

⁹ Hazel Le Rougetel, *The Chelsea Gardener: Philip Miller 1691-1771* (London, Oregon: Sagapress, Inc., Timber Press, Inc., 1990), 22; William T. Stearn, "The Botanical Importance of Philip Miller's Publications," in Le Rougetel, 182-183.

¹⁰ Reproduced in *The Journal of Botany British and Foreign* 63, ed. A. B. Rendel (London: Taylor & Francis, 1925): 163-165.

¹¹ Simon Schaffer writes that in response to new scholarship in the history and sociology of science "the older contrast between disinterested scientific curiosity and vested commercial and colonial purposes should be abandoned." "Visions of Empire: Afterword," in *Visions of Empire* (see note 4), 337.

¹² Thomas Sprat, *History of the Royal Society*, ed. Jackson I. Cope and Harold Whitmore Jones (St. Louis: Washington University Studies, 1958), 62.

¹³ For recent scholarship on this subject see, for instance, Julie Robin Solomon, *Objectivity in the Making: Francis Bacon and the Politics of Inquiry* (Baltimore: Johns Hopkins University Press, 1998); Lorraine Daston, "The Language of Strange Facts," in *Inscribing Science: Scientific Texts and the Materiality of Communication*, ed. Timothy Lenoir (Stanford: Stanford University Press, 1998), 20-38; Lorraine Daston, ed., *Biographies of Scientific Objects* (Chicago: University of Chicago Press, 2000); Cynthia Syndberg Wall, *The Prose of Things: Transformations of Description in the Eighteenth Century* (Chicago: University of Chicago Press, 2006); Brian W. Ogilvie, *The Science of Describing: Natural History in Renaissance Europe* (Chicago: University of Chicago Press, 2006).

¹⁴ The scholarship on collecting is vast. See, for instance, Oliver Impey and Arthur MacGregor, eds., *The Origins of Museums: The Cabinet of Curiosities in Sixteenth- and Seventeenth-Century Europe* (New York: Oxford University Press, 1985); Krzysztof Pomian, *Collectors and Curiosities: Paris and Venice, 1500-1800*, trans. Elizabeth Wiles-Portier (Cambridge: Polity Press, 1990); Giuseppe Olmi, "From the Marvellous to the Commonplace: Notes on Natural History Museums, 16th-18th Centuries," in *Non-Verbal Communication in Science Prior to 1900*, ed. Renato G. Mazzolini (Firenze: Olschki, 1993); Paula Findlen, *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy* (Berkeley: University of California Press, 1994); Katie Whitaker, "The Culture of Curiosity," in *Cultures of Natural History*, 75-90 (see note 4); E. C. Spary, "The 'Nature' of Enlightenment," in *Sciences in Enlightened Europe*, 272-304 (see note 4); Lorraine Daston and Katharine Park, *Wonders and the Order of Nature, 1150-1750* (New York: Zone Books, 1998); Barbara Benedict, *Curiosity: A Cultural History of Early Modern Inquiry* (Chicago: The University of Chicago Press, 2001); Marjorie Swann, *Curiosities and Texts: The Culture of Collecting in Early Modern England* (Philadelphia: University of Pennsylvania Press, 2001).

¹⁵ While Linnaeus's artificial sexual system was replaced by the end of the century with a natural system, he made a lasting impact by establishing binomial nomenclature.

¹⁶ For a description of Linnaeus's reception in England, see William T. Stearn's introduction to *Species plantarum, A Facsimile of the first edition 1753*, Vol. 1 (London: printed for the Ray Society, 1957), 75-80; Frans A. Stafleu, *Linnaeus and the Linnaeans: The Spreading of Their Ideas in Systematic Botany, 1735-1789* (Utrecht, Netherlands: A. Oosthoek's Uitgeversmaatschappij N.V. for the International Association for Plant Taxonomy, 1971), especially chapter 7.

¹⁷ Armstrong, *Selected Letters of Peter Collinson*, 177.

¹⁸ *Ibid.*, 184 (10 April 1755).

¹⁹ See John Harvey, *Early Gardening Catalogues; Early Nurserymen* (London: Phillimore & Co., 1974). In *Possessing Nature*, Paula Findlen argues that tradespeople were not always given privileged positions in natural history investigations; they were necessary but invisible participants.

²⁰ John Gascoigne notes in *Joseph Banks and the English Enlightenment* (107) that the Linnaean system was the "chief stimulus in placing natural history on a scientific footing and promoting growth."

²¹ The various editions of the *Gardener's Dictionary* provide useful information about the progress of horticulture in Britain. Scholars and botanists regard the last edition as the most botanically important because it incorporates Linnaean terminology. Le Rougetel, *The Chelsea Gardener*, 169.

²² Londa Schiebinger analyzes the impact of Linnaean nomenclature and some of the ways it was contested in the eighteenth century in *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge: Harvard UP, 2004), especially chapter 5 ("Linguistic Imperialism").

²³ The Society of Gardeners determined to publish their findings in a series of catalogues, but only managed to bring out the 1730 edition, which focused on trees and shrubs. Le Rougetel, *The Chelsea Gardener*, 31.

²⁴ Prominent examples include Stephen Switzer, *The Nobleman, Gentleman, and Gardener's Recreation* (1715) and *Ichonographia Rustica* (1718; expanded edition 1742); Batty Langely, *New Principles of Gardening* (1728).

²⁵ Douglas Chambers, *The Planters of the English Landscape Garden: Botany, Trees, and the Georgics* (New Haven: Yale UP, 1993), 137.

²⁶ See, for instance, John Dixon Hunt and Peter Willis, eds., *The Genius of the Place: The English Landscape Garden 1620-1820* (New York: Harper & Row, 1975); Chambers, *Planters of the English Landscape Garden*; Le Rougetel, *The Chelsea Gardener*; Mireille Galinou, ed., *London's Pride: The Glorious History of the Capital's Gardens* (London: Anay Publishers, 1990); George Plumptre, *The Garden Makers: The Great Tradition of Garden Design from 1600 to the Present Day* (New York: Random House, 1993); Janet Browne, "Botany in the Boudoir and Garden: The Banksian context," in *Visions of Empire*, 153-172; Mark Laird, *The Flowering of the Landscape Garden, English Pleasure Grounds, 1720-1800* (Philadelphia: University of Pennsylvania Press, 1999).

²⁷ Chambers in *Planters of the English Landscape Garden* (80-81), citing J. C. Loudon, *Arboretum et Frutecetum Britannicum; or, The Trees and Shrubs of Britain* Vol. 1 (London, 1838). In the 1768 edition of the *Gardener's Dictionary*, Philip Miller claimed that "between 1731 and 1768 the number of plants cultivated in England doubled" (Le Rougetel, *The Chelsea Gardener*, 170). Chambers writes, "The revolution in landscape design that occurred in the first half of the eighteenth century depended for its execution primarily on the planting of trees and shrubs" (81).

²⁸ Hindle, *Pursuit of Science*, 24. It is difficult to track these figures with precision. In *Selected Letters of Peter Collinson* (xxvi), Armstrong writes that Collinson's "careful records show more than one hundred subscribers including collectors in Ireland, Scotland, France and Germany during the period 1740-1767." Researchers at the Chelsea Physic Garden report "of approximately 300 new plant species introduced between 1735 and 1768 from North America, 2/3 were from the Bartram-Collinson exchange" ("The Legacy of Peter Collinson, Eighteenth-Century Plant Enthusiast," private circulation).

²⁹ Brett-James, *Life of Peter Collinson*, 171; Hindle, *Pursuit of Science*, 24; Christoph Irmscher, *The Poetics of Natural History: From John Bartram to William James* (New Brunswick, NJ: Rutgers University Press, 1999), 14.

³⁰ Chambers writes in *Planters of the English Landscape Garden* (3) that the "union of ancient philosophical ideals" (as represented by the *Georgics* and by Horace's principle of *utile dulci*), "the sudden expansion of botany" (through the influx of exotic specimens), and "practical silviculture" (as expressed in such works as Evelyn's *Sylva* and other gardening manuals) essentially created the English landscape garden. See also Roger Turner, *Capability Brown and the Eighteenth-Century English Landscape* (New York: Rizzoli, 1985), for a discussion of the emergence of the "natural" style in design.

³¹ Quoted in Brett-James, *Life of Peter Collinson*, 25-26. In the "Account" Collinson writes, "In the very early Part of my Life I had a love for Gardening." *Journal of Botany*, 164.

³² Hunt and Willis, *Genius of the Place*, 208.

³³ Brett-James, *Life of Peter Collinson*, 106. In addition to Collinson and Fothergill, John and William Bartram were also Quakers (although John was disowned for refusing to believe in the divinity of Jesus). George Fox, founder of the Friends, stipulated the spiritual and moral value of gardening, and the exclusion of the Friends from the major academic institutions in England due to the Test Act may have encouraged a practical approach to learning and an experiential approach to the world. Kastner, *Species of Eternity*, 50. See also Ernest Earnest, *John and William Bartram: Botanists and Explorers* (Philadelphia: University of Pennsylvania Press, 1940); Larry R. Clarke, "The Quaker Background of William Bartram's View of Nature," *Journal of the History of Ideas* 46 (1985): 435-448; Bruce Silver, "Clarke on the Quaker Background of William Bartram's Approach to Nature," *Journal of the History of Ideas* 47 (1986): 507-510; Geoffrey Cantor, "Quakers in the Royal Society, 1660-1750," *Notes and Records of the Royal Society of London* 51, no. 2 (July 1997): 175-193. Generalist studies include David Sox, *Quaker Plant Hunters* (York: Sessions Book Trust, 2004) and Ann Nichols, *The Golden Age of Quaker Botanists* (The Quaker Tapestry at Kendal, LTD, 2006).

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- ³⁴ Fothergill, *Some Anecdotes of the late Peter Collinson*, 11-12.
- ³⁵ Laird, *Flowering of the Landscape Garden*, 80.
- ³⁶ *London's Pride* 128.
- ³⁷ Laird, *Flowering of the Landscape Garden*, 80. In *Early Gardening Catalogues* (201), Harvey says the earliest price catalogue appeared in 1775; other than that, the price lists gardeners gave to estates offer the best information. This history is hard to trace, as noted by Findlen in *Possessing Nature*; Brian Halliwell, "Flowers and Plants in the Seventeenth Century," in *London's Pride*, 74; Andrew Cunningham, "The Culture of Gardens," in *Cultures of Natural History*, 38-56.
- ³⁸ Armstrong, *Selected Letters of Peter Collinson*, 100.
- ³⁹ Quoted in Blanche Henrey, *British Botanical and Horticultural Literature before 1800*, Vol. 2 (London, New York: Oxford University Press, 1975), 350-351. Collinson mentioned the "loblolly bay" in particular, writing "this year, after more than 20 years trial, he showed me the loblolly bay of Carolina coming up from seed in a way not to be expected." The plant was later named *Gordonia lasiasthus* by Ellis in honor of Gordon.
- ⁴⁰ Manuscript 323a, 29; 32-33. Courtesy of the Linnean Society of London.
- ⁴¹ On the emergence of gardening as a leisure activity, see Todd Longstaffe-Gowan, "Gardening and the Middle Classes, 1700-1830," in *London's Pride*, 128; Browne, "Botany in the boudoir," in *Visions of Empire*, 153; Spary, "The 'Nature' of Enlightenment," in *Sciences in Enlightened Europe*, 289; Gascoigne, *Joseph Banks and the English Enlightenment*, 79.
- ⁴² Berkeley and Berkeley, *Correspondence of John Bartram*, 198.
- ⁴³ Laird, *Flowering of the Landscape Garden*, 83.
- ⁴⁴ *Ibid.*, 80.
- ⁴⁵ Armstrong, *Selected Letters of Peter Collinson*, 5.
- ⁴⁶ Gascoigne, *Joseph Banks and the English Enlightenment*, 76-78.
- ⁴⁷ Chambers writes in his introduction to *Planters of the English Landscape Garden* (2) that the new capitalism appropriated landscape and that new meanings and attitudes toward nature emerged in reaction to this, in order to see humans not as exploiting nature but as cooperating with it for both use and pleasure. For more on eighteenth-century consumer culture, see Albert O. Hirschman, *The Passions and the Interest: Political Arguments for Capitalism before Its Triumph* (Princeton: Princeton University Press, 1977); Paul Langford, *A Polite and Commercial People* (Oxford: Clarendon Press, 1989). Gascoigne writes in *Joseph Banks and the English Enlightenment* (185) that the "confidence that the human condition could be improved rippled out from agriculture, the traditional centre of the nation's economic and social order, to most other areas of society." For a discussion of the challenges of uniting commercial ventures with an experimental spirit, see David Hancock, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735-1785* (Cambridge: Cambridge University Press, 1995), especially part II chapter 3 on "Planting"; Clark, Golinski, and Schaffer's introduction to *Sciences in Enlightened Europe*.
- ⁴⁸ Armstrong, *Selected Letters of Peter Collinson*, 124.
- ⁴⁹ Berkeley and Berkeley, *Correspondence of John Bartram*, 266 (6 December 1745).
- ⁵⁰ One famous instance of such a practice was Franklin's letter of 10 March 1779 to American sea captains urging them to allow safe passage to Captain Cook during the American Revolution. "Passport for Captain Cook," in *Benjamin Franklin, Writings*, selected by J. A. Leo Lemay (New York: The Library of America, 1987), 926-927.
- ⁵¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 332 (Dobbs to Bartram, 29 June 1751).
- ⁵² *Ibid.*, 118 (12 April 1739).
- ⁵³ *Ibid.*, 180-181 (3 February 1742).
- ⁵⁴ *Ibid.*, 323 (24 April 1751).
- ⁵⁵ *Ibid.*, 216-217 (21 June 1743).
- ⁵⁶ *Ibid.*, 335 (1 December 1751).
- ⁵⁷ Brett-James, *Life of Peter Collinson*, 57-60.
- ⁵⁸ William Darlington, ed., *Memorials of John Bartram and Humphry Marshall*, facsimile of the 1849 edition (New York: Hafner Publishing Co., 1967), 275-276.
- ⁵⁹ Brett-James, *Life of Peter Collinson*, 37.
- ⁶⁰ Liza Picard reports that "the theft of a plant or tree worth over 5s was in 1765 made a felony for which the punishment was death." *Dr. Johnson's London: Coffee-houses and Climbing Boys, Medicine*,

Toothpaste, and Gin, Poverty and Press Gangs, Freakshows and Female Education (New York: St. Martin's Press, 2001), 243. Langford describes the link between crime and luxury in *Polite and Commercial People* (162). For information on the Transportation Act, see A. Roger Ekirch, *Bound for America: The Transportation of British Convicts to the Colonies 1718-1775* (Oxford: Clarendon Press, 1987).

⁶¹ Ian K. Steele, *The English Atlantic 1675-1740: An Exploration of Communication and Community* (New York, Oxford: Oxford University Press, 1986), 113.

⁶² For a discussion of emerging changes in the manipulation and management of time in the eighteenth century, see Stuart Sherman, *Telling Time: Clocks, Diaries, and English Diurnal Form 1660-1785* (Chicago: The University of Chicago Press, 1996), 22. Steele describes the way habits of writing changed in response to shipping schedules in *The English Atlantic* (188).

⁶³ Berkeley and Berkeley, *Correspondence of John Bartram*, 211 (18 December 1742).

⁶⁴ *Gentleman's Magazine* for December 1751, 561.

⁶⁵ Berkeley and Berkeley, *Correspondence of John Bartram*, 694.

⁶⁶ Rosemary Weinstein describes the eighteenth-century novelty of eating fruit, partly in response to improved techniques of fruit production starting in the seventeenth century, in "London's Market Gardens in the Early Modern Period," in *London's Pride*, 82.

⁶⁷ The *Oxford English Dictionary* cites 1762 as the first usage for the word *habitat*.

⁶⁸ Therese O'Malley discusses the emergence of new practices of recreating natural habitat in garden design in "Art and Science in the Design of Botanic Gardens, 1730-1830," in *Garden History: Issues, Approaches, Methods: Dumbarton Oaks Colloquium on the History of Landscape Architecture XIII*, ed. John Dixon Hunt (Washington D.C.: Dumbarton Oaks Research Library and Collection, 1992): 279-302.

⁶⁹ Berkeley and Berkeley, *Correspondence of John Bartram*, 392.

⁷⁰ *Ibid.*, 451-454.

⁷¹ The earliest usage listed in the *Oxford English Dictionary* for the word *ecology* is 1873. Alfred Crosby uses the phrase "portmanteau biota" to describe the phenomenon Bartram describes here, in *Ecological Imperialism: The Biological Expansion of Europe, 900-1900* (Cambridge: Cambridge University Press, 1986).

⁷² All definitions from the *Oxford English Dictionary*.

⁷³ Berkeley and Berkeley, *Correspondence of John Bartram*, 469-470.

⁷⁴ In this regard, my project engages not only with the literary and cultural criticism of colonial America, but with the history and sociology of science. Reflecting scholarly interest in the relationship between scientific thinking and textual forms, Thomas H. Broman writes, "studying the genres of scientific writing provides a device for situating ideas in historical context. The utility of genres for this purpose lies in the fact that genres both serve identifiable social functions and act to structure the material they present in characteristic ways." "J. C. Reil and the 'Journalization' of Physiology," in *The Literary Structure of Scientific Argument*, ed. Peter Dear (Philadelphia: University of Pennsylvania Press, 1991), 13.

Chapter 2

"The Seeds of This I am a Stranger to":

John Bartram, Peter Collinson, and the Cedars

I have a sprig in flower of the Kalmia in water & it stares mee in the face all the while I am writeing--saying, or Seems to say, as you are so fond of Mee tell my Frd J Bartram who sent Mee to send some More to keep me Company for they will be sure to be well nursed & Well treated and don't forgett the Yellow Root & Genseng if it happens in thy way.

-- Peter Collinson to John Bartram, June 12, 1761¹

There could be no more appropriate illustration of the crucial relation between plants and letters in the eighteenth century than the image of the Kalmia flower speaking to Peter Collinson while he writes a letter to John Bartram. Natural history writing, as a rhetorical mode, emphasizes a fundamental connection between the textual and the material, between the word and the thing. Collinson's portrayal of a flower staring at him and directing his words expresses a new aspect of this connection, grounded in an increasingly personal and familiar relationship with nature.

Collinson wrote this letter in 1761, by which time he and Bartram had been corresponding for more than twenty-five years as part of the process of botanical exchange. Indeed, the Kalmia speaks to Collinson in support of the mobility of plants, encouraging Collinson to encourage Bartram "to send some More to keep me Company." Letters were the primary way Bartram and Collinson conducted the business of botanical exchange, and it is in their letters that we glimpse the process by which nature came to have a dynamic personal meaning for them.

Other modes of writing--for example, botanical lists, entries in commonplace books, and specimen sheets--also captured the movement between the natural object and the written object, and many of these forms intersected with letters. But the dialogic

quality of the epistolary form set it apart from other forms of eighteenth-century natural history writing, most notably in the way it sustained and inscribed a deepening familiarity with nature. Bartram and Collinson moved constantly back and forth between working with plants, and writing and reading letters--all part of the process of making the unknown known. They wrote their letters in direct relation to specific objects such as the *Kalmia*, and their rhetorical choices reflect that relation, whether they are discussing a collecting expedition, a taxonomic puzzle, or the appearance of their gardens.

I want to illustrate the dynamic between mobile plants and mobile letters by reconstructing the epistolary history of two evergreen trees, the red cedar (*Juniperus virginia*) and the white cedar (*Chamaecyparis thyoides*),² as it appears in the letters of Bartram and Collinson. Tracing the history of specific objects through their complete correspondence reveals some of the rhetorical, conceptual, and material tools they used to make meaning of unknown botanical objects *over time*.³ Their letters were well suited to record this ever-expanding meaning because they both possessed a temporal specificity and represented an open-ended engagement--with each other and the world around them. One of the important developments of the eighteenth century was the injection of time into the study of nature, as "natural history" transformed into "the history of nature."⁴ The letters of Bartram and Collinson, individually rooted in time but part of a more than thirty-year relationship, document this development in many ways.

My aim here, in focusing on Collinson and Bartram's ongoing exploration of the two cedars, is to show how the interplay between epistolary discourse and mobile botanical objects opened up multiple and shifting meanings for those objects. There was nothing particularly special about Bartram and Collinson's taxonomic and horticultural

work with the cedars. Rather, because their interactions about the red and white cedars were typical, they illustrate the ways in which the circulation of letters and plants engendered new conceptual frameworks for understanding the relationship between nature and the self.

* * *

The story of the red and white cedars begins, like most botanical discussions between the two men, with a request from Collinson to Bartram. In a letter dated February 12, 1736, Collinson wrote:

our curious Bottanists are sadly perplexed about the Difference between the Red & White Cedars. [P]ray be so kind to gather 3 or 4 specimens of Each sort of the size of the paper, Branches with their Leaves and when Dryd by First oportunity, the size & height of each sort & their uses & a few Berries of Each sort by way of sample, the Red we have but want seeds of the White Cedar one of my Curious Friends is writing a Book & wants to Insert the Cedars Red & White & show their Differences which is not particularly Described by any author. [S]o pray be exact & the'll much oblige thine, P.C.⁵

The subject of the cedars thus first emerges in the Bartram-Collinson correspondence in terms of one mode of defining mobile plants: taxonomy. The assumption behind Collinson's request is that describing nature's order begins, in this case, with describing the differences between two similar botanical specimens.

Collinson's directive demonstrates the collaborative and dynamic aspect of classificatory work, from his references to "our curious Bottanists" and "one of my Curious Friends" to his request for information and specimens from the local collector, whose curiosity is implicitly recognized in the request. The word *curious*, ubiquitous in eighteenth-century natural history writing, in this passage evokes a specific community of individuals who aimed, as Barbara M. Benedict puts it, to "pursue knowledge by empirical means: observation, experimentation, exploration."⁶ Bartram, observing and

exploring in America, established his membership in that community in part by assisting curious taxonomists who were working to classify new botanical objects that were themselves curiosities.⁷

Collinson's request, a miniature example of the instructions given by the Royal Society to travelers and explorers, illustrates the vital connection between text and object that often motivated--and would hopefully emerge from--such directives. That is, Collinson's instructions reflect a specific gap in knowledge about the difference between the two trees, which had not been "particularly Described by any author." Bartram, in providing specimens of the trees in the form of the branches, leaves, and berries as well as an "exact" description detailing the "size & height of each sort & their uses," could help fill that gap, deepening the collective knowledge about the objects themselves.

The empirical methods of botanical classification provided Collinson and Bartram with one mode of defining, and increasing their familiarity with, mobile plants. A prevalent language of social interaction expressed the collaborative aspect of this work, complicating the distinction between letters (cultural objects) and plants (natural objects). In Collinson's next epistolary reference to the cedars, for instance, in a letter dated April 21, 1736, he wrote: "pray remember 2 or 3 Specimens of the White and Red Cedars & if possible pray send the Berries or seed vessel of each in particular the White Cedar for the Seeds of This I am a Stranger too, half a Dozen, per way of Specimen, will be sufficient - - for tho you call it the White Cedar yett Wee are in Doubt what Class it belongs too till wee see its seed Vessels --." ⁸ Collinson's conventional claim that he was "a Stranger" to the seed of the white cedar illustrates how a discourse of social interaction and personal

connection permeated the culture of botanical exchange, evident also in the tropes of plant "introductions" and "adoptions."

This discourse was elaborated and refined through the processes of epistolary exchange. The formalities of botanical exchange relied to a large degree on the formalities of letterwriting, influencing the dynamic between word and thing. Bartram and Collinson wrote and read their letters to one another in relation to specific botanical objects, and the material work of botanical exchange--in which seeds, roots, branches, berries, and plants accompanied letters from one correspondent to another across the Atlantic--nurtured a connection between people and plants, often blurring the distinction between them.

Collinson took particular pleasure in pursuing the figurative possibilities of the connection. One of the most dramatic examples appears in a letter he wrote to Cadwallader Colden dated February 25, 1764:

As often as I survey my Garden & Plantations it reminds Mee of my Absent Friends by their Living Donations. See there my Honorable Friend Governor Colden how thrifty they look. Sir, I see nobody but Two fine Trees, a Spruce & a Larch, that's True, but they are his representatives. But see close by how my Lord Northumberland aspires in that Curious Firr from Mount Ida but Look Yonder at the Late Benevolent Duke of Richmond, His Everlasting Cedars of Lebanon will Endure when you & I & He is forgot.⁹

The passage goes on for approximately three more paragraphs, as Collinson looked around his garden and described the botanical representatives of many of the friends he knew only as epistolary correspondents. Their exchanges yielded him numerous botanical samples, and just as the epistolary friendships took root, so did the living botanical donations of those friendships. All of the trees may have been strangers at one time to Collinson--just as the white cedar was a stranger--but through his horticultural efforts and

through the passage of time, they transformed the space of his garden and plantations and became representatives of his friends.

Collinson's assimilation of people and plants was not in the satiric vein of Pope's mock catalogue, mentioned in the previous chapter, but represented an effort to express the impact of nature on the self. The meaning of the spruce and the larch, for Collinson, extended beyond the fact that they were "Two fine Trees": the rhetorical metamorphosis of trees into epistolary acquaintances wrapped them in personal attachments. Collinson's fondness for this trope suggests something more than poetic license; his writing here demonstrates how botanical objects acquired more, and more complex, significance, through rhetorical connections made in letters.

Collinson's gardens and plantations stimulated his interest in being properly introduced to the red and white cedars, for it was there that he often became acquainted with unknown botanical objects arriving from North America: "pray Remember the White Cedar to send 2 or 3 good Specimens," he wrote in the next reference to the subject, in a letter dated June 1, 1736, "-- and 1/2 doz. of its Cones or seed vessels & pray send Mee for a Specimen a Little Board about 2 foot Long of Each Sort of Cedar for a Specimen. I have Large trees of Cedars raised from Berries in my Garden, which I call Red Cedar but I never was sure which was Either white or red & wherein the difference lay."¹⁰

As this passage suggests, sorting out the taxonomic specificities of a plant could yield personal gratifications as well. Collinson desired to know more about the cedars in order to know his own garden better, showing another way the work of taxonomic clarification possessed both an abstract and personal quality: local information such as

Bartram provided could aid the taxonomist, just as a greater understanding of taxonomy could enrich a gardener's relationship to his land. Collinson called the trees in his garden "Red Cedar," but the taxonomic queries from the curious botanists made him look at the trees differently and wonder if they were, in fact, "strangers."

Bartram's role as the local collector was crucial to Collinson's goal of learning more about the differences between the red and white cedars, and in the early summer of 1736, three or four months after Collinson's first request, Bartram undertook a trip to a cedar swamp on Eggharbor River in New Jersey. The necessity of the collector's report to the classification project shows that collecting and classifying plants was not simply a process of abstracting natural objects from the natural world.¹¹ Rather, it was part of a complex process allowing for increased familiarity with the plant. The "white cedar" could travel to England in the form of branches and berries, but, as Bartram's account of his journey to the swamp demonstrates, mobile letters kept mobile natural objects connected to specific place through the information they conveyed:

I engag'd an owner of part of a Cedar swamp for my Guide without whom I could hardly have found It. Wee travel'd about Twelve Miles beyond the inhabitants over Desarts of sand & such deep mirey Swamps that sometimes both Wee and our Horses had much ado to gett out. The Sand lies in Ridges 40 or 50 or 60 poles over & the swamps lie between which are the heads of Rivers & Brooks but so thick sett with shrubs and Bushes about 10 poles Wide yt wee had great Difficulty in passing these swamps[.] att Last wee came to the Head of (Egharbour River) where the great Cedar Swamp Began containing many hundred Acres Chiefly produceing White Cedar but in some dryer places, Silver Laurell or Bay Maple, Holley, & Sassafras & about the Ridges Some pines, but I observed no Red Cedar. The White grows only in wett places often knee deep in Water in wett seasons--they grow near together the small ones within a foot or Two of one another a white Cedar of Two inches Diameter will be 20 feet high, the larger Trees grows all at 10 or 20 feet Distance which makes them grow very tall, a Tree of Two feet diamr att the Stump, will be 80 or 100 feet in highth and 30 or 40 feet without a Limb, the soil where they grow I take to be Clay but the surface is a matt of Roots all interlac'd one with another which intangles the Leaves and Rubish & makes a Bogg the Bark of the Root is Red which gives a tincture to

the Waters that runs from them but the Tast is good & sweet. Our Ceterach & Sarsaparilla grows at the Roots where the sun is rarely seen so thick is the shade above, the Leaves is not near so long & prickly as the Red Cedar, the Fruite is Coniferous & seed very small--to satisfie your Immediate Curiosity I inclose a small specimen, but this second of Last June I cutt down a Large Tree for to send you Larger specimens which I shall send by first opportunity.¹²

Bartram's account follows conventions of nature reportage,¹³ providing information about the soil and situation of the swamp and the botanical productions of the surrounding area. Bartram writes, "I observed no Red Cedar," suggesting that the landscape came into focus for him in terms of Collinson's query regarding the difference between the red and cedars. Once he determined that the swamp contained no red cedars--itself an important piece of natural history information suggesting, as it does, a horticultural difference between the two trees--Bartram turned his observational attention to the white cedars, fulfilling Collinson's directives for information regarding "the size & height" of the trees and providing detailed information about their manner of growth.

The rhetorical structure of the account progresses toward increasingly focused commentary, enacting the movement of Bartram's attention as it narrowed from a broad prospect to a specific object. His narrative begins outside the swamp and moves closer and closer to the white cedar over challenging landscapes. Indeed, the style of Bartram's writing illuminates his personality and his approach to botanical collection: the writing is not dry and detached but conveys a lively sense of the activity of collecting, of his movement through time ("att last we came") and through space, with all its swampy difficulties.¹⁴

The descriptive focus of the passage narrows, as Bartram zeroes in on the white cedar, describing the size of the trees as well as the color of the bark, the structure of the roots, the size and texture of the leaves, and sensory observations such as the taste of the

swamp water and the prickliness of the leaves. Ultimately, the description merges into a material object, as Bartram concludes the passage by assimilating letter and specimen and satisfying Collinson's request for samples: "to satisfie your Immediate Curiosity," he writes, "I inclose a small specimen," with the promise of larger specimens to come.

The journey, motivated by Collinson's request, gave Bartram knowledge of and familiarity with the white cedar, both of which were solidified and revealed in his account of the journey. Epistolary exchange manifested and maintained the connection between Bartram's wet and muddy experience in the cedar swamp, Collinson's uncertainty about whether the cedars growing in his garden were in fact red cedars, and the curious botanists looking through incomplete taxonomic descriptions in search of the botanical differences between the red and white cedars. In reading Bartram's account, Collinson learned more about the collecting endeavors of his American friend in ways that could be inscribed in the taxonomic process. The specific account of a local collector like Bartram was important to the classification process, highlighting the ways it was in fact a process, one that entailed movement through real landscapes. The work of taxonomic classification, and the kinds of knowledge it represented, was not confined to the evaluative work in a university study but also required a sense of the relation between natural objects and particular landscapes.¹⁵

The natural history of the cedars is thus embedded in the textual history of the Bartram-Collinson correspondence. But in fact Bartram's detailed epistolary account of this visit to the cedar swamp is not extant in its original form. It remains part of the manuscript record only because Collinson copied it into a letter he wrote to Dr. Johann Jacob Dillenius (1687-1747), the "curious friend" and botanist who was attempting to

define the differences between the red and white cedars for inclusion in a taxonomic work. Collinson's letter to Dillenius is dated July-August 1736, and here is how he prefaced the long extract from Bartram's letter: "My Indefatigable Friend John Bartram in Pensilvania has taken an Expedition of 140 or 150 Miles In Search of the White Cedar. I press'd Him to Satisfie us in perticular Relateing to this plant & if it had been twice as farr he would have done it. I will give you part of his Letter." After quoting Bartram's letter, Collinson wrote, "Now dear Dr I think by what Mr Dudley Says & My Friend Bartram who has used Great Dispatch to Informe us, thee art now fully Quallified to Sett Mr. Ray and all Curious Inquirers Since In a Clear Light respecting the White & Red Cedars, the White by its Seed Vessell Here Inclosed appear to be a True Cedar, but what is call'd the Red Cedar are only Junipers or Savins."¹⁶

Finally the perplexed botanists were reaching some resolution to the taxonomic questions that had been percolating through Collinson's letters for six or seven months, since he first raised the subject in February of 1736. Collinson sent Dillenius the sample of the white cedar that Bartram had sent to him, keeping it in motion even after its transatlantic journey. Mobility is a trope that illuminates not only the action of the seed vessel but the textual information and rhetorical style as well, for Collinson sent Bartram's words to Dillenius in order to clarify a particular taxonomic puzzle about a particular natural object. As Collinson wrote at the end of his letter to Dillenius, the specimen and Bartram's account of it should be enough for Dillenius to illuminate the differences between the red and white cedars--distinguishing the "True Cedar" from those that "are only Junipers or Savins"--for the benefit of "all Curious Inquirers."

Bartram's epistolary report thus stands in as compelling evidence, as "Clear Light," when combined with a specimen, reaffirming the crucial link between word and thing in natural history investigations. The practice of excerpting parts of letters was common within natural history networks for just this reason, and Bartram's description of the act of collecting became part of an ongoing epistolary dialogue about the cedars, connecting it not just to an abstract natural history of an object but to a specific textual history replete with the personality and inclinations of a specific writer. Collinson's sense of his immersion in the natural history network, and its textual and taxonomic elaborations, is evident in the way he characterized his role in encouraging Bartram, his "Indefatigable Friend," to collect the specimens and in the way he addressed Dillenius as "dear Dr." This personal connection to the process of taxonomic classification, cultivated through conventions of letterwriting, demonstrates the way botanical and epistolary exchange worked together to give specific meanings to natural objects.

Collinson did not fail to reward Bartram's collecting efforts in the swamp as well as his reportorial efforts. A little over a month after sending Dillenius Bartram's report of his trip to Eggharbor River, in a letter dated August 28, 1736, Collinson complimented Bartram on thinking to send "the small Specimen of Cedar with the little Cones in the letter," and reported on the taxonomic resolution: "my Friend says it [the white cedar] is a True Cypress having both the figure and properties of the Common Cypress but the Cones Exceedingly Less."¹⁷ Nine months later, in a letter dated May 20, 1737, Collinson confirmed this information, including with the letter a catalogue of "the Names of the plants or Specimens Last Sent as I had them from Docr Delenius professor of Botany att Oxford, to whome I have yearly Imparted of thy Seeds."¹⁸ The catalogue contains 208

items, each with varying sorts of information and commentary. (Collinson labored over the list, writing to Bartram, "As I have taken a pretty deal of pains In the Catalogue I have the Less to write Here," that is, in the body of the letter.) Had Bartram decided to search the list for the red and white cedars, here is what he would have found: Number 111 reads "Is a real Cypress--by you Call'd white Cedar" and number 120 reads "Red Cedar or Rather Juniper."¹⁹

Through Collinson's repeated requests to Bartram and through Bartram's collecting efforts and epistolary reports, over the course of several months, they finally achieved an answer to a taxonomic question that had been puzzling botanists in England. Their writings demonstrate the way mobile letters and mobile specimens helped fix the taxonomic identity of natural objects. In the simplest version of how the cedar specimen moved, Bartram (in Philadelphia) sent a specimen (collected in New Jersey) to Collinson (in London) who passed it on to Dillenius (in Oxford) who then reported the classification to Collinson who then reported it to Bartram. Moreover, the collaborative work of epistolary and botanical exchange deepened their familiarity with the cedars in more personal ways, multiplying its meanings and associations. After Bartram introduced Collinson to the two trees, making them no longer strangers to the English botanical community, Collinson, in some sense, re-introduced Bartram to the red and white cedars, re-presenting them as a juniper and a cypress.

* * *

I want to pause in my history of the cedars to reflect further on the significance of Collinson's "Catalogue," which provides taxonomic assessments of the samples Bartram had sent him over the previous two years. The inclusion of the catalogue with the letter is

an example of the way the ongoing and accommodating epistolary form intersected with other forms of writing designed to organize and record natural knowledge.²⁰ Of course, different forms of writing give different shape to personal experiences and impressions; some forms (such as a sonnet or a character description of a botanical specimen) constrain expression while others, like letters, are more open and fluid. A catalogue might seem to be more limited than a letter in its expressive possibilities in that it is a fragmented, static form with no obvious narrative drive. Still, Collinson's catalogue was written in direct relation to his epistolary relationship with Bartram and to the mobile natural objects they were exchanging. Consequently, just as the material conveyed in their letters was always in process, so too with the accompanying catalogue. Although Collinson's catalogue distilled information more succinctly than most of his letters did, it too was a provisional and dynamic form representing not only the order but also the dynamism of nature.

The explicit purpose of Collinson's catalogue was to convey nomenclatural information, serving as another rhetorical tool with which to deepen their familiarity with nature. Each entry in the catalogue represents a botanical object Bartram had collected in one form or another, packaged up, and shipped across the ocean. Collinson's catalogue consolidated and organized the information about the plants in order to facilitate their botanical exchanges. Before shipping the plant samples, for example, Bartram would attach specific numbers to each sample, which he would keep track of so that the numbered lists he received back from Collinson were meaningful to him. Creating a catalogue thus represents one collaborative aspect of their transatlantic communication, of information distilled from the dynamic work of epistolary and botanical exchange.

Collinson's and Bartram's efforts were part of the larger cultural project (described in chapter 1) of accumulating knowledge and information about the natural world. Eighteenth-century natural historians imagined they were unfolding nature's order through the taxonomic project and their horticultural endeavors. Collinson's catalogue is one formal representation of that process of unfolding. In it, he furnished Bartram with Dillenius's most up-to-date nomenclatural information as a practical tool for expanding their botanical knowledge. The entries in which Collinson (through Dillenius) provided something like a nomenclatural history of specific plants accentuate this practical function. For example, number 3 reads "Vervain with a Nettle Leafe *Verbena Urtica folio Canadensis* of Tournefort"; number 8 reads "Plucknett calls these sorts of plants *Serpentaria* but Plumier more properly calls it *Saururus* or *Lizard Taile*"; number 45 reads "Breitnals Snake Root *Sanicula canadensis amplissima folio Lacinata* (of Tournefort)"; and number 72 reads "Virga Aurea Nova Anglia, See Parkinson page 243".²¹

Such nomenclatural connections helped naturalists familiarize themselves with natural objects and the literature concerning them in comparable ways. The dynamic work of naming and renaming, then, added new layers of information to the perception of plants, such that botanists could refamiliarize themselves with a plant they already knew under a different designation. So, for example, a plant Bartram might have called by its common name, such as the Snake Root of his friend Joseph Breitnall, was, according to Collinson's catalogue, more properly called *Sanicula canadensis amplissima folio Lacinata*, a designation provided by Joseph Pitton de Tournefort in his *Institutiones rei herbariae*. Bartram did not read Latin, so the reference to Tournefort would not necessarily have directed him to the book, and, moreover, the fluidity between old and

new names in their correspondence indicates a necessary rhetorical flexibility in response to the expansion in botanical taxonomy. Nevertheless, each new name was information that Bartram could use in further discussions of this plant, with Collinson or anyone else, and both he and Collinson found new authority by having this information ready to hand.

The dynamism that was inherent in the work of organizing and ordering a mobile botanical world only reflected the dynamism of nature itself. Collinson's catalogue rhetorically captures this dynamism in the way it demarcates the interrelations between objects. For example, number 132 reads "Common Jersey pine, It is New to Mee, and has this Singular Difference from 113, for that has 4 & 5 leaves to a Sheath & this has but Two, pray send us 3 or 4 More Specimens, & Cones--," which leads the reader back to 113, which reads, "This Pine I do not find Mention'd by any Author, this has 4 & 5 Leaves in one Sheath, pray send 2 or 3 more specimens & Cones, but pray Mention what Specimens the Cones belong to, thee forgot the Last." Collinson's list also demarcates the relation between objects and environment, as in number 202, which reads "Dr. Delenius, Declares this to be an Osmond Royal by its flowers & Seeds, but it differs from the Common sort, in the way of its growth & place where its found." The kind of associative description used here--in which Collinson comments on the Common Jersey pine in relation to another undescribed pine--was a staple of natural history writing and an important tool of knowledge acquisition. In this case, it is also an example of how each entry in the catalogue was dynamic with other entries, as well as with material objects.

Collinson's primary aim may have been to provide Bartram with nomenclatural designations, but the catalogue served more private purposes as well. It gave Collinson an opportunity to express a personal response and connection to mobile natural objects as he

became more familiar with them, especially through the labors of gardening. Gardening gave Bartram and Collinson a particular kind of knowledge and authority that they perform for and share with one another. Further, it nurtured a way of thinking about botanical objects in terms of the passage of time and the transformation of space, transformations that their letters record and track. Collinson's catalogue, too, was expansive enough to accommodate the collector's desire and the gardener's experience in the pursuit of natural knowledge, as illustrated by the following sampling of entries:

32--another Digitalis or Foxglove with Narrow Leaves but Can't Judge of the Colour of the flower I wish Wee could gett these plants in our Gardens

33--Satureja Virginiana a pretty plant Send Seed and Specimen Species of Savery...

78--a Remarkable Water plant (Intirely New) if thou goes into New Castle County again see in what state it is, bring Specimens & plants for to be sett by the River or some pond side...

91--Satureija, a New Species, I have it in my Garden from thy first seed it has a strong penny royal smell I take it to be Different from Number 33 - which Wee have not...

197--Althea Magna, a Noble plant, seeds are much Desir'd for us all...

202--Dr. Delenius, Declares this to be an Osmond Royal by its flowers & Seeds, but it differs from the common sorts, in the way of its growth & place where its found...

205--A New Helleborine, should be glad to see the flower & Have a Root...

The gardener's goal of transforming natural spaces through a variety of botanical objects is evident here, as Collinson expresses his desire for plants to add to "our Gardens," imagines specimens being "sett by the River or some pond side," and shows off his knowledge by describing how the Osmond Royal (202) "differs from the common sorts" in its manner of growth and habitat. This brief sampling from Collinson's list represents

not the detached voice of a taxonomist or the pragmatic voice of a merchant but the passionate voice of a gardener, mesmerized by the many new additions to "our Gardens." Through various terms of admiration-- "a pretty plant," "noble," "remarkable," "much Desir'd"--Collinson expressed his response to each and every object Bartram had collected and shipped to him.²²

In this way, Collinson's interest in clarifying nomenclatural confusion went hand in hand with a more aesthetic response to natural objects, as illustrated by his attention to the beauty, shape, color, and smell of various plants. Collinson's list inscribes the relationship between an increased familiarity with the horticultural specificities of exotic plants and experimentation with their aesthetic possibilities for garden design, especially in England. For example, entries 155 through 159 and entry 161 in Collinson's catalogue are all the same species, all labeled "Virga Aurea." Next to the numbers, Collinson drew a line and made this comment: "Distinguished only by the Likeness of their Leaves to other plants you have a great Variety of this Tribe must make a fine show Collected together in a Row in One Bed, then they'd show themselves to a pleasant advantage."²³

Collinson's comment may be construed as an expression of the promise of the New World, a world that was becoming more real and tangible through botanical exchange and which therefore could be imagined in more specific detail. Collinson's comment hints at this new imaginative potential in conveying his envy, from one gardener to another, about the design possibilities made available by local natural productions. The shape of the leaves, the colors of the flowers, and other features helped identify the object and its classificatory relation to other objects, but these formal considerations were also factors in shaping decisions regarding garden design, in

determining how to have mobile natural objects make "a fine show" and show themselves "to a pleasant advantage."

Collinson's declaration that the plants must make a "fine show" is central to the cultural work of his catalogue, asserting his experience and authority in response to mobile natural objects. Collinson's sense of what combination of plants made "a fine show" differed somewhat from Bartram's, despite the fact that both men came to the work of botanical collection with a long-standing interest in gardening. Their experience as cultivators of the earth no doubt explains in part their success in setting plants in motion and their avid and rich linguistic response to the work. Nevertheless, their gardening instincts and preferences differed.

Collinson, because of his location and his inclinations, articulated his sense of the relation between a botanical object and a created scene through the discourses of landscape design and aesthetic judgment popular in England in the period. So, for example, in the letter to Bartram in 1741 in which he described his experience of wandering through the many exotic (American, Asian, European) plantings on Lord Petre's estate by saying they transported him to North American thickets and to South American tropical forests, Collinson used an available cultural language to set the scene for Bartram. He wrote that the combination of thousands of different trees and shrubs

make a very beautifull appearance great Art & skill being shown in consulting Every one's pticular growth & the well blending the Variety of Greens Dark green being a great Foil to Lighter ones & Blewish green to yellow ones & those Trees that have their Bark & back of their Leaves of white or Silver make a Beautifull Contrast with the others the whole is planted in thickets & Clumps and with these Mixtures are perfectly picturesque and have a Delightfull Effect.²⁴

Collinson expresses a principle articulated by William Kent, Batty Langley, and others, that the art of landscape should imitate nature itself. The beauty that emerged from

creative plantings--combining varieties of trees, planting them in clumps, being attentive to their color combinations--was a beauty that extended nature's beauty, and in fact followed nature's own direction.²⁵

The passage amplifies the idea that appears in Collinson's catalogue in relation to the *Virga Aurea*, namely that the "great Variety" of *Virga Aurea* "must make a fine show Collected together in a Row in One Bed," where they would "show themselves to a pleasant advantage." Both Collinson's comment in the catalogue and the detailed elaboration in the letter about the advantage of variety in garden design show a habit of thinking about plants from an aesthetic point of view--in terms of blending colors, planting in "Mixtures," considering leaf shape and plant size--along with a habit of thinking about plants as mobile, as components that one can "Dispose and Mix" together in planting (as he puts it in a letter to Philip Southcote).²⁶ Such habits of thinking were not peculiar to Collinson but were, in fact, central to botanical investigations in this period, finding expression in published writings as well as in letters and plant catalogues such as Collinson's.

Variety was an important concept in defining mobile botanical objects, connected both to the project of ordering nature and to the emerging awareness of nature as a dynamic and mutable force. The complexity of the concept is illustrated by considering that the pleasure Collinson felt in admiring and imagining the aesthetic possibilities offered by botanical variety in a cultivated landscape was balanced by the frustration botanists experienced in trying to determine whether variety indicated fundamental or superficial distinctions between plants.²⁷ *Virga Aurea*, with the "great Variety of this Tribe" that Collinson imagined must allow for "a fine show," holds six separate places in

his list, reflecting the several specimens Bartram sent. Still, the catalogue suggests that Dillenius gleaned no new taxonomic information from the six objects Bartram had individually numbered (155, 156, 157, 158, 159, 161) and shipped across the Atlantic. Varieties were subordinate in many of the taxonomic methods in use in the period; from a taxonomic point of view, in the first half of the century, varieties did not add significantly to the storehouse of knowledge.

From the perspective of a gardener, however, varieties were full of possibility. They provided an opportunity to manipulate the effects of the mobility of natural objects--uprooting, transporting, rerooting--as well as to discover and account for natural patterns. Collinson's dismissal of the taxonomic distinctions between the six different objects sent by Bartram did not preclude his admiration for the aesthetic distinctions between them; his list allowed for fluid movement between these different ways of classifying the natural world.

The meaning and pleasure Collinson found in using a variety of mobile plants in his garden and plantations, and in seeing them in the gardens of England, differed from the meaning and pleasure Bartram found in his garden. Bartram's garden was a working garden, connected to his career as a farmer, botanist, and nurseryman, and not an ornamental garden.²⁸ Transplanted botanical objects, both native and foreign, became meaningful to Bartram through various horticultural activities. For one, Bartram experimented with plant hybridization, an emerging project that facilitated the production of plant varieties for aesthetic and commercial purposes, and contributed to the knowledge of both the boundaries and possibilities of nature's mutability.²⁹ Variety as a matter of design--of how, say, to manipulate the planting of trees and shrubs based on

matters of leaf color or size--was of less interest to Bartram than variety as a feature of nature.

More broadly, of course, Bartram's garden manifested the project of botanical exchange for scientific, aesthetic, and commercial purposes. Lists of a different sort distilled Bartram's work with mobile plants. Each five-guinea box he sent to Collinson for waiting customers included a packing list identifying the enclosed seeds. Such lists encompassed his collecting and planting endeavors, even as they illustrated the increasing commercial viability of those endeavors and, by extension, nature itself.

In 1753 or 1754, Collinson deemed one list so impressive that he published it anonymously in the February 1754 issue of the *Gentleman's Magazine* under the heading "A List of Seeds of Forest Trees and flowering Shrubs gather'd in Pensilvania, the Jerseys and New York, by John and William Bartram, and sent over the last year to the Correspondents, being the largest Collection that has ever before been imported into this Kingdom anno 1755."³⁰ Unlike Collinson's catalogue, Bartram's list was a straightforward enumeration of the objects in each seed box:

1. Benjamin or all-space tree
2. Magnolia
3. Red cedar
4. Wh. Cedar or cypress
5. Broad leaved euonymus
6. Cephalanthus, or button wood
7. Judas tree
8. Sugar maple
9. 10. Myrtle

And so on, with this list ending at number 100 with *Toxicodendron*. Names are connected to objects in this list, but its commercial purpose accounts for its sparseness, as compared to the natural historical and horticultural purpose that produced Collinson's catalogue.³¹

The botanical variety of Bartram's list asserts its own value, a fact prefaced in Collinson's reference to it as "the largest Collection that has even before been imported into this Kingdom."

More important, it illustrates the marketing value of the list form. Bartram's list was an early version of a nursery catalogue, and, to return to his garden, the list reflects the commercial potential of his work there. This purpose only increased Bartram's familiarity with the natural world. Bartram's son, John Jr., published the first printed nursery catalogue in America in 1783 (primarily written by William Bartram), when he was head of the Bartram family garden, promoting the nursery by advertising the variety of their available plants for sale. The catalogue followed John Bartram's lead by categorizing the plants according to natural rather than artificial relations, a method reflected in the garden arrangement itself.³² The 1783 catalogue, then, conveyed information about natural relations between plants, following the layout or "design" of Bartram's garden.³³

Bartram's 1753 list illustrates the order and stability he and Collinson were able to achieve in the nature trade (despite the proliferation of botanical names in response to mobile plants). Indeed, the stability it represented is what made it viable as a promotional and advertising document. By contrast, Collinson's catalogue, written for a different purpose, retains vivid reminders of the contingency and dynamism of nature. Collinson recorded the unpredictabilities of mobile natural objects, even when describing them required him to bend the conventions of his own format. In most cases, each object in Collinson's list garnered only a line or two of taxonomic and descriptive commentary.

Number 100, however, illustrates the way the catalogue accommodated a more detailed description of the material life of an object and of Collinson's personal connection to it:

100--*a perticular & fine sort of Hieracium*, or Hawkwood, seed & Specimens I Observe a Many rare plants from the Blew Mountains which if Thee has not taken care to bring plants for thy Garden--I am afraid Wee shall never see them Here, for it is not worth while to go on purpose, In my travells all over England, I have preserved Wild plants fresh for my Garden--by this Methode, first, Lett them be in what state soever I took them up, with some Earth to the Roots, then I always provided green moss, in this wrap'd the Roots & branches--& tied It round In paper, & putt Into bags hanging by my Horses Side under my Close to keep from the sun, att Night, I unloosen'd the Branches & Leaves but not the Roots, & then Sett only the Roots with the Moss tied round it, in a Bason of Water Exposed to the Air & Dews, I used to putt 2-4 or 6 plants in one Bundle, short ones & Long Ones each by themselves by this Methode I could Carry & Keep plants fresh & in Health for 2 or 3 weeks att planting be sure Water, & Keep Waterd & shaded on Days for some time.³⁴

In this passage, Collinson the practical merchant struggles against Collinson the gardener in response to the contingencies of botanical exchanges. Bartram had evidently sent a specimen suitable for getting this object classified as a *Hieracium*, but not a live sample of the plant. Collinson notes ruefully that if Bartram did not successfully transplant a live sample of the plant to his own garden, the newly identified plant might now be out of reach, because he cannot ask Bartram to undertake the time and expense of a trip to the Blue Mountains just to retrieve one plant.

And yet despite an explicit awareness of a distance that cannot be overcome, Collinson at the same time rhetorically collapses distance and easily imagines movement, both in his extended description of a "Methode" to transport live plants, and in his hope that the *Hieracium* may be growing in Bartram's garden, possibly available for transport across the sea. Buried in the middle of this catalogue, his detailed instructions on how to manage mobile natural objects--from the earth attached to the roots to the green moss in which to wrap the tender parts of the plants to the attention to watering and sunlight--

were not meant solely to provide Bartram with information he already no doubt knew, considering that he had been collecting for Collinson for at least two years. Rather, by using the catalogue as a place for imaginative live-sample collection, Collinson's language reaffirms the connection between the physical and the rhetorical, between the act of collecting a live sample and the act of describing how it might be done.

Collinson's catalogue and Bartram's list crystallize the link between word and thing even as they facilitated the continued mobility of plants for aesthetic, scientific, and commercial purposes. Indeed, the easy dynamic between these modes of engaging with nature is characteristic of the period. The lists may appear to be detached, abstract representations of plants removed from their natural context. However, read in light of Bartram's and Collinson's letters and gardens, it is clear that these rhetorical forms were attached to soil, to natural processes, and to complex self-interested and disinterested meanings.

Lists and catalogues consolidated information and observations more than letters did, but they emerged from and returned to an ongoing, synthesizing epistolary dialogue. Collinson's catalogue and Bartram's list--like Bartram's extended account of his trip to Egg Harbor River to collect cedar samples--were modes of natural history writing adapted to manage the flow of information and objects moving in both directions across the Atlantic. Letters easily conveyed these modes of writing, and it is thus in Bartram and Collinson's epistolary history that the natural history unfolds most vividly.

* * *

I want to return now to the history of the red and white cedars. Taxonomy, or fixing a plant to a definition, was only one goal of natural history as pursued by Bartram

and Collinson. Most broadly, it was the continued mobility of natural objects that drove these men, and inspired their textual and horticultural labors and investigations. The taxonomic difference between the red and white cedars was resolved once Bartram sent Collinson the seed vessels of the white cedar, which Collinson forwarded to Dillenius for classification. Through their efforts, Dillenius was able to identify the plants, and Collinson reported these results to Bartram in his catalogue. However, Collinson's interest in the white cedar in particular did not diminish.

As he indicated in his first letters to Bartram on the subject, the red cedar was familiar to them already; he had several growing in his garden. But the white cedar was still rather unknown, and this fact alone gave it special value to Collinson and to other botanical enthusiasts. One way to make it known was to reproduce it, to root it in English soil, but Collinson expressed the challenges of this task in his next two epistolary references to the white cedar.

On February 26, 1737 (a year after his first request), Collinson thanked Bartram for the "fine pcel of White Cedar that thee has sent":

I wish we may be so fortunate to raise some it is a plant that Wee have not In England. I wish thee would Collect a few young Seedlings a foot or Two high & plant in thy Garden till they have stood a year & taken root & then send them or what would be better is to plant 6 or 8 in a Box about 2 foot square & if they grow they may be sent without Danger of removing & pray send more seed next year. [P]ray some more white Cedar, what does thee make of those substances with the sprigs growing through them I take them to be Excrescences, tho they have some small resemblance of the Cypress cone.³⁵

And in a letter written ten months later dated April 6, 1738, Collinson wrote,

pray look out for a plant or two of White Cedar; for I am afraid that last sent Mee will go off, though it has a clod of its own earth about it--the smell of the Leaves a little dried smells like to Cinnamon. It is a fine plant. If mine stands it will be the only one in England though I have hopes to raise it from seed, this year. Set half a

dozen young plants in a box & let them stand a year or two to strike root before they are sent.³⁶

(In this same letter, Collinson asked Bartram to "send as Many Red Cedar berries in a Little Box by themselves as Thee can afford for half a guinea being for a particular pson." Even though Collinson wrote this letter after sending Bartram the catalogue defining the white cedar as a cypress and the red cedar as a juniper, he continued to refer to them by the names red and white cedar, suggesting that taxonomic accuracy was less important to him than conversational clarity in this particular endeavor.)

Both passages illustrate the complex motives driving the project of botanical exchange, as well as the fluidity between different discourses of natural history. Collinson offers more instructions on managing the work of mobility, and conveys his own powers of empirical observation in querying Bartram about the "Excrescences" and in describing the smell "like to Cinnamon." At the same time, his eagerness represents a new form of attachment to the plant, a desire not only to be introduced but to establish a long-term relationship with this "fine plant."

Collinson's comment on February 26, 1737 that "it is a plant we have not in England" and his comment on April 6, 1738 that "if mine stands it will be the only one in England" together reflect an Old World desire to possess natural objects from the New, a familiar discourse of colonialism. There are really two white cedars described here: the actual material object that Bartram shipped in "a clod of its own earth" and the ideal object--the "fine plant"--that Collinson imagines, the one he hopes to raise from seed in order to possess the only one in England.

Collinson's attention to the reproductive possibilities of the white cedar highlights their material work with the plants on both sides of the Atlantic. Transplantation

connected Bartram and Collinson to material transformations of landscapes; it made them conscious of how objects and landscapes change through time. This is one reason why letters were such a valuable medium for recording their work with mobile natural objects. Every letter represented an open-ended moment in a reciprocal exchange; letters were both a response and an invitation. As such, they encouraged a way of thinking about the epistolary content contingently, with the assumption that more information, more commentary, more ideas may be forthcoming.

Gardeners approach their work in a similar manner. Gardening is a dynamic ongoing process, especially with the possibility of shipments of new objects always in view. In this way, letterwriting and gardening were related activities for Bartram and Collinson. Both were forms that stood in direct relation to mobile botanical objects, giving ongoing shape--rhetorical and horticultural--to their ideas and impressions about those objects.

Collinson recorded several ideas and impressions about the white cedar in his letters of February 1737 and April 1738. His declaration that if his white cedar seedling from Bartram survived he would have "the only one in England" might seem extravagant except in the contemporary context of the network of naturalists and gardeners. If he had the only white cedar growing in his garden, then he would receive attention for, and derive authority from, this fact. Coaxing a nonmobile plant to be mobile--and then rerooting it--was an achievement worth attending to, both materially (by exhibiting the results to visitors) and textually (by describing the results in letters, lists, and other forms of writing).

Collinson's desire to have the only white cedar in England was on a continuum with his desire to record his role in introducing new plants to England, as he did in his unpublished "Account of the Introduction of American Seeds into Great Britain." Both impulses demonstrate a pleasurable awareness of transformations of natural space over time. For example, in a 1762 entry in his commonplace book, Collinson remembered his role in transporting plants, merging his personal history with the history of the English landscape: "At the request of Lord Petre of Thorndon Hall Essex I procured [some?] pine tree kernals for himself & for the Duke of Norfolk to Sow at Worsop in Notinghamshire from [] anno 1740 & a [] of Italian Oaks. These two pines and oakes are vastly grown and make a noble effect on the hills planted with them." And a few lines later, "Bought great quantity of Chesnutss for the D: Norfolk to be sown at Worsop 1741--now fine trees 1762."³⁷

Collinson's commonplace book entries offered another formal space in which to preserve his role in effecting changes to the English landscape, with the writing functioning as a private act of remembrance. Collinson's awareness of his connection to the trees growing on the hills of Thorndon Hall and Worsop illustrates a personal dimension to the "natural history" of botanical objects that was elaborated in forms like commonplace books and letters. Such personal connections yielded a more complex awareness of the link between nature's mobility and mutability over time.

For example, in a draft letter (to "Mr. Fox") dated October 1, 1759 and recorded in his commonplace book, Collinson registers the passage of time during a visit to Goodwood, the estate of the Duke of Richmond: "Under the safe conduct of the Duke and Duchess of Richmond [I am amazed,' crossed out] I once again have the pleasure of

[visiting] the delightful scenes of Goodwood. After nine years absence I ['was,' crossed out] am agreeably surprised with the wonderful progress and growth of many exotic trees, that I remember in their infant state, that now require a skillful hand to [check] their exuberance."³⁸ Collinson was so impressed by his visit to Goodwood that he described it also in a letter to his cousin Benjamin Cook, relating his joy in seeing the growth of trees--now overgrown--he had procured for the current Duke's father and in his continued involvement in their botanical life: "This Work the present young Duke reserved for Mee to curtail & Lop. You know my Dear Cosen my Task so you' conclude I had great pleasure in these Operations as I remembered their first planting, and between whiles we was projecting new Schemes & plans for the future Improvement & ornament at Goodwood."³⁹ In these passages Collinson remembers the "first planting" of the trees, he expresses amazement at the growth that he must "curtail & lop," and he looks forward to "future Improvement." In such observations in letters and in his commonplace book, Collinson recorded a way of thinking about changes to the natural world through time.

There are important rhetorical distinctions between letters and entries in a commonplace book, even while they are related forms of natural history writing, and the distinction between them comes into relief in relation to the passage of time. Most obviously, Collinson's response to objects was given ongoing expression in letters. By contrast, his commonplace book entries are more diarylike (even though some portions of an entry may eventually have found their way into a missive). The interplay between language and object is still paramount, but such entries capture a particular moment in time. Collinson's descriptions of Thorndon Hall and Worsop, for instance, freeze a landscape in time even as they record changes to that landscape over time.

Collinson's writing suggests one kind of temporal specificity in his request that Bartram plant six white cedar plants in boxes and let them stand a year or two in his garden before sending them, and another kind of temporal specificity in recording the dates of the flowering of specific plants, and still another kind of temporal specificity in reporting on the growth of specific trees over time. Through such specificity and attention, Collinson tracked his connection to once mobile plants in and over time-- who sent them; how he introduced them; their uses and beauties--along with the natural history of those plants, a history that operated increasingly according to a linear as well as a cyclical sense of time.⁴⁰

For Collinson, the mobility of plants nurtured a sense of the personal connection between plants and people, in figurative ways (such as his assimilation of the Duke of Richmond with the Cedar of Lebanon growing in his garden) and in more literal ways (such as his identification with the exotic trees growing at Goodwood). Collinson extended this connection to Bartram as well, as reflected in his reports and accounts to Bartram about the botanical objects he had collected and shipped across the Atlantic. For example, a few months after writing to Bartram of his hope that he may have the only white cedar in England, in a letter dated July 10, 1738, Collinson began a letter with the words "I am obliged to thee for thine per [Captain] Steadman, and have the pleasure to tell thee that Most of the plants in the Last cargo thrive finely I never had such Luck Before."⁴¹ He then proceeded to report on the status of numerous plants sent to him by Bartram, including the white cedar and a "Great" and "Noble Martigon" referred to in the caption of a botanical drawing (quoted in the Introduction, above):

that Stately Martagon thee sent found on a bank near Schuylkill--is now Near Flowering it is 5 foot 1/2 high & will I believe have 15 flowers which is

prodigious, it Differs from the great Marsh Martagon for that will not flower till Midle of August and another sort I had formerly from Docr Witt but that was a smaller sort & never has but 4 or 5 flowers on a stalk I had 3 of your Red Lillies that flowered this year that came in the Last Cargo: they had but one flower on Each Root--pray have they no more with you--The Laurells all Grow, or Chamaerhododendrons the 2 Shrub Honeysuckles and a Very pretty plant, The Gooseberry from Conestogo Grows Well, and above all the White Cedar thrives finely & the pine, which is what we Call Lord Weymouth's and a many other pretty plants which come out of the sods of mould taken up with the plants, 2 or 3 sorts of Helleborine as they seem to be which shows that your Woods are sowed thick with Rare and odd plants--there is several other odd plants that I can't yett Discover what they are for all these I am much obliged to thee and Hope the things per Capt Wright are come Safe to hand and I hope will make some pt of amends for thy Great Care & Trouble.⁴²

Collinson's aim in this passage was to describe for Bartram, in associative but specific language, the continued life of plants he had collected and shipped across the Atlantic Ocean. He singled out the white cedar "above all," suggesting its continued elevated status as he worked toward successfully cultivating it.

The passage, a domesticated form of natural history writing,⁴³ is propelled by the plants, enacting the movement between the mobility and rootedness of North American plants. Collinson collapses distance through his encounter with and description of such plants, writing to Bartram about the banks of the Schuylkill and about Conestogo (New York), places he knows primarily through Bartram's letters and through the mediation of the botanical objects Bartram collected in those locations and sent to him, and which were subsequently growing in his garden outside of London.⁴⁴ The successful transplantation of the botanical objects along with Bartram's commentary on the specimens succeeded in collapsing the transatlantic distance between the two men. It is from Bartram that Collinson learned about the native habitats of plants, information he then connected to plants, and to Bartram, and to their ongoing communications. Bartram

as the local collector thus introduced Collinson not only to new and "odd" plants but also to the colonial landscapes through which he traveled.

The most provocative image in the passage comes not from what Collinson expected to see from the transplanted specimens, but from the unpredictability that accompanied them. Collinson writes about "a many other pretty plants which come out of the sods of mould taken up with the plants, 2 or 3 sorts of Helleborine as they seem to be which shows that your Woods are sowed thick with Rare and odd plants," and declares that "there is several other odd plants that I can't yett Discover what they are." This image reflects a conventional method of transplantation, in which live plants were transported with their native earth still clinging to them and protecting their roots.⁴⁵ There were perceived horticultural benefits to planting a bit of native dirt with the sample--literally transplanting American soil into English soil--but these clumps also contained the possibility that new and odd plant stowaways might have hitched a ride across the Atlantic.

In this case, Collinson drew from such unexpected botanical productions some information about their place of origin: "which shows that your Woods are sowed thick with Rare and odd plants." Collinson glimpsed the American woods through such accidental (and unmarked) travelers. The sense of collapsing the distance evident in his description of walking through Lord Petre's estate--"when I walk amongst [such plantations], One cannot well help thinking He is in North American thickets....but to be att [Lord Petre's] Table one would think South America was really There"--is the rhetorical and conceptual extension of this more material experience with mobile botanical objects and the American dirt that accompanied them. Through soil and

collector's reports, mobile American plants remained connected to, even as they transported, America itself.

The urge to make the unknown known motivated travelers to discover and settle the New World of America for profit and pleasure, and Collinson's writing, too, conveys the anticipation of discovery: "there is several other odd plants that I can't yett Discover what they are," he writes. Collinson placed orders with Bartram and requested specific plants, but there was always the hope of discovering something unexpected, and patient attention to clumps of dirt could yield spectacular discoveries. The grammatical link Collinson makes between odd plants and the idea of discovery reflects the sense of purpose that motivated the cultural work of botanical exchange--as expressed also in the Society of Gardeners claim that, through planting, they were creating "a new World." Such figurative expressions were grounded in material objects, and rooting an American plant--in English soil, in a taxonomic system--contended with the unpredictable effects of mobility on the living objects themselves. When the material work led to unexpected discoveries and a glimpse of "a new World," it infused their writing with the kind of enthusiasm and delight and curiosity evident in Collinson's description.

Collinson continued to write to Bartram about the fact that the white cedar was a plant greatly desired by English enthusiasts. Bartram meanwhile pursued the task of collecting. In a letter dated October 18, 1741, Bartram described three journeys he had taken in the late summer and early fall, including one "Journey to Cape may [New Jersey] to gather myrtle berries & red & white Cedar but these was all scarce this year I gathered most of what I could find we cut down near 20 white Cedar trees & climbed many more to gather what I have."⁴⁶ Four months later, on February 3, 1741/42,

Collinson wrote that "Of the Seeds thou Sent the Rose Laurell are Come up and are very thriving, Red Cedar by thousands White Cedar a few" and repeated that "white Cedar white pine & Sassafras thou Cannot send to much for Wee can never have Enough of them."⁴⁷

The white cedar may have been desirable to English gardeners in the middle decades of the eighteenth century, but on the other side of the Atlantic Bartram was exploring the uses of the red cedar. In 1749, seven years after Collinson wrote Bartram that red cedars were coming up "by thousands" and that the English could "never have Enough of" the white cedar, Bartram published an essay in an issue of Ben Franklin's *Poor Richard Improved* titled, "Essay for the improvement of estates, by raising a durable timber for fencing and other uses." The preface (most likely written by Franklin) says "Kind Reader, By way of preface (for *custom* says there must be a preface to every almanack) I present thee with an *essay* wrote by a celebrated *naturalist* of our country, which, if duly attended to, may be of more service to the publick, than 375 prefaces of my own writing."⁴⁸ For more than thirteen years, Collinson had been requesting the red and white cedars for taxonomic and horticultural purposes. Bartram's essay represents another purpose for their botanical work, and another aspect of the relationship between mobile natural objects and writing.

Moving beyond the network of botanical enthusiasts--and beyond the epistolary form—Bartram's essay reveals how the mobility of plants intersected with colonial agricultural development, with useful knowledge, and with advancing the public good. As its title indicates, the essay addresses a factor of great concern to the colonies and to the mother country, namely, the shortage of timber.⁴⁹ The colonies had long held the

promise of replenishing England's diminishing supply of timber, and even as Collinson celebrated the sylvan variety of the English landscape made possible by North American introductions, he was also printing essays in the *Gentleman's Magazine* advising the dedicated cultivation of trees for ships' masts and other uses necessary to England's commercial and imperial progress.⁵⁰

Just as Collinson recorded his role in the historical changes to the English landscape, Bartram too was aware of his role in mapping changes to the American landscape, a result not only of the mobility of plants but also of the mobility of people. In one letter, for instance, he reports a change to the land due to encroaching settlement, declaring that if he had not collected the "stalk & seed" of the *Meadia*, it would have been "wholly lost to the world."⁵¹ Bartram's essay, too, reflects an awareness of natural changes over time and the importance of land management. Grounded in his personal experience, Bartram's essay makes clear that the colonies were depleting their resources far more quickly than the English had depleted theirs, for a variety of reasons. It begins,

By a diligent observation in our province, and several adjacent, I apprehend that timber will soon be very much destroyed, occasioned in part by the necessity that our farmers have to clear the greatest part of their land for tillage and pasture, and partly for fuel and fencing. The greatest quantity of our timber for fencing is oak, which is long in growing to maturing, and at best is but of short duration; therefore I believe it would be to our advantage to endeavour to raise some other kind of timber, that will grow faster, or come sooner to maturity, and continue longer before it decays.

The red cedar (a species of juniper) I take to be the most profitable tree for fencing, and several other uses, that we can raise in our country, considering how easily it may be raised from seed; its readiness to grow on most kinds of soil; its quick growth; the profits it will afford while it is arriving to maturity; and the long duration of the wood when grown to a proper size for the materials we want for our several occasions in husbandry or building.⁵²

Through his essay, Bartram was, in a sense, re-introducing the red cedar to his fellow colonists. The essay illustrates how botanical collection and exchange, in

conjunction with epistolary explication and description, intersected with a broader audience and with agricultural concerns.⁵³ Bartram's familiarity with the American landscape, a result of his own sensibilities and encouraged by organized botanical collection, establishes his authority at the start. His authority is further reflected in his comment that the red cedar is "a species of juniper," a fact gleaned from his English correspondence and that establishes his specialized knowledge. Bartram, the "celebrated naturalist," aimed to reach a larger audience through *Poor Richard Improved*, and here his rhetorical imperative was not ongoing exploration so much as persuasion. Bartram's essay adopts a declarative style to a greater degree than his letters in order to put a different emphasis on botanical investigation, laying out empirical facts and problems before proposing an agricultural solution.

The passage captures the distance between the Old World and the New: while Collinson was eager to cultivate the white cedar because it was rare, Bartram was eager to encourage the cultivation of the red cedar because it was easy to reproduce and could be put to good use; while Collinson celebrated the transformations to the English landscape over the course of many years, Bartram grappled with a different kind of transformation to the American landscape. The essay juxtaposes different kinds of temporal awareness--natural time (as reflected in the observations that oak is "long in growing to maturing" as compared to the "quick growth" of red cedar, and that the red cedar decays more slowly than oak) and cultural time (as reflected in the observation that agricultural necessities were responsible for the destruction of the timber and in the acknowledgment that farmers must consider short-term as well as long-term profits)--to emphasize the necessity for intervention and action.

The essay proposes building nurseries and then plantations of red cedars, providing detailed and concrete horticultural information to this end. The passage, then, reflects the mutability of nature in response to human settlement, as well as the importance of managing nature's resources over time. Bartram writes, "I am of opinion, that with care, ingenuity and industry, we may make the very raising of them to a proper magnitude (exclusive of the value of them when cut down) to be easy, ornamental and profitable."⁵⁴ The word "profit" dominates the essay. The latter part of the essay describes both short- and long-term profits to the organized cultivation of the red cedar, as Bartram elaborates his belief that there does not have to be a choice between thrifty agricultural management and a pleasing "ornamental" landscape.⁵⁵ Bartram's essay reflects an Enlightenment faith in the human ability to manage and profit from nature, even as it reports on the damaging changes to a natural landscape as a result of human action. The essay, then, conveys not only the natural history of the red cedars, but alludes also to the history of the red cedars, and, by extension, of nature itself.

The culmination of this story of the red and white cedars, I think, comes in a letter written by Collinson dated February 13, 1753/54, five years after the publication of Bartram's essay on the various profitable uses of the red cedar. In it, Collinson mentions the white cedar in terms of profit. By then, Collinson had successfully managed to reproduce the white cedar, but, unlike Bartram with the red cedar, he was trying to keep it from wider circulation. His letter to Bartram begins with the announcement that he is not writing this letter in haste, from "behind the counter," but with more time and leisure: "Dear John, Being Retreated here from the Hurries of the Town while Snow covers the Ground in this Alpine Situation (the Country near the Town being Clear of It), I retired to

my Study with a Good Fire and found great Serenity and pleasure of Mind in conversing with my distant friends thy sundy pacquets lay before mee, as often as I peruse them I still find Entertainment & much Matter for Speculation & Reflection."⁵⁶

Following contemporary conventions of the familiar letter,⁵⁷ Collinson draws a scene of reading, conversing, communicating: through epistolary contact, he felt close to his "distant friends." In his retreat at Ridgeway House, Mill Hill, a residence nine miles northwest of central London and east of Hampstead Heath, he was able to reflect on Bartram's "sundry pacquets." But Collinson's variation on the conventions of this type of letter was to note that the pleasures of reading Bartram's letters were not that they brought him closer to Bartram, but that they brought him closer to the material (the "Matter," as he says) of those letters, namely, the natural objects the men exchanged and discussed.

Collinson, sitting by his fire, reread the "sundry pacquets," and responded to the material therein: Bartram's account of forest trees, of roses, of water and land terrapins, of an expedition to the mountains, of sowing parsley with fir seeds; Bartram's description of red spruce and sea beach cherry and convolvulus and phytolacca and the horns of the moose deer; further discussion of one of Collinson's favorite topics, namely the possibility of cultivating vineyards in the colonies; and recurrent expressions of joy in "the Uniforme & Admirable Order in the Creation [that] speakes the unlimited power & Wisdom of the Great [God] to preserve the Chain of Beings."⁵⁸

Finally, near the end of the letter, in a short paragraph between a paragraph on the potential exploration of the Hudson Bay and one on the successful arrival of seven boxes of seeds, Collinson returned to a topic that had been part of their epistolary conversation for sixteen years: the white cedar. He wrote, "the White Cedar Expedition must be

pleasant--but it would Spoil Trade to tell how Easie the White Cedar is propagated from Cuttings not one will Miss. I have 2 Dozen of the finest Straight upright plants from Cutting thou ever saw but this Gordon & I keep a great Secret."⁵⁹ Collinson's comment about the easy propagation of the white cedar is a small moment a long letter, but it is the culmination of the epistolary history of the red and white cedars I have been reconstructing, for three reasons.

First, it announces the success of their ongoing efforts to cultivate the tree. In 1738 Collinson had written to Bartram that if he managed to nurture a single white cedar plant in his garden he would have the only one in England. By 1754 he reported that he had "2 Dozen of the finest Straight upright plants from Cutting thou ever saw." Over the course of sixteen years, a transformation had been wrought: a botanical object that at one time was not available in England, that Collinson and others worked hard and took time to cultivate, sending Bartram on numerous collecting expeditions, had become easy to reproduce: "not one will Miss," says Collinson. Collinson's delight in how "Easie the White Cedar is propagated from Cutting" celebrates nature's mobility and adaptability.

Second, it reinscribes the role of material profit that underlay Bartram and Collinson's work with mobile natural objects. They were invested in the noble aims of advancing knowledge and the public good, and they were personally invested in the delights and achievements of gardening. But it was after all Collinson's merchant status that enabled him to develop connections in the New World and establish a trade in natural objects. Bartram, too, received necessary material compensation for his work, which assisted in his ability to care for his family and allowed him more time to devote to collecting.⁶⁰ Collinson may be teasing a bit here in his comment that it would "spoil

trade" to reveal how easily the white cedar may be reproduced from cuttings, but the comment points toward their commercial stake in the mobility of natural objects.⁶¹

I have understated this motivation in their exchange throughout this chapter because it is not an explicit component of the history of the red and white cedars (although it is implicitly present in Collinson's repeated comment that the English "can never get enough" of the white cedar). More than anyone else in this study, Bartram and Collinson worked within all of the motivating frameworks (outlined in chapter 1) for the mobility of natural objects in the eighteenth century: the pursuit of useful knowledge; the commercial sale of botanical objects; the emergence of a new aesthetic of landscape design. In this moment of describing the successful cultivation of the tree, after years of never mentioning financial gain in specific relation to the white cedar, Collinson's comment illustrates how implicit such considerations were to their activities.

Finally, the notion of keeping such success a "secret" complicates the rhetoric of free and open exchange characteristic of Enlightenment natural history investigations.⁶² Do Collinson and the nurseryman James Gordon want to keep this information a secret in order to control the value of the white cedar on the commercial market? Or to control the prestige associated with owning one? After all, if its easy propagation were made public, Collinson would no longer be able to aspire to have the only one in England. Trade was integral to his natural history pursuits, and his status as a merchant did not prevent him from making connections with the prestigious world of the Royal Society of London. Still, the selflessness of natural history pursuits was written into the founding documents of that society of curious individuals, which made the idea of profit suspect to many people.⁶³ Whether or not it was true that Collinson and Gordon kept the easy propagation

of the white cedar a secret, Collinson's claim dramatizes his excitement about their successful cultivation of this much-desired botanical object, demonstrating another way it came to have meaning for him.

* * *

Following the thread of the word "secret," I want to conclude my epistolary history of the red and white cedars by returning to an early moment in the story, to a comment Collinson made in a letter to Bartram dated December 14, 1737 about his desire for the white cedar:

Dear frd I am pleased to heare thee has been in the Jerseys & Kent County & that thee has Discovered the pitch or Red pine, which is a sort Wee want All sorts of pines & Firrs & white Cedar & Spruce are plants Wee want--yett as they Live so Remote from each other, Content thy self with sending one sort a year unless any other sort is near at Hand, Wee Expect no unreasonable & hard things and will not have thee Exert thy self out of Reason to serve us--thy Accurate Observation & pfect knowledge In the Times of Gathering these sort of Trees must be thy Director In these Matters, but though thy Excursions are attended with Difficultys and great Fatigue yet the secret pleasure that Accrues & the New Discoveries and the Many Observations both Informing & Entertaining which tend to Enrich thy Mind with Natural knowledge and fill it with Exalted Ideas of the wonderfull Hand that made all these things, must yield thee such a secret pleasure as will fully Compensate for & Counterbalance all the other.⁶⁴

Once again, Collinson imagines Bartram moving through a North American landscape, and his responsibility for Bartram's movement makes him pause to reflect on the advantages and disadvantages of the arduous labor.⁶⁵ The passage mentions some of the culturally accepted benefits of natural history exploration: the acquisition of useful and entertaining observations; the growth of knowledge; the spiritual benefits of contemplating "the wonderfull Hand that made all these things."

But the repeated phrase "secret pleasure" suggests something else about the motivating force behind Bartram and Collinson's work with mobile botanical objects.

Collinson imagines the secret pleasure Bartram must derive from the rigors of his botanical excursions, as well as the secret pleasure he must feel in the observations and discoveries, the knowledge and wonder, that result from these excursions. This sense of "secret pleasure," then, had been written into their botanical and textual exchanges from the beginning; it figures as a motivating force apart from and above the potential financial rewards of secrecy and even the rewards of advancing the public good.

Their long-term work of collecting, shipping, identifying, and studying plants enabled them to become familiar with the unknown--with nature--which was their larger project. Collinson and Bartram expressed all aspects of this endeavor through their epistolary labors, and the phrase "secret pleasure" provides a way to understand the value of their work over the course of a long friendship. Writing letters, collecting and shipping plants, waiting for plants to grow, complaining but persevering when they failed to grow--these habits of working and thinking, these physical and intellectual labors, could produce rewards, satisfactions, and pleasure.

By "secret" Collinson means something like private, internal, subjective. The phrase expresses an idea that is present throughout their exchange, namely an awareness of the personal and intangible benefits resulting from the study of nature, even as they understood the commercial value of their endeavors. The deepening familiarity with specific objects such as the red and white cedars, evident in their epistolary exchanges, extended to a deepening familiarity with nature itself. More than anyone else in this study, Bartram and Collinson facilitated the transatlantic mobility of natural objects in the eighteenth century, and their writings reflect and capture a period of swift cultural transition and transformation. One such transformation was the emergence of an ideal of

a personal relationship with nature-- relationships Bartram and Collinson created from their work with mobile natural objects and from the dynamic movement between objects and writing that their exchanges required.

John Bartram's son William would give a distinct and influential voice to a personal response to nature, but it is important to note that the stirrings of Romanticism are evident in the writings of Enlightenment figures like John Bartram and Peter Collinson. In their work with mobile natural objects, Bartram and Collinson were simultaneously engaging in the Enlightenment project of mapping the natural world, and manifesting the early stages of the Romantic project of responding to and articulating the effects of nature on the self.

¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 521 (see intro., n. 1).

² For a short appreciation of Bartram's work with the cedars, see Winifred Notman Prince, "John Bartram in the Cedar Swamp," "Notes and Documents," *The Pennsylvania Magazine of History and Biography* 81, no. 1 (January 1957): 86-88.

³ Christoph Irmscher writes, "If Bartram's and Collinson's letters often appeared more like a jumble of botanical notes and businesslike receipts than like coherent narratives, some main themes do recur." Irmscher's description captures one aspect of the Bartram-Collinson correspondence, but it does not address the way extended epistolary exchange creates different kinds of narratives. *Poetics of Natural History*, 23 (see chap. 1, n. 29).

⁴ Jacques Roger, "The Living World," in *Ferment of Knowledge*, 278 (see chap. 1, n. 4).

⁵ Berkeley and Berkeley, *Correspondence of John Bartram*, 21.

⁶ Benedict, *Curiosity*, 1 (see chap. 1, n. 14).

⁷ The history of the concept of *curiosity* has received much attention from historians of science and literary scholars alike. What I find most fascinating about the concept is its ubiquitousness and inclusiveness: it functioned as a noun and an adjective; it served as a shorthand term of inclusion and description; it yielded authority and was a term of derision; it referred to people and things. One of the challenges of the natural history enterprise in the eighteenth century was establishing a common rhetorical context in which to converse about natural phenomena, and the word *curiosity* was sufficiently meaningful and yet general enough to adapt to the discursive pressures of transatlantic epistolary exchange. Benedict's book unfolds some of the paradoxes of the concept, as does another recent book that specifically explores the eighteenth-century transatlantic natural history community: Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (Chapel Hill: UNC Press, 2006). The secondary literature is vast (see chap. 1, notes 4 and 14).

⁸ Berkeley and Berkeley, *Correspondence of John Bartram*, 27.

⁹ Armstrong, *Selected Letters of Peter Collinson*, 256 (see chap. 1, n. 8).

¹⁰ Berkeley and Berkeley, *Correspondence of John Bartram*, 29.

¹¹ A plant listing in a taxonomic guide somewhat obscures the role and significance of the collector's report. My study is in dialogue with other scholarship in the history and rhetoric of science and in literary studies that takes for granted the dynamic, contentious, fluid quality of eighteenth-century natural history. I am working against assumptions that the classificatory goals of Enlightenment science (embodied most obviously in the figure of Linnaeus) represent only an imperial desire to possess and control the natural world through the process of naming and organizing natural phenomena. The epistolary contributions to the classification process that I unfold here help complicate the view that the taxonomic project of the period represents only the impulse to break nature down to abstract units in order to control it. Thomas Hallock's research pursues the paradox of Linnaean work, what he calls "the tension between dislocation and the local." "Snakes, Saracena and Other Gender Benders: Martha Logan, Jane Colden and William Bartram" (conference paper); see also his *From the Fallen Tree: Frontier Narratives, Environmental Politics, and the Roots of a National Pastoral, 1749-1826* (Chapel Hill: The University of North Carolina Press, 2003). Scholars such as Janet Browne, John Gascoigne, Hallock, David Philip Miller, Susan Scott Parrish, Jessica Riskin, Simon Schaffer, Timothy Sweet, and others chart new directions in this field.

¹² Berkeley and Berkeley, *Correspondence of John Bartram*, 33-34.

¹³ Wilson coined the term "nature reporter" in *In the Presence of Nature* (see chap. 1, n. 4).

¹⁴ In my analysis of Bartram's description of his trip to Egg Harbor River, I follow Irmscher, Hallock, and other scholars in working against the kind of argument made by Pamela Regis, who claims that the rhetoric of natural history writing did not include a way to represent time: the "narrative suspends" and "description replaces action." *Describing Early America: Bartram, Jefferson, Crèvecoeur and the Rhetoric of Natural History* (DeKalb: Northern Illinois University Press, 1992), 24.

¹⁵ James L. Larson addresses the issue of plant distribution (what is now called "biogeography") and the way naturalists tried to balance a belief that nature was fixed (illustrated by taxonomic inventories) with an awareness that it was dynamic. He writes, "because the dominant Linnaean system, which was matchless as a sorting device, included a note on station and habitation in the generic and specific characters, the lists of new plants did contain some geographical information." *Interpreting Nature: The Science of Living Form from Linnaeus to Kant* (Baltimore: Johns Hopkins UP, 1994), 110. Clark, Golinski, and Schaffer, in their introduction to *Sciences in Enlightened Europe* (30; see chap. 1, n. 4) describe the problem this way: "locality was significant both as a limitation on the universality of enlightened knowledge and as a category within it." Still, Larson points out even though Linnaean taxonomies contained some data about native habitats of botanical specimens, the idea that plant distribution could be related to historical development was not fully articulated until Humboldt (114). My interest here is in the way the local was inscribed in letters.

¹⁶ Armstrong, *Selected Letters of Peter Collinson*, 46-47. Collinson's reference to "Mr Dudley" and "Mr Ray" indicates that other naturalists had in fact described the cedars. Nevertheless, the differences between the red and white cedars was the particular issue under investigation. Paul Dudley (1675-1751), F.R.S., Chief Justice of Massachusetts, pursued natural history and contributed some papers to the RSL. In a letter to Bartram dated 7 June 1736, Collinson wrote that he had before him "a very curious account" by Dudley of the evergreens of New England, and included Dudley's catalogue, which listed the white cedar and the red cedar. Collinson told Bartram that he included the catalogue "by way of information, and to put thee on observing what you have, of these kinds, growing near you" (*Memorials of John Bartram and Humphrey Marshall*, 79; see chap. 1, n. 58). John Ray (1627-1705), F.R.S., was an English botanist who established an important system of botanical classification in his *Historia plantarum* (3 volumes, 1686-1704). William T. Stearn says that Ray, along with Joseph Pitton de Tournefort (1656-1708) and Herman Boerhaave (1668-1738), were "Linnaeus's most important predecessors in systematic botany." *Botanical Latin: History, Grammar, Syntax, Terminology and Vocabulary* (New York: Hafner Publishing Co, 1966), 37.

¹⁷ Berkeley and Berkeley, *Correspondence of John Bartram*, 33.

¹⁸ *Ibid.*, 48.

¹⁹ *Ibid.*, 54.

²⁰ William Merrill Decker, *Epistolary Practices: Letter Writing in America Before Telecommunications* (Chapel Hill: University of North Carolina Press, 1998), 10.

²¹ Joseph Pitton de Tournefort (1656-1708) was Professor of Botany at the Jardin du Roi and author of *Elémens de botanique, ou Méthode pour connoître les Plantes* (1694) and a Latin version titled *Institutiones rei herbariae* (1700), which distinguished genus from species and allowed Tournefort to classify 6,000 known plant species into just 600 genera (Stearn, *Botanical Latin*, 37). Charles Plumier (1646-1704) was a student of Tournefort's. A famous botanical explorer, he is most well known for having discovered and described the fuchsia, and for proving that the cochineal should be classed with insects. John Parkinson (1567-1650), apothecary to James I and Royal Botanist for Charles I, published *Paradisi in Sole Paradisus Terrestris* in 1629 and *Theatrum Botanicum* in London in 1640.

²² For a discussion of the language and psychology of desire in eighteenth-century transatlantic botanical exchange, see Parrish, *American Curiosity*, especially chapters 3 and 4. Irmscher gestures to this issue as well in his comment that "Collinson's epistles were not just long, they were--if the pun is permitted--longing, too." *Poetics of Natural History*, 21.

²³ Berkeley and Berkeley, *Correspondence of John Bartram*, 25.

²⁴ *Ibid.*, 167 (1 September 1741).

²⁵ In *The Life of Peter Collinson* (217-220; see chap. 1, n. 6), Norman Brett-James includes a catalogue of some of the "choicest books" in Collinson's library, gathered from the sale of the estate of C. S. Collinson (Peter's grandson) in 1834. The list includes "Hasselquist's Voyages and Travels in the Levant, 1766 with Notes by P.C....Henepin's New Discovery of Vast Country in America...History of the Dutch East India Company...J. Smith's Virginia 1624 with MSS notes...Fernando Mendez Pinto, Voyages 1692...J. Ray, Observations on the Low Countries, 1683, plates and notes by P.C....History of the Present State of Virginia, 1765...Buffon's Natural History, 14 vols., 1749...The Works of Evelyn," and so on. Brett-James does not claim to provide a comprehensive list of books in Collinson's library, but this sampling reflects Collinson's wide reading in the field of exploration and natural history. Collinson's commonplace book also includes quotation extracts from voyages of exploration and extensive commentary on various aspects of

natural history, although I did not discover any record of his readings in the aesthetics of landscape design. Manuscript 323a and 323b, courtesy of the Linnean Society of London.

²⁶ Armstrong, *Selected Letters of Peter Collinson*, 159 (9 October 1752).

²⁷ Varieties raised problems for systematic classification because they threatened to undermine a principle of essentialism with regard to species. James L. Larson writes that there were three types of varieties: the local, the kind that produced a permanent change in the individual (and that was maintained through grafting), and the kind that was passed on genetically through seed. Gardeners were interested in the first two more than systematists were, and Larson says that systematists ignored the last sort as long as possible since they didn't quite know what to do with it. He writes, "Gardeners customarily used multiplication by seed to produce the greatest possible number of varieties, while naturalists employed the same means to establish true species." Nomenclaturists asserted two sets of traits in the nature of any given physical object--the constant one, same in all members of the species, and the individual one, "variable," capable of adaptation and often dependent on physical circumstances and environment: "The two natures, combined in one individual, were nevertheless distinct. The individual proper was a local ephemeral fact; the representative was a constant element in the system of nature. For many, natural history was the science of representative types studied through individual forms." The issue of variety interests me because it is connected to the importance of local environments and to the impact of time on plants through the issue of reproduction. Larson writes, "We shall see, in fact, that because history was involved it suggested that variation was fundamentally of no importance....At the very most, I think one can speak of an intensification of interest toward the end of the eighteenth century in viewing natural forms in terms of their history." *Interpreting Nature*, 61-70, 64; see especially chapter 3. See also Beretta, *Enlightenment of Matter*, 50-61 (see chap. 1, n. 4).

²⁸ Bartram received many famous people at his garden, including Benjamin Franklin, George Washington, and Thomas Jefferson, as well as numerous naturalists such as Pehr Kalm, Andre Jussieu, Alexander Garden, and others, but their visits were, by all accounts, primarily to admire and enjoy the range of his botanical collection rather than the artistry of his landscaping. Thomas P. Slaughter describes Bartram's garden as a "borderless botanical garden": "John's garden was a commercial nursery in which vegetation was situated without regard for aesthetic design." *Natures of John and William Bartram*, 81 (see intro., n. 18). For a discussion of the difference between Bartram and Collinson as gardeners, see Irmscher, *Poetics of Natural History*, 20-27. Irmscher also distinguishes Collinson's interest in aesthetic design from Bartram's ordered disorderliness, but suggests that Bartram derived aesthetic pleasure from the contrasts that his disorderliness created. Both Slaughter and Irmscher refer to a contemporary description of Bartram's garden by Alexander Garden written in a letter to Cadwallader Colden dated 4 November 1754: "His garden is a perfect portraiture of himself, here you meet with a row of rare plants almost covered over with weeds, here with a Beautifull Shrub, even Luxuriant Amongst Briars, and in another corner an Elegant & Lofty tree lost in common thicket--on our way from town to his house he carried me to severall rocks & Dens where he shewed me some of his rare plants, which he had brought from the Mountains &c. In a word he disdains to have a garden less than Pensylvania & Every den is an Arbour, Ever run of water, a Canal, & every small level Spot a Parterre, where he nurses up some of his Idol Flowers & cultivates his darling productions." *The Letters and Papers of Cadwallader Colden* Vol. 4 (New York: Collections for the New York Historical Society, 1920), 472.

²⁹ Bartram described his experiments in letters to friends like John Custis, making explicit connections between the hybridization of plants and a mutable nature acting according to its own processes. One passage, in a letter to Alexander Garden (25 March 1762), is strikingly similar to a passage William Bartram would pen for the Introduction to *Travels*. John Bartram describes first the "charming colors" of the "vernal & autumnal flowers," and goes on to say, "But when we nearly examine ye various motions of plants & flowers, in their evening contraction & morning expansion they seem to be operated upon by something superior to only heat & cold or shade & sunshine such as ye surprising tribes of ye sensitive plants & ye petals of many flowers shutting close up in rainy weather or in ye evening until ye female part is fully impregnated & if we wont allow them real feeling or what we call sense, it must be some action next degree inferior to it for which we want A proper epithet or ye immediate finger of god to whome be all Glory & praise." Berkeley and Berkeley, *Correspondence of John Bartram*, 551-552.

³⁰ *Gentleman's Magazine* 24 (February 1754): 65. Reprinted in Berkeley and Berkeley, *Correspondence of John Bartram*, 364-366. Collinson's commonplace book contains a draft with "anno 1755" in the heading (MSS 323a, 27-28, Courtesy of the Linnean Society of London).

³¹ In his study of literary lists, Robert E. Belknap distinguishes the *list* from the *catalogue*: "Lists differ from catalogues in presenting a simple series of units, without the descriptive enhancement a catalogue usually provides. The catalogue is more comprehensive, conveys more information, and is more amenable to digression than the list." *The List: The Uses and Pleasures of Cataloguing* (New Haven, CT: Yale University Press, 2004), 2-3.

³² Joel T. Fry, "Bartram's Garden Catalogue of North American Plants, 1783," *Journal of Garden History* 16, no. 1 (Jan-Mar 1996): 13-14.

³³ William Bartram wrote a preface to a later catalogue of the Bartram garden (published in Philadelphia in 1807), in which he described his father's approach to the garden: "His view in the establishment [of the garden] was to make it a deposite of the vegetables of these United States, (then British Colonies), as well as those of Europe and other parts of the earth, that they might be the more convenient for investigation. He soon furnished his grounds with the curious and beautiful vegetables in the environs, and by degrees with those more distant, which were arranged according to their natural soil and situation, either in the garden, or on his plantation, which consisted of between 200 and 300 acres of land, the whole of which he termed his garden." "Preface to A Catalogue of Trees, Shrubs, and Herbaceous Plants, Indigenous to the United States of America, Cultivated and Disposed of by John Bartram & Son, at their Botanical Garden, Kingsess, near Philadelphia," in *William Bartram: Travels and Other Writings*, 587 (see intro., n. 8). Ann Leighton describes the Bartram catalogue in her excellent garden history *American Gardens in the Eighteenth Century: "For Use or for Delight"* (Amherst: University of Massachusetts Press, 1986), 298-306.

³⁴ Berkeley and Berkeley, *Correspondence of John Bartram*, 53.

³⁵ *Ibid.*, 38.

³⁶ *Ibid.*, 86.

³⁷ Manuscript 323b, 202. Courtesy of the Linnean Society of London.

³⁸ Manuscript 323b, 52-53. Courtesy of the Linnean Society of London.

³⁹ Armstrong, *Selected Letters of Peter Collinson*, 222.

⁴⁰ Collinson was in the habit of recording botanical notes and memoranda. Jean O'Neill, who studied Collinson's annotations in his three editions of Philip Miller's *Gardener's Dictionary*, says, "In these *Dictionaries* Collinson wrote wherever he found space: on the end boards and blank pages, and in the margins of the books....In a limited amount of space, it is impossible to cope with all the information found in the *Dictionaries*." "Peter Collinson's copies of Philip Miller's *Dictionary* in the National Library of Wales," *Archives of Natural History* 20 no. 3 (1993): 373-380. Such extensive informal notekeeping reflects Collinson's desire to trace the history of England's botanical efforts for posterity. Both Collinson and Bartram were encouraged by friends (Franklin, Linnaeus) to convey their natural history knowledge to the public through formal publications, but neither did so, claiming a lack of time and training. Nevertheless, as this chapter suggests, both men wrote constantly as part of their natural history work.

⁴¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 93.

⁴² *Ibid.*, 93-94.

⁴³ I owe this formulation to Philip J. Pauly, "Horticulture and Culture," *Raritan* 27 no. 3 (Winter 2008). Passages like this represent an early form of garden writing, a genre that would flourish in the nineteenth and twentieth centuries partly in response to the increased publication of botanical literature.

⁴⁴ Bartram's *Observations on the Inhabitants, Climate, Soil, Rivers, Productions, Animals, and Other Matters Worthy of Notice...* (London, 1751), detailing his travels through Pennsylvania, New York, and Canada in 1750 as part of an expedition to establish a treaty with Native American tribes, would have offered another source of information about the American environment. Reproduced in *Selected Works by Eighteenth-Century Naturalists and Travellers*, introduced by Keir B. Sterling (New York: Arno Press, 1974).

⁴⁵ Bartram received directions from his foreign correspondents about the importance of preserving the soil with the sample (including the example above from Collinson's catalogue, #100). This method was broadcast to the public, including via an article Collinson published in the *Gentleman's Magazine* for December 1751 (561) in which he provides "some hints relating to [the] culture and management" of "all the variety of trees, shrubs, and flowers, which are produced in our North American colonies, having given great encouragement to the annual importation of plants and seeds, which arrive here in the spring months." Collinson writes, "Great care should be taken to keep the mould about the roots. When all the plants are set, spread the remaining mould on the bed; for variety of plants and flowers often spring from it." In this same

article, Collinson includes "the white cedar, or cypress [and] red cedar" in his list of "most curious seeds," and concludes with "A List of Seeds arrived this year from our North American Colonies--Dec. 1751" that lists the white cedar (#2) and the red cedar (#3).

⁴⁶ Berkeley and Berkeley, *Correspondence of John Bartram*, 171.

⁴⁷ *Ibid.*, 181-182.

⁴⁸ Leonard W. Labaree, ed., *The Papers of Benjamin Franklin*, Vol. 3 (New Haven: Yale University Press, 1961), 331. The editors of the *Papers* note that the evidence that Bartram was the "celebrated naturalist" comes from a 5 May journal entry by Peter Kalm as well as internal textual evidence. Franklin provided lifelong support for Bartram's botanical and natural history endeavors.

⁴⁹ See Gilbert Chinard on the importance of John Evelyn's *Sylva* and *Elysium Britannicum* as early popular articulations of the necessity of timber management in response to the shortage of timber in England. "The American Philosophical Society and the Early History of Forestry in America," *Proceedings of the American Philosophical Society* 89 no. 2 (July 1945): 444-471. Ann Leighton describes Evelyn's early encouragement of the idea of planting foreign trees in *American Gardens* (77-82). For more on the relationship between the colonists and the New World environment, see Chinard, "Eighteenth Century Theories on America as a Human Habitat," *Proceedings of the American Philosophical Society* 91, no. 1 (February 1947): 27-57.

⁵⁰ Collinson published a series of articles in the *Gentleman's Magazine* in 1755 and 1756 encouraging the cultivation of North American evergreen trees for useful and ornamental purposes. Each article describes the uses and beauties of specific trees. In the March 1756 number, Collinson describes the uses of the red and white cedars in detail, noting that the "leaves [of the white cedar] have a very fine cinnamon-like smell," an observation he also made in a letter to Bartram quoted above. In another article (November 1756, 503-504), he specifically refutes arguments against the planting of foreign trees by listing the benefits (ship's masts, chests, roof shingles, and so on) of doing so. (Collinson wrote this article ca. 1755 in a letter to Edward Cave, publisher of the *Gentleman's Magazine*. He concluded the letter by saying, "Friend Henry, if this meets with your approbation, Insert it in your next Gentleman Magazine. Else return it to yours." Armstrong, *Selected Letters of Peter Collinson*, 194; Armstrong misattributes the date of publication?)

⁵¹ Berkeley and Berkeley, *Correspondence of John Bartram*, 608 (30 September 1763). The full passage reads: "another remarkable instance is that I have now travailed near 30 year throw our Province & in some 20 times in ye same provinces & yet never as I remember once found one single species in all ye after times that I did not observe in my first Journey through ye same province by many times I found that plant ye first that I nor any person could find after which plants I suppose was destroyed by ye cattle I never found one person that ever found one new plant after I had been there that I did not observe ye first time I crosed ye Shenando I saw one or two plants or rather stalk & seed of ye Meadia on its bank I jumped off got ye seed & brought it home sent part to thee & part I sowed my self both which succeeded & if I have not gone to that spot perhaps it had been wholly lost to the world John clayton asked me where I found it I discribed ye very spot to him but he nor any person from him could find it after O what A noble discovery I could have made on ye banks of ye Ohio & misisipi."

⁵² *Papers of Benjamin Franklin*, 3:331.

⁵³ Franklin's petition in support of Bartram's natural history endeavors, "A Copy of the Subscription Paper, for the Encouragement of Mr. John Bartram," published in Franklin's *Pennsylvania Gazette* on 17 March 1741/42, asserted that such efforts would yield just this sort of practical useful knowledge, in part by promoting increased communication with the Royal Society of London. Apparently, the petition did not succeed in convincing colonists that there were benefits to investing financially in natural history investigations. *Papers of Benjamin Franklin*, 2:356-357. Bartram pursued his work with the support of Collinson, whose mediation provided patrons and customers for Bartram's botanical collections as well as, ultimately, a stipend from the king.

⁵⁴ *Papers of Benjamin Franklin*, 3:333.

⁵⁵ Collinson's awareness of the tension between *ornamental* and *useful* is evident in his writings. In his "Account of the Introduction of American Seeds into Great Britain," Collinson says he "willingly undertook" the labors of botanical exchange without any desire for profit "in hope to improve or at least to adorn my country." He used a similar formulation in a letter to the Duke of Bedford (draft) dated 12 April 1759: "The Trouble & pains in getting these Seeds Over is amply Compensated by the Success that has attended them besides the pleasure it gives Mee that I can Oblige my Curious Friends as well as Improve (or at least Embelish) my Country." Armstrong, *Selected Letters of Peter Collinson*, 217. Collinson's

repeated qualification of "improve" with "at least embellish" or "at least adorn" suggests his awareness of a cultural tension between these two aims.

⁵⁶ Berkeley and Berkeley, *Correspondence of John Bartram*, 369.

⁵⁷ See, for example, William Henry Irving, *The Providence of Wit in the English Letter Writers* (Durham, N.C.: Duke University Press, 1955); Howard Anderson, Philip B. Daghlion, and Irvin Ehrenpreis, eds., *The Familiar Letter in the Eighteenth Century* (Lawrence: University of Kansas Press, 1966); Janet Gurkin Altman, *Epistolarity: Approaches to a Form* (Columbus: Ohio State University Press, 1982); Elizabeth Heckendorn Cook, *Epistolary Bodies: Gender and Genre in the Eighteenth-Century Republic of Letters* (Stanford: Stanford University Press, 1996); Decker, *Epistolary Practices* (see note 20); Rebecca Earle, ed., *Epistolary Selves: Letters and Letter-writers, 1600-1945* (Aldershot: Ashgate, 1999); Amanda Gilroy and W. M. Verhoeven, eds., *Epistolary Histories: Letters, Fiction, Culture* (Charlottesville: University Press of Virginia, 2000).

⁵⁸ Berkeley and Berkeley, *Correspondence of John Bartram*, 369-372.

⁵⁹ *Ibid.*, 371.

⁶⁰ Franklin's petition on behalf of Bartram's natural history endeavors makes explicit the link between natural history pursuits and financial responsibilities. *Papers of Benjamin Franklin*, 2:356.

⁶¹ Charles Hamilton planted white cedars at Painshill Park, possibly with seed purchased from Collinson. See Laird, *Flowering of the Landscape Garden*, 67 (see chap. 1, n. 26). I am grateful to Mark Laird for his willingness to answer questions regarding the Bartram-Collinson seed exchanges.

⁶² Collinson's request is in keeping with other remarks to Bartram protecting their mutually beneficial relationship. At various times (see Berkeley and Berkeley, *Correspondence of John Bartram* 9, 27), he asked Bartram not to reveal certain aspects of their business relationship out of a concern that they might provoke resentment. His worry, early in their relationship, was that if his other contacts in the colonies knew that Bartram was being compensated, they might withhold their botanical offerings unless they too were compensated.

⁶³ Alexander Garden, one of the subjects of the next chapter, belittled the idea of collecting botanical objects for sale and profit in a letter to John Ellis: "As to collecting seeds to sell to the gardeners, it is what I should not chuse to do, neither would my business permit me. What I may be able to collect shall be solely to serve my friends, amongst whom you have an indubitable title to more than I shall be able to collect these many years. Smith, *Correspondence of Linnaeus*, 415 (see intro., n. 5). Parrish explores the rhetorical efforts naturalists made to detach epistolary natural history from the corrupting influence of the market, and unfolds some of the contradictions and complexities, in *American Curiosity* (see note 7), especially chapter 4.

⁶⁴ Berkeley and Berkeley, *Correspondence of John Bartram*, 70-71.

⁶⁵ Wayne Franklin, in *Discoverers, Explorers, Settlers: The Diligent Writers of Early America* (Chicago: The University of Chicago Press, 1979), describes Collinson's tendency to idealize Bartram's travels; he reads this response to Bartram's writing as another mode of abstracting the American environment.

Chapter 3

Alexander Garden, John Ellis, and the Dynamism of Epistolary Natural History

In 1752, the same year Benjamin Franklin performed his kite experiment proving lightning is electrical and John Bartram complained in a letter to Dr. Gronovius that it had been a "very bad seed year," a young doctor from Scotland moved to "Charlestown," South Carolina. Dr. Alexander Garden (1730-1791) had completed his medical studies at Marischal College at the University of Aberdeen in the mid 1740s, and, after passing his examination by the Surgeon's Company board in 1748, had served for more than two years as a ship's surgeon in the Royal Navy. In 1750, he had returned to Scotland to pursue further medical studies at the University of Edinburgh, and, upon being invited to take over a thriving medical practice in Charleston, he decided to pursue financial independence in the New World. Garden's interests ranged widely, and the New World held for him a promise not only of financial security but also of exciting opportunities for natural history exploration.

While at the University of Edinburgh, Garden studied under famed botanist Charles Alston, King's Botanist and Keeper of the Garden at Holyrood, and the quest for natural knowledge captured Garden's imagination.¹ His commitment to the international community of the "curious" did not abate with his arrival in South Carolina--despite the imposition of extensive medical responsibilities--and Garden established himself as a contributing member to that community through transatlantic epistolary exchange. Indeed, as he makes clear in the following passage, writing and receiving letters sustained him:

You will no doubt think that it is odd in me, who live so far from the learned world, to have such an avaricious desire after new correspondents. I own it is really odd; but I cannot help it, and I think that nothing is a greater spur to enquiries and further improvements, than some demands from literary correspondents. I know that every letter which I receive not only revives the little botanic spark in my breast, but even increases its quantity and flaming force.²

It was January 13, 1756, and Garden was writing to his London friend John Ellis.

Garden actively sought connections in the Old World in order to alleviate his sense of distance from the centers of learning, and he was fortunate to find a friend in Ellis. Ellis was a merchant who in many ways assumed the role fulfilled earlier in the century by Collinson, facilitating transatlantic natural history exchange. Like Collinson, many of Ellis's natural history connections were linked to his trade connections, but Ellis was a more theoretically rigorous naturalist than Collinson (as I will discuss in the next chapter). Ellis pursued several natural history interests--for example, he conducted experiments on putrefaction, achieved some fame for his publications on corals, and devised new methods for transporting seeds and live plants³--but the bulk of his correspondence with Garden revolved around botanical matters large and small, nurturing the "little botanic spark" in Garden's breast.

Given the cultural importance of letterwriting in the eighteenth century, Garden's emphatic affirmation of the value of correspondence seems puzzling, especially his declaration that "You will no doubt think that it is odd in me, who live so far from the learned world, to have such an avaricious desire after new correspondents. I own, it is really odd; but I cannot help it." In fact, it would not have been at all "odd" for him to have "an avaricious desire after new correspondents." Garden's comment may reflect the sense of insecurity and isolation common for a transplanted colonial, or it may be read as a performance of his dependence on his correspondents. Whatever the case may be, Ellis

too was "avaricious" for new correspondents, as Garden would have known, for this trait was common to most members of the republic of natural history letters. Indeed, a desire for such connections was one of the qualities that validated an individual's membership in the community of the curious.

In this passage, Garden articulates one purpose (an important word to naturalists in the eighteenth century) of their epistolary exchange: "nothing is a greater spur to enquiries and further improvements, than some demands from literary correspondents." Garden's formulation affirms that letters served a practical function by motivating naturalists to make "enquiries and further improvements," revealing a conventional assumption about the goals of natural history correspondence in the period. It is a commonplace to say that letters became increasingly important as conveyors of information about the natural world throughout the seventeenth century. In England, their status was established in the latter part of the century by Henry Oldenburg, first Secretary of the Royal Society of London (1662 to 1677), who maintained a vast network of correspondents, channeling the information they provided into the meetings of the Royal Society and, after 1665, into the *Philosophical Transactions*.⁴

Oldenburg's work as mediator and facilitator shows the central role letters played in institutionalizing the exchange of information about experiments and natural phenomena. He articulated the value of letters as a form through which to exchange ideas, describe natural phenomena, and report on nature. Natural history letters were not expected necessarily to display the writer's erudition or rhetorical artistry but rather to convey simply and clearly the ideas or discoveries that the writer wished to present to the

larger community. Indeed, for the members of the RSL, the "plain style" was the best assurance of the truth-value of the writers' claims.⁵

Still, despite the consensus that natural history letters were crucial to the production of scientific knowledge in the seventeenth and eighteenth centuries, their status as "scientific work" has been difficult to define. Historian Andrea Rusnock has proposed that scholars who have charted the decline of experimental activities at the Royal Society in the eighteenth century often fail to note the Society's increasing dependence on letters through that period. "If scientific activity is construed broadly," Rusnock writes, "--for example, if correspondence is taken into account--the Royal Society of the eighteenth century was much more energetic and influential than its disparagers would have us believe."⁶

One reason the Royal Society depended on letters in the eighteenth century is that they carried out one of the great tasks of the period: conveying and classifying natural objects as numerous new objects came into view and were shipped around the globe. The correlation between a mobile form and mobile objects sustained Enlightenment investigations of nature, allowing a farmer in Philadelphia or a clergyman in the north of England or a planter in the Bahaman Islands to contribute to the meetings of the Royal Society. But as Fellows sifted through the content of letters to find important material to report or excerpt in the *Philosophical Transactions*, a sense that private letters were simply the "underlying process" to the advancement of knowledge gradually emerged, and this sense was solidified in the critical histories of the period until relatively recently.⁷

In this chapter and the next, I will consider some of the reasons why letters hold both a crucial and subordinate place in the history of scientific textual forms. Indeed, the ambiguities of the form itself suggest some possible answers, including the fact that the fluidity between "I" the writer and "You" the reader, over the course of an ongoing epistolary relationship, creates a sense of a multiauthorial voice; that the form is capacious, easily incorporating other discourses and generic elements; that letters are meant to close a temporal and spatial distance between reader and writer even as they inscribe that distance; that letters are written from a single author to a single reader but they may be exposed (willingly or not) to a larger readership; and, that letters are susceptible to easy movement between the public and private realms.⁸ Many of these features of the letter form take on special significance in the context of what I call epistolary natural history.

I will begin, in this chapter, by analyzing an exchange of letters between Garden and Ellis in order to engage two related questions: how were letters written and read as vehicles of natural history information; and, what particular features of the letter form made it suitable to the needs of eighteenth-century naturalists? The specific exchange--two draft letters from Ellis and a long response from Garden--took place between May 1758 and February 1759. Ellis and Garden had been corresponding for more than three years⁹, and the topics covered in these three letters reflect the content of their natural history exchange: they were preoccupied with new botanical and zoological objects, with relations between the colonies and the crown, with the value of natural history connections, with the possibilities for new economic crops, with the troubles posed to their exchanges by war. This exchange between Garden and Ellis is not a unique but

rather a representative moment in an ongoing epistolary relationship, showing how the dynamic qualities of the letter form shaped the work of Anglo-American natural history in the eighteenth century, reflecting and fostering an awareness of the dynamism of nature itself.

* * *

The record of this exchange begins with the draft of a letter from Ellis to Garden dated May 1, 1758.¹⁰ [**Appendix, Fig 10**] Here is the text of the letter:

To Doctor Garden
May 1 1758
My Dr Friend,

I received your favor of the 18 Janr and a box of seeds which I thank you for; I likewise recd a box of the Swamp Laurel from Mr. Perreneau: but beg you would persuade him and some other of your friends when you take them out of the swamps to plant some of the [dearest? cleanest?] single stemm'd plants in a swampy ground under your own eye that they may get new roots before they are sent to England which will greatly help their growth with us – some of them are alive but we are oblig'd to nurse them up in [pots] to make them strike root, and 2 thirds of them generally are lost. {Remember some plants of the Halesia [written in the left margin]} Mr Collinson often desires me write to you to know what kinds of Palms & Palmettos you have among you. I believe the one you sent as a species of Palm is no more than the tree yucca but beg you'd please (when ever you send a new genus describ'd according to method) to send the Specimen with it. Mr Collinson has lately rec'd and put into my hands Mr Claytons new Flora Virginiana which he has sent him to be printed here. We shall have an opportunity of printing by way of Appendix your new genera that are ready when you please to send them. Some you have sent which I shall mention to you. –

Mr. Clayton mentions a palmetto which I suppose grows with you to large size. We want the specimens of the blossoms to [describe] it. I have wrote Linnaeus a letter very lately in answer to one I recd from him; he offers me the 1st part of his Systema naturae, which is printed in Stockholm and tells me it will give me pleasure. He says there 52 [sic] plates of animals in it, the plants and fossils will make another volume: but that [----- line crosses out some words] is not yet finished. I expect a letter to you from him for I know he is as desirous of your correspondence as you can be of his and I have wrote to him to send his letter inclosed to me that it may go the safer.

I shall send you as a present the Hortus Cliffortianus which you esteem as we do an excellent book. It is rare to be met with. I only wait for a safe conveyance for this ship goes without convoy. In the catalogue of seeds you sent me you have sent several without names as N 12. 15. 17 & 18. I am obliged to

["you," word missing] for your very great compliment you pay me in naming N 17 after me. I wish you had sent me a description drawing or specimen of it for you raise both my vanity and my expectations by your description of it.

Let me know if you have tried the Potash mixt with Lime water in precipitating your Indigo. Tell me whether Madder Rubia Tinctorum would not grow with you well, your sandy deep soil is like what they have in Holland and as it is a native of the Levant. Quare whether the juices and consequently the colour would not be [more?] [exalted?]; for we know it to be a fact from the Testimony of Dyes that the Smyrna Madder affords a brighter red than the Dutch Madder. The penetrating quality of this root makes it a noble [] medicine, make it likewise [and here to five] other colours. You are no stranger to the red colour it gives to the bones of animals as pigs and poultry that have been fed with the bran used for. [Linnaeus? Linens?] printed with it.

Our Premium Society are getting an act of Parliament to fix the Parson's tithe to a [modus?] to encourage the [growth] here. Quare whether you could not raise it cheaper than we do not withstanding the freight supposing there was a peace.

Above £10000 is imported here annually from Holland which we might raise at home and in our own colonies which is better for us.

Mr. Miller has answered my letter in the Ph: Trans: to Mr Webb about the Toxicodendrons. But I believe the answer I have given his will shew him, he had better been contented by acquiescing & confessing his mistake but obstinate self opinionated men will ever be subject to error.

I have got Miss Colden's [Tibraurea] which I have sent Linnaeus the drawing & character. She's a most ingenious young lady. I have likewise sent him John Bartram's Characters and drawing of his Yellow root another new Genus.

[Appendix, Fig 11]

Let us know whether olives will answer the premium grants and what will be best to encourage for this market.

Let me know whether a provincial garden will be thought of for the making of experiments.

The draft letter opens with Ellis placing the letter in the context of their ongoing exchange, thanking Garden for his "favor of the 18 Janr." It was common epistolary practice to acknowledge such obligations right away. Given the uncertainty of the mobility of natural and textual objects, it was important to confirm receipt. The formal convention of starting a letter with a date and salutation ("My Dr Friend") served a purpose of locating this act of writing in time and in relation to previous acts of writing

(and reading), providing an illusion of immediacy that assisted in reestablishing a connection between writer and reader.¹¹

Ellis's draft letter reflects throughout the importance of such connections among the network of naturalists. These connections appear in an explicit and personal way in the first three paragraphs of the letter--in Ellis's gratitude to Garden as well as to Garden's brother-in-law, Mr. Perreneau, in his reference to the naturalists in England struggling to coax the swamp laurels to grow, in his references to Mr. Collinson and Mr. Clayton, in his report on his exchanges with Linnaeus, and in his desire to give Garden a present in response to Garden's "very great compliment" of a new specimen named "Ellisia" in his honor. These paragraphs show the expansiveness of the natural history community and provide a sense of the world beyond the letter to which the letter is vitally connected.

The formalities of letterwriting, depending as they did on a language of politeness, nurtured such connections within the natural history community.¹² The polite phrases that pepper Ellis's first three paragraphs--"which I thank you for," "beg you would persuade him," "beg you'd please," "I am obliged"--illustrate the way the language of politeness rhetorically functioned to smooth the transition from one topic to the next, from one request to the next. These commonplace phrases are formal elements of social interaction designed to keep the exchange moving and to assist in the quest for desired information or objects. They facilitated a connection to a correspondent--which was especially important given that many correspondents, including Garden and Ellis and Bartram and Collinson, never met in person--and to specific natural objects.

Still, the appearance of polite phrases in epistolary natural history highlights one of the ambiguities of the form, in that even as the exchanges relied on such formalities,

writers moved quickly through them in order to get to the important matter that motivated them--the matter of nature. ("I have been studying matter to fill my letter," wrote Ellis to Linnaeus in 1765, "for meer business to Philosophers is of no account."¹³) A salutation, a reference to letters received, and expressions of courtesy were formal necessities, but Ellis's letter illustrates the way they were necessary primarily in order to propel the content forward.

His letter turns to the stuff of nature almost immediately, and the first three paragraphs suggest that Ellis's writing was driven partly by associative thinking. For instance, Ellis tells Garden, "Mr Collinson often desires me to write to you to know what kinds of Palms & Palmettos you have among you," which prompts Ellis to assert that he thinks the species of palm Garden sent him "is no more than the tree yucca" and to take the opportunity to advise Garden on proper methods for botanical exchange. Addressing Collinson's interests leads Ellis to mention the new book by Clayton that he received from Collinson, which leads Ellis back to the question of the classification of the palm, before reporting on yet another book gift he had lately received, this time from Linnaeus. And the third paragraph begins with another reference to a book gift, as Ellis promises to send Garden "as a present the Hortus Cliffortianus," one of Linnaeus's first publications in systematic botany.

This sort of associative thinking was a feature of epistolary natural history, and it may be this quality that has prompted recent critics to describe the content of natural history letters as a "jumble" and a "miscellany."¹⁴ Such characterizations point to the informal organizational structure and to the abundance of information in the natural history letters of Garden, Ellis, Bartram, and Collinson. They also draw attention to one

of the ambiguities of such letters: the formalities of the letter form, however economical, productively held together the informal, speculative, associative, "jumbled" content. The letter form accommodated a freedom of organization that both allowed for and reflected a freedom of thought, which is nowhere more evident than in the questions that launch the second half of Ellis's letter draft, beginning with his comment "Let me know if you have tried the Potash mixt with Lime water in precipitating your Indigo."

In this part of the letter, the force of Ellis's curiosity emerges, as his questions spill out in a series of bursts often using the command form: "Tell me whether Madder Rubia Tinctorum would not grow with you well..."; "Quare whether you could not raise [Madder Rubia Tinctorum] cheaper than we do notwithstanding the freight supposing there was a peace..."; "Let us know whether olives will answer the premium grants..."; "Let me know whether a provincial garden will be thought of for the making of experiments." Such formulations nicely illustrate the "demands from literary correspondents" that so inspired Garden and inflamed his "little botanic spark."

They also show, as Collinson's letters do too, the way the genre of instruction, with its requests and directives and queries, filtered into the letter form, lending institutional weight to a private exchange. This is one example of the way the capacity of the letter form to incorporate and ferry other discourses was well suited to the purposes of natural history.¹⁵ Each question reflects a bit of Ellis's own work and thinking, and each question creates an opening for Garden--to investigative work, to collection, to speculation, to writing. At the same time, each question reflects the goals and expectations of England's scientific community, with Ellis serving as its representative.

The letter form itself functioned as a mediator, keeping information mobile and provisional, even as correspondents endeavored to stabilize and confirm it.

The provisional quality of epistolary information is evident in the second and third paragraphs of Ellis's letter, in his commentary regarding the "Palms & Palmettos you have among you." Ellis tells Garden that the topic is prompted by Mr. Collinson's curiosity, but he clearly has ideas of his own, namely that "the one you sent as a species of Palm is no more than the tree yucca." Ellis's theory casts doubt on Garden's attribution of name to specimen in a way that captures the stereotype of the Old World naturalist disparaging the contributions of his New World counterpart, even as he urges him to send more specimens.¹⁶ Still, Ellis's comments are in the spirit of empirical process, and he tracks the question through the new reference book--John Clayton's *Flora Virginiana*--he has "lately rec'd" from Collinson. The question of what to call the specimen that Garden sent to Ellis is being worked out through epistolary exchange (as will become clear later in this chapter in my discussion of Garden's response).

Ellis's passage on the palm/yucca illustrates the way letterwriting engendered a specific way of reading and writing--one that was dynamic with material objects, with other written texts, with other sources of information--in pursuit of correct knowledge. Ellis pushes for more information and more clarity, in this case about "Palms & Palmettos," moving back and forth between the specimen Garden sent and the book by Clayton given him by Collinson. As in the Bartram-Collinson correspondence, one important objective of the evolving transatlantic epistolary relationship was to refine methods of collection, analysis, and description, and Ellis here continues in the role of Old World advisor by asking Garden to provide more information in specific ways: "beg

you'd please (when ever you send a new genus describ'd according to method) to send the Specimen with it" and, a few lines later, he repeats "We want the specimens of the blossoms to [describe] it."

Ellis's letter illustrates how well-suited the letter form was to this process of refinement, since they conveyed the provisional speculations of naturalists as well as their ongoing efforts to acquire more specimens and to generate more reportage. This desire for more--more specimens, more blossoms, more descriptions--propels the content of Ellis's letter. The advice he offers in order to fulfill this desire, such as the imperative that a specimen of a "new genus" must accompany the description of it (reaffirming the link between word and thing), reflects his role in training Garden in the formalities of an empirical response to nature. It also suggests that the dynamic mode of reading and writing nurtured by epistolary exchange cultivated a dynamic way of thinking about the natural world.

Ellis's interest in having specimens accompany descriptions represents the classificatory project of ordering, and finding order in, the botanical world. In the second half of Ellis's letter draft, beginning with his question about whether "you have tried the Potash mixt with Lime water in precipitating your Indigo," the provisional quality of epistolary natural history emerges in relation to nature's adaptability, as Ellis advances the project of colonial economic agriculture. Ellis, on behalf of the Royal Society of Arts, was primarily interested in whether "Madder Rubia Tinctorum would not grow with you well," and his letter recounts the facts and information to back up this speculation. He says that "your sandy deep soil is like what they have in Holland," and, based on "Testimony" that states that the color of the dye from Smyrna is "brighter red than the

Dutch Madder," he extrapolates to suggest that the combination of the soil in the colonies, which is similar to the soil in Holland, and the warmer climate, similar to Smyrna, might be able to produce an equally bright dye at a greatly reduced cost.¹⁷

In this part of the letter, the connections among the network of naturalists are more implicit than earlier, demonstrated in Ellis's consistent use of the third-person plural. Natural history letters frequently captured this sense of immersion in and responsibility to the larger community, collapsing the geographical distance between correspondents. At the same time, Ellis's use of the third-person plural functions as a grammatical marker of the distance and difference between the Old World and the New, a distance mediated by letters. Ellis's letter was written to one recipient, Garden, even as it invokes and makes explicit its connections to the world beyond the letter, from the gardeners trying to raise swamp laurels in the second paragraph, to Mr. Collinson's request that Ellis ask Garden about Palms, to the members of the Premium Society who want to raise crops in England's colonies. The letter form nurtured this sense of inclusivity, furthering the purposes of natural history.

Ellis's prose reveals the process of his thinking on the subject of the Madder *Rubia Tinctorum*, demonstrating the potential economic benefits from the dynamic of reading, writing, and thinking nurtured by empirical investigations and epistolary exchange. Ellis considers "testimony," he looks to Garden for insight and for more concrete information, and he thinks comparatively. The letter links Ellis in England and Garden in South Carolina in an ongoing process of knowledge acquisition, still contingent and speculative but full of possibility to men like Ellis and Garden. It is impossible to overstate the evils perpetrated by the conquest of the New World or to

ignore the way imperial, exploitative practices of empire-building were facilitated by the empirical methods of the "new science." At the same time, the letters of men like Ellis and Garden, almost the only way to come to know these figures, suggest that the economic investment in the colonies was less driven by a general ideology of empire or conquest than by concrete goals, connected locally to soil, to plants, to "testimony," to hypotheses, and to the reading and writing of letters.¹⁸

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I want to develop some of these preliminary observations about the relationship between the formalities of letters and the dynamic processes of epistolary natural history by introducing Ellis's second draft letter, written four months later.¹⁹ [**Appendix, Fig 12**]

London Sept 11, 1758

Dr. Garden,

I wrote to you the 1st of May [----- line crosses out some words] a few days after poor Mrs Ellis was brought to bed of twins 2 months before her time and died the 15 of June, one of the children is likely to do well the other died a week after it was born. According to my promise I send you Linnaeus's Hort Cliffort which we esteem a most valuable work and deserving a place in your library. I wrote to you to correspond with Linnaeus. He is the ["most valuable" crossed out] best acquaintance you can have among the [Foreign]. He will soon make your name famous among men of learning abroad & at home, and when ever you send him any new genera be sure to send the dried specimens to confirm your descriptions and then you may depend on it if they are new he will adopt them in his work. This I do because we have no botanists here that know plants like either you or Dr Linnaeus—

I wrote to you for the description of your Palms & Palmettos. Pray send me some seeds of them and the plant you were pleased to call Ellisia and if possible a drawing or specimen of it.

Tell Mr Perreneau that by proper nursing I shall be able to raise some of his swamp magnolias.

Tis a great misfortune to us that we have had no ships from you since April last.

Pray tell me whether a publick Garden call'd the Provincial Garden under the Direction of the Governour & Council would be a practical Scheme for I intend to publish such a Scheme for your benefit to raise the things we take from foreigners I mean such as are adapted to your Climate. And you need not fear being supplied with seeds for it from us.

We must instruct you to send us [~~“a specimen”~~] some of your cochineal insects [on] a specimen of the [Opuntia]. Observe whether the male has wings for the female it is asserted has some. Linnaeus has wrote to me for such a thing. Put it in a box wrapt up in paper—2 specimens one for him & one that I may show the Premium Society with some of the insects in a pill box.

I long to hear whether you have got the plant reckoned good for facilitating the delivery of women in labor among the Indians.

I have wrote for a bushel of the seed of the plant they sow on the sea coast of Spain to make [Barilla], this article may be of some importance to you if you were once got into a right method then I believe many of the [Glaucous] colored succulent plants that grow on your sea coast would answer this purpose. I have wrote likewise for some seeds of the [Tiliqua Edalis] or [Ceratonia of Lin.] This is propagated on the sea coast of Spain for [~~“the”~~] feeding their asses and beasts of burthen and reckoned preferable to all other food even corn. Pray let me know whether you have yet planted any of the [Carthamus] or Safflower as encouraged by the Premium Society. [~~“The manner of curing has lately been published by Hasselquist²⁰ who was lately in Aggad”—this sentence written in small type above a crossed-out line, and is difficult to make out.~~] You’ll find they only want opportunities to encourage you being heartily [desirous] to serve you which you should take care to improve.

Pray send us some of the Resin of the great Juniper for we hear it is as good as the [Olibanum or Thus Marcalau]—I again intreat you to try to collect some of the Juice of the [Rhus Lentisia foli.] I have wrote for some seeds of the true [Chio Mastick] tree, which if I receive shall send you if not shall send you some young plants. Remember that the [] of the south of France and Italy which end with 2 [loose] leaves is not the true for that ends with an odd lobe.[the following written in the margin]: }or any of those milky juices of the [Rhus] tribe that may be fit for [Varnish]

I [wonder] the difficulties you lie under in collecting seeds [] and specimens of rare plants but if you would carry this matter to [~~“a degree”~~] written above “perfection”] [the following lines are circled]{}: you must form a society of sensible and curious men who have some principles of true patriotism in them [line written above reads: “who wish well to the Province in general”] besides that [~~“just”~~] necessary regard to their own private interest.

You must form a society of about 20 sensible men of consequence that are open hearted curious well wishers to the true Interest of the Province as well as their own private interest. A yearly contribution from these would furnish you the necessaries to obtain the true natural history of your country as well as to supply your friends here that you would oblige with every thing that is curious, and in return you would have every thing that you could require of them. By this means People here would know your true Situation and of what consequences you are to the mother Country and this of course would induce them to take a little more care of your Trade by sending you proper convoys in time of War.

In this society you must have a Secretary to carry on your correspondence, which you may open with the Premium Society and also with particular persons here, for great bodies move slow. It will be necessary to have private persons your

correspondents besides who at the same time may do you the [] in taking care that your correspondence with our society has it due weight and is properly attended to.

I [~~“shall”~~ crossed out] here inclose you a catalogue of the Plants fit for medicine & manufactures as also for the Table & agriculture and shall be glad of your remarks – I think the Mohair Goat worthy of your attention. This such a society should try to get over from Turkey which would well answer any [].

[Appendix, Fig 13]

Pray be particular in the [art? act?] of your Cochineal (I fear it will not answer your [needs] to attend to it). I beg to know whether the Date Palm will stand your Winter.

I am strongly of opinion that Madder will be well worth your cultivation as your climate will exalt the colour. This is evident from the difference between Turkey & Dutch Madder. The tithe that is paid here of 3 [shills p acre?] will make it dearer here besides the price of land here much exceeds yours so that I am persuaded you may afford it cheaper than we can, but suppose it was equally encouraged in both places [~~“the Dutch Madder”~~ crossed out] it would be many years before the market could be fully supplied with making use of the Dutch.

[~~“We heard it reported”~~ crossed out. Written above] It has been in our Newspapers here from Georgia that they had found the tea shrub but I believe it is a mistake. Pray send me a specimen of your [Caspine or Yapon] Shrub I mean the blossoms for I do not find that it is yet properly described. Your red [~~“acacia”~~ crossed out] Robinia’s grow well especially as they are [in arches] on the common. White Robinia which is a very hardy free growing plant with us [written in small letters above, “and has blossoms when young, the white not till it is old”]. (I am much obliged to you for the seed vessel of the [Baureria]) which makes us believe it never grows very large. Your [Supple Jack?] stands our weather very well. I was in hopes you had made some progress in [large insects?] on the Keratophytos & Sponges which you have an opportunity to do. We have no person of Curiosity in our West Indie islands so that if you don’t attempt it it must for some years lie concealed from human eye. I have got a tolerable good correspondent in Barbadoes as to plants but he knows nothing of sea productions.

If you have an opportunity to send to the Bahamas for a few curious seeds for me, you may order them to be directed to I. Pownall Esq. Secretary to the Lords of Trade and I shall receive them safe. Mr Pownall tells me he has had some good ones from thence that [Geor Tincknor?] had got for him by means of a gentleman that has Catesby’s book there.

I want to begin with some comparative observations on the relationship between Ellis's May and September letters, in order to sketch some patterns that further illuminate the specific ways the form of the letter organized a response to nature. First, Ellis's letters, though written four months apart, repeat much of the same information. In the

May letter, he refers to receiving a box of Swamp Laurel from Garden's brother-in-law, Mr. Perreneau; he says that Collinson wants him to inquire about the difference between the Palms and Palmettos in the region, and suggests that he thinks the Palm "is no more than the tree yucca"; he encourages Garden to write to Linnaeus; he inquires about the names of some plants in a catalogue Garden sent; he thanks Garden for wanting to name a potentially new plant genus "Ellisia" and requests a drawing or specimen of the plant in question; he explores the possibility of whether Madder would grow well in the colonies thereby limiting England's dependence on Holland's Madder; and he asks whether colonists would be interested in establishing a provincial garden in order to make experiments. All of these topics appear again, in greater or less detail, in the September letter.

There are some topics that are not repeated. In the May letter, for instance, Ellis reports on the latest development in a debate he was having with Philip Miller in the *Philosophical Transactions* about Toxicodendrons; he mentions his receipt of two new plant descriptions from Jane Colden (daughter of Cadwallader Colden) and John Bartram; and he asks Garden whether he thinks olives would be a likely crop in the colonies. Likewise, in the September letter, he requests information about the cochineal insect; he describes some seeds he wants to acquire from the continent that he thinks might thrive in the colonies; he inquires about a newspaper report that a tea shrub had been discovered in Georgia; and, he provides other bits of information and direction regarding various plants.

Such repetition was a common feature of the discourse of epistolary natural history, helping to keep information moving from one side of the Atlantic to the other.

From a practical point of view, the practice of repeating topics from one letter to the next was necessitated by the fact that letters would often miscarry, or that several months might pass between the reading and writing of a letter. Repetition helped overcome the contingencies of transatlantic exchange and ensured that information would eventually reach a recipient. In other words, if one letter was lost, another carrying much the same information would arrive safely. The uncertainty of the transatlantic epistolary enterprise--made clear in Ellis's reference to having "proper convoys in time of War"--had a direct impact on their textual practices.²¹

From a more literary point of view, repetition reflected the epistolary mode of reading and writing, in which the content of previous letters in an exchange governed the writing of an individual letter. The efficacy of repetition as a mode of organizing and composing a letter stands in interesting relation to the temporal markers of a letter. Repeating topics from one letter to the next inscribed the momentum of an ongoing exchange, even as it created a kind of temporary stasis in that exchange: Ellis asks for information regarding the palms in May, and in September he repeats the request; Ellis pursues the viability of madder as a colonial crop in May, and in September he reiterates his opinion.

However, the formality of dating each letter lent specificity to each appearance of a particular subject. Thus, the dates at the start of each letter, and the frequent references to other letters by their date of composition, not only served an organizational function (in addition to acknowledging receipt), but also invoked the forward momentum of the exchange. In capturing time, the dates made it possible for the work to move and advance through time, even as that movement seemed to be slowed by the repetition of subject

matter. And keeping information moving was Ellis's goal in terms of maintaining a relationship with Garden and in terms of gathering knowledge of the natural world.

Repetition also, of course, reflected the specific interests of a writer. Comparing Ellis's May and September letter drafts and examining entries in his notebooks demonstrate that, rhetorically, repetition marked a process of sifting and synthesizing natural history matter. Letter summaries recorded in his notebook, like the draft copies, would have allowed Ellis to hold onto the texture of a specific epistolary relationship, to remember what topics had been discussed in order to ensure that the conversation was always moving forward and being put to good purpose. Moreover, the compositional process of reading, writing, and sifting could produce more refined modes of expression. Ellis wrote out many of his letters in draft form in his notebook, and these drafts show the writer at work: crossing out lines, inserting new phrases, making notes in the margin. More important, these textual practices affirm that the dynamic between reading and writing cultivated by the exchange of letters was grounded in a more private dynamic between reading and writing, all to the purpose of advancing natural knowledge for the public good but with the effect of deepening a personal engagement with nature in all its manifestations.

Summarizing the contents of Ellis's two draft letters, as I have done above, does not do justice to the way each letter is grounded in information and curiosity about the natural world and the way the writing of each letter is propelled by the specifics of that world. The primary work of natural history in the eighteenth-century Anglo-American world, as mandated by the Royal Society, was acquiring, categorizing, and describing natural objects from new worlds, and letters ferried many of those objects both

figuratively and literally. In the last chapter, I focused on the appearance of two specific objects in the correspondence of Bartram and Collinson over the course of a long exchange, which obscured the way objects of nature weight the content of epistolary natural history. Ellis's letters testify to this fact.

In the September letter alone, he refers to at least twenty-five natural objects, which dictate the progress of his prose, disclosing his intellectual engagement with the natural world. The emphasis differs depending on the interests of the correspondents-- Bartram and Collinson, for instance, were more preoccupied with horticultural exchange and trade than with colonial agricultural development--but one consistent characteristic of epistolary natural history is the attention to material objects. Each reference to an object in a letter represents a moment of thought, investigation, and curiosity. Natural objects thus governed the structure of Ellis's letterwriting as well as reflected the progress of his thinking, and the capacious letter form accommodated their driving force.

Natural history letters manifest the primacy of the material world, in part, by subordinating personal history to natural history. This reticence about private affairs makes the appearance of personal information or the expression of personal feelings more noticeable and sometimes jarring, as when Ellis begins the September letter by saying "I wrote to you the 1st of May [a line crosses out some words] a few days after poor Mrs Ellis was brought to bed of twins 2 months before her time and died the 15 of June, one of the children is likely to do well the other died a week after it was born. According to my promise I send you Linnaeus's Hort Cliffort which we esteem a most valuable work and deserving a place in your library."

Ellis's reference to his loss is a small, personal moment within a letter largely devoted to more wide-ranging, public concerns, such as colonial agriculture. In the abrupt juxtaposition of the death of his wife and child with his gift to Garden of Linnaeus's *Hortus Cliffortianus*, we see the explicit subordination of personal information to the natural historical goals of the letter, and another example of the ways such letters engaged with social formalities. Ellis does not elaborate on the circumstances of his wife's death or the status of his home life. For example, he also had a three-year-old daughter, Martha (b. December 1754), at the time (and in fact, the second twin died within a few months of writing this letter). Within the culture of natural history exchange, personal connection across geographical distance was established less through the expression of personal feelings and domestic details and more through questions about and responses to the natural objects and ideas elaborated in the exchange of letters.²²

Still, the distinction between the personal and the natural historical cannot be drawn too sharply. In one respect, Ellis's September letter gestures toward the way the personal merged with the natural historical: Ellis does not refer again to the loss of his wife and child, but several paragraphs later he writes, "I long to hear whether you have got the plant reckoned good for facilitating the delivery of women in labor among the Indians." Ellis's interest in the medicinal properties of plants reflects an early motivation--still prevalent although on the wane in the eighteenth century--for botanical exploration.²³ The comment also easily registers the presence of non-European participants in the project of botanical exploration, reflecting a desire to assimilate knowledge even as it absorbs "the Indians" into the intimate space of his exchange with Garden.²⁴ Ellis's poignant request for a kind of natural history knowledge directly connected to his own

recent experience with the difficulties and risks of labor inscribes the relation between the personal and the natural historical within the space of the letter.

Ellis's transition from the information about the death of his wife and child to the fulfillment of a promise made in the May letter to send Garden an important book by Linnaeus may seem abrupt, yet similar instances occur in other letters written by members of this transatlantic natural history network. For instance, Ellis informed Linnaeus, in some postscripts to a letter dated August 19, 1768, "I shall now endeavour to get some of the *Ustilago* to try that experiment fairly. Poor Collinson, our friend, is dead. My Lord Hillsborough has sent me some specimens of the wild nutmeg, with small fruit on them."²⁵ It is not easy to grasp why a reference to the death of Collinson should be squeezed between a comment on *Ustilago* experiments and an announcement about the acquisition of wild nutmeg specimens, or why reporting the death of a wife and child should lead to an offer of a book gift. One way to read such moments is to note again that Ellis's letters, like his postscript to Linnaeus that mentions the death of Collinson, are propelled by the material of nature.

Writers and recipients serving the eighteenth-century transatlantic natural history project agreed on their sense of purpose, which was the acquisition of knowledge and information about the natural world. As Garden says to Ellis, letters from correspondents were a "spur" to action, or, as he says in a letter to Linnaeus, he "viewed nature without a purpose" until he starting using the new taxonomic systems acquired through his epistolary exchanges. The transformations in prose style toward a "plain" natural style, reflected in Sprat and in letter manuals, offer one explanation for the oblique references to facts of personal history. The limited space of a sheet of paper offers another. Nature,

in all its material manifestations, drove their writing, and they dedicated the space of their paper to nature and knowledge.²⁶

Reading natural history letters, then, may not add significantly to the store of biographical data on little-known figures like Ellis and Garden, but it nevertheless opens up the crucial personal dimension to eighteenth-century transatlantic natural history pursuits. Ellis's request for natural history information relating to his personal loss illustrates the self-interest and personal motives that drove the disinterested pursuit of knowledge. Writers responded to natural objects in specific ways, even as they believed in the larger purpose of working toward the public good and the advancement of knowledge. Collinson, remember, pursued the importation of North American botanical specimens driven by a desire to improve the English landscape and advance the knowledge of plants, as well as by a passion for beautiful flowers.

Despite the convention of marginalizing the personal in natural history discourse, the requests and interests of naturalists were of course influenced by personal inclinations and circumstances, even by competition, as seen in Ellis's remark to Garden about his ongoing debate with Philip Miller in the pages of the *Philosophical Transactions* ("Mr. Miller has answered my letter in the Ph: Trans: to Mr. Webb about the Toxicodendrons. But I believe the answer I have given his will shew him, he had better been contented by acquiescing & confessing his mistake but obstinate self opinionated men will ever be subject to error").²⁷ Ellis's letters conveyed information designed for the public good as well as private hopes and sorrows, and in this, we glimpse another way natural history letters worked by contradiction.

The fluidity between public and private, between self-interest and disinterest, that was characteristic of Enlightenment natural history makes an explicit appearance in both of Ellis's letters in his attention to the subject of a provincial garden. His letters were not neutral vehicles of knowledge and information, but invested with many purposes. Ellis, working through the auspices of the Royal Society of Arts, was dedicated to the idea of establishing a provincial garden in the southern colonies. A provincial garden would be a site for experimenting with potentially useful and lucrative botanical productions; it would be a place to root mobile objects and to test ideas about colonial crop development. Ellis's September letter encapsulates the various motives driving natural history--trade, knowledge, different kinds of private and public interests, expanding communication--as he and his friends on both sides of the Atlantic worked to discover and categorize the natural world.

The subject of the provincial garden letter comes up briefly at the end of the May letter, when he says to Garden, "Let me know whether a provincial garden will be thought of for the making of experiments." In the September letter, he pursues the subject at length. Ellis begins by addressing Garden's constant anxiety about the fact that he did not have enough time (because of his medical practice and his ill health) to pursue his natural history interests and to collect specimens for his English correspondents. A provincial garden, created through an organized and collaborative effort in a centralized location, would alleviate the pressures on a single person to pursue such studies and collecting. Ellis directs Garden "to form a society" of individuals by appealing to their private and public interests, and, as is clear from the draft letter, he worked over this part of the paragraph.

First he wrote, "you must form a society of sensible and curious men who have some principles of true patriotism in them besides that [~~"just"~~] necessary regard to their own private interest." Ellis revised the phrase "who have some principles of true patriotism in them" to "who wish well to the Province in general," inserting this latter phrase above the earlier one. In the draft letter, these lines are circled. Directly below them, Ellis refined his point: "You must form a society of about 20 sensible men of consequence that are open hearted curious well wishers to the true Interest of the Province as well as their own private interest."

The change from "true Patriotism" to "true Interest of the Province" removes the motivation for the project from an abstract ideal of patriotism to a more personal connection to a local space, rhetorically linking the material interests of individuals to that of the Province itself. Indeed, the sense of mutual obligation--between private interest and the interest of the Province, between colony and "mother Country," between friends and correspondents--dominates the passage. The rhetorical connection between the material world and more abstract considerations is further emphasized in the repetition of the word "true," which links private interests to the interests of the Province, and which connects the value of a disinterested pursuit of knowledge about the Province (its "true natural history" and "true Situation") to the material benefits that would emerge from such knowledge: "By this means People here would know your true Situation and of what consequence you are to the mother Country and this of course would induce them to take a little more care of your Trade by sending you proper convoys in time of War."

Ellis's argument in favor of establishing a provincial garden offers another instance of how natural history investigations were dependent on, and in dynamic relation

with, commercial interests. According to Ellis, the creation of a provincial garden would promote transatlantic exchange, which would lead to increased knowledge about the colonies, which would lead to increased trade and security. The phrase "of course" assumes such progress, as well as a shared cultural approach with Garden. Thus Ellis not only attempts to persuade Garden of the strengths of the idea but to provide Garden with tools of persuasion to wield in his local community. The idea that a provincial garden could reveal "the true natural history of [a] country" represents an Enlightenment ideal--one to which Garden already subscribed--but the way Ellis links this ideal to the private interests of "20 sensible men of consequence" shows how the pursuit of knowledge for the public good was bound to private interests.

Ellis offers Garden his thoughts on the practicalities of establishing a useful society and provincial garden as well as on more general principles, and, in so doing, he inscribes the importance of letterwriting to the pursuit of natural knowledge: "In this society you must have a Secretary to carry on your correspondence, which you may open with the Premium Society and also with particular persons here, for great bodies move slow. It will be necessary to have private persons your correspondents besides who at the same time may do you the [] in taking care that your correspondence with our society has its due weight and is properly attended to." Ellis's model for the society he recommends is the Royal Society of London (Benjamin Franklin had already tried to transplant this model to the colony in the 1740s, and would succeed on his second attempt in 1767²⁸). Ellis emphasizes the vital link between natural history investigations and the methods and forms of communication, as Henry Oldenburg did in the first issue

of the *Philosophical Transactions*. The passage reads like a training manual, another kind of instruction passed on to distant colonies.

Ellis's advice on the need to address letters to "private persons" in addition to the Society at large points to the range of ways letters assisted in the acquisition of natural and useful knowledge. Throughout his letters, Ellis's use of the third-person plural (e.g., "We must instruct you to send us...some of your cochineal insects") expresses his position as a voice of the Royal Society of Arts (the "Premium Society"), illustrating how a personal letter from a "private person" speaks for a larger community. Yet, as he suggests, a large abstract body is not always able to attend to letters: "It will be necessary to have private persons...taking care that your correspondence with our society has its due weight and is properly attended to."

Ellis implies that in order for the information in a letter to carry "weight," it must have an advocate, and letters cultivated a sense of advocacy by building an ongoing relationship between two people over time, suggesting that the advancement of some forms of knowledge depended not on isolated figures in a laboratory or on the discussions taking place in regular meetings of societies or at coffee houses, but on the collaboration, mutual obligations, and freedom of thought given shape through the formal structure of letters and the formalities of epistolary exchange.²⁹ These letters mediated more than the geographical space between correspondents. They also mediated the contradictions inherent in eighteenth-century natural history--between public and private, between interest and disinterest, between self and community, between provisional and established knowledge.

Ellis's dream of establishing a provincial garden was never realized. In his response to Ellis's letter, below, Garden lays out some of the problems with the idea, counseling Ellis on the socio-political culture in the colonies and explaining why planters might resist the idea of launching the project. While Ellis stressed the importance of interpersonal connections in managing natural history exchanges ("great bodies move slow"), Garden stresses the importance of the government and its representative institutions for convincing individuals to participate in projects that may not immediately yield profitable results. This different emphasis encapsulates the distance between the Old World and the New. Here is Garden's response to the epistolary transaction opened by Ellis's two letters:

S. Carolina, Charlestown

Feb. 17, 1759

My Dear Friend,

Your two last letters of the 1st of May and 12th of September 1758 both lie before me. I most sincerely condole with you on your loss, and feel, with a heart full of grief, part of that sorrow and anxiety which must afflict you, on the melancholy situation of your family.

Since any of my letters to you can have come to your hands, I have received many marks of your esteem, and last by Captain White, I had your invaluable and truly grand present of the *Hortus Cliffortianus*. I never saw this superb and inestimable work before; neither do I believe that there is another copy in America, unless one which Mr. Clayton has in Virginia. Accept of my grateful acknowledgments for it; indeed this is almost all I can give. I am ashamed to have it so little in my power to send you many things that would be acceptable to you, and even what I have from time to time promised you; but I can sincerely assure you, that it is not want of inclination that prevents me. The method in which we are obliged to carry on our business of the practice of physic here, requires a constant and hourly attendance.

I must go regularly through your agreeable letters, but must first tell you what I wrote you by his Majesty's ship *Winchelsea*, Captain Hale, who had the misfortune to be taken, and thus the thread of my correspondence was broken.

First then, I enclosed a letter under cover to you, to Mr. Whitworth, which I left open for your perusal, as you expressed some satisfaction at a former letter to him on nearly the same subject. This contained some observations on our public affairs, and although the face of things in America be much altered since,

yet I have now enclosed another copy of it in this, and I hope you will excuse the trouble, and put a wafer in, after perusing it, and send it to him.

I sent you by captain Ball some specimens of our Cochineal plant, with some of the insect preserved in spirits, and some dried and put into a bottle. These I hope came to hand, and gave you satisfaction. I examined the insect, while alive, by your microscope, and found it answer pretty much to Dr. Browne's description, only what the Doctor takes to be the proboscis, is double in every one that I examined, and in some of them there is a long spiral filiform hair proceeds from the point of each proboscis. I did not observe this hair in all, but whether it be peculiar to some, or be the distinguishing mark of male or female, or whether I broke it off in taking away the cobweb-like substance, in order to see them, I cannot pretend to determine. In every thing else I think the Doctor's description seems just.

This is certainly the same species that we use in the shops. I imagine that the chief difficulty in collecting it is in cleansing away the cobweb. It is a prodigiously prolific creature, each of the females producing a vast number of eggs. The number I judge is some hundreds, and yet each of them seems large in proportion to the bulk of the mother.

The eggs are elliptical, quite smooth, shining, transparent, and of the same colour as the blood of the parent insect. You will observe that in powdering Cochineal there are always a number of small gritty particles, in which however the richest of the colour seems to consist; these are the eggs or young, and however big or large one of these insects may be, yet if it be not full of these eggs, the juice is of a thinner and more dilute colour, and will not give such a degree of tinge to paper. **[Appendix, Fig 14]**

As to the species of the *Opuntia*, on which they bred with us, I think it is different from that described by Dr. Linnaeus or Browne, for the kind that bears this Bug or Cochineal; and I am sure it is very different from Plukenet's draught, t.281. f 3d and 2nd, which Linnaeus refers to, and which Plukenet affirms to be the *Opuntia coccinellifer*.

Linnaeus says *Op. flore sanguineo* in one of his synonyms.--Ours is *flore flavo*. Linnaeus says *Articulis ovato-oblongis*--Ours, *Articulis obversè-ovatis*. Linnaeus says *Articulis subinermibus*--Ours, *Articulis spinis longis rigidis acutissimis munitis et penicillis spinorum urentium hinc inde in totam superficiem obsitis*.

In your last letter you desire me to give you an account of this insect, which I shall do if I live till the time, and God bless me with health; but the season in which I could best make myself acquainted with them, is the time that I am generally sick every year, that is, from the middle of May till about the middle of July. Indeed this situation was so irksome last summer, that it almost determined me to leave the province, and return to Europe. But, *forsàn et his quoque Deus dabit finem*. The above is a copy of what I wrote you on the Cochineal by the Winchelsea.

I shall be careful in sending Linnaeus some specimens next Summer, in the manner he desires.

I likewise sent you by captain Ball some specimens of a *Protea* or *Leucadendron* which I found here. Pray let me have your opinion of it.

The Pistachia nuts which you sent me never came up; but the Scammony, *Coloquintida*, and *Styrax* promise well.

In a former letter you advise me to send birds to Mr. Edwards; but I am unacquainted with this part of Natural History, and know very few of the birds which we have here, though there be an immense variety; however, if he will mention such as he wants that are in the first (for I have no more than the first) volume of Catesby, I will endeavour, and probably may easily be able, to procure them.

The scheme of the Provincial garden is truly noble, and has a prospect of answering a good and great end. It will no doubt be highly beneficial to the province, and may in time be useful to Great Britain. I will most cheerfully lend my little assistance, but after talking of this matter with several gentlemen, we all were of opinion that if it could be recommended by your Society to the governor, council, and assembly, it would take at once, and be carried into execution with great spirit and life: as we judged that such a thing being proposed by any person here would not have weight enough to determine them to think well of the scheme. For this reason I have mentioned it but to a few, because I thought, if you should approve of this method, it is better that it should come at once upon them, and I am morally certain, from what I know of the people, that it will be received with open arms and great applause, and the necessary steps, such as you recommend, will immediately be taken. There seems to be a kind of necessity to drive the dull part of mortals to their own happiness and welfare. The task is irksome, but the reflexion of having intended and promoted a general good is the superior reward.

There is one thing which I must beg of you if you can procure it, and that is, one of Mr. Ehret's draughts, such as he gives to the engraver. The gentleman who draws for me has begged me often to write to you for one, that he may regulate himself by the method he uses.

I come now to your two last letters. I never could get any seed of the red *Acacia*. It grows only about two or three feet high, bears quantities of fine flowers, all which drop soon.

I never saw any other than the tree Palmetto and swamp Palmetto, between which I know very little difference but in the size. The Palmetto Royal is undoubtedly different from the Yucca, as you will see by the Pericarp or fruit of the Palmetto Royal, which I have sent among the other seeds. This grows to about 12, 15, or 18 feet high, but the tree Palmetto on the sea side grows to 30 or 40 feet high without a branch, and bears a fruit just like the *Chamaerops*, or swamp Palmetto.

I hope Mr. Clayton's book will soon be published; it must be very useful. He will have an account of our Pink root in it. I have sent an account and description, with a draught of this, to Dr. Whytt. Though I added a botanical description, the design of the paper is chiefly medical. I cannot think that this is Browne's *Anthelminthia*, nor any way related to it.

What you write concerning Linnaeus desiring me to write to him, gives me great satisfaction. I gladly embrace the opportunity, and have written under cover to you. I beg you will forward these papers, after perusing and inclosing them. I have sent two copies of my letter to him, as I have done of this to you. I have sent him a copy of my characters of the *Ellisia*, which I have begged him to confirm in his genera, and give it the bishop's touch. I hope it will not reach him too late for the edition which he is now about. Please to offer my sincere respects to him, and hearty wishes for the continuance of his health and life, which are useful to so many.

I have inclosed a draught of the *Ellisia* to you, which I am persuaded you will be pleased with, especially when you consider that it was done in America. If it give you any pleasure, and if you allow me to call it *Ellisia*, I shall esteem the honour you do me in giving me an opportunity to testify, in some measure, the grateful sense I have of the obligations I lie under to you. I have not sent you a copy of the characters, because the letters to Linnaeus are left open, and you will find the characters there, which I think you should transcribe; and let me beg you will have the draught engraved as soon as you possibly can, for I am afraid of what you mentioned concerning the french having some of the plants raised in Paris, and as it is an annual, they may publish it first. Will it be necessary to send the draught to Linnaeus afterwards?

I must beg of you to send me half a dozen copies of this draught when it is done, for I confess I shall be proud of it, if it please you. I must send one to Mr. Colden, one to Bartram, and one to Clayton. Please to roll them round such a stick as silks are rolled on, for when they are folded they spoil greatly.

The seeds which I sent last year without names [referred to in Ellis's May letter] were such as I did not know, and whose fruit only I had seen. There are some this year which I do not know, marked *anonymos* or *ignotum*.

What you observe concerning the Madder is certainly true. It would do well here, but it will be in vain to think of driving the planters to any thing till they see it in a Provincial garden. Their seeing the things grow which may be proposed to them, will have more influence in determining them to plant them, than all the advice that could possibly be mustered up otherwise.

I have not seen a plant of the pinnated *Toxicodendron* these two years. I have not been in the country for that time, but when I was sick, till yesterday, when I brought home some branches of a tree that I do not remember to have seen; it is an *Octandria* or *Decandria Digynia*, *calyce colorato octofido*. I have inclosed a small sprig to you, and one whose fruit is better formed, and more forward; pray let me have your opinion of this, what it is; it has some affinity to the *Chrysosplenium*, and some to the *Ulmus*, but differs greatly from both at the same time.

I have written frequently to governor Ellis as you desired. I sent him specimens of the *Halesia*, *Beureria*, and red *Robinia*, and a long catalogue of the common and Indian names of what I know you want.

There are many things in your last which I cannot possibly answer just now, but will write to you soon again. The *Salsola*, *Anabasis*, *Mesembryanthemum*, *Atriplex*, *Salicornia*, grow in the greatest plenty on our

sandy coasts, so that any planter living nigh the coast might, if he would, make the experiment of the Barilla. I must beg one of Ehret's cuts of the fine double white flower, which you mention from the Cape of Good Hope. It appears grand in description, and truly deserves the name of *Augusta*.

I have sent you a small parcel of the flower with which the Indians dye red. It makes a surprisingly bright scarlet colour, which I myself have seen done without any other apparatus than just pouring boiling water on the herb for about half an hour, and then dipping the feather or wool amongst it. It never will wash out again. A lady procured this for me, but she unluckily mentioned her design of giving it to me to be sent over the great water, as they say, and as soon as they knew this they formed many excuses for not gathering it at all, and could not at last be persuaded to gather any, till the frost came, which destroyed its bright dyeing quality. This they knew well it seems before, but they think that when they communicate any of their knowledge to the white people, the plant or herb immediately loses its wonted virtue, and for this reason it is difficult to procure any thing from them. I send you this only, that you may examine the flower, and let me have your opinion of it. Try its dyeing quality. What is in the small paper I have had by me two years. I am yours, &c.

Alexander Garden

I have sent you a small dry specimen of *Ellisia* inclosed in the *Ellisia* draught; and I have sent you the only specimen which I have of the Loblolly Bay: this must not be called the *Gordonia*. Name it yourself, or let Linnaeus name it.³⁰

Garden was more of a prose stylist than Ellis. This letter exhibits more figurative language, more complex sentence structures, and more rhetorical flourishes than either of Ellis's two draft letters. This stylistic difference (which holds up throughout their exchange) is apparent from the letter's opening. I want to return to the issue of the formalities entailed in such openings in order to illustrate the link between the temporal ambiguities of the letter form and the dynamic purposes and processes of epistolary natural history.

Garden's letter represents a specific writing experience, since it is located in time ("Feb. 17, 1759") and space ("S. Caroline, Charlestown"). At the same time, Garden places the letter in temporal and spatial continuity with Ellis's "two last letters." These commonplace epistolary formalities open rhetorical space for social formalities, as

Garden goes on to condole with Ellis on the death of his wife and child, and to thank him for the gift of the *Hortus Cliffortianus*.³¹

Both gestures, while fulfilling social obligations, also attempt rhetorically to bridge the geographic distance between them: "I most sincerely condole with you on your loss, and feel, with a heart full of grief, part of that sorrow and anxiety which must afflict you....Since any of my letters to you can have come to your hands, I have received many marks of your esteem, and last by Captain White, I had your invaluable and truly grand present of the *Hortus Cliffortianus*." The material letters--Ellis's two letters to Garden and the letter Garden is writing to Ellis--mediate the emotional and physical distance between "a heart full of grief" and expectant "hands."

These social gestures propel the content and the purpose of Garden's letter, signaled by his claim that he will "go regularly" through Ellis's letters of May and September 1758, both of which "lie before [him]." But before Garden can "go regularly" through Ellis's letters, before he can address the many and varied subjects raised in those letters, he felt compelled to repeat information he had conveyed in an earlier, lost letter. As he says, "[I] must first tell you what I wrote you by his Majesty's ship Winchelsea, Captain Hale, who had the misfortune to be taken, and thus the thread of my correspondence was broken." These two phrases--"go regularly" and "thread of my correspondence"--reflect assumptions about the reading and writing practices of epistolary natural history, assumptions that shed light on the contradictory ways the mobile, provisional letter form participated in the project of stabilizing knowledge of nature.

Garden's desire to restore the "thread of [his] correspondence" draws on a metaphor that suggests his sense of the internal coherence of their epistolary exchange through time. The "misfortune" that broke the thread was most likely a result of the Seven Years' War, which was underway when Garden wrote this letter and which left English ships vulnerable to French attack. Ellis referred to this vulnerability in his September draft letter, when he suggested that educating the English public on the natural history of the American colonies would encourage a greater public investment in securing and protecting the trade ships crossing the Atlantic.³² Garden's desire to restore the "thread of [his] correspondence" offers another example of how such uncertainty and flux affected the epistolary practices of naturalists. Here, for instance, Garden explicitly summarizes the content of an earlier letter, probably by copying directly into this new letter from a draft or copy of the lost letter. As he says, "[I] must first tell you what I wrote you by his Majesty's ship *Winchelsea*."

Garden begins ("I must first...First, then...") by informing Ellis that in the earlier letter shipped on the *Winchelsea* he had enclosed, under cover to Ellis, a letter addressed to Mr. Whitworth.³³ Even though a good deal of time has passed and the circumstances of the letter to Whitworth are out of date, Garden nevertheless encloses a copy of that letter and reiterates his invitation that Ellis read the letter before sending it along to Whitworth. Next, Garden reports that he had sent "by captain Ball" some samples of the cochineal, proceeding to repeat his observations on the insect and the opuntia (the host plant for the cochineal). Garden's natural history description of the cochineal and the opuntia goes on for six paragraphs, and concludes with the framing sentence: "The above is a copy of what I wrote you on the Cochineal by the *Winchelsea*."

Garden's efforts to maintain the "thread of [his] correspondence," despite the contingencies of exchange, were not unique to naturalists, of course; all letters were subject to miscarriage. However, the sense of purpose in advancing knowledge and the public good shaped Garden and Ellis's ongoing epistolary dialogue. Thus before Garden could address the various matters Ellis raised in the May and September letters, he must first repeat information contained in the lost letters, information that Garden had but that Ellis did not yet have. Indeed, the repetition of the word "first," rhetorically setting up his backward glance over the material, suggests Garden's attention to the chronology, in terms of both the writing of this specific letter and the epistemological and empirical endeavors of their ongoing exchange. Only with the lost information restored could their epistolary conversation proceed most productively. Garden was invested in the information and observations he had conveyed in the earlier lost letter about the "public affairs" in America and about the cochineal insect, and he wanted to make sure they existed as part of his exchange with Ellis, for self-interested and disinterested reasons.

The idea of restoring the "thread of...correspondence" expresses the value of the natural history work conducted in every letter, since the work accumulates through time. Copying information contained in an earlier letter (as Garden says, "The above is a copy of what I wrote you on the Winchelsea"), along with repeating requests and ideas as we saw in Ellis's May and September letters, were writing strategies that stabilized the exchange of information despite the contingencies of transatlantic travel. The sense of contingency attendant on epistolary exchange was in some ways a productive factor in the expansion of natural knowledge, because it inspired a formal practice of continuously processing and sifting matters of natural historical importance.³⁴

Whereas Garden's reference to the "thread of my correspondence" points to a writing practice, his assertion that he must "go regularly" through Ellis's "agreeable letters" highlights a reading practice, or, more accurately, a relation between his reading and writing. The phrase "go regularly" suggests a forward, chronological momentum to the epistolary transaction. Letters are rooted in time, with their customary date above the salutation, and it is this chronological specificity that made it possible for recipients to track information and requests through time--in other words, to follow the "thread of...correspondence."

However, this illusion of forward momentum was belied in practice. In fact, the work of epistolary natural history in the eighteenth century was fluid, dynamic, and nonlinear. Garden's use of his letter copy to summarize and restore information to his exchange with Ellis offers one example of these traits: when letters miscarried, writers must return to material written weeks or months earlier, and they must refer to information that they may already have superseded. (As Garden says regarding the Whitworth letter, "although the face of things in America [referring to local politics] be much altered since, yet I have now enclosed another copy of it in this.") The formal opening of a letter--including the date and the salutation and the expression of social obligations--invokes and enters into a temporal process that looks both forward and backward in time.³⁵

Likewise, epistolary conclusions bear a sense of uncertainty and abruptness, despite the formalities of the closure ("I am yours, &c"). Indeed, letters often concluded in response to forces external to their content, such as the amount of space left available on the sheet of paper or the imminent departure of a ship. Garden, in his long letters,

sometimes refers to keeping a letter "open" for several days at a time, while he waited for a ship to depart, writing new paragraphs when he had news to report or the time to sit and reflect on natural history matters. There was no real conclusion to an ongoing natural history exchange, in part because of the epistolary form--in which each salutation is a summons to a response--and in part because of the purposes and motives driving men like Garden and Ellis to further exploration and exchange.

Garden's attention to Ellis's two letters of May and September offers another example of the nonlinear, fluid quality of epistolary natural history. Garden dated his letter February 17, 1759 with these two letters "before [him]," an image that captures the material representation of their epistolary dialogue. He says, "I come now to your two last letters," suggesting that now that he has restored the information from the lost letters he can "go regularly" through the most recent letters. But in responding to Ellis's two letters, Garden does not take them one by one, nor does he strictly follow the order of subjects as laid out by Ellis. Despite his comment that he must "go regularly" through Ellis's letters, Garden follows his own inclinations, moving back and forth between Ellis's two letters and his own copy book, sifting out specific bits that interested him or that spoke to his experience, and writing his letter in a cumulative way.

Reading Garden's letter in relation to Ellis's two draft letters thus shows how an ongoing epistolary discussion shaped the writing of a specific letter, affirming the social aspect of scientific advancement and its basis in personal interests--even if those interests were cast in light of the public good. The topics Garden addresses had in many cases been raised by Ellis, if not in the May or September letters then in earlier letters. For example, Garden attends to Ellis's queries in the May and September letters about the

palms and yucca, about Clayton's book, about having Linnaeus as a correspondent, about the "Ellisia," about seeds he had sent, about the Madder, about the Toxicodendron, about the death of his wife, about the provincial garden, about the cochineal and opuntia, about the Barilla, about the red acacia and robinia, and about the Beureria.

Many of these topics receive only scant attention from Garden, and Ellis raised some topics that Garden doesn't touch on at all in this letter, such as the swamp laurel, Jane Colden and John Bartram, olives, the swamp magnolias, whether or not the natives have a plant to help with childbirth, and several others. In following the "thread" of correspondence, some subjects just seem to drop away. Still, even though Garden says he doesn't have time to address all the subjects raised by Ellis's letters--"There are many things in your last which I cannot possibly answer just now, but will write to you soon again"--the dialogic impulse shapes the form. The list of subjects indicates how reading Ellis's letters organized Garden's writing. Ellis speaks in his letters, and Garden speaks back. Garden acknowledges this dialogic aspect explicitly at times: "In your last letter you desire me to give you an account of this insect..."; "In a former letter you advise me to send birds to Mr. Edwards..."; "I come now to your two last letters"; "What you observe [in the May letter] concerning the Madder is certainly true"; "I have written frequently to governor Ellis as you desired." These rhetorical traces of Garden's reading and writing emphasize the organic growth of natural history information through epistolary exchange, as an "I" responds to a "You."

This organic growth represents one reason why letters made such good vehicles of natural history. The collaborative dialogic quality of epistolary discourse facilitated the work in ways that were not incidental but integral. Indeed, the dialogic aspect of the letter

form trained naturalists in how to testify to their knowledge and describe their response to nature through empirical methods (a subject I explore in detail in the next chapter). In a letter, one speaks to another person directly, creating an imperative to articulate a position clearly even while employing a provisional rhetorical style. The writing of letters--which nurtured an awareness of one's reader/audience, an openness to new ideas, and an acceptance of contingency--reinforced empirical methods of observation, investigation, and description, and cultivated an awareness of nature's dynamism, mutability, and variety.

Garden's response to Ellis's queries about the palms illustrates the organic growth of knowledge through the dynamic practices of epistolary exchange. Ellis suggested in his May letter that the palm samples Garden sent were "no more than the tree yucca." This subject had in fact come up in earlier letters. Garden had first sent the specimen to Ellis in January 1756, at Collinson's request. Garden had declared it a new genus and suggested that it be named "Schlosseria" or "Halea" or "Huxhamia."³⁶ Sometime that year, Ellis must have written to say that he believed the specimen was a yucca, because in January 1757, Garden had sent samples of the "Fruit of the Palmetto Royale which I called Huxhamia or Schlosseria & the fruit of the Yucca foliis filamentosis both in a box that you might compare them together & see the great Difference." (This shipment, sent with Captain Cheeseman, apparently miscarried.) In May 1757, Garden had written to Ellis at length about the difference between the two plants and defended his claim that the palm sample was a new genus, despite the fact that Linnaeus had sided with Ellis on the matter.³⁷

When Garden picks up the subject of the palm in his letter of February 1759, three years after their first exchange on this plant, this epistolary history would have been in his mind. Once again, Garden disagrees with Ellis's claim that the palm is "no more than the tree yucca" and provides further evidence justifying his position:

I never saw any other than the tree Palmetto and swamp Palmetto, between which I know very little difference but in the size. The Palmetto Royal is undoubtedly different from the Yucca, as you will see by the Pericarp or fruit of the Palmetto Royal, which I have sent among the other seeds. This grows to about 12, 15, or 18 feet high, but the tree Palmetto on the sea side grows to 30 or 40 feet high without a branch, and bears a fruit just like the *Chamaerops*, or swamp Palmetto.

We might imagine that Ellis's epistolary comments dismissing the classification of the palm sample again spurred Garden to return to "the Pericarp or fruit of the Palmetto Royal" in order to reevaluate his claim. Both men are responding to natural objects--those that Garden has seen growing in the ground as well as those seeds and samples he set in motion across the Atlantic. Their difference of opinion about the classification of the specimen, which could perhaps have been resolved very quickly in person if they examined the seeds and talked through the issue, took several months to be explored in letters (in 1760, in what may be the last mention of the subject, Garden maintained his doubts about Ellis's insistence that the Palmetto Royal was a yucca: "Now I would beg to know why the Palmetto Royal and Yucca, which have fruits so very unlike, should nevertheless be both Yuccas. I confess this puzzles me").³⁸ The temporal lags of epistolary exchange thus slowed the progress of knowledge.

Nevertheless, each moment of epistolary expression about the classification of the specimen represents a building block of natural knowledge. Such exchanges highlight how letters both reflected and reinforced eighteenth-century notions of empirical investigation, such as the importance of direct observation and openness to other opinions

in the interest of correct knowledge, as correspondents inspired and pushed each other to refine and confirm their information and observations.

At the same time, this ongoing epistolary discussion suggests why letters have a subordinate status as documents of natural history. This story, like so many others in epistolary natural history, does not have a clear ending. Some researchers say that if they are right about what plant Ellis and Garden are referring to as the "palmetto royal," Garden's position would prove correct.³⁹ But because there is no easy way to ascertain the "facts" of the case, such emphasis on empirical outcomes misses the important rhetorical transactions embodied in this debate. Read as evidence of specific ways of thinking rather than as preliminary clues to verifiable results, natural history letters quite explicitly enact the "underlying process" of scientific investigation in hypothesis, induction, and openness to disproof.

Information in letters seems stable--Garden seems certain that "The Palmetto Royal is undoubtedly different from the yucca"--but every letter is an invitation to a response, and this reciprocity, specific to the letter form, cast a quality of fruitful contingency over the content of letters. Indeed, the contingencies, provisionalities, and artificial conclusions inherent to the form reinforced an awareness of the abundance and variety of nature, even as naturalists worked with and toward an idea of order.

Eighteenth-century naturalists were not only or primarily motivated by abstract ideals of achieving correct knowledge, of course, and one reason the letters of Ellis and Garden and Bartram and Collinson are so compelling is that they often reveal the grounded personal motivations for empirical investigations. One of the most prominent was the privilege of naming, or being named for, a new botanical genus. From almost the

beginning of their epistolary friendship, Garden aspired to find a new plant genus to name in Ellis's honor. In eighteenth-century botany, discovering a new genus (or being credited with discovering a new genus) was the pinnacle of achievement, and the excitement about new natural objects expressed in epistolary natural history was linked to an eagerness to name new objects.⁴⁰ There was a classical tradition of naming plants after people, but Linnaeus gave this practice new life with the publication of *Critica botanica* (1737) and *Philosophia botanica* (1751), making it an integral part of his system. Indeed, it was a strategic move to spur discovery, but the figurative power of attaching plants to persons, deliberately confusing the difference between them, took root and found expression in letters (as in Collinson's imaginative assimilation of his garden trees and his correspondents, mentioned in the last chapter).⁴¹

The earliest reference to Garden's efforts to baptize a new specimen in Ellis's honor appears in a letter dated December 24, 1755.⁴² Garden had been reading Linnaeus's *Species plantarum* for the first time, and believed that Linnaeus had lumped together too many distinct species. In response, Garden suggested to Ellis that Linnaeus separate "our yellow Jessamy," "which is absolutely a new genus," from the genus *Bignoniae*, and dub it *Ellisiana*.⁴³ Garden pursued the matter in letters to Ellis, Whitworth, and probably others, but Linnaeus was not convinced that the "yellow Jessamy" was a distinct genus. While Garden did not yield in his opinion that his original specimen was not a *Bignonia*--"It differs in the Calyx, Corolla, Stamina, Pistilla, Pericarp, &c and very essentially in each and every one of them"--he was willing to defer to Linnaeus's authority and thus in May 1757 he proposed instead "a plant which is entirely new, and the most superb lofty

plant that ever I met with in America, which I shall beg leave of you to accept as a name-sake."⁴⁴

The three letters under discussion here document Garden's efforts to have this "new, and...most superb lofty plant" named for Ellis. Ellis mentioned the specimen (now referred to as "Ellisia") in both of his letters, and his excitement about a potentially new specimen was no doubt augmented by Garden's desire to name it after him. Ellis was keen to receive more information about the plant from Garden, saying in May, "I am obliged to ["you," word missing] for your very great compliment you pay me in naming N 17 after me. I wish you had sent me a description drawing or specimen of it for you raise both my vanity and my expectations by your description of it," and in September, "Pray send me some seeds of [your Palms & Palmettos] and the plant you were pleased to call Ellisia and if possible a drawing or specimen of it."

In his February response, Garden obliged. He sent Ellis a drawing ("draught") of the specimen, and wrote, "I have not sent you a copy of the characters, because the letters to Linnaeus are left open, and you will find the characters there, which I think you should transcribe." These paragraphs attest to the importance of epistolary work to the progress of botanical classification, in Garden's reference to the various textual practices he and Ellis must engage in to further their goal. He advised Ellis to "[peruse]" his letter to Linnaeus,⁴⁵ to review and "transcribe" the botanical character description intended for Linnaeus, and to "have the draught engraved as soon as you possibly can." Here again, we see the value of the private function of letters, even as the form reached beyond one recipient, in the epistolary practices of sharing information and keeping it mobile. Ultimately, of course, Garden's goal was to stop the dynamic movement of information

about the “Ellisia” and to have it fixed or rooted in a more permanent way, by being published in the latest edition of Linnaeus's *Species plantarum*.

Garden's sense of excitement and urgency derived not only from his desire to succeed in naming a plant for Ellis but also from a concern that his work be made public as soon as possible, since only then would the claim be made fact. Linnaeus's acceptance of the plant as a new genus under the name “Ellisia” was the most important way to give Ellis "a species of eternity," as Collinson described it; having the drawing engraved and published represented another way the botanical object could achieve fame, for a drawing also "fixed" the specimen. Once the plant was placed in Linnaeus's system it would forever "testify," as Garden says, to his "grateful sense" of his "obligations" to Ellis. It would stand as a permanent testament to their friendship, since his name would be linked to the name “Ellisia” as its discoverer. And the honor he does Ellis would return in some way to him, not only within systems of classification but also, more locally, in having a visual representation of his connection to Ellis to give to his New World friends. As Garden says, "I confess I shall be proud of it."

Despite Garden's efforts to build a persuasive case, Linnaeus again was not convinced that the plant Garden dubbed “Ellisia” was a new genus, and he classified it as a *Swertia*. Again, Garden wrote grumbling letters to Ellis and more flattering letters to Linnaeus attempting to win the point, but to no avail. Although later research confirms that Garden was correct in designating the plant a new genus, it does not bear the name “Ellisia.” Garden failed in his quest to name a plant in Ellis's honor, and, as with his work on the palms, his work on the “Ellisia” did not produce the results he wanted. Garden's work dramatizes the way information conveyed in a letter was historicized--in that it was

located in a specific act of writing--and contingent--in that it was still part of a process of moving toward accepted verified knowledge.

Even so, writers, especially in the New World, could receive approbation from the community of the curious for information and claims made in letters, even though much of the information was still provisional and yet to be authorized. Garden's claims about the palm and the "Ellisia" are stable within the context of his letter, even though they never found permanent stability in a larger system of classification or a public record. And yet, of course, empirical investigation and intellectual work more generally is always full of misdirection, false starts, fruitless labor. In this regard, epistolary work shaped ways of thinking in response to contingency that both reinforced and reflected the empirical methods of the new science.

* * *

I began this chapter by asking two questions: how were letters written and read as vehicles of natural history information in the eighteenth century? and, what particular features of the form made it suitable to the needs of eighteenth-century naturalists? The reading and writing practices I have described here--the writing of letters in response to letters received; the interplay between writing a letter, reading other letters, reviewing reference books, and copying information out of a letter book; the place of the personal in pursuing specific interests as writers responded to the desires of their correspondents; the tendency to sift out information to respond to, letting some topics fall by the wayside; the openness of letters to a larger community; the capacity for long-term discussions, as writers built up and refined their information--all contributed to the usefulness of letters to advancing both natural history knowledge and methods in the eighteenth century.

More important, these reading and writing practices highlight the unique force of the dialogic as a feature of the letter form: it established obligations; it provoked a desire to please and impress recipients; it spurred people to action; it forced writers to be attentive to their recipients as an audience; it allowed for an informality that nurtured a freedom of thought and speculation and methodological experimentation; and it relied on an ongoing traffic of letters, which lent a formal integrity to natural history exchange.

The idea that form shapes thinking is not new. However, the looseness and adaptability of the letter form, which conveys an excess of information in an associative, provisional manner, makes it a peculiarly useful and also challenging site for exploring the connection between form and content. As I have tried to show, reading and writing letters deepened Garden's and Ellis's personal engagement with the natural world, enriched their understanding of empirical methods, and expanded their curiosity. The contingent, provisional quality of epistolary natural history engendered a dynamic way of thinking, ensuring that the natural world remained open--despite the impulse conventionally associated with the Enlightenment to quantify and classify and categorize, and despite the presence of still-powerful epistemological assumptions about nature's stability. As Garden and Ellis invoked information from other letters and sources in the process of reconsidering it, as new objects were discovered, as hypotheses were laid out, their understanding expanded. Ultimately, the active features of the form inscribed the transformation in the idea of nature from stable and ordered to dynamic and mutable.

¹ Edmund Berkeley and Dorothy Smith Berkeley, *Dr. Alexander Garden of Charlestown* (Chapel Hill: The University of North Carolina Press, 1969), 8-26. Other references to Garden's place in early American natural history include Margaret Denny, "Linnaeus and His Disciple in Carolina: Alexander Garden," *Isis* 38, no. 3/4 (February 1948): 161-174; Stearns, *Science in the British Colonies of America* (see chap. 1, n. 3); Richard Beale Davis, *Intellectual Life in the Colonial South, 1585-1763*, Vol. 2 (Knoxville: The University of Tennessee Press, 1978); Albert E. Sanders and William D. Anderson, Jr., *Natural History Investigations in South Carolina from Colonial Times to the Present* (Columbia: University of South Carolina Press, 1999); Ellen Valle, "'The Pleasure of Receiving Your Favour': The Colonial Exchange in Eighteenth-Century Natural History," *Journal of Historical Pragmatics* 5, no. 2 (2004): 313-336.

² Smith, *Correspondence of Linnaeus*, 362-363 (see intro., n. 5), hereafter cited as *CLO*.

³ Ellis's publications include *Essay Towards a Natural History of Corallines* (1755); *Directions for Bringing over Seeds and Plants* (the 1770 edition contained an appendix describing the Venus Fly-Trap; the 1771 edition contained an appendix on "The Method of Catching and Preserving Insects for Collections"); *The Historical Account of Coffee* (1774); *Natural History of Zoophytes* (published posthumously 1786); and several publications in the *Philosophical Transactions*. He was awarded the Copley Medal by the Royal Society of London. Additional though limited biographical information appears in Ray Rauschenberg, "John Ellis, F.R.S.: Eighteenth Century Naturalist and Royal Agent to West Florida," *Notes and Records of the Royal Society of London* 32, no. 2 (Mar 1978): 149-164; Julius Groner and Paul F. S. Cornelius, *John Ellis I: Merchant, Microscopist, Naturalist, and King's Agent and II. A Biologist of His Times* (Pacific Grove, CA: The Boxwood Press, 1996).

⁴ Oldenburg laid out the importance of communications to "the Grand Design of improving Natural knowledge, and perfecting all Philosophical Arts, and Science[,] All for the Glory of God, the Honor and Advantage of these Kingdoms, and the Universal Good of Mankind" in the first edition of the *Philosophical Transactions* (6 March 1664/5). See Marie Boas Hall, "Oldenburg and the Art of Scientific Communication," *British Journal for the History of Science* 2, part 4, no. 8 (December 1965): 288.

⁵ Thomas Sprat advocated for the benefits of a plain, undogmatic style in his *History of the Royal Society* (1667). Robert Boyle had elaborated similar ideas a few years earlier in *Certain Physiological Essays Written at Distant Times, and on Several Occasions* (1661): "And...as for the style of our Experimental Essays, I suppose you will readily find that I have endeavour'd to write rather in a Philosophical than a Rhetorical strain, as desiring, that my Expressions should be rather clear and significant, than curiously adorn'd...And certainly in these Discourses, where our Designe is only to inform Readers, not to delight or perswade them, Perspicuity ought to be esteem'd at least one of the best Qualifications of a style, and to affect needlesse Rhetorical Ornaments in setting down an Experiment, or explicating something Abstruse in Nature, were little lesse improper than it were (for him that designs not to look directly into the Sun it self) to paint the Eye-glasses of a Telescope, whose clearness is their Commendation, in which ev'n the most delightfull Colours cannot so much please the Eye as they would hinder the sight." Quoted in Alan G. Gross and Joseph E. Harmon, eds., *The Scientific Literature: A Guided Tour* (Chicago: The University of Chicago Press, 2007), 36. One of my goals in this chapter and the next is to trace this mode of expression in transatlantic natural history correspondence, in combination with other characteristics of the letter form.

⁶ Andrea Rusnock, "Correspondence Networks and the Royal Society, 1700-1750," *British Journal of the History of Science* 32, part 2, no. 113 (1999): 168. Rusnock is responding to a tradition of scholarship that sees the eighteenth century as a despondent period in English scientific advancement, a decline from the accomplishments achieved by Hooke, Boyle, and Newton. Marie Boas Hall charts this evolution in *Promoting Experimental Learning: Experiment and the Royal Society, 1660-1727* (Cambridge: Cambridge UP, 1991) by citing the decrease of public experiments and the increase of reading reports and excerpts from letters, a trend reflected in the pages of the *Philosophical Transactions*. In the same period there was

an explosion of cultural interest in natural history, reflected in the increase of popular periodicals devoted to natural history subjects.

⁷ Greg Myers, *Writing Biology: Texts in the Social Construction of Scientific Knowledge* (Madison: University of Wisconsin Press, 1990), 25. Charles Bazerman describes private and semi-private letters as a convenient, expedient way for scientists to "develop problems, claims, arguments, and evidence" before presenting them for publication, in *Shaping Written Knowledge: The Genre and Activity of the Experimental Article in Science* (Madison: The University of Wisconsin Press, 1988), 143. Recent directions in scholarship focus on the social and collaborative aspects of the advancement of knowledge in the eighteenth century, which is inscribed in the epistolary process. Still, the interesting problem of how to value epistolary work persists. See, for instance, Gross and Harmon, *The Scientific Literature*.

⁸ See Altman, *Epistolarity* (see chap. 2, n. 57). Decker describes some of the paradoxes of epistolary discourse, noting that there is something fundamentally "unbounded" and unstable about it: "In its intersubjectivity, its habit of quotation, its liquid form, its propensity to act as a solvent in its contact with other genres, the letter, perhaps more than any other form of writing, enacts a recognition of the tendency of language to leak from established placements into the interstitial space of informal occasion, trial and error, play, and reinvention." *Epistolary Practices*, 35-36 (chap. 2, n. 20). Decker's description captures the quality of dynamism I elaborate here, offering a useful way of thinking about how such an unbounded discourse participated in the project of organizing and categorizing objects of and responses to the natural world in the eighteenth century.

⁹ I have not been able to determine the exact year Garden and Ellis made their acquaintance, but 1754 or 1755 seems likely, given the March 1755 date of the first published letter in *CLO* and the date (19 March 1755) of Garden's election as the "first colonial correspondent" of the Royal Society of the Arts, founded in 1754 by William Shipley, a correspondent of Garden's. Stearns, *Science in the British American Colonies*, 600.

¹⁰ Ellis Papers, Notebook 1, 6-7. Courtesy of the Linnean Society of London. I have transcribed Ellis's two draft letters. Where I am uncertain about the transcription, I have included possible words in square brackets; a question mark after the word signals my attempt to hazard a guess about the word; no question mark signals my relative certainty about the transcribed word or phrase. I have also included descriptions of what the manuscripts look like in square brackets, in an attempt to convey a sense of the material object. Note that Ellis's character descriptions of the plants he refers to, sent to him by Jane Colden and John Bartram, are also in Notebook 1. The two pages after the descriptions are a draft letter to Linnaeus dated 25 April 1758 (printed in *CLO*, 90) that includes the character descriptions of the plants, and then two pages after that is the May draft letter to Garden that mentions his work with the specimens.

¹¹ Altman, *Epistolarity*, 122-124.

¹² Steven Shapin elaborates the importance of civility, as defined by codes of gentlemanly conduct, to the activities and exchanges of the Royal Society in the late seventeenth and early eighteenth centuries, highlighting the connection between style and credibility, in *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago: The University of Chicago Press, 1994). Joseph Chaves's dissertation, *The Domestication of Politeness, 1711-1784* (2003), describes the dissemination of politeness in the eighteenth century, offering a useful way of considering how modes of politeness were imported into, and perhaps exported out of, the realm of natural history.

¹³ *CLO*, 167 (19 July 1765).

¹⁴ Irmischer, *Poetics of Natural History*, 23 (see chap. 1, n. 29); Parrish, *American Curiosity*, 140 (see chap. 2, n. 7). Parrish sees this "broken writing style" as reflecting and capturing the miscellany of nature itself, and as further evidence of the truth-value of the writing as regulated by ideals of friendship and candor (140-149).

¹⁵ In *Epistolary Practices* (10), Decker refers to the peculiar way letters assimilate and are assimilated by other genres.

¹⁶ For example, Garden wrote to Cadwallader Colden on 14 March 1758: "I have a real & sincere satisfaction in seeing truth gain ground, but you have not been the first whose works have been Denied the Countenance of the English Society; They Appear to me to be either too Lazy and indolent to examine or too conceited to receive any new thoughts from any one but from an F.R.S." *Letters and Papers of Cadwallader Colden*, 5:228 (see chap. 2, n. 28).

¹⁷ Madder is the common name of the genus *Rubia*. *Rubia tinctorum* is also known as "Common Madder." The roots are the source of a red dye known as rose madder.

¹⁸ Parrish explores this issue in *American Curiosity* (169-173) through the framework of gift-giving.

¹⁹ Ellis Papers, Notebook 1, courtesy of the Linnean Society of London (see n. 10). Note that some passages from this letter are excerpted in Spencer Savage's invaluable *Catalogue of the Manuscripts in the Library of The Linnean Society of London*, part iv, Calendar of the Ellis Manuscripts, The Correspondence and Miscellaneous Papers of John Ellis, F.R.S. (London, 1948), 51.

²⁰ Fredric Hasselquist (1722-1752), student of Linnaeus, traveled to Palestine at Linnaeus's urging, reaching Smyrna in late 1749; he visited Asia Minor, Egypt, Cyprus, Palestine, making large natural history collections; he died near Smyrna on his way home from fatigue; his natural history collections survived and his notes were published in 1752, appearing in English in 1766 as *Voyages and Travels in the Levant, in the Years 1749, 50, 51, 52*.

²¹ Theorists of the epistolary form suggest that an awareness of its futility is always present in the epistolary act. Eighteenth-century scientific letters represent such concerns through frequent expressions of frustration, anxiety, or hope. Yet despite an awareness of the distance from fellow correspondents, a sense of futility in the face of numerous obstacles is rarely evident, reflecting, perhaps, the fact that their relationships were often only embodied in letters. Eighteenth-century naturalists did not write to one another in an attempt to bridge the gap arising from the distance; rather, they wrote because of, and capitalized, on that gap. Their letters were not trying to overcome absence but distance.

²² In *American Curiosity* (especially chapter 4), Parrish describes the affective, fraternal bonds between correspondents, mediated by and through nature itself. The sense of distance between correspondents inscribed by the letter form was a characteristic of the familiar letter, in which one's character was revealed not through an unfolding of emotion and self-awareness but through the description of events external to the self. Evidence of a shared culture was important to crafting familiar letters, and the shared culture here was nature itself. Natural objects and facts took the place of allusions to Milton and reports on common acquaintances or descriptions of a recent trip. One similarity is the density of description, a peculiar feature of the English letter-writing tradition in the eighteenth century, according to Altman (*Epistolarity*, 194). See also Howard Anderson and Irvin Ehrenpreis, "The Familiar Letter in the Eighteenth Century: Some Generalizations" in *The Familiar Letter in the Eighteenth Century* (see chap. 2, n. 57); Konstantin Dierks, "Letter Writing, Masculinity, and American Men of Science, 1750-1800," *Pennsylvania History* 65 (1998): 167-198.

²³ Richard Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World*, (New Haven: Yale University Press, 2000), 26-27.

²⁴ Several scholars, including Kathryn H. Braund, Hallock (see chap. 2, n.11), Karen Ordahl Kupperman, Parrish, Shiebinger (see chap. 1, n. 22), and Timothy Sweet, have described the expansive networks of natural history exchange constituted by relations between European and non-European peoples in the conquest and exploration of the Americas.

²⁵ *CLO*, 234.

²⁶ This principle emerges explicitly when authors censor their writing, either because the subject matter is not appropriate (such as politics) or because they believe their ideas are too rough and unformed to be of use and interest to their correspondents.

²⁷ "Two Letters Concerning Toxicodendron" (Abbe Mazeas; James Parsons; Philip Miller), *Philosophical Transactions* 49 (1755-1756): 157-166; "A Letter from Mr. John Ellis, F.R.S. to Philip Carteret Webb, Esq. F.R.S. attempting to ascertain the Tree that yields the common Varnish used in China and Japan; to promote its Propagation in our American Colonies; and to set right some Mistakes Botanists appear to have entertained concerning it," read November 25, 1756, *Philosophical Transactions* 49 (1755-1756): 806-876; "Remarks upon the Letter of Mr. John Ellis, F.R.S. to Philip Carteret Webb, Esq. F.R.S. Printed in the *Philosophical Transactions*, vol. xlix, part ii, p 806, by Mr. Philip Miller, F.R.S.," read December 15, 1757, *Philosophical Transactions* 50 (1757-1758): 430-440; "An Answer to the Preceding Remarks. By Mr. John Ellis, F.R.S.," read January 19, 1758, *Philosophical Transactions* 50 (1757-1758): 441-456. Ellis refers to an ongoing debate with Philip Miller taking place in the pages of the *Philosophical Transactions* concerning the classification of several species of Toxicodendron. Some species of this genus produce a dye or varnish, a fact that intrigued naturalists, but Ellis and Miller disagreed over the matter of classification and culture, over which species produced the best dye, and over which species grew in which parts of the world. Miller, Head Gardener of the Chelsea Physic Garden, was the established authority while Ellis was still a relatively young member of the community, having been inducted into the Royal Society in 1754 and having yet to make any significant contribution to natural history. Each man had

something at stake in his personal reputation as a botanist, but this fact is largely implicit in their public letters, as they emphasize what is at stake in terms of correct knowledge and the public good by considering the viability of a potentially lucrative colonial crop. A comment in a letter to Linnaeus dated 21 July 1758 indicates how preoccupied Ellis was with the issue: "I am sorry to disagree with Mr. Miller, but he has an opinion that he knows better; and in a Public Society, I think, no man should advance any thing for certain truth without he is sure of it; but as it would be too long to give you an account of the whole of this controversy, I must refer you to our Philosophical Transactions, which I suppose you have in your Academy. As soon as this China Varnish tree produces any blossoms, I will send you a specimen. I must own it is only conjecture in me to call it a *Rhus*. I called it so, because he had supposed it to be one, and from the habit and manner of its growth" (*CLO*, 98).

²⁸ Stearns, *Science in the British Colonies of America*, 670-674.

²⁹ Rusnock argues in "Correspondence Networks" (156; see n. 6) that the collaborative work of correspondence constituted a distinct "scientific method."

³⁰ *CLO*, 428-436.

³¹ As Decker writes in *Epistolary Practices* (95), in relation to the issue of self-consciousness in epistolary style, "The most extraordinary communications are frequently prefaced, and thus made possible, by the most commonplace beginnings." While writers like Emerson and Dickinson may adapt the stock conventions of the genre, Decker argues, most writers in nineteenth-century America accepted them "as part of its condition, and instrumental in articulating epistolary relationships."

³² The French captured 19 out of 21 ships that sailed from Charleston in January and February 1767.

Stearns, *Science in the British Colonies of America*, 607.

³³ Charles Whitworth (ca.1721-1778), elected VP of the Royal Society of Arts on 2 February 1755. *Oxford Dictionary of National Biography*.

³⁴ This is yet another point of comparison between the mobile botanical object and the mobile epistolary object. The copy of the Whitworth letter was a companion to this letter, just as it had been a companion to Garden's earlier letter. Lost plants and lost letters were re-sent, in an ongoing process.

³⁵ Altman, *Epistolarity*, 117-118; 122-124.

³⁶ *CLO*, 365-366 (13 January 1756); at the end of the letter (370), Garden says that he has included a character description of the plant.

³⁷ *CLO*, 396-398 (6 May 1757). This letter is an engaging read because Garden draws on his sense of the difference between the two specimens to criticize Linnaeus's methods. But Ellis remained skeptical (*CLO*, 461; 25 August 1759).

³⁸ *CLO*, 465-466 (13 January 1760).

³⁹ Berkeley and Berkeley write, "If we are correct in thinking that the plant in question was that presently known as *Sabal palmetto* (Walt.) Todd., it not only belonged to a different *genus*, but a different family and order as well" (*Dr. Alexander Garden*, 111). Stearns repeats this information almost verbatim in *Science in the British Colonies of America* (609).

⁴⁰ Garden wrote to Colden on 14 January 1755: "In a Letter from the Ingenious *Huxham* he greatly regrets that Botanists should attend so much to the Nomenclature of Plants & so little to their own virtues & Qualities, had they done this says he their observations would have been of more generall use to mankind. I entirely join issue with him if we consider Botany as subservient to Medicinal purposes, but I imagine most Botanists study it (at least in its greatest extent) as a Branch of Naturall History & I doubt not too for the advancement of *Analogy & Comparative Anatomy*, in both which it is certainly of the greatest & most singular use. He would have Botanists not only remarking the Species of each plant but also the nature as far as possible, of each individual for this I think he is extremely right." *Letters and Papers of Cadwallader Colden*, 5:2 (see chap. 2, n. 28).

⁴¹ Parrish observes the confusion between plant and person effected by botanical nomenclature in *American Curiosity* (171). For information on the resurgence of interest in naming plants for people in the eighteenth century, see James L. Larson, *Reason and Experience: The Representation of Natural Order in the Work of Carl Von Linné* (Berkeley: University of California Press, 1971); Schiebinger, *Plants and Empire*, specially chapter 5 (see chap. 1, n. 22).

⁴² *CLO*, 357.

⁴³ Berkeley and Berkeley note that Garden sent a description of the "yellow Jessamy" to Ellis in March 1756 and that in April 1757 he discussed it in a letter to Whitworth. Also that "...the Yellow Jessamy to

which he referred seems to be that presently known as *Gelsemium sempervirens* (L.) Ait.f." (*Dr. Alexander Garden*, 75).

⁴⁴ *CLO*, 395-396 (6 May 1757).

⁴⁵ Garden wrote a letter to Linnaeus dated 30 November 1758 (*CLO*, 290-302) that includes a character description of the "Ellisia"; Garden flatters Linnaeus and the importance of his system throughout the letter ("nature can certainly do much more without learning, than learning without nature").

Chapter 4

John Ellis, Carl Linnaeus, and a Botanical History of the *Gardenia*

Study, that Botany may always be turned to some beneficial purpose.

--Carl Linnaeus to John Ellis, December 8, 1758¹

System is Ariadne's clew for botany without which all [the kingdom of plants] is chaos.

--Carl Linnaeus, *Philosophia botanica*, aphorism #156

On April 8, 1761, John Ellis wrote a letter to Alexander Garden in which he passed on some exciting news:

I received your very kind letter of the 20th November by Capt. Strachan, and am as much pleased with the very fine collection of seeds you sent me, so curiously preserved, as you can be with the *Gardenia*. Linnaeus has actually adopted it among his new genera, which will be published in his *Addenda*; and the Royal Society, which still makes it more public here, has ordered my account of it to be printed. I gave in Linnaeus's characters, with those of the *Halesia*; and it will surprize people when they know that a nurseryman, James Gordon, in less than three years, has made L500 from four cuttings of a plant. Every body is in love with it, and you may depend on having a plant of it from me; for as it is a double flower, besides being the native of a warm climate, it produces no seeds here.²

Thus did Alexander Garden in Charleston, South Carolina, learn that his friend Ellis had successfully named a new plant genus in his honor.

I begin this story at its apparent conclusion in order to reflect on Ellis's glee in Linnaeus's "adoption" and the subsequent publication of the *Gardenia*. In this chapter, I want to examine the epistolary processes by which a mobile botanical object took its place in the universe of fixity represented by Linnaean classification. Letter writing, as I have tried to show in previous chapters, was a mode of discovering order in and imposing order on nature, as naturalists described their increasing familiarity with and knowledge of the natural world. The provisional quality of epistolary discourse assisted in this process, keeping information moving as naturalists refined their empirical methods of observation and analysis, and engaged in ongoing discussions about natural phenomena.

Here, I want to return to the idea of what constitutes an ending in epistolary natural history, looking at how the knowledge and information moving through private letters stopped being provisional (or at least appeared to stop being provisional). Letters moved fluidly between private and public spheres, but publishing information gleaned from an ongoing epistolary correspondence signaled a kind of ending, as suggested by Ellis's excitement that the newly adopted *Gardenia* was to be published and printed.

The relationship between the epistolary form and public assertions of knowledge is further complicated by the fact that the letter form was often the medium for making such assertions. There is an important distinction between public letters--crafted for publication in, say, the *Philosophical Transactions*--and private letters--written between two correspondents, like Bartram and Collinson or Garden and Ellis, who maintained an ongoing epistolary relationship through time--but the distinction is slippery.³ Public letters, for instance, were written for a public purpose, even though they emerged in part from the empirical and rhetorical work conducted through private epistolary processes. Likewise, private letters mediated the distance between a specific writer and a specific reader, even though elements of private exchanges were frequently shared with other readers and excerpted for publication.⁴

The letter form thus served several functions in the process of moving natural history information into the Enlightenment public sphere; an interpersonal exchange of letters could help establish matters of fact, and the letter form could then be used to publish those facts.⁵ This formal ambiguity suggests another reason why letters are considered both crucial to and subordinate in the history of scientific forms,⁶ and holding

onto such distinctions, even as they fold into one another, illuminates the specific rhetorical and formal accomplishments of epistolary natural history.

One way to contextualize the public/private dichotomy in relation to epistolary natural history is to note that even as naturalists were refining their methods and vocabularies throughout the eighteenth century, more and more lay people were at the same time reading and talking about natural history, and the letter form played an important role in conveying natural history information to those readers. The public shape of epistolary natural history in the periodical press is an informative context for the dynamic transatlantic epistolary exchanges of Garden and Ellis or Bartram and Collinson I have discussed thus far.

During the eighteenth century, there was a steady increase in the publication of natural history information, reflected in the burgeoning growth of periodicals dedicated to natural history and targeted to both a broad public audience and an increasingly specialized audience. The *Gentleman's Magazine* showed the most growth, especially in the 1750s and 1780s, but the trend was evident in the *London Magazine*, the *Scots Magazine*, the *Monthly Review*, and the *Critical Review*. Geography was the most popular subject in mainstream periodicals (as opposed to the *Philosophical Transactions*), followed by botany and zoology.⁷

Natural history established a presence in the Enlightenment public sphere, but a gradual process of specialization would eventually divide the reading public. The following passage, from a letter Peter Collinson wrote to the French naturalist Henri-Louis Duhamel Du Monceau dated March 6, 1763, reflects an awareness of this emerging split:

Wee have too many Magazines in England and yett they are of Publick Utility.

Subjects that are too trivial to appear in the Transactions, & yett of use & proper to be known, are communicated all Over England & America (that is possessed by us) in the Gentlemans Magazine, to which I am perswaded my Friend DuHamel is no Stranger. I send the Inclosed that you may read my Observation on the Peaches & Nectarine growing together and another Letter signed Harrison on the Numerous Nests of Insects that Load the Trees & Bushes with advice to Destroye them in Time before they spread their Legions of Devourers.

To these Little Essays I never subscribe my Name, because I do not Love Popularity, but sometimes I add a fictitious name.⁸

Collinson's description highlights not only the importance of presenting natural history information to the public, but also the reliance on the letter form as a medium for such information. In the *Philosophical Transactions* and the *Gentleman's Magazine*, entries frequently began with a polite address to the editor and were signed by the author, whether using a real or fictitious name.

Collinson's assertion that he does not "subscribe" his name because he does not "love Popularity" reflects a self-conscious disinterestedness typical of the period, but it also shows an awareness of the differences between periodicals, and their differing audiences. He could not use a fictitious name in his contributions to the *Transactions* since the work of the Royal Society was steeped in gentlemanly codes of conduct, including a belief that the value of a claim was to some extent determined by the status and character of the person who made it. By contrast, the *Gentleman's Magazine* functioned as a "monthly collection, to treasure up" information from various sources for public benefit (to use its founder Edward Cave's words). This goal released its editor somewhat from observing protocols for methodological and rhetorical rigor, such as those solidifying at the Royal Society, including the link between knowledge and "knowledge-producer."⁹ The difference between the readers of the *Transactions* and the

readers of the *Gentleman's Magazine* reflects a difference between the Fellows of the Royal Society and the members of the Society for the Encouragement of Arts and Manufactures, between an emphasis on theoretical concerns and on "Publick Utility."¹⁰

The adoption of the *Gardenia* was not a subject "too trivial to appear in the Transactions." Its public appearance, in a letter from John Ellis to Philip Carteret Webb, affirmed the importance of the epistolary form, and of epistolary processes, to the project of classifying the botanical world and, in so doing, revealing nature's order. The mobility of plants was of course a precondition for this work, and here I use the dynamic between public and private epistolary processes to show how a notion of fixity and endings--represented by Linnaean classification and by publication--motivated botanical exchanges. Indeed, the pleasure of uprooting and transporting plants was sustained by an equally powerful pleasure in ordering plants and fixing them in place. Let me now go back to the beginning of the story of the *Gardenia*.¹¹

* * *

Near the end of Garden's February 1759 letter to Ellis, discussed in the last chapter, he says, "I must beg one of Ehret's cuts of the fine double white flower, which you mention from the Cape of Good Hope. It appears grand in description, and truly deserves the name of *Augusta*" (*CLO*, 435). This "fine double white flower" had long intrigued Ellis. He had first mentioned the plant to Linnaeus in a letter of April 25, 1758, in a passage describing James Gordon's skills as a gardener, remarking that "we have got a rare double Jessamine from the Cape, that is not described; this man has raised it from cuttings, when all the other gardeners have failed in the attempt" (*CLO*, 93). Three months later, Ellis wrote to Linnaeus with the news that "Mr. Collinson, Ehret, and I were

the other day at Mr. Warner's, a very curious gentleman, at Woodford near this City, to see his rare plant like a Jasmine, with a large double white flower, very odoriferous, which he received about four years ago from the Cape of Good Hope" (*CLO*, 99).

Ellis did not here relate how Warner received the plant, but the story--another example of the mobility of botanical objects--is recorded in other sources. One early account was written by the gardener and botanist Thomas Knowlton, who wrote the following description in a letter to Richard Richardson dated November 13, 1750:

The 6th of October, I had a kind letter from Richard Warner, Esq. of Woodfoot Race, who has offer'd me the fine Bay-Leaved Jasemin, Miller has figured. It last summer was twelve-month flower'd for the first time in his stove, where it was brought to him by Captain Hutchison, an East-Indian man. In his return he call'd at the Cape of Good Hope for refreshments, and took a ride out into the country for a day's journey; and in his way was most wonderfull surprised by a fine smell, and looking round, spied a large double white flower which it come from: the next day he went with two sailors and a box, took it up and planted it, and brought it to his friend, Mr. Warner, who is the onely one has it; but to whome he communicated it. And, what is wonderfull, the Dutch know nothing of it; and the said gentleman has maid me an offer of it, and any plant in his garden duplicated and seeds, which I might have had down directly, but have put it off till the spring, as being safer, &c.¹²

Knowlton's 1750 account indicates that Ellis was most likely incorrect in his claim (in 1758) that Warner had received the plant "about four years ago," and such chronological confusion was an inherent aspect of the work of botanical collection and exchange.

Nevertheless, Knowlton's words in 1750 suggest that Ellis's enthusiasm in 1758 for the "rare plant like a Jasmine" was not unwarranted, since such enthusiasm was already a part of the plant's history in England. Indeed, both Knowlton and Ellis highlight an aesthetic response to the plant, singling out its particular beauties in terms of scent and appearance. Such an aesthetic response, in fact, drove Ellis's desire to classify it, a goal he pursued through empirical investigations.

During Ellis's visit with Ehret and Collinson to Richard Warner's estate, Warner gave Ellis a "specimen" of the flower--"about four inches across from the extremities to the limb"--"to dissect." Classifying the plant depended on dissecting it and giving a detailed description of its parts. Before providing Linnaeus with a rough character description of the specimen, Ellis tells him that Philip Miller had described the plant as a Jasmine "in his Dictionary now publishing, and in his figures of Plants"¹³ (*CLO*, 99). This would not have been an incidental piece of information. Miller was doing more than any other individual in England to publish botanical information about newly available plants, and the fact that he had already published the specimen under the name "Bay-Leaved Jasemin" (as Knowlton referred to it) would have conveyed some information to Linnaeus about the structure of the plant. Still, Ellis's comment that the specimen is "*like* a Jasmine" (my emphasis) points to the way the project of classification moved forward by relying on the provisional and analogical qualities of plant nomenclature.

In fact, botany is composed of these two components--classification and nomenclature--and Ellis's first provisional character description followed Linnaeus's method by analyzing the fructification of the plant specimen, which includes both the parts of the flower (calyx, corolla, stamen, pistil) and the parts of the fruit (pericarp, seed, receptacle).¹⁴ Describing these structural elements made it possible to place the specimen in the system, which was Ellis's purpose in crafting his first character description of the "fine double white flower"¹⁵:

As [the specimen] is a double flower, the stamina, in many, grow into the sections of the petal; but this year it grows more vigorously, and the parts of fructification have appeared more distinct, especially in the specimen he gave me, where, upon opening the tube, I discovered six stamina adhering by the filaments to the inside of it, supporting as many antherae; three of the antherae were united together, but easily to be separated. These stamina corresponded to the same number of

sections of the limb. The style has three stigmata, and is united to the germen, which is placed under the receptacle, and contains above 40 very small seeds, which, magnified, looked like the acini of a Rubus. The calyx has six alae or angles, at equal distances, which end in so many erect foliaceous pointed denticles. Sometimes the limb of the flower is divided into five segments only, and then the stamina are but five, and the alae of the calyx are but five, and the stigmata but two. There were three rows of petals or sections in my specimen, six in each row. Mr. Warner by my desire dried a specimen for you last year, which Mr. Collinson sends you now, but I hope to get you a specimen where the parts of fructification are more distinct. (*CLO*, 100)

There is a formal imperative to this passage. Ellis drew on the vocabulary of classification, and its descriptive requirements shaped the movement of his prose. One requirement was enumerating the parts of the plant: Ellis saw "six stamina...supporting as many antherae....The style has three stigmata....The calyx has six...angles," and so on. Enumerating each part was crucial because underlying Linnaeus's method is the idea that two plants that mostly agree in the structure of their flowers and fruits are related.¹⁶ His system--still relatively new to English naturalists in 1758--deployed terminology and principles that had been in use for a long time, but in new ways, simplifying and streamlining the process.¹⁷ The specifics of fructification, gleaned from observing a single specimen, determined the placement of the plant in his system of classification. Ultimately, the numbers and the description should allow Linnaeus, or anyone, to place the specimen in relation to other plants.

Still, despite Ellis's methodical description of what he "discovered," the passage conveys a good deal of provisional information characteristic of epistolary natural history. Some contingencies were rooted in the quality of the specimen itself. For example, early in the passage Ellis highlights the complications arising from the fact that the specimen is a double flower, which made it difficult to distinguish the parts of fructification ("*this year* it grows more vigorously, and the parts of fructification have

appeared more distinct, *especially* in the specimen he gave me" [my emphasis]). The passage also draws attention to another, more fundamental, uncertainty with regard to classifying the specimen properly: "*Sometimes* the limb of the flower is divided into five segments only, and then the stamina are but five, and the alae of the calyx are but five, and the stigmata but two" (my emphasis).

Ellis followed methods of empirical observation, describing features of the plant that would cause them some difficulty in ascertaining the plant's genus. His willingness to attend to these differences--to open them up as subjects for discussion--illustrates one of the benefits of epistolary natural history: letters were a good place to sort through information before presenting it to the larger public, because, as I discussed in the last chapter, the open-ended, dynamic quality of epistolary exchange kept information mobile and in flux. The letter form, as used in this private or quasi private way, was a good place to test and elaborate ideas in pursuit of correct knowledge.¹⁸

Ellis's goal, of course, was botanical knowledge of the "fine double white flower." His attention to the issue of nomenclature highlights another benefit of the private exchange of letters, in that it could serve self-interested aims in the disinterested pursuit of knowledge. After writing out his description of the specimen, Ellis turned to the nomenclature issue, indicating that he suspected the specimen was not in fact a Jasmine: "If you find this plant to be no Jasmine, but an undescribed genus, you will oblige me in calling it *Warneria* after its worthy possessor" (*CLO*, 100). In making this request, Ellis once again opposed Philip Miller's opinion.

As I mentioned in the last chapter, Ellis had ongoing conflicts with Miller. In perhaps his first letter to Linnaeus, Ellis had written "Though our Mr. Miller is a good

gardener, he is of opinion that he is a most excellent botanist, which all the world will not allow him," before describing briefly his exchange with Miller then underway in the *Philosophical Transactions* regarding the Toxicodendron (*CLO*, 84). That was a public debate, but soon after confronting Miller publicly in the pages of the *Transactions*, Ellis privately confronted Miller in this letter to Linnaeus by disputing Miller's claim that Warner's plant was a Jasmine. And Linnaeus would have to evaluate these different opinions.

A few days later, on August 1, 1758, Ellis wrote again to Linnaeus, and this time the content of the letter concerns the "Warneria" exclusively. He launches into the subject immediately, with no preliminaries: "Sir, I wrote to you a few days ago, and sent you a drawing of the dissection of a curious Plant, called by Mr. Miller a Jasmine" (*CLO*, 100).

[Appendix, Figs 15 and 16] Ellis goes on to say that in the intervening time, he had received another specimen of the plant, with a more "[perfect]" seed vessel.

This letter does not represent the miscellaneity of epistolary natural history, but rather illustrates how the form could be used to convey a focused report. Ellis describes his examination of the new specimen in order to confirm and refine his initial character description:

I called in Mr. Bierken to be present at the dissection, to assist me, and to testify to you what we observed. Upon opening the tube we found no stamina; but the style, instead of being one as described in my last letter, we found to be three distinct ones, each having a fleshy stigma and sitting on the germen, which we found divided into three loculaments, so that the base of each style was inserted into the top of each loculament. When we separated the germen from its place, the valves adhered to the hard spongy substance that inclosed them; these valves we examined in the microscope, and found to be of a strong fibrous or ligneous substance.

The reason why in this specimen the styles should appear separate, and joined in the former, is, because there were not stamina in this last, and therefore

the styles had room to grow distinctly in the tube, being not so much compressed.
(*CLO*, 101)

In his first description, Ellis did not draw conclusions, but simply attempted to convey in declarative language what the various parts of the specimen looked like in relation to one another and their number.

In this passage, his tone is not only descriptive but also speculative. Ellis treats his examination of the specimen, with Mr. Bierken to "assist" and "testify," as if it were an experiment: observable, verifiable, reproducible. Mr. Bierken's presence allows Ellis to write confidently about their dissection, with the validity of their results conveyed rhetorically in the use of "we" and in verbs that show their empirical methods at work ("we found...", a phrase that highlights their objective position as observers simply reporting on how the object looked; "we separated..."; "we examined...", both phrases that convey the action of investigation). In reading Ellis's description of the dissection, then, Linnaeus could become a "virtual witness" to the examination.¹⁹

More than the first description, this paragraph provides a sense of the action of observation, as Ellis draws on the tools (microscope), methods, and language of experiment to describe his observation and dissection of the plant. The passage reflects rhetorical conventions of reporting experiment--such as mentioning witnesses and describing the action of the examination--that were established, if still evolving.²⁰ The fact that Ellis's description was constituted by the dialogic form of the letter kept the information mobile and provisional, even as he used the private exchange with Linnaeus to sharpen his language and deepen his understanding of the specimen.

The object of analysis itself evoked and necessitated such rhetorical refinement and specificity, illustrating the way epistolary exchange nurtured greater familiarity with

plants and, by extension, with nature itself. The more Ellis looked at the specimen, the more concrete it became for him as an object. At the same time, the more he looked at it, the more he noticed gaps between his descriptions of the plant and the plant itself. As he compared his first dissection to his second, he discovered differences that he tried to account for. For instance, in the first description he noted that the specimen had one style with three stigmata. By contrast, the second specimen had three styles, each with a stigma. The work of botanical classification entails determining what is essential to a botanical object, and, in conveying such variability, the passage displays Ellis's proper engagement with the process.

Ellis's application of empirical methods and language to the work of botanical classification illustrates some of the challenges of that work in England in the 1750s. The experimental successes of Boyle and Newton nurtured a belief in the repeatability of experiment: a chemical or physical process--say, storing electricity in a Leyden jar--should be repeatable so that anyone could perform the experiment and produce the same results for themselves.²¹ Botanical classification was a different sort of endeavor, and Linnaeus's system, along with the descriptions generated for each botanical object, in some sense constituted the work of experiment. Indeed, his system contributed to the elevation of botany in the period, making it more rigorous, more specialized, more than just an effort to fill Bacon's "storehouse." Ellis's epistolary descriptions of his dissections, then, are not simply background to the work of classification; they *are* the work of classification.

Accounting for variability was one crucial element of this work. Ellis's attention to the differences between two specimens taken from the same plant reflects his effort to

close the gap between the concrete objects of analysis and an abstract system of classification. His sense of purpose derived in part from a belief in the stability and order of nature, even as he grappled with differences. In his private exchange with Linnaeus, Ellis could elaborate such differences in the process of working toward placement.²² His personal letters were an experimental testing ground, as he observed and wrote about a botanical object that was both concrete--he had seen it growing in a garden, he had placed its flower under a microscope--and unknown--its place in nature's order was yet to be determined.

The epistolary form, linking the amateur in London with the authority in Uppsala, mediated the interplay between the abstract rules of classification and the concrete specificity of natural objects. Here again, the dynamic, dialogic features of the form moved the process forward, not only negotiating differences of opinion but also allowing naturalists to recognize contingency, even while they worked toward certainty. What we see in eighteenth-century epistolary natural history is how a fluid form contributed to stabilizing botanical knowledge, using a classification system that, for all its apparent rigidity, was itself fluid and in flux.

Still, despite the various uncertainties he laid out, Ellis concluded the letter by asking Linnaeus to send him the character description as he intends to publish it, assuming he agrees that the specimen represents a new genus. Ellis's request highlights the imperative to publish and the necessity of private letters to accomplish that end. Linnaeus, the recognized authority, would ultimately control matters of classification and publication, and, in his letters, Ellis appropriately defers to Linnaeus's authority, even as he conveys his investment in the issue. Indeed, he expresses his investment primarily in

the matter of nomenclature: "Mr. Warner begs of me to write to you not to call it *Warneria*, and therefore I shall desire the favour of you to call it *Augusta*; a name, I hope, you will think highly suitable to the magnificent appearance of so elegant a plant, and in doing this you will much oblige, Your most obedient servant" (*CLO*, 101-102).

The juxtaposition of Ellis's objective description of his dissection with Mr. Bierken with his request for a nomenclatural "favour" that "will oblige" him illustrates how the conventions of the letter form advanced the work of botanical classification. Ellis's letter moves fluidly between the scientific and the personal, between the formalities of experiment and the formalities of letterwriting, right to its conclusion, as Ellis's nomenclatural request slides into a conventional epistolary farewell. Indeed, both formalities exerted a mode of restraint on correspondents that enhanced interpersonal communication and furthered the goals of natural history investigation.

Attaching a name to a specimen may seem like a less rigorous project than defining its character, but they were bound up in the same purpose. Naming a new specimen, as I discussed in the last chapter, was a privilege, and the process often produced noticeable interpersonal tensions.²³ Ellis's letters give us a glimpse of what was at stake for him in this matter: not only contributing to the advancement of botanical science by describing a previously undescribed and rare specimen, but also the satisfaction of having named "so elegant a plant."

What seems to be Linnaeus's first epistolary comment on the specimen appears in a letter dated September 29, 1758, in which he informs Ellis that is "cannot possibly be a species of *Jasminum* or *Nycanthes*, if the fruit be a capsule with many seeds" (*CLO*, 103).²⁴ He goes on,

I wonder that the pistil should be in three divisions, as Miller represents a single cloven one. May I be allowed to insert the character of this genus, on your authority, in my System, as I am unable to make it out myself? I have, in the letter to Mr. Warner, which accompanies this, requested him to inform me whether the young branches are milky or not, when broken. Be so good as to procure from him a speedy answer. (*CLO*, 103)

Linnaeus's remarks highlight the collaborative work ferried by letters: based on Ellis's claim that he had observed forty seeds in the seed capsule, Linnaeus declares the plant cannot be a Jasmine; and based on Ellis's claim that there are three pistils (which Ellis calls by a synonym, "style"), he questions Miller's visual representation of the plant in his book.

At this point, Linnaeus's assertions about the plant were grounded primarily in language, in Ellis's epistolary descriptions of an object that Linnaeus had not yet seen. And while Ellis provided concrete information about the mathematical proportions of the specimen, the object would still have been, in some sense, abstract, a fact that seemed to cause Linnaeus some anxiety. Linnaeus's suggestion that he would be placing the character in the *Systema* "on [Ellis's] authority" demonstrates his uncertainty about the plant's character as well as a bit of discomfort with the prospect of including a plant in his *Systema* that he had not examined. Linnaeus's concern with correctness was not just about accuracy, but was also about protecting his reputation, a concern that appears again toward the end of the letter: "Favour me with your determination, as soon as possible, whether I am to publish the character of the *Warneria* as you describe it; that is, with a three-cleft style, and a germen of three cells with many seeds" (*CLO*, 104). Again, Linnaeus put the onus on Ellis to determine whether or not the specimen, "as you describe it," was ready to be presented to the public.

Inserting and publishing a character description in the *Systema* authorized it, eliminating the provisional quality of the classification process still in play in their epistolary exchanges. Linnaeus's letter thus illustrates the way the imperative to publish affected the work and conversations conducted in a private exchange of letters. The aspiration to publish was held in check by a concern for the facts of the matter, and as Ellis and Linnaeus wrote back and forth to one another, they pushed each other to further examination, to look again, to be conscious of their role in the advancement of knowledge about a particular botanical specimen. Publication required (as Linnaeus suggests in his letter) "authority," but in the private space of one-to-one epistolary exchange, doubts and questions could be discussed.

Ellis's next letter (October 24, 1758) emphasizes the value of the dialogic form, as he responds directly to the reservations and questions Linnaeus raised in his September 29 letter. He begins with a conventional epistolary address--"I have the pleasure of your favour of the 29th Sept, and am very glad you received the letters I sent you"--and then immediately launches into a summary of their work on the plant thus far. His recapitulation does more than simply ensure that he and Linnaeus are working with the same information. It also begins to shape their work on the plant into a story, to interpret observations and information gathered thus far, and to report on this effort in botanical classification.²⁵ Such a narrative act helps to jog memory, given the time that elapsed between writing and receiving letters as well as the numerous other objects under their study. Ellis's summary also indicates how they were responding to the ongoing work, keeping the subject open, provisional, in process. As such, it can perhaps be seen as a

rhetorical effort to influence Linnaeus's response to the work, with the goal of publication always in the background.

Ellis writes,

My letter of the beginning of August gave you an account of the dissection of Mr. Warner's Jasmine by Dr. Bierken and me, wherein we found three distinct styles, each style sitting on a loculament, so that we plainly could, without glasses, perceive three loculaments full of seeds, of a roundish form, about 30 or 40 in each. The valves which adhered to the spongy substance of the pericarpium appeared to be hard and fibrous; and when they were separated from the seeds, we could plainly discover the partitions or *parietes* that formed the several loculaments. This account I sent to Mr. Warner at the same time that I sent you my last letter, but he has desired me to write to you to beg you would not call it *Warneria*, and which I believe I did in my last letter. I believe he is convinced that it differs from the Jasmine; but he has such an esteem for Mr. Miller, that he would not appear to differ from him in so capital a plant by adopting another name. Mr. Ehret is now engraving an elegant plate of it, and I suppose will give a dissection of it, and intends to call it by a name of his own, for we agreed when we examined only the stamina and styles at Mr. Warner's together, that it was by no means a Jasmine.

The lobes of the Corolla are obliquely bent, which I have never seen [in] a Jasmine. There is but one flower on each small branch. It is not in the least milky. I carefully examined both the leaves, branches, and flowers, and could not perceive the least lactescent appearance when I cut them. In those flowers, where the stamina appear, there are as many of them (generally) as the lobes of the corolla. When the flowers come out first in summer, if the weather is warm, they have six divisions or lobes; but towards the latter end, the blossoms are smaller and the lobes but five. So that I believe it is Hexandria Trigynia, though most of the flowers have but five lobes. (*CLO*, 104-106)

Ellis invokes and clarifies his earlier descriptions in order to assuage Linnaeus's doubts about his epistolary reports and the object itself. He addresses the two troubling factors Linnaeus raised in his letter: the discrepancy in the number of stiles, and whether or not the specimen produces many seeds. He also responds in the negative to Linnaeus's query about whether the stems produce a milky substance. The back and forth of epistolary exchange allowed him to refine his assessment, and he works hard in this letter to provide Linnaeus with rhetorical "evidence," drawing on the language of empiricism: "I have

carefully examined"; "we plainly could, without glasses, perceive..."; "we could plainly discover..."; Mr. Ehret--who was engraving "an elegant plate of it"--"agreed...that is was by no means a Jasmine."

These phrases show the visual imperative of the "new science" at work. Ellis presses his point, using phrases such as "we plainly could...perceive" and "we could plainly discover" to suggest that the facts are self-evident. His empirical observations and position within the natural history community affirm the truth-value of his report.²⁶ And again, Ellis supports the objectivity of this evidence by indicating that it is not his alone--he was accompanied, at various points, by Dr. Bierken, Mr. Warner, and Mr. Ehret, and their observations confirmed his analysis. In this way, the writing of letters rhetorically performed and repeated the work of observing and identifying the fructification parts of the specimen. (Ehret published his "elegant plate," as Ellis calls it, labeled "*Jasminum ramo uniflore, pleno, petalis cariacis*," in 1759 in *Plantae et Papilliones rariores*, a beautiful collection of engravings of plants and butterflies.²⁷) [**Appendix, Fig 17**]

Ellis's primary interest was in getting Linnaeus to confirm beyond a doubt that the specimen was not a Jasmine. Even the new information he adds--that "the lobes of the Corolla are obliquely bent"--is presented to demonstrate that fact. Ellis both wants to be proven right--that the plant is a new genus--and wants to prove Miller wrong--that the plant is not a Jasmine. In order to justify his opinion further, he offers more information about Mr. Warner's wariness about having the plant named for him: "I believe he is convinced that it differs from the Jasmine; but he has such an esteem for Mr. Miller, that he would not appear to differ from him in so capital a plant by adopting another name" (*CLO*, 105).

Ellis's remark draws attention to the way personal relations informed the work of botanical classification and, specifically, the practice of naming plants for people. Ellis suggests first that Warner's reluctance to accept the name "Warneria" emerges from loyalty to a personal relationship--Warner's concerns, Ellis hints, are based solely on his "esteem for Mr. Miller," who at that point had not yet adopted Linnaeus's methods. This personal information rhetorically served Ellis's larger claim that the plant was not a Jasmine, by emphasizing that Warner's reluctance to have the plant named for him was not grounded in a dispute about the classification itself. Ellis used the private space of exchange to convey potentially sensitive information, in order to assert the validity of his claim that the plant is not a Jasmine.

In fact, for the first time, Ellis offers a systematic designation for the plant, even as he highlights a horticultural feature that may or may not affect its placement: "When the flowers come out first in summer, if the weather is warm, they have six divisions or lobes; but towards the latter end, the blossoms are smaller and the lobes but five. So I believe it is Hexandria Trigynia, though most of the flowers have but five lobes" (*CLO*, 105-106). Whether or not the corolla of the specimen has five or six divisions could affect its systematic placement, so in effect Ellis introduced more contingency into the process of classifying the specimen even as he asserted a placement for it. The dialogic, dynamic letter form accommodated the contingencies of botanical classification, contingencies introduced by plants (sometimes the corolla has five divisions) and by people (Mr. Warner wants to be sensitive to Mr. Miller's feelings).

Ellis's first few letters on the subject of the "Warneria" self-consciously used the flexible letter form to work through provisional matters. His tone in this paragraph,

however, as he reports on and defends his work, reflects an assertiveness not evident in his earlier letters. The last paragraph, in fact, suggests a sort of ending. After asserting his belief that the specimen is *Hexandria Trigynia*, a new genus, Ellis concludes his commentary on the "Warneria" by saying: "I must therefore desire you would call this plant *Augusta*, which I think as well deserves that title for its elegance in every respect, as the *Methonica* does to be called *Gloriosa*. This will not offend our friend Warner's modesty, nor his particular delicacy to Mr Miller. The description and characters you may collect from what I have wrote to you" (*CLO*, 106). Ellis offers Linnaeus a rationale for choosing the name *Augusta* for the elegant specimen, using the private space of the letter to assert a hoped-for conclusion to the work ("I must therefore desire...") in terms of designating it a new genus and naming it.

The vital relationship between the dynamic exchange of letters and publication is apparent in Ellis's remark that "[t]he description and characters you may collect from what I have wrote to you." Ellis's comment points to the cumulative aspect of epistolary exchange. His words to Linnaeus in earlier letters were not abandoned as they continued to discuss the plant, but were always in the background as a reference for both men. The idea that Linnaeus could "collect" the description and characters of the plant from his letters indicates Ellis's awareness that his words would be filtered through Linnaeus in the movement toward publishing the plant. This is an explicit reference to the way botanical descriptions conveyed in letters were often adapted for a public forum.²⁸ Ellis's formulation highlights the way letters functioned as both a private space for working through natural history details and occasionally tense interpersonal relationships, as well

as a medium to convey information that could be "[collected]" and transmuted into print for a larger public audience.

Despite Ellis's confident tone, Linnaeus's next letter, written less than two months later (December 8, 1758), indicates that he had been researching the plant, checking Ellis's descriptions against classification manuals, and that his research raised new questions:

With regard to your *Warneria*, there seems little doubt of its being the plant delineated in *Hort Malab.* v. 2. t. 54; *Burm Zeyl.* t. 59; *Rumph. Amb.* v. 4. t. 39, though these authors exhibit a wild specimen, in which the leaves are always narrower. They all assert it to be somewhat milky in its native soil. From this circumstance, as well as the whole habit, the obliquely abrupt segments of the corolla, the calyx, the minute stipulas at the insertion of the opposite leaves, the whitish flowers, and other particulars, I judge their plant to be closely allied to *Nerium*, belonging to the family of *Contorti*. Hence the flower, if single, must have a double capsule, though a simple style. I dare not therefore take my character of your shrub from a double flower, except on your exclusive authority. I had rather not meddle with this plant at all, till it is better known. It has no relationship to the Jasmines. (*CLO*, 110-111)

In the absence of an actual specimen to examine, Linnaeus had turned to another resource, botanical literature, illustrating the value of the dynamic reading and writing practices nurtured by epistolary exchange. Linnaeus used Ellis's epistolary reports to track down related specimens (all from South Asia) in other taxonomic accounts,²⁹ and his work represents a move toward understanding the object with greater specificity, although contingencies remained.

For example, the authors he studied "exhibit a wild specimen," and they establish the plant's character based on a single rather than a double flower. Each epistolary effort by Ellis and Linnaeus was a step toward knowledge, even as their letters conveyed and articulated additional provisional qualities that emerged from their examinations and research. Linnaeus's habit of making assertions couched in qualifications--"I judge their

plant to be closely allied to *Nerium*, belonging to the family of *Contorti*....I had rather not meddle with this plant at all, till it is better known"--suggests his continued reservations. Still, despite this uncertainty, he is confident enough to add, "It has no relationship to the Jasmines," granting Ellis one piece of positive news.

The discussion of the plant in his December letter is slight, but Linnaeus devoted his next extant letter to Ellis, probably written a month later, in January 1759, entirely to the "Warneria." He narrates his own dealings with the specimen, turning their work with the plant into a story involving Ellis's eagerness to establish a new genus; his own "[hesitation]" to pursue the matter since "the double flower being almost sure to mislead us, in the construction of the character"; his reluctant willingness to publish a character of the plant based "on [Ellis's] authority alone"; and his recollection of and hunt for a dried sample of the plant in his herbarium.

I want to pause to consider the formal issues raised by this impulse to report on progress, because it offers another way to consider the impact of the personal on empirical ways of knowing. The narrative spin Linnaeus put on their epistolary discussion of the "Warneria" qualified his position more emphatically than had been apparent earlier. Indeed, he says that he felt pressured by Ellis to declare the plant a new genus, and that it was only on account of his personal feelings for Ellis that he had even been willing to publish the specimen. Such a revelation not only justified his reticence, but also served as a way to elicit Ellis's obligation and gratitude and to further their mutually beneficial relationship.

In addition, such narrative descriptions represent acts of interpretation, a response to a botanical object and to various textual objects that inform and frame the discussion

of the botanical object. They illustrate the layering effect of epistolary exchange: letters themselves became objects of analysis, not just for the information they conveyed but also for the way they conveyed it. Linnaeus had to interpret Ellis's motives and empirical abilities as part of the task of identifying this rare and curious specimen. The dialogic quality of the epistolary form kept information moving and fluid so it could be invoked and analyzed, even as it inextricably bound the advancement of natural history to personal relationships, as correspondents used the private space of letters to negotiate desires and authority.

Linnaeus's letter reveals that he could take a more detached rhetorical view of their epistolary proceedings thus far precisely because he had examined an actual specimen. Textual resources were invaluable, but they did not diminish the importance of first-hand experience. Linnaeus "luckily met with the specimen in question" over the Christmas holiday, when he finally had time to examine his herbarium. The specimen, single rather than double, was from the East Indies, and Linnaeus reports that when he immersed it in hot water he was able to "clearly ascertain every part of its structure, so as to draw up, without any uncertainty, the following character of your genus *Warneria*" (CLO, 112). Linnaeus--having performed his own experiment with the plant--was confident enough about his information ("without any uncertainty") to draft a formal character of it:

Cal. Perianth of one leaf, with five angles, and five deep, sword-shaped, vertical, straight, nearly upright, permanent segments.

Cor. of one petal, funnel-shaped. Tube nearly cylindrical, longer than the calyx. Limb flat, in five deep obovate segments, the length of the tube, more straight at one edge than at the other.

Stam. Filaments none. Anthers five, linear, half as long as the limb, inserted into the throat of the corolla, but attached above their base, so that their lower part is concealed within the throat.

Pist. Germen below the receptacle. Style, thread-shaped, the length of the tube of the corolla, and terminating, beyond the throat, in a large, ovate, obtuse, emarginate stigma.

Peric. Berry of two cells.

Seeds.

Hence it is perfectly evident, that this shrub has no affinity to the Jasmine tribe, but belongs to the natural order of the *Contorti*, Phil. Bot. 31. n. 29. (*CLO*, 112-113)

Linnaeus's discovery of a plant sample in his collection propelled this classificatory effort forward. Once he was able to make his own observation of the plant, rather than relying on Ellis's, Linnaeus could authorize its character, and thus its classification. He examined the specimen with his own eyes, to "reproduce" Ellis's work and verify his remarks, and, indeed, he essentially came to the same conclusions. Their joint work bound them together, and this connection may even be evident in Linnaeus's grammar: before he provides the description he refers to the plant as "your genus *Warneria*," while after the description, he refers to it as "our genus *Warneria*."

In his response (dated March 2, 1759), Ellis expressed pleasure that Linnaeus's description so closely matched his own. Not only did Linnaeus's description prove Miller wrong, but Linnaeus finally confirmed Ellis's claim that the specimen represented a new genus. Still, Linnaeus indicated that some matters of uncertainty remained in determining the exact character description, especially with regard to the seeds--"Such being the case, our genus *Warneria* may be established as perfectly distinct," he wrote, "though its fruit is not yet well ascertained; and this genus may stand next to *Cerbera*" (*CLO*, 114)--and Ellis took the opportunity to press a few points, reasserting the accuracy of the work that he and Dr. Bierken did together to arrive at their description.

Ellis focused especially on the question of the seeds, no doubt picking up on Linnaeus's comment that the fruit "is not yet well ascertained." Once again, it seems that

Ellis's motivations were not only the advancement of botanical knowledge, but also a more personal investment in proving Miller wrong, as he anticipates a public demonstration as proof. He says he plans to dissect a flower "before [Mr. Warner]" next summer in order "to convince him of what Mr. Gustavus Brander, Dr. Bierken, and I have seen; for Mr. Miller will not admit...that any seeds have been seen by any one."³⁰

Almost as important as the public demonstration was the textual evidence of Linnaeus's letter, and Ellis's comment that "I have shewn your letter to both Mr. Warner and Mr. Miller" suggests why Linnaeus was cautious about making botanical claims, even in a private epistolary exchange, because his authority could be wielded. His letters were passed around, and as the information and assertions they contained spread through the network of naturalists, they began to be publicized in ways that could be taxonomically confusing or personally embarrassing.

Of course the practice of exchanging letters facilitated the work of natural history by keeping information moving and accessible, and yet it also had the potential to impose restraints on the claims one was willing to make in a private letter. (Correspondents did their own form of censoring, often referring to information that was not suitable for a letter.) Indeed, natural history letters such as those discussed here were private, in that they were exchanged between two correspondents, a specific "I" and a specific "You," and as the Ellis-Linnaeus exchange illustrates, that private space allowed for the exploration of matters of fact and accuracy. Still, the larger community of naturalists often stood on the margins of each letter, and in this sense, even private natural history letters were public. With the publication of letters crafted for a public audience (as I discuss below), the sense of the public expanded, becoming larger and more abstract.

This story of the "Warneria" did not end with Linnaeus classifying the plant as a new genus. As I said above, botany entails the twin tasks of classifying and naming. Without a name the plant did not formally exist; it could not be introduced to the public. However, the name issue continued to vex Ellis and Linnaeus. Indeed, their letters affirm the link between the personal and the empirical, illustrating the challenges of honoring personal connections and accomplishments using a system comprised of specific rules and protocols.

Ellis was invested in his requests, and in a letter of March 2, 1759, he repeated his preference for the name *Augusta*: "I hope you will have no objection to the calling it *Augusta*, by way of eminence among flowers, as you have called the Methonica *Gloriosa*, for I know you stick firmly to the rules you have laid down." The "rules" Ellis refers to appeared most distinctly in Linnaeus's *Philosophia botanica* (1751), although the principles were already at work in his earlier books. In the *Philosophia botanica*, Linnaeus stipulated that adjectives should not be used as generic names. Ellis shows deference to Linnaeus's authority, even as he mentions one instance where Linnaeus deviated from his rules. Rather than risk losing the privilege of naming the plant, Ellis goes on to offer yet another suggestion: "But if you have any material objection to this, be so kind as to call it *Portlandia*, after that eminent patroness of botany and natural history the Dutchess of Portland, who is a great admirer of your excellent and learned works, by which you have opened the eyes and understanding of mankind to contemplate and properly arrange the works of nature" (*CLO*, 121-122).³¹

Over a year went by with very little communication between Ellis and Linnaeus. It was in fact a difficult year for Ellis. His textile business failed, and he was forced to

declare bankruptcy. His daughter went to live with his sister-in-law's family, while Ellis moved out of London and became a sort of advisory gardener at Philip Carteret Webb's estate, Busbridge, in Surrey.³² Given these distractions and worries, Ellis's silence may be attributed in part to his attention to his domestic and financial affairs. However, in a letter dated April 29, 1760, Linnaeus expressed concern that Ellis's silence may be due to injured feelings over the still unresolved issue of naming the "Warneria." He reports that Professor Ferner, a mutual friend, had informed him that Ellis was "displeased at my not having admitted your new genus, by the name of *Augusta*, into the second volume of my *Systema*." Linnaeus then asks permission to "state [his] reasons":

I am not without scruples respecting the genus itself, the fruit not being well ascertained, and the number of segments and stamens, whether five or six, uncertain. From its affinities indeed I should take this tree to be pentandrous, though not positively. But the name alone, were there no other reason would have prevented my adopting this genus. A teacher may be ashamed to commit the very fault he condemns; as I have told you in another letter, to which I have received no answer. I have laid down a rule in my *Critica* and *Philosophia*, that no adjective should be admitted as a generic name. On this ground I have expunged several names of other authors; but, that I might not carry innovation too far,³³ I admitted *Mirabilis* and *Gloriosa*, for which I have so often been blamed by my adversaries. Every one knows that the Harlem florists give this kind of names to their Hyacinths, Tulips, &c. such as *superba*, *augusta*, *incomparabilis*, *pulcherrima*. But if I were to adopt such a name, I should sin against my own laws. Neither do I presume to give a name of my own choosing to your genus. If *Watsonia*, or any other appellation be chosen, this genus may find a place, with several others, in an Appendix to the third volume of my *Systema*. (CLO, 127-128)

Linnaeus refers to his doubts about the classification of the specimen, especially with regard to the fruit and whether it has five or six stamens, but he primarily focuses on the name. His letter suggests one reason why Ellis mentioned the *Gloriosa* whenever he suggested the name *Augusta*: he understood that the name *Augusta* deviated from one of Linnaeus's rules--namely, that adjectives were not suitable for generic names--but he also

knew that Linnaeus had already deviated from the rule and perhaps hoped to persuade him to do so again.

Linnaeus mentions rules he "laid down" in his *Critica botanica* [Rules for Botanical Naming, 1737] and *Philosophia botanica* [Botanical Philosophy, 1751]. The *Philosophia*, in particular, condensed and crystallized Linnaeus's system for identifying and naming plants, representing a codified body of rules reduced to aphoristic form for ease of acquisition.³⁴ This is not the place (nor am I qualified) to examine these rules in detail, but I want to touch on them briefly, in order to evoke another rhetorical and methodological context for Ellis and Linnaeus's epistolary exchange. Their letters suggest that the formal precision and clarity of an aphorism stood in productive tension with the dynamic and provisional quality of epistolary natural history in the task of botanical classification.

Several aphorisms in *Philosophia botanica* pertain to Ellis and Linnaeus's nomenclatural work on the "Warneria." Aphorism #235, for example, states, "Generic names which are adjectival are less satisfactory than those which are substantives," and Aphorism #236 reads, "Generic names should not be misused in order to perpetuate the memory of Saints and men distinguished in some other branch of learning or to secure their favour."³⁵ Linnaeus stipulated that adjectives could be added to generic names as specific epithets, or used to describe the organs of the plant with greater specificity--in other words, they could be part of the descriptive function of the species designation--but they should not be used as generic names.³⁶

Keeping these rules in mind, we can speculate about the problems posed by Ellis's suggestions. For instance, *Augusta* is an adjective, but Ellis may also have been thinking

of Princess Augusta Charlotte of Wales (1719-1772), wife of Frederick, Prince of Wales, a patron of botany. Even after her husband's premature death in 1751, Augusta contributed to the advancement of botany in England, most notably through the enlargement of Kew Gardens.³⁷ And of course Ellis's suggestion of "Portlandia"--not mentioned, as far as I know, by Linnaeus--was specifically to honor a patroness of botany, perhaps to "secure...favour."

Whether or not these factors motivated Ellis, the suggestion would nonetheless have inhered in the names themselves, which is perhaps why Linnaeus refused to honor Ellis's request.³⁸ His letter "[stating] his reasons" for not giving the name *Augusta* to the "Warneria" reaffirms the necessity of collaboration, even while it reasserts the hierarchical nature of the classification enterprise at the time, illustrating how the dynamic epistolary form facilitated the work of botanical classification--Linnaeus laid out his reasons, solicited a reply from Ellis, and held out hope that the plant would "find a place" in his book.

The phrase "find a place" captures their mutual goal, which was to solidify the botanical information (classification and name) about a mobile plant. This goal would be achieved only when the object had been named, adopted, and presented to the public. Publication would grant the plant a new kind of existence--where it could stand in a new relation to other plants, where it could be introduced to and acknowledged by a community of botanists and gardeners, where it could become a citation or a reference in itself.³⁹

Ellis and Linnaeus's epistolary work, then, was dedicated to giving the concrete object a more permanent and public existence. The word "adopt" was an important part of

the vocabulary of classification, and it had a web of meanings that served the project well. Some definitions refer to taking up and accepting something, while one draws attention to the new relationships formed in the process. An obsolete definition, with a 1601 citation from Pliny, is to name after or to christen.⁴⁰ All of these meanings--especially the sense of naming and of placing something into a new relationship with something else--are in play in Ellis's and Linnaeus's letters, and Albrecht von Haller captured Linnaeus's ambitions in this regard when he referred to him as a "second Adam."⁴¹

Publishing the plant was the goal, and private letters were a crucial place to work through the empirical processes of determining the plant's genus. Private letters were also useful for negotiating differences of opinion. Linnaeus, for instance, laid out the reasons why he could not grant Ellis's wish to name the plant *Augusta*, but concluded his letter with an expression of devotion: "Farewell! May you long enjoy life, and preserve your affection for me, who have been, and will be, entirely yours as long as I live!" (*CLO*, 129). The conclusion illustrates that in maintaining an epistolary relationship naturalists like Ellis and Linnaeus incurred obligations and responsibilities to one another that took shape through the rhetorical conventions of the form as well as through the careful elaboration of natural history information and methods. The personal and the empirical were not bound together in eighteenth-century natural history because naturalists relied on the letter form. Rather, it was relying on the form--on the formalities of the form, such as concluding expressions of friendship and obligation--that helped teach naturalists how to communicate effectively and politely, and how to manage contingency and disagreement, as they worked toward making claims of fact.⁴²

Ellis soon replied, in a letter dated June 13, 1760. In what may have been a strategic move, Ellis began his letter by telling Linnaeus that he was sending him a collection of seeds from "our mutual friend Dr. Garden," and by referring to new zoological and botanical specimens sent by Garden that he intended to forward on to Linnaeus. The letter goes on,

In answer to your letter of the 29th of April, I desire you would please to call Mr. Warner's Jasmine *Gardenia*, which will satisfy me, and I believe will not be disagreeable to you.

What you say is right in regard to the keeping up to the rules you have laid down in your *Philosophia Botanica*, and therefore I submit.

I shall endeavour to get you a specimen of the *Morea* of Miller, and send it with the other specimens.

I shall write to Dr. Garden this day, that I have desired you to give the name of *Gardenia* to the Jasmine, which I am persuaded he will esteem as a favour; at the same time I shall send him Mr. Ehret's curious print of it, coloured by himself. (*CLO*, 130)⁴³

Ellis applies subtle forms of rhetorical pressure here. His tone is cooler, and there is also a sense that selecting an appropriate name is no longer a subject for negotiation. There is a finality to his request, reflecting perhaps a desire to bring this botanical work to a conclusion. He says he "submit[s]" to Linnaeus's insistence that he adhere to his own rules, but he also doesn't leave Linnaeus much room to argue with the new choice of "Gardenia," saying he will "write to Dr. Garden this day" with the news. According to the archives, Ellis did indeed write to Garden that very day. His notebook summary of the letter reads, "Wrote to Dr. Garden at Charlestown S. Carolina June 13, 1760. Sent him Ehret's Print of Warner's Jasmine, call'd it Gardenia. Advised him of writing at the same time to Linnaeus to call it so[,] agreeable to Linnaeus 's letter desiring me to name it....Acct. of the Crimson Ink in the Dedication of the Gardenia..."⁴⁴

Ellis, then, used the network of epistolary exchange to achieve his nomenclatural goal, for to tell Garden about the "Gardenia" was to make the information public, to take the subject matter from one exchange and export it into another. By extending the provisional information beyond the bounds of a one-to-one epistolary exchange, Ellis in effect limited Linnaeus's options for a polite response. Such openness between correspondents was a strength of epistolary natural history in spreading knowledge, but this example illustrates how it could also be a tool to further individual aims. Ellis's letter--especially his comment that he is sending Linnaeus seeds from Dr. Garden and his assertion that he will inform Garden of his choice of "Gardenia" for the plant name--suggests the way other relationships and forms of communication could be manipulated to create a sense of obligation, in the push toward introducing new claims of natural knowledge.

Linnaeus did indeed feel an obligation, but he was not ready to yield. In his reply, dated August 11, 1760, he wrote:

I shall obey your orders as to the names of plants; but if I may without reserve lay open my mind to you, I could have wished that the supposed Jasmine might have been called *Warneria*, after the person who has first cultivated it in Europe; *Gardenia* being applied to some genus first discovered by Dr. Garden. I wish to guard against the ill-natured objections, often made against me, that I name plants after my friends, who have not publicly contributed to the advancement of science. If therefore I confer this honour on those who have discovered the respective plants, no objection can arise, nor can I be charged with infringing my own rules. Still, if my opinion displeases you, pray say so without reserve; for my attachment to you will not easily permit me to go contrary to your determination. (*CLO*, 134)

A few paragraphs later, before concluding the letter, Linnaeus adds: "If you have made out any thing more concerning the fruit of the said double-flowered Jasmine, pray inform me, that I may know where to place this genus in my System, and not be under the

necessity of putting it into the Appendix, among such as are imperfectly known" (*CLO*, 135).

Linnaeus's primary concern was to find a rationale for the name. As his aphorisms suggest, he established his rules in order to guide the choice of names in a principled manner. In this passage, his investment in these rules is evident in his desire to name the plant for someone who had "publicly contributed to the advancement" of botanical knowledge. His attention to "[public contributions]" is striking in that it would seem to dismiss those who contributed to the project in less public ways, including through private epistolary exchange. Linnaeus blurs the line between public and private here, distinguishing those who have made public contributions even as the collection and exchange of botanical objects was largely dependent on interpersonal ties and private relationships nurtured over time.

Garden, for instance, had been sending materials to Ellis and, through Ellis, to Linnaeus, for a few years. Indeed Ellis's first letter to Linnaeus accompanied a sample he had received from Garden, so Linnaeus must have been aware of Garden's private "contributions." However, his hierarchical way of thinking excluded Garden from this rule, and presaged the separation between amateur and professional that would be in place by the end of the century. (His attitude reflects a way of thinking that was particularly galling to New World naturalists, who already felt distanced and excluded from the centers of learning. This attitude, apparent in Garden's letters to his colonial contacts such as Cadwallader Colden, is more muted in his letters to Ellis and Linnaeus.)

In this passage, Linnaeus tacitly subordinates the work of epistolary natural history and exchange in order to preserve an objective approach to nomenclature

(represented via public contributions) and to avoid charges of preferential treatment based solely on personal relationships. At the same time Linnaeus used this letter to accomplish exactly the sort of private work that letters were ideal for: he suggests that his "attachment" to Ellis will in fact force him to "obey [his] orders" despite his reservations, using his personal relationship with Ellis to try to persuade him to change his mind about the "Gardenia."

In his next letter, undated but received by Ellis on November 4, 1760, Linnaeus pursues the subject and continues to stress the link between an appropriate name and public contributions:

I had given the name of *Gardenia* to an entirely new and very singular genus, the *Catti marus* of Rumphius, *Amboin*. V. 3. 177. t. 113,* in order so far to conform to your wishes. But as you still persist in your decision, that the Jasmine so often mentioned between us should be called *Gardenia*, I will comply, though I cannot but foresee that this measure will be exposed to much censure. All that I beg of you, my dear friend, is, that you would publish the genus and its character in some loose sheet, or some periodical work, or transactions; in which case I promise to adopt the name. I wish to learn from you what Dr. Garden has written in Botany, or what he has discovered, that I may make mention of it. Do not therefore indulge any more suspicions of my regard and devotion to you, who esteem you among the chief of my friends. (*CLO*, 135-136)

This passage highlights the dynamic between public and private essential to the project of botanical classification, illustrating how publication could be used strategically for the purposes of moving natural history information out of a private form of discourse into a public form. Linnaeus promises to adopt the genus as "Gardenia" if Ellis first publishes it "in some loose sheet, or some periodical work, or transactions," but he means something specific by the word "publish."

Ellis, of course, had already publicized the name "Gardenia" in one way, by writing a letter to Garden about it; Linnaeus now asks that the name and description be

publicized more widely, not just contained in the network of epistolary natural history but published to a larger more abstract audience. Given this request, as well as his desire to mention anything Garden had "written" or "discovered," Linnaeus's goal, it seems, was to give the object a public life in order to justify the name *Gardenia* before "placing" the object in the official classification record. The private discussions between Ellis and Linnaeus about the character and name of the specimen were mostly concluded: Ellis "submit[ted]," Linnaeus "comp[lied]," and thus the *Gardenia* came into existence. The object, which had been a curious rare specimen, now had a name.

The rhetorical and epistolary work that produced this result continued in a different register. The next step was to present this newly named object to the public, which entailed transforming the quasi private discourse of epistolary natural history into a public discourse of epistolary natural history. Ellis immediately acted on Linnaeus's directions regarding publication, and his public letter engages in a different set of formalities than his private letters, because it was written with a different sense of purpose for a different kind of audience.

On November 20, 1760, three weeks after Linnaeus asked him to publish the *Gardenia*, Ellis presented his findings to the Royal Society. In a letter dated June 2, 1761, he informed Linnaeus that the plates for the *Gardenia* and the *Halesia* (another newly defined genus, named for the botanist Stephen Hales, that Ellis had presented at the same time) were being prepared to accompany his "memoir," both of which would be published in the *Philosophical Transactions* (CLO, 146). (*Memoir* was another term, like *report* or *account*, used to refer to formal piece of natural history writing. It was used more commonly in France; in 1702, the Académie Royale des Sciences began publishing

its research, which appeared annually in separate volumes as *Histoire de L'Académie Royale des Sciences*--short summaries of the research--and *Mémoires de L'Académie Royale des Sciences*--full-length articles.⁴⁵)

Ellis's memoir of the *Halesia* and *Gardenia* appeared in volume 51, covering the year 1759-1760, with the title "An Account of the Plants *Halesia* and *Gardenia*: In a Letter from John Ellis Esq; F.R.S. to Philip Carteret Webb, Esq; F.R.S." It is, in effect, a letter of introduction, with all the sense of personal commitment and attachment that phrase entails:

Dear Sir, You must have observed, that as the spirit of planting has increased in this kingdom, the study of botany has become more fashionable; the works of the celebrated Linnaeus, heretofore looked on as capricious and strange, are now in the hands of every man, who wishes to study the order of nature.

The great variety of plants, which you have introduced into your garden from North America, as well as from many other parts of the world, must give you double pleasure, when you view them ranged in proper order, and judiciously named.

The calling of plants after the names of botanists, as well as after the names of those, that have been, or are the promoters and encouragers of this useful science, is not without its advantages; and this custom has been followed by Linnaeus, and recommended by him in his *Philosophia Botanica*. It has this good effect; it stimulates many to the searching after new discoveries, and still further improvements in agriculture and vegetation, a truly wise and laudable end.

The intent of this letter is to lay before you the characters of two new genera of plants, now growing in your garden, which I shall take the liberty to call after our worthy friends Dr. Stephen Hales of Teddington, and Dr. Alexander Garden, physician in Charlestown, South Carolina.

Webb was the ostensible recipient of this public letter, but Ellis deliberately wrote it for a larger audience, including the Fellows of the Royal Society and readers of the *Transactions*.⁴⁶ The difference in his prose style signals his purpose, which is the presentation of factual information distilled from his private exchanges with Linnaeus. The dialogic imperative that drove those exchanges largely disappears here, as, instead, Ellis crafts a formal presentation of his findings.

For instance, Ellis's opening paragraphs provide a frame for his introduction of the *Gardenia* and the *Halesia*, directing his listeners and readers in how to understand the significance of his findings. Ellis places his account of the two plants within the context of the beneficial work of classification, especially under the Linnaean method, with which "every man" can "study the order of nature." The idea of the order of nature lies behind Ellis and Linnaeus's private epistolary exchange, driving their work.⁴⁷ Here, in this public forum, Ellis highlights the idea of order in part to validate his claims.

Ellis uses the word "order" to refer to both an a priori attribute of nature and an almost visible effect of Linnaeus's system. Ellis's public commitment to the "proper order" emerging from the Linnaean method itself staked a claim. Linnaeus's reputation and the value of his system were cementing in England at that very moment, starting with the publication of *Species plantarum* in 1753 and solidified by the 1762 publication of William Hudson's *Flora Anglica*, the first book of British flora written entirely according to the Linnaean method of classification and nomenclature.⁴⁸

Ellis's assumption that Webb (and, by extension, the other readers/recipients)⁴⁹ must receive "double pleasure" from the variety of botanical objects in his garden as well as from the ordering of that variety reads like an Enlightenment commonplace, but it is one worth reflecting on in terms of the work of classification. In Ellis's writing, the notion of "the order of nature" slides into the idea of a "proper order" as expressed through Linnaean classification. Ellis moves seamlessly between the material world of plants and an abstract idea of order, between the variety of plants growing in Webb's garden and the pleasure of viewing them "ranged in proper order, and judiciously named" as determined by the rules of Linnaean classification.

Ellis's term "double-pleasure" introduces an aspect of the pleasures attendant on eighteenth-century natural history that I have alluded to in previous chapters, namely, the pleasures of systematic ways of thinking. Indeed, the empirical elaborations and enthusiasms in Ellis's letters to Linnaeus about the *Gardenia* illustrate one kind of pleasure in classificatory work, such as his description of examining specimens through the microscope, debating the results with Bierken and Warner, working out character descriptions, and so on.

But there is another, more tangible kind of pleasure that can emerge from the work of discovering nature's botanical order through epistolary processes. In his public letter, Ellis's reference to "double-pleasure" offers a way to understand the classificatory impulse in terms of landscape. His description of plants "ranged in proper order" suggests a method of planting built around taxonomic principles rather than a principle of, say, color or size, as Collinson celebrated. Such a planting would, in effect, materialize Linnaeus's system, reflecting the order of nature itself.⁵⁰ The *Gardenia* found a theoretical place in *Systema naturae*, which could determine its material place in the garden.

Ellis's public presentation rooted the plant in place, turning it from an object in Warner's garden into a name and character in a book, and, in turn, into objects growing in the garden exactly as they were placed in the book. Indeed, his investment in this transplanting was personal, since it was through his private epistolary endeavors that the object was placed at all. Ellis's remark illuminates the way classification--represented through the dynamic process in letters, in this public presentation of a "new genus," and

in planting botanical objects "ranged in proper order" according to the Linnaean method--was a source of many kinds of pleasure.

Ellis not only links abstract order and material nature within the introductory frame of his "Account," but he repeats this link when he announces the specific goals of his report: "The intent of this letter is to lay before you the characters of two new genera of plants, now growing in your garden." These two genera--the *Halesia* and the *Gardenia*--may be new but they are already, at the same time, "growing in your garden." That is, the plants are "new" not as objects in a garden but as objects in an abstract system of classification, standing in relation to other objects. They are "new" in that they have been adopted into a system, even though gardeners and botanists had been experimenting with them for several years.

This slippage between the abstract and the material would have posed no contradiction for Ellis or his listeners. The word *new* was capacious and flexible, and it had been serving the English aims of discovery and exploration since at least the sixteenth century. The idea that classification was not an imposition of order on nature but in fact a reflection of nature's order implicitly guided even the contingent and sometimes protracted work of classification in epistolary natural history.

Ellis starts his "Account" with a description of the *Halesia*, a plant he had received from Garden. Ellis highlights this fact by introducing the *Halesia* with a long transcription from a letter from Garden describing the plant, thus establishing Garden as, in Ellis's words, "a [promoter] and [encourager] of this useful science" of botany. Ellis asserts that the practice of naming plants after such people rewards deserving botanists and also serves as a motivation to "discoveries" and "improvements," no doubt seeking to

counter any arguments about Linnaeus's adoption of the name *Gardenia*. Including an excerpt from a private letter was common practice, and represents another example of exporting information (verbatim) from one kind of epistolary exchange into another.⁵¹

Here we see how this practice could be used for strategic purposes: Garden's words from a letter to Ellis were now a matter of public record, contributing to the validity of the choice of the name *Gardenia*.

Ellis transports the private epistolary work he conducted with Linnaeus regarding the *Gardenia* into the public realm in less explicit ways. He begins with an introduction that stands in contrast to his rather straightforward description of the *Halesia*, drawing attention initially to the aesthetic beauties, exotic origins, and many values of the *Gardenia*. He begins:

The other plant, which I am to describe, is known by the name of the Cape Jasmine, and is the most rare and beautiful shrub, that has yet been introduced into the European gardens, as well for the refreshing aromatic smell of its double milk-white flowers, as the perpetual verdure of its leaves, which are like those of the lemon-tree.

It promises, from the thickness and woodiness of its stem, together with its free manner of growing, to become a shrub of six or seven feet high.

It bears but one flower at the end of a branch; and the leaves grow opposite to each other on the branches.

We are indebted to Capt. Hutchinson, of the Godolphin Indiaman, for this curious discovery, who, about six years ago, found it growing near the cape of Good Hope, and, on his arrival here, presented it to Richard Warner, Esq; of Woodford in Essex; who finding great difficulty in propagating this valuable plant, either from cuttings or by inarching it on the yellow Indian jasmine, as he had been advised, I recommended him to try Mr. James Gordon, gardener at Mile-end.

In another example of the way the commercial value of plants was tied to, and in some sense confirmed, its scientific value, Ellis proceeds to laud Gordon's talents (something he had already done in his discussion of the *Halesia*), in part by describing the monetary value of the samples Gordon cultivated: "he computes this plant will be worth at least

five hundred pounds sterling to him." Ellis uses the space of the public letter to introduce these two new plants to the public, and monetary value expressed one way these plants were known and another mode of organizing them.

After the general introduction, Ellis turns to the matter of the classification itself, describing his increasing familiarity with the specimen and how he arrived at the designation *Gardenia*. Rather than excerpt passages from his exchange with Linnaeus, the long paragraph summarizes the epistolary work he and Linnaeus conducted over the course of two years, necessarily eliminating many details. Ellis writes,

Having dissected many dried as well as fresh specimens of this rare plant, I found sufficient evidence (notwithstanding the flowers being double) to prove, that it belonged to quite another class of plants, as different from the Jasmine as the Rose is from the Peony: that the fruit was below the receptacle, instead of being above it. But, in order to be more certain, you may remember, in July 1758, I procured a specimen from Mr. Warner, for my friend Dr. Linnaeus's opinion. At the same time I wrote to the professor, that if he found it to be a new genus, agreeable to the description I had sent him, that he would please to call it *Warneria*, after its worthy possessor. In his answer, he sets forth the impossibility of his being exact in determining a new genus from a double flower, agreeable to the rules he has already laid down in his *Fundamenta Botanica*. But these objections were soon after fortunately removed, by accidentally finding, among his dried oriental plants, a specimen of the same kind with a single flower, which, upon expanding it in warm water, and dissecting it, he found it to agree very nearly with the description I had sent him. But Mr. Warner refusing to have it so called, and chusing that it should still remain a Jasmine, as it is commonly called, I have thought no man more worthy, as a botanist, than our friend Dr. Garden: accordingly, the professor has agreed to adopt this new genus by the name of *Gardenia*, which he says belongs to the natural order of contorted flowers, that is, to those monopetalous flowers, whose lobes, or sections of the limb of their petals, turn all to the right hand; such as the *Nerium*, *Plumeria*, *Cerbera*, *Cameraria*, *Vinca*, &c. and that it should be placed next to the *Cerbera*.

Reading Ellis's "Account" after reviewing his letters highlights the way the letters were indeed the "process underlying the published work," in that a lot of what transpired in the private letters dropped away upon publication.⁵² Information was pulled out of a private epistolary exchange and transformed into a public epistle (the formulation of Ellis's title

captures this generic flexibility: "Account *in* a Letter"). The story of Ellis's experimental work with the specimens in his public letter to Webb and the Fellows is streamlined, flattened into a straightforward narrative that only briefly and obliquely refers to the negotiations and back-and-forth quality of his epistolary exchange with Linnaeus.⁵³

Read in the context of the letters, we know that this "Account" is a strategic effort to publish the new genus *Gardenia* and, in so doing, to solidify the aptness of the name and in some sense the fact of the plant. Ellis's and Linnaeus's letters conducted and conveyed the indispensable work of getting to know the plant under a new set of descriptive and taxonomic circumstances, and this publication began the process of authorizing the plant, rooting it, as Linnaeus said, in "place."⁵⁴

While the plant's character and name were still subject to negotiation and some doubt during Ellis and Linnaeus's epistolary exchange, here that doubt is transformed into the appearance of certainty. While it was still a subject of epistolary exchange, its status was more ambiguous: it existed in Warner's garden, in Linnaeus's herbarium, under Ellis's microscope, in Gordon's hothouse. And yet it was (as Linnaeus put it) "imperfectly known." It had no place in the "proper order." Presented publicly through Ellis's narrative description of their research, a character description, and a botanical illustration, however, the object came into existence. It had been adopted and could be introduced.⁵⁵

In the process, Ellis leaves several aspects of the private epistolary narrative out of his public report. Most obviously he eliminates the specificities of the negotiations surrounding the naming and description of the specimen. Ellis's public, and published, letter shows the distillation of fact from the more private epistolary process. This public report represents a further step in rhetorical refinement, evident in Ellis's declarative

assertions (e.g., "it belonged to quite another class of plants, as different from the Jasmine as the Rose is from the Peony"), in his depictions of his empirical approach (e.g., "in order to be more certain"), and in the subordination of contingency (e.g., Ellis first mentions the difficulties posed by the double flower only parenthetically). But while Ellis gestures toward the epistolary conversation ("I wrote to the professor...In his answer...") and to its dynamic specificities, he does not elaborate its details and rhetorical subtleties. He obliquely refers to the complications and disagreements, but then dismisses them with assurances of accuracy and certainty, perhaps because they were not essential to the public botanical record. The purpose of this report was to solidify the value of the claims.

By this compressed "Account," no one would know that Linnaeus had reservations about the character description (especially the number of stamens and the quality of the fruit) even after he dissected his own specimen. No one would know that Ellis had first proposed the names *Augusta* and *Portlandia*, when Mr. Warner objected to *Warneria*, or know that Warner's objection stemmed from his concern for Philip Miller's reputation. No one would know that Linnaeus had concerns about the choice of *Gardenia*, since Alexander Garden was not directly connected to the object and had not "publicly contributed" to botany. Indeed, no one would know that the publication of this report was not only in the interest of introducing a new genus to the natural history community, but was also part of a rhetorical public relations strategy to make Garden's contributions to botany part of the public record so that Linnaeus would not be accused of naming the genus after a friend. Ellis accomplished that task here by drawing attention to Garden's contribution of new specimens (such as the *Halesia*) and epistolary reports, and by simply asserting Garden's stature: "I have thought no man more worthy, *as a botanist*,

than our friend Dr. Garden" (my emphasis). Ultimately, Ellis achieved his goal of getting the beautiful specimen declared a new genus and having the privilege of naming it.

Ellis's report necessarily compresses details in the interest of reporting on the results of the private epistolary work. But in eliminating or subordinating the process by which he arrived at results, the report loses the dynamic texture of the private letters: Ellis's trips to Warner's garden on specific days with Collinson and Ehret to see an interesting new specimen, his experience of hovering over a microscope with Bierken discussing the minute features of a plant as they pry apart the styles, and his conversations with Warner about what to call the plant; Linnaeus's discovery of the dried specimen in his herbarium at Christmas, and the image of him poring over different botanical catalogues searching for similarities and differences in the character descriptions. Their personal exchange of letters captured the dynamic process of botanical classification.

By contrast, the formalities of Ellis's public letter do not enact the process of investigation but report on the results. The object becomes more abstract--"a *Gardenia*"--as it is fixed in the public domain. In his letters to Linnaeus, for example, Ellis drew attention to the collaborative and empirical work of his dissections of the plant. In the public letter, he simply says, "Having dissected many dried as well as fresh specimens of this rare plant, I found sufficient evidence...to prove" that it is not a Jasmine. Some of the camaraderie of the experience captured through epistolary exchange -camaraderie that was part of the process of "witnessing" essential to Ellis's claim that the plant was a new genus--recedes to an implicit background, in deference to the different purpose of the published letter.

Nevertheless, even as Ellis and Linnaeus's private letters used the language and methods of the "new science" to push their investigative work forward, Ellis's generalizing public account gestures toward the interpersonal dynamic underlying the claims. This fluidity between public and private served the purposes of natural history. Reading Ellis's private letters and the resulting public letter shows how formalities of description and investigation were being tested in private and public epistolary ways, with the goal of advancing natural knowledge.

Ellis fulfilled Linnaeus's request to publish the *Gardenia*, and finally, on November 23, 1762, Linnaeus informed Ellis, "Your *Gardenia* stands in its proper place in my new *Species plantarum*" (*CLO*, 158). Thus did Alexander Garden, a Scotsman residing in Charleston, South Carolina, receive a "species of eternity" by having his name linked to an exotic plant discovered on the Cape of Good Hope. The mobile botanical object now "[stood] in its proper place" in the realm of botanical classification.

Garden, however, had not yet met his namesake, a fact that moves this story out of the chambers of the Royal Society and back to the garden, away from the public letter and back to the private letter. For Ellis, the plant had initially existed as a material object in his friend Warner's garden, but with no clear-cut place in nature's order, and no name. For Garden, the plant initially existed only as a name and as a topic of epistolary discussion, but it was not real or tangible to him in any other sense. Even before he read his "Account" to the Royal Society on November 20, 1760, Ellis recorded in his notebook a summary of a letter he had written to Garden on November 12th, informing him about the latest developments: "Warner's Jasmine to be given to the R. Society by name of *Gardenia*. Linnaeus found out the true Characters from a Single blossom which he met

accidentally among his specimens. Gordon the Gardiner made L500 by it first and last so elegant a plant."⁵⁶ Garden responded in a letter dated "About January 1761," "Your compliment of the *Gardenia* was most acceptable to me, and you need not doubt I shall gratefully remember it. Has Linnaeus adopted it?" (*CLO*, 50)

Now, finally, we return to the passage with which I started this chapter, where Ellis expresses his delight in the publication of the *Gardenia*. Here, at the end of the chapter, the passage reveals the layered complexities of botanical classification, in which a plant's botanical history is bound to an individual's personal history, in both public and private ways. Ellis replied, on April 8, 1761:

I received your very kind letter of the 20th of November by Capt. Strachan, and am as much pleased with the very fine collection of seeds you sent me, so curiously preserved, as you can be with the *Gardenia*. Linnaeus has actually adopted it among his new genera, which will be published in his *Addenda*; and the Royal Society, which still makes it more public here, has ordered my account of it to be printed. I gave in Linnaeus's characters, with those of the *Halesia*; and it will surprize people when they know that a nurseryman, James Gordon, in less than three years, has made L500 from four cuttings of a plant. Every body is in love with it, and you may depend on having a plant of it from me; for as it is a double flower, besides being the native of a warm climate, it produces no seeds here.

These words from Ellis seem to represent the end of this rendering of the epistolary tale of the *Gardenia*. The letter goes on, however, revealing other pleasures Ellis took in the process of classifying and naming the plant, and other benefits of private epistolary exchange. He continues:

I have bought two more coloured prints of it, which shall be sent by the ships in June; for I fear these stragglers may be taken by the enemy. It has given great jealousy to our botanists here, that I have preferred you to them; but I laugh at them, and know I am right; for, without flattery, you have done more service, and I have obliged more people through your means, than they have in their power to do. Continue to look out for new genera; and send some dry specimens of *Stuartia*, Loblolly Bay, and your rarer plants. (*CLO*, 507)

Ellis's exultant pride and pleasure in the publication of the *Gardenia* offers another perspective on the role played by self-interest and mutual obligations in this depiction of the advancement of natural history knowledge. His claim to have "preferred" Garden both rewards Garden for his past "service" and establishes a sense of obligation for his future service, which Ellis immediately capitalizes on in the last sentence of the passage:

"Continue to look out for new genera; and send some dry specimens of *Stuartia*, Loblolly Bay, and your rarer plants."

As this story of the *Gardenia* shows, eighteenth-century botany was driven by both a self-interested and disinterested engagement with the natural world. Linnaeus, for example, maintained relationships with his students and contacts all over the world in order to acquire more natural objects, and others established contact with him to receive the pleasures and credit that came from participating in the task of ordering natural phenomena. Linnaeus's system, and the revolution in botanical nomenclature he started with the 1753 publication of *Species plantarum*--including the stipulation that a generic name must come "from Greek or Latin (Crit. Bot., No 229), or looked as if it did" or must "[commemorate] a king or someone who had advanced the study of botany"⁵⁷--inspired the careful taxonomic examinations evident in Ellis's letters to Linnaeus, and motivated naturalists like Garden and Bartram to quest for new, previously undescribed genera. Their work often produced empirically based, objective natural knowledge that took its place in the system and became part of the public record, as evidenced in Ellis's publication in the *Transactions*. His sense of triumph and delight expressed in his letter to Garden illustrates the more personal motives for, and satisfactions in, the quest.

Garden's initial response to the compliment Ellis gave him was brief, perhaps because the object existed for him only in the abstract. In the late spring of 1761, though, Ellis sent Garden two colored plates of Ehret's engraving, and on July 25, 1761, Garden wrote to request additional prints. These prints represented his worth to the botanical community, and no doubt he wanted to send them to friends like Cadwallader Colden and John Bartram in the northern colonies. The prints would also have made the object real to him. Botanical prints were more than abstract representations of the plant; in many ways, they expressed the concreteness of the object, its type. Still, Garden was eager to see the material object itself, although the following passage, written in January of 1763, reveals the familiar challenges they faced:

By this vessel you will receive a parcel of seeds, and I hope you will remember my friend John Gordon at Mile End. Especially let him have all No. 21, or the Dwarf oak. He wrote to me particularly for this plant when he sent me the *Gardenia*, whose sudden death I take to be no good omen for the continuance and duration of my botanical name and character; but if I do not outlive it, I shall be pleased, and if I do, I shall certainly make myself happy in some other acquisition, if it should only be like the former, imaginary! You shall soon have a plaguy long letter from Sir, yours, &c. (*CLO*, 518)

Gordon has sent Garden two specimens in 1762 at Ellis's request. One plant must have died en route, but Garden informed Ellis that the other "was quite alive, and I think will do admirably well" (*CLO*, 514). Unfortunately, as this passage reveals, it did not fare well. Garden's comment--"I take [the sudden death of the plant] to be no good omen for the continuance and duration of my botanical name and character; but if I do not outlive it, I shall be pleased, and if I do, I shall certainly make myself happy in some other acquisition, if it should only be like the former, imaginary!"--shows a humorous acceptance of the contingencies of nature and the classification process.

More important, it offers another instance of the mutual identifications established through the Linnaean practice of naming genera for individuals. The link is spatial, to some extent: a *Gardenia* growing in Ellis's garden could remind him of his friend across the ocean. Ellis made this meaning explicit when he expressed his dismay to Linnaeus about the plant Linnaeus had chosen for the genus *Ellisia*: "people here look on a little mean-looking plant as reflecting no honour on the person whose name is given to it."

The identification between individual and plant genus also had a temporal component. Collinson crystallized this meaning when he referred to it (in a letter to his Virginia friend John Custis) as receiving a "species of eternity." Garden, too, evoked this meaning when he lamented the likely success of "the continuance and duration of [his] botanical character." The slippage in terminology is notable: Collinson says attaching an individual's name to a plant genus is receiving a "species" of eternity, by which he means a type or kind of eternity, a way to live beyond death, while Garden's phrase "my botanical character," connected as it is to his reflection on whether or not he will outlive the plant, also uses a classificatory term ("character") to blur the line between man and plant, between death and a life after death. Such metaphorical possibilities inhere in the vocabulary of Linnaean botanical classification, simultaneously abstracting and anthropomorphizing the botanical objects themselves. (Erasmus Darwin would dramatize these possibilities in his poem *The Loves of the Plants* [1789].)

There was a sentimental quality to the practice of naming plants for friends and nurturing the identification between individual and plant, but this sentimentalism was coextensive with an empirical engagement with the natural world. To Garden, the *Gardenia* continued to be, as he says, "imaginary," but he took some comfort in the fact

that it was "real" to his friend Ellis: "I am vastly pleased to hear of my namesake the *Gardenia* thriving so well with you, and should be very glad to get a plant of it, as I now have a piece of ground where I could cultivate it," he wrote, on January 26, 1771 (*CLO*, 588). As far as I have been able to determine, Garden never successfully cultivated the plant.

Farther north, his acquaintance John Bartram had more luck. Peter Collinson wrote to Bartram on December 25, 1767:

I am pleased to hear that Thou was Gratified with seeing Warners Jessamin in flower who could think that fine plant had travelled so soon to your world this Engaging Vegitable exercised the skill of all our Naturalists & yett I don't know any one has hit its Culture, for a year or Two it seems prosperous & then flags & Declines My Dear John don't be astonished at any Thing Wee remember & forget, forget & remember, Some years agon I wanted the Agave being disappointed I thought no more of It but looking over the Flora Virginica, it revived again, & so we go on, untill we forget our Selves, & are soon forgot.⁵⁸

The *Gardenia* (or, as Collinson continues to call it, "Warners Jessamine," demonstrating the layers of botanical nomenclature) was not forgot, and Alexander Garden did not outlive his "botanical name and character." Indeed, the continued prestige of the plant underscores Ellis's canniness in working so hard to name what Collinson called an "Engaging Vegitable" and Ellis called "so elegant a plant."

Natural history letters, both public and private, inscribe the experimental process; they may be considered a "laboratory of prose."⁵⁹ Linnaean nomenclature and classification was a new language of comprehension, tested and refined in private and public epistolary form in the eighteenth century. Classification, even the diagnostic emphasis of Linnaean classification, is in large part a science of words and description, and the end result of placing a true botanical specimen in a system with its proper name represents only the final moment of the dynamic rhetorical work conducted by naturalists

in letters. (Even then, the finality could be called into question or reaffirmed, especially in the field of botanical nomenclature, since establishing a fact in the public record meant it could be addressed in new ways.⁶⁰)

The mobility of plants necessitated new modes of organizing and ordering the botanical world, and the transformation of the "Warneria" from the Cape of Good Hope into the *Gardenia*--through its introduction to the public in Linnaeus's *Systema naturae* and in Ellis's letter in the *Philosophical Transactions*--represents the accomplishments of these modes of unfolding nature's order. At the same time, the project of fixing plants by placing them in a system of classification or by publishing them contributed to an awareness of nature's variety and mutability (as subject I take up in the final chapter). The private epistolary processes that facilitated Ellis's and Linnaeus's public assertions of knowledge about the *Gardenia* disclose the impact of conceptions of variety, contingency, and mobility on the Enlightenment project of ordering nature itself.

¹ Smith, *Correspondence of Linnaeus*, 111 (see intro., n. 5), hereafter cited in text and notes as *CLO*.

² *CLO*, 507.

³ Greg Polly makes the useful distinction between *public letters* and *private letters* in his examination of the importance of the epistolary form in *The Spectator*, although the distinction has a different valence for the purposes of natural history. See "A Leviathan of Letters," in *The Spectator: Emerging Discourses*, ed. Donald J. Newman (Newark: University of Delaware Press, 2005), 111-114. See also Michael Warner, *The Letters of the Republic: Publication and the Public Sphere in Eighteenth Century America* (Cambridge: Harvard University Press, 1992); Toby Ditz, "Formative Ventures: Eighteenth-Century Commercial Letters and the Articulation of Experience," in *Epistolary Selves*, 59-78 (see chap. 2, n. 57).

⁴ Parrish unfolds some of the paradoxes emerging from the blurring between public and private spheres in the eighteenth century in *American Curiosity* (see chap. 2, n. 7), especially pages 147-156.

⁵ Barbara J. Shapiro's work on what she calls "discourses of fact" and the "cultural elaboration of 'fact'" -- "how the concept 'fact' became a central feature of several intellectual enterprises and of the general English intellectual landscape" -- has helped shape my thinking. She shows how "matters of fact" moved from the discourse of law to the empirically based discourse of natural history in the seventeenth century. She concludes that "[o]ver time, 'fact,' as human deeds and actions, had been transformed into the best knowledge available to fallible human beings of a very broad spectrum of human and natural phenomena." *A Culture of Fact: England, 1550-1720* (Ithaca: Cornell UP, 2000), 189; 7; 137; 218. Different critical fields have interrogated the category of the "fact." My reading of the Ellis-Linnaeus correspondence has also been influenced by the social history of science, as, for example, the following passage: "What makes an observation or an experiment result in a scientific fact? In the 17th century, there were at least two standards according to which facts were judged scientific. First, a scientific fact was an occurrence in the natural world that was reported by a reliable individual -- usually a member of a scientific society -- and was witnessed by one or more such observers. Second, a scientific fact was a finding resulting from the appropriate use of instruments (telescope, microscope, thermometer, air-pump, and the like) combined with methods...for improving observations, conducting experiments, and confirming or extending theoretically based assertions." Alan G. Gross, Joseph E. Harmon, Michael S. Reidy, "Argument and 17th-Century Science: A Rhetorical Analysis with Sociological Implications," *Social Studies of Science* 30, no. 3 (June 2000): 374. See also Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton: Princeton UP, 1985); Mary Poovey, *A History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society* (Chicago: University of Chicago Press, 1998).

⁶ Gross and Harmon, in *The Scientific Literature* (see chap. 3, n. 5), illustrate the continued prevalence of assumptions that letters were both crucial to and subordinate in this history. The book charts the emergence of a new literary genre, the "scientific article," a "robust medium for communicating new facts and explanations about the natural world" (xvii). Prior to its emergence, facts were communicated by letters or books, both of which had "shortcomings": "the letter because of its limited distribution, the book because of its long gestation period" (xviii). While Gross and Harmon give full credit to the importance of the "learned letter," they stress its limitations: "These are not 'letters' in the traditional sense of the word; authors wrote these epistles on some scientific or technical topic with the understanding that they would be passed on to others. Thus the actual intended audience was interested members of the scientific community at large, though short passages within them may personally address the primary recipient" (2). See also Gross, Harmon, Reidy, "Argument and 17th-Century Science," 371-396, esp. 373; Gross, Harmon, Reidy, *Communicating Science: The Scientific Article from the 17th Century to the Present* (Oxford: Oxford University Press, 2002), 75, 91. Recent work in the history of science, focusing on the social aspects and

rhetoric of science, has interrogated how "scientists" make claims. See, for example, Dear, *The Literary Structure of Scientific Argument* (see chap. 1, n. 74); Marcello Pera and William R. Shea, eds., *Persuading Science: The Art of Scientific Rhetoric* (Canton, MA: Watson Publishing, 1991); Jan Golinski, *Making Natural Knowledge: Constructivism and the History of Science* (Cambridge: Cambridge UP, 1998).

⁷ Blanche Henrey notes that there were approximately one hundred botanical papers published in the *Philosophical Transactions* from its inception in 1666 to the founding of the Linnean Society of London in 1788; and, that there were two and half times as many general and local floras published in England between 1762 and 1800 as between 1700 and 1762. *British Botanical and Horticultural Literature before 1800*, 631 (see chap. 1, n. 39). Don Raymond Baesel says in his *Natural History and the British Periodicals in the Eighteenth Century* (dissertation, Ohio St. University, 1974) that the *Gentleman's Magazine* published approximately 412 pieces pertaining to botany between 1731 and 1789, with the years 1755-1759 and 1785-1789 showing the most growth (475). The figures Baesel provides may be a little loose since he uses the category of "number of pages" devoted to a specific field, but they nevertheless provide a sense of the editorial weight (and thus popular interest) given to particular subjects during particular decades. He also notes that the periodical press became a place to reflect on the work conducted by scientific societies; the *Monthly Review*, for instance, published hundreds of pages of commentary on the workings and transactions of various scientific societies (22-28). William T. Stearn also discusses the rise in botanical publications at the end of the eighteenth century in his introduction to *Species plantarum*, 78 (see chap. 1, n. 16).

⁸ Armstrong, *Selected Letters of Peter Collinson*, 246 (see chap. 1, n. 8).

⁹ Rusnock, "Correspondence Networks," 164 (see chap. 3, n. 6).

¹⁰ Until recently, the critical consensus had been that the *Transactions* were in a funk during much of the eighteenth century, publishing trivial reports that could not compare to its early heady days when they published groundbreaking work by Robert Boyle and Isaac Newton. See, for example, Baesel, *Natural History*, 115; Hall, *Promoting Experimental Learning*, 4, 139 (see chap. 3, n. 6). From the time the *Transactions* were founded until 1752, it was the responsibility of the Secretary of the Royal Society to determine its contents. The *Transactions* had been founded as a way to convey information contained in letters to the larger public. In 1752 (perhaps in response to two works published by John Hill--*Lucina sine Concubitu* [1750] and *A Review of the Works of the Royal Society of London: Containing Animadversions on Such of the Papers as Deserve Particular Observation* [1751]--satirizing the *Transactions*), the Society created a Committee of Papers, five members "to read and select articles for publication on the basis of 'the importance and singularity of the subjects, or the advantageous manner of treating them'" (quoted in Gross and Harmon, *The Scientific Literature*, 38). This change professionalized the *Transactions*, somewhat, by establishing a more rigorous system of evaluation prepublication. In 1831, the Society began sending articles to outside readers for evaluation (Gross and Harmon, *The Scientific Literature*, 38).

¹¹ For other descriptive accounts of the naming of the *Gardenia* see Margaret Denny, "Naming the *Gardenia*," *The Scientific Monthly* 67, no. 1 (July 1948), 17-22; Berkeley and Berkeley, *Dr. Alexander Garden*, 158-162 (see chap. 3, n. 1).

¹² Dawson Turner, ed., *Extracts from the Literary and Scientific Correspondence of Richard Richardson, M.D., F.R.S., of Bierley, Yorkshire: illustrative of the state and progress of botany, and interspersed with information respecting the study of antiquities and general literature, in Great Britain, during the first half of the eighteenth century* (Yarmouth: Printed by Charles Sloman, 1835), 405. Knowlton (1691-1781) served as gardener for Dr. James Sherard at Eltham until 1725, and then for Richard Boyle, 3rd Earl of Burlington at Londesborough until the end of his life. He was well connected with the natural history community in England. Richardson (1708-1776) was the son of a well-known natural historian and antiquarian (of the same name), who gathered a large collection of rare and exotic plant specimens and cultural artifacts. *Oxford Dictionary of National Biography*.

¹³ Ellis is referring to two works by Philip Miller: *Figures of the most beautiful, useful, and uncommon plants described in The gardeners dictionary, exhibited on three hundred copper plates, ... To which are added, their descriptions,...* (1760) and *The gardeners dictionary. Containing the methods of cultivating and improving all sorts of trees, plants, and flowers, for the kitchen, fruit, and pleasure gardens; as also those which are used in medicin*. I believe the plant Ellis refers to appeared in the fourth edition of Miller's dictionary (1754), listed as species 15 under the genus "Jasminum": "Jasminum arborescens; foliis laurinis, flore umbellato, Houst. Tree-like Jasmine, with Bay-leaves, and Flowers growing in an Umbel."

¹⁴ Stafleu writes that "*character* as understood by Linnaeus is the definition of a plant, expressing its essence," and he quotes several aphorisms from *Philosophia botanica* to illustrate the point: #151--"Botany has a double basis: classification (*dispositio*) and nomenclature (*denominatio*)"; #152---"Classification shows the divisions or the affinities of the plants; it is either *theoretical*, instituting the classes, order and genera, or *practical*, establishing the species and the varieties" (38); #88: "The essence of the flower rests in the anther and the stigma, of the fruit in the seed, of the fructification in the flower and the fruit, of the plants in the fructification." *Linnaeus and the Linnaeans*, 57, 58, 51 (see chap. 1, n. 16). For a useful summary of Linnaeus's achievements and impact, see Lisbet Koerner, "Carl Linnaeus in His Time and Place," in *Cultures of Natural History*, 145-162 (see chap. 1, n. 4).

¹⁵ Ellis did not consider himself particularly adept at the work of botanical classification, although his skills as an observer were beyond dispute. He wrote his letters to Linnaeus in English; his translation of an extract of a letter dated 3 April 1761 from Linnaeus appears in Notebook 2 (39 R) at the Linnean Society of London.

¹⁶ Stafleu, *Linnaeus and the Linnaeans*, 51: "The character complex contains quite a few attributes which can be expressed in simple numbers, and numbers are ideal for logical division!" Stafleu says Linnaeus's devotion to the "morphological complexity of the fructification" signals a kind of empirical thinking, but he stresses that Linnaeus was driven by a priori thinking.

¹⁷ Stearn, *Botanical Latin*, especially 14-46 (see chap. 2, n. 16). Stearn writes, "By the end of the eighteenth century, botanical Latin had thus acquired a vocabulary based indeed on the seventeenth-century legacies of Ray and Tournefort, but enlarged and elaborated by Linnaeus and his successors to meet the needs of most botanists concerned with the flower-plants in the nineteenth century" (46). Stearn shows how many of the names for the floral parts derived from classical botany (39-43), but he also says that a "rich technical vocabulary, resting on hard-won knowledge gained largely since 1650 and hence unknown to the ancients, sets botanical Latin apart from classical Latin" (46).

¹⁸ Bazerman, *Shaping Written Knowledge*, especially chapter 5, "Literate Acts and the Emergent Social Structure of Science" (see chap. 3, n. 7).

¹⁹ This phrase was coined by Steven Shapin, although I am using it more loosely. Shapin suggests that "virtual witnessing" eliminated the need for direct witnessing and for replication of experiment: "We usually think of an experimental report as a narration of some prior visual experience: it points to sensory experience that lies behind the text. This is correct. However, we should also appreciate that the text itself constitutes a visual source." "Pump and Circumstance: Robert Boyle's Literary Technology, *Social Studies of Science* 14 (1984): 491.

²⁰ Dear claims that "an account of an experiment is an essential part of its performance" in "Narratives, Anecdotes, and Experiments: Turning Experience into Science in the Seventeenth Century," *The Literary Structure of Scientific Argument*, 135 (see chap. 1, n. 74). Ellis's description of his dissection is, in one sense, an account of an experiment.

²¹ Gross, Harmon, and Reidy, citing Alan Shapiro, argue that while repeatability held an important place in seventeenth- and eighteenth-century England, it did not acquire a status of methodological rigor until the nineteenth century. Rather than replication being established as necessary in order to confirm the accuracy of results, replication, as understood by men like Hooke and Newton, had a more casual role in experimental science and was necessary primarily in order to enable others "to see for themselves." "Argument and 17th-century Science," 379 (see n. 5).

²² Hallock highlights the dialogic, collaborative aspect of classification in *From the Fallen Tree*, especially chap. 5 (see chap. 2, n. 11). Hallock points out that while Linnaean systems of taxonomic classification may be considered static, they relied on such dynamic processes of exchange (141-142). His work represents an important corrective in a critical tendency to elaborate readings of Enlightenment culture based on a too narrow sense of the impact of Linnaean classification.

²³ According to many historians of early America, these tensions were particularly acute in the colonial and early national periods, as Americans sought to establish their credibility in scientific fields. Expressions of American defensiveness and Anglo-European dismissiveness are often interpreted within this framework. As this example indicates, however, the privilege of establishing a new name for a botanical specimen provoked strong feeling on both sides of the Atlantic.

²⁴ Note that Linnaeus wrote his letters in Latin. I am working with the translations published by Smith in *CLO*.

²⁵ Narrative was an important feature of scientific prose in seventeenth- and eighteenth-century England, especially by comparison with the French natural history model, which established professional protocols earlier than the English. Gross, Harmon, Reidy report in *Communicating Science* (71) that "[n]early one in three English introductions [of scientific articles] looks like a letter; nearly one in six starts like a story. Sometimes epistolary conventions are reproduced without alteration."

²⁶ Steven Shapin argues that the rules and codes and conventions for gentlemanly conduct were transposed to the work of scientific investigation and reportage. He stresses the relationship between authority and status: "people-knowledge is a necessary...condition for the making of thing-knowledge." *Social History of Truth*, xxvi (see chap. 3, n. 12).

²⁷ Ehret included some of the history of the "Jasmine," along with his engraving: "The History and Analysis of the Parts of the Jessamine, Which Flowered in the Curious Garden of R. Warner, Esq. at Woodford, July 1758. By George Dionysius Ehret, Fellow of the Royal Society, and Member of the Imperial Academy, Naturae Curiosorum." He goes on to describe how the plant arrived in England and what it looks like in general terms, before providing a more formal "Character and Explication of the Figures." He provides the figures on the engraving itself, and he also depicts a small framed landscape showing the tree in a natural setting and the figures of the plant alongside, with an inscription in Latin. (I am grateful to Gina Douglas for showing me a copy of *Plantae et Papilliones* at the Linnean Society of London. A note inside the book reads, "Found in the loft at West end of Library Gallery. S. Savage 8 October 1943.")

²⁸ Bazerman argues that the awareness of the potential for publication encouraged epistolary correspondents to start writing easily excerptable "expository sections" in their letters, in the hope that they would be lifted out for publication in the *Transactions* or elsewhere. Eventually, they eliminated the conventions of the epistolary form altogether, as new genres, such as the "experimental report" (Bazerman) or the "scientific article" (Gross et al), emerged to do the same work. *Shaping Written Knowledge*, 133.

²⁹ *Hortus Malabaricus* is a catalogue of medicinal plants found in the south Indian state of Kerala, compiled and published in Amsterdam from 1678-1703. It was sponsored by the Dutch colonial administrators in India. I believe "*Burm zeyl.*" refers to Johannes Burman's *Thesaurus zeylanicus* (Amsterdam, 1737), a catalogue of plants collected in Ceylon. Georg Eberhard Rumphius (ca. 1627-1702), a German botanist employed by Dutch East India Company, was the author of *Herbarium Amboinensis* (1741), a catalogue of plants from what is now Indonesia.

³⁰ Hall describes the tension between witnessing an experiment and trusting the report of an experiment, as the protocols for the Royal Society evolved in the eighteenth century: "At the same time the spoken and printed word replaced ocular demonstration; those experiments which were described were accepted at face value provided always that their description and the conclusions drawn from them seemed reliable."

Promoting Experimental Learning, 131 (see chap. 3, n. 6).

³¹ A draft letter demonstrates how Ellis crafted his prose in an attempt to persuade Linnaeus to accept his taxonomic suggestions. Here is the same passage, in draft form: "In the meantime as this very curious plant is desired by Mr. Warner not to [be] called after him, You will do me a particular favour to call it Augusta [marginal insert: as you have call'd that Superb flower Methonica, Gloriosa] as I have already desir'd. But if you think this name not a proper one, I shall then beg the favour [...illegible...] Portlandia, after that renowned patroness of Botany and Natural history the Duchess of Portland, a Princess that admires and esteems your many excellent books [deletion: performances] by which you have opened the eyes and understanding of Mankind [deletion: in contemplating the works of nature] [marginal insertion: by which they may more properly digest and contemplate the works of nature.] [deletion: If this is not agreeable to you, we have an excellent botanist who endeavours to lead the young Princes of the Blood of this Country into the study of Botany, the Earl of Bute.] Your compliance in this will always command my friendship [to send you over an account of what is new and rare in Botany]." Ellis Manuscripts, Notebook 2, 17. Courtesy of the Linnean Society of London.

³² Webb (1702-1770) had been elected a Fellow of the Royal Society of Arts in 1747 and a Fellow of the Royal Society of London in 1749. In 1758, he received a medal from the Society of Arts for planting a large number of acorns for timber and other useful purposes. *Oxford Dictionary of National Biography*.

³³ Smith annotates this remark by Linnaeus: "What illiberal censures has this forbearance of Linnaeus brought upon him!" (*CLO*, 128).

³⁴ Stafleu says the *Philosophia* is "the key to Linnaeus" (*Linnaeus and the Linnaeans*, 32). See also Wilfrid Blunt (with the assistance of William T. Stearn), *The Compleat Naturalist: A Life of Linnaeus* (New York: Viking Press, 1971), 214.

³⁵ Stafleu, *Linnaeus and the Linnaeans*, 99.

³⁶ Stearn, *Botanical Latin*, 91. Note that the species concept was not yet fully formed.

³⁷ In fact, the Earl of Bute, whose name Ellis suggested as a possibility for the "Warneria" (see n. 31), was tutor to Augusta Charlotte's son, the future George III.

³⁸ One might wonder why *Ellisia* was not presented as a name option, but Ellis had already received the honor of having his name linked to a plant genus of the family *Verbenaceae* in Patrick Browne's *Civil and Natural History of Jamaica* (1756), one of the first English works to use Linnaean principles of classification. In fact, during one of Garden's attempts to name a plant genus for Ellis, Ellis wrote to him: "...Linnaeus says I must be contented with one plant, which Dr. Browne has given me" (*CLO*, 460). The story of the *Ellisia* took a twist in 1762, when Linnaeus informed Ellis that he had collapsed the genus *Ellisia* into the genus *Duranta* and that he was "[looking] about for a new *Ellisia*." Ellis hoped to switch his name to a new genus discovered by Garden, but Linnaeus had already named that plant *Schlosseria*, according to Garden's suggestion. So Linnaeus followed his original idea, which was to change the name of the plant that had appeared in 1753 as *Ipomaea Nyctelea* in *Species plantarum* to *Ellisia Nyctelea* of the family *Hydrophyllaceae*, despite Ellis's objections that "people here look on a little mean-looking plant as reflecting no honour on the person whose name is given to it, though I am convinced, as it is a distinct genus, the compliment is equally great with the greatest tree." Linnaeus incorporated the new name into the second edition of *Species plantarum* (1762).

³⁹ "Citations are fairly common in the 18th century. Five out of 10 articles contain them." Gross, Harmon, Reidy, *Communicating Science*, 85.

⁴⁰ All definitions from the *Oxford English Dictionary*.

⁴¹ Stafleu, *Linnaeus and the Linnaeans*, 43. Koerner highlights the fact that despite his arrogance and fame Linnaeus was in fact a provincial man, who "read no modern languages, and lacked both 'general culture' and the 'new science....He was chiefly a floral classifier." "Carl Linnaeus in His Time and Place," 145 (see n. 14). Peter Collinson wrote to Linnaeus on April 20, 1754: "I have had the pleasure of reading your *Species plantarum*, a very useful and laborious work. But, my dear friend, we that admire you are much concerned that you should perplex the delightful science of Botany with changing names that have been well received, and adding new names quite unknown to us. Thus Botany, which was a pleasant study and attainable by most men, is now become, by alterations and new names, the study of a man's life, and none now but real professors can pretend to attain it. As I love you, I tell you our sentiments." *CLO*, 31. The passage illustrates the blind spots that come from being in the midst of a significant transformation since, ironically, Linnaeus's introduction of binomial nomenclature--the most lasting part of his work--is considered a factor in democratizing the work of botany. Koerner writes, "...the value of Linnaeus's classifications lay in their humdrum, everyday usefulness, for casual and serious users alike" (145).

⁴² Gross and Harmon refer to the role of politeness in scientific discourse in *The Scientific Literature* (17; see chap. 3, n. 5).

⁴³ Ellis summarized the highlights of this letter to Linnaeus in Notebook 2, 34. Courtesy of the Linnean Society of London.

⁴⁴ Ellis Manuscripts, Notebook 2, 33. Courtesy of the Linnean Society of London. Ellis's summary appears in an abridged form in *CLO* (493-494); I have included only the parts of the summary that pertain to the "Gardenia," all of which appear in *CLO* except for the last point about the "Crimson Ink."

⁴⁵ Gross and Harmon, *The Scientific Literature*, 40, 53. Unlike the accounts that appeared in the *Transactions*, the French *mémoires* could be hundreds of pages.

⁴⁶ See Gross, Harmon, Reidy, *Communicating Science*, 71-77.

⁴⁷ Christophe Bonneuil, "The Manufacture of Species: Kew Gardens, the Empire, and the Standardization of Taxonomic Practices in Late Nineteenth-Century Botany," in *Instruments, Travel and Science: Itineraries of Precision from the Seventeenth to the Twentieth Century*, eds. Marie Noëlle Bourguet, Christian Licoppe, and H. Otto Sibum (London, New York: Routledge, 2002), 192-195.

⁴⁸ Stearn, *Species plantarum*, 75-78 (see chap. 1, n. 16).

⁴⁹ In "A Leviathan of Letters," Polly says that the editor/recipient for public letters--like Addison and Steele, in the "person" of Mr. Spectator--occupied the position of the public sphere. Authors wrote to an editor who represented the public at large, the "abstract collective body formed by epistolary exchange" (106; see n. 3). This notion applies to the "collective body" of the Royal Society.

⁵⁰ See O'Malley, "Art and Science in the Design of Botanic Gardens, 1730-1830" (chap. 1, n. 68).

⁵¹ Bazerman, Myers, Dear, Gross, and others see a movement toward creating excerptable passages in letters, eventually distancing the form from the empirical work conveyed in the excerptable passages. Their point is that reports were increasingly written with publication in mind, with the epistolary salutation and conclusion being just residual formalities during the transitional period.

⁵² Myers, *Writing Biology*, 25 (see chap. 3, n. 7).

⁵³ Ellis's narrative description follows a convention established in the late seventeenth century, as naturalists found ways to convey their experimental activities to their colleagues. Frederic L. Holmes argues that such narrative description is the progenitor of the modern "research paper": "Experimental papers transform into verbal form findings which have been reached through activities involving materials, physical apparatus, and operations carried out at discrete times and places. The experimental paper thus is necessarily in part a report on these events" (179). He follows the work of Dear and Shapin, who "argue that Boyle and other 'virtuosi' resorted to highly detailed narrative accounts of their experiments and observations as a means to attain authority for the assertions they based upon them" (166). "Argument and Narrative in Scientific Writing," in *The Literary Structure of Scientific Argument* (see chap. 1, n. 74).

⁵⁴ Gross, Harmon, Reidy, *Communicating Science*, viii; Parrish, *American Curiosity*, 148 (see chap. 2, n. 7).

⁵⁵ Polly writes that letters were the "optimal medium in which to effect a passage from private to public discourse." "A Leviathan of Letters," 112. It is not just that important work was done in the background. It is also that even for the less experimental work of botanical classification, there is a sense of shaping a narrative: determining what happened in private, what the important features are, what is "true," what should be made public, how to craft what happened into a public account. Dear explores this subject in "Narratives, Anecdotes, and Experiments," in *The Literary Structure of Scientific Argument* (see chap. 1, n. 74). The action of investigation stands in peculiar relation to the public/private dichotomy, which may be why the letter --itself a form in peculiar relation to public/private--is so useful. Botanical classification may not seem experimental, but its methodological imperatives were the same as for more performative experiments.

⁵⁶ Ellis Manuscripts, Notebook 2, 37. Courtesy of the Linnean Society of London. Printed in *CLO*, 500.

⁵⁷ Stearn, *Species plantarum*, 40.

⁵⁸ Berkeley and Berkeley, *Correspondence of John Bartram*, 693-694 (see intro., n. 1). I am grateful to Joel Fry, Curator of Bartram's Garden, for generously providing me with information about Bartram's early successful cultivation of the *Gardenia*.

⁵⁹ Amy Boesky's phrase "laboratory of prose" is useful here, although I am adapting it for my own purposes. Boesky argues that, for Bacon, experiment was "a discursive structure, a method for 'directing and ordering' narrative as well as experience....The perfection of the prose experiment seems to lie in the opportunities it offered for revision and repetition, for searching again." "Bacon's New Atlantis and the Laboratory of Prose," *The Project of Prose in Early Modern Europe and the New World*, eds. Elizabeth Fowler and Roland Greene (Cambridge: Cambridge UP, 1997), 143-144.

⁶⁰ For instance, while the *Gardenia*'s appearance in public solidified and disseminated the knowledge about the newly described and named plant, its history took another turn in December of 1762, when Daniel Solander published "An Account of the *Gardenia*: In a Letter to Philip Carteret Webb, Esq; F.R.S. from Daniel C. Solander, M.D." in the *Philosophical Transactions* 52 (1761-1762): 654-661. Solander affirmed Ellis's findings and presented new information based on his own empirical research and his investigation into the plant's "prehistory" in England, before the advent of the Linnaean system.

Chapter 5

"Soil & Situation": William Bartram and the Rootedness of Nature

By His Excellency Peter Chester Esquire Captain General and Governor
in Chief in and over the Province of West Florida and the Territories depending
theron in America, Chancellor and Vice Admiral of the same &ca. &ca.

TO ALL TO WHOM these Presents shall come or may in any wise concern,
GREETING.

Know ye that William Bartram Botanist having requested my Leave and License to
Travel through the different parts of this Province under my Government, in order to
make Botanical and other Observations I DO THEREFORE HEREBY permit him to
Travel in and over the said Province for the Purpose of Collecting, Rare and useful
productions in Botany and Natural History. And I do hereby Command all His Majesty's
Servants and Subjects within this Province that they do not interrupt him in this lawful
proceedings, but that they be aiding and assisting to him as becometh all encouragers of
useful Discoveries.

Given under my hand and Seal at Arms at Pensacola the Fifth day of
September in the Year of our Lord one Thousand seven Hundred and Seventy
Five and in the Fifteenth Year of HIS MAJESTY'S REIGN.

Peter Chester

By His Excellency's Command
Alex: Macullagh, D. Secy.¹

Thus it is with the Philosophic Pilgrim. The hopes & desire of arriving at the famed
country celebrated by travelers for some new & remarkable display of the Glory & power
of the greate Author of Nature, keeps the mind awake to reflection & contemplation, &
the various noval scenes & natural objects that present themselves to view & variously
engage our attention on the way is the nutritious & strengthening food of the imagination.

--William Bartram, draft manuscript for *Travels*,

ca.1787²

There is a curious entry in William Bartram's Commonplace Book (1760-1790)
that begins "Brachman's Creed": "Contented with the natural groath of our own country
we wander not elsewhere in serch of the different rarities that an unknown sky and
climate produce."³ The extract (for so it appears to be) goes on to describe, in the first
person, the character of this contented people, and seems to attach qualities of truth,
equality, and community to such contentedness.

This entry stands out for two reasons. The first is that Bartram was in fact
someone who wandered elsewhere in search of different rarities. The second is that

numerous extracts in his *Commonplace Book* reflect his own interest in those who traveled in search of rarities, including Columbus—"first discoverer of America," whose launch on September 6, 1492 may be considered the "most important Voiage that ever was conceived and executed by Mankind upon the Ocean"—and "Mssrs. Banks & Solander," who accompanied Captain Cook on his first voyage to the South Seas between 1768 and 1771 in "His Majesty's Ship Endeavor."

The history of the mobility of plants I have been charting in this thesis--the search for and collection of "the different rarities that an unknown sky and climate produce"--was predicated on a history of travel and discovery. I want to conclude by looking at the writings of William Bartram, a figure who was part of both histories: a botanical collector, setting plants in motion and examining them in minute detail, and a famous traveler, describing the experience of moving over a specific terrain. Of course, Bartram was steeped in the culture of transatlantic botanical exchange. For most of his life, he would have watched his father John Bartram collecting botanical objects, preparing them for shipment, making observations, organizing specimens, and maintaining a correspondence with his English and European contacts. In addition, William Bartram accompanied his father--who called him "my little Botanest"--on numerous collecting and exploratory excursions during his adolescence and beyond, including trips to the Catskills, upstate New York, and Connecticut between 1753 and 1755 and an exploration of the eastern coast of Florida in 1765, a territory acquired by England in 1763 as a result of the Treaty of Paris.

William Bartram is most familiar to us as a traveler, while it was in large part due to the fact that he was John Bartram's son that he found support from an Englishman, Dr.

John Fothergill, in 1772 for a “botanical journey to the Floridas,” as Fothergill described it in a letter to a friend.⁴ In this chapter, I focus specifically on Bartram's "Report to Dr. Fothergill," written during his period of travel between 1773 and 1777.⁵ The "Report," while exemplifying a conventional genre of natural history writing, reflects in part the changes wrought by four decades of organized transatlantic botanical collection and exchange. During this period, as I have tried to show, the mobility of botanical objects transformed the way naturalists looked at specimens and at landscapes, nurturing an awareness of the dynamism and mutability of nature itself. Bartram's writing reflects a subsequent shift, in a new valuation of place and a new appreciation for qualities of nature that are irreproducible and nontransportable. The discourses of landscape gardening, Romanticism, and the sublime intersect in important ways with this shift; Bartram's "Report" shows how the shift was bound up with the discourses of natural history.

In its purpose, the "Report" is connected to earlier reports of travel and discovery such as those by Thomas Harriot and John Smith in the sixteenth and seventeenth centuries, and even to his father's two travel accounts (produced for private circulation, but nevertheless published), one describing a trip to upstate New York and one describing a trip with his son to Florida in 1765.⁶ Further, considering again the references in Bartram's *Commonplace Book* to the travels of Banks and Solander, the "Report" also stands in relation to more contemporaneous voyages such as those by Captain Cook to the South Seas in the late 1760s and 1770s. Even this compressed chronology points to the challenge of locating Bartram in a historical continuum, and of thinking about him as other than a transitional figure: from Enlightenment to Romantic, from scientific to

literary, from colonial to patriot. This has to do with his milieu (he lived from 1739 to 1823), with the publication history of his *Travels* (describing a trip taken during the colonial period on behalf of an English patron, but written and published during the early national period), with his education, and with his own sensibilities.

Still, during the period of travel, Bartram was a colonial subject, capitalizing on the personal connections cultivated through transatlantic epistolary natural history to give his life a sense of direction. And the "Report," explicitly solicited by his patron, was the evidence of his commitment and success. Formally, it was intended to serve the function that reports and travels and observations had long served the English empire: to provide information about the natural resources for development and appropriate areas for settlement and cultivation. But the spirit of change is registered in Bartram's writing, and in its style the "Report" is something more than an example of promotional literature, incorporating classification schemes, botanical lists, and reportorial specificity into a personal account of the Romantic self in nature. The "Report" represents a new phase in the cultural history of nature's mobility, alive to the inherent dynamism in nature in part by being attentive to the irreproducible specificities of place.

* * *

In three letters written to Bartram before and during his travels, Fothergill laid out several conventional expectations: he wanted live samples of useful, beautiful, singular, and fragrant shrubs and plants; he wanted dried specimens and/or drawings of plants and other natural phenomena such as shells, snakes, and birds; and he wanted regular written reports or letters from Bartram.⁷ Fothergill's directives indicate that the genre of instruction, institutionalized by the Royal Society in the seventeenth century, had been

fully integrated into the Anglo-American vocabulary of natural history exchange by the latter part of the eighteenth century. As he wrote, on September 4, 1773: "It will be right to keep a little journal, marking the soil, situation, plants in general, remarkable animals, where found, and the several particulars relative to them as they cast up."⁸

In order to show how Bartram's "Report" registers shifts in the discourse of natural history, I want to focus on the important natural history category of "soil [and] situation." The category of soil and situation was a conventional feature of promotional and travel literature, a way of classifying the land and of gesturing toward the possibilities for settlement and transplantation. "Soil and situation" could be invoked for a variety of rhetorical purposes: it often introduced a list or description of natural productions particular to that soil and situation; it mapped the terrain for a reader, who could, conceivably, diagram the various regions; it provided spatial orientation, moving the traveler and by extension his reader from one place to another; and it provided information about what objects grew where and in what relation to one another, which had horticultural value. As Fothergill wrote to Bartram, "continue thy journey in such a manner as to visit the most likely places for plants at different seasons. Mark the places they grow in, whether in swamps, dry banks, under shade or in the open country. These circumstances will assist us in their culture here."⁹

Soil and situation were features of the landscape to be observed and described by the traveler, representing another example of the dynamic between natural object and written text that was inherent to natural history pursuits. The terms "soil" and "situation" often appear explicitly in natural history writing, either singly or as a unit, whereas sometimes their function is implicit. John Bartram's 1765 journal of his journey along the

St. John's River in East Florida offers many examples of the observational and descriptive imperatives of soil and situation. Here is just one: "We landed on the west-side which was low and rich for 100 yards back, rising gradually from the water to 4 or 5 foot perpendicular, then comes to a level, looking rich and black on the surface for an inch or two, then under it a fine sand to a great depth; this level produceth red-bay, great magnolia, water and live-oaks, liquidamber, hiccory, and some organges, but no large trees; the lower rich ground produceth gledistia, pishamins, cephalanthus, ash, cypress, and cornu femina."¹⁰ This passage illustrates the relationship between the quality and texture of the soil, and the botanical productions it nourishes. Following convention, John Bartram's journal provides specific and direct information, exhibiting little use of figurative language.¹¹

William Bartram's "Report" contains similar descriptions of soil and situation, using a flat, objective, reportorial style to convey natural history information. Here is one example, taken from his trip through Georgia: "The Road kept near the River generally very uneven, the Soil a light greyish sandy loam about 2 feet in depth then a bed of yellowish Clay. The Vegitable productions, such as heretofore, except the forests being a mixture of short leaved Pine; Black & red Oak; & hiccory, Water Oak; very low dwarf Oaks, Chinquapins, Very low oak leaved Toxicodendron called by the inhabitants Poison Oak."¹² This passage (like his father's) accomplishes a specific task of natural history, fulfilling his reader's expectations for information about the soil and situation relative to the botanical productions of the territory. Yet the "Report" also provides several instances of another use Bartram made of the category of soil and situation, one that shows his

capacity to adopt and adapt various discursive styles in order to convey a sense of nature, as well as a sense of *being* in nature.

The phrase "soil and situation" itself appears a few pages into the first part of Bartram's "Report," as he describes his travels near Savannah, Georgia: "Went over the same soil and situation of country, observing no new kinds of Vegetable," and what he means by "the same" is evident earlier in the paragraph:

we persued on our journey through Pine groves, the Land flat, the soil sandy but the country everywhere clad with green grass in the forests & beautiful Savannahs, richly painted over with various col'd flowers, a pretty yellow Cistus, a beautiful Citisus, Penguicula's or various col'd flowers, Violets, & Phlox of various dies, Iris, Ixia, Bartsia and an endless variety of other, gay subjects of the Vegetable Kingdom. & here in the Pine Forests I first observed that very pretty Yellow Flower, resembling a Lithospermum.¹³

Bartram adapts the function of soil and situation, piling on adjectives and evoking a colorful scene, in order to convey nature's beauty. He is not a passive observer simply recording natural history details about a specific terrain, but an active and appreciative percipient responding to the aesthetic pleasures of a natural landscape. Bartram takes a rhetorical convention for describing landscape that is characterized by flat reportage--in which a plain style to some degree confirms the veracity of the report--and transforms it into a vivid visual scene. The landscape is the drama, and in this Bartram's writing illustrates a shift in the ways of valuing nature from both a natural historical and a philosophical point of view. The organized exchange, collection, and cultivation of "pretty" flowers fostered both aesthetic and scientific modes of observation in the field.

Bartram's tendency to paint a scene for his reader, using (in this case) the category of soil and situation, reflects an impulse to discover the beauties of uncultivated nature in the process of reporting on natural productions. This impulse is evident in Bartram's use

of another form of natural history exchange, namely, the specimen sheet. One purpose for his trip was to collect plant samples and specimens, which he packed for transportation across the Atlantic Ocean. Specimen sheets particularized the role of soil and situation, communicating information that suggested rootedness and environmental specificity even while the dried specimen traveled and was incorporated into new situations, such as a *hortus siccus* or, perhaps, eventually, a new landscape. The category of soil and situation as Bartram used it in the "Report" and on his specimen sheets refers to a specific place, but the information could also be used to facilitate the successful transportation of natural objects to another place altogether. Bartram's specimen sheets and drawings capture this relation between soil and situation and botanical specimens, highlighting the link between the mobility and rootedness of nature.

Bartram sent Fothergill 209 specimens between 1774 and 1776, with corresponding remarks. Over the course of his travels, he also sent Fothergill 59 zoological and botanical drawings with separate descriptions. And in 1789, Bartram sent duplicates of 38 specimens collected during his travels to Robert Barclay, an English botanical enthusiast, including 4 drawings of those plants that he considered the most valuable of his collection. Eventually, these specimens, drawings, and Bartram's remarks were folded into the Fothergill collection.¹⁴ Setting plants in motion was one of the important ways Bartram, like his father and Collinson and Garden, became familiar with nature, and specimen sheets and drawings were two forms that facilitated this process of familiarization. Bartram's annotations on his specimen sheets and drawings suggest that even as he isolated a specimen and described its essential features (including its soil and situation), he could also adapt these forms to emphasize the dynamism of nature.

I want to look first at an example of Bartram's remarks about soil and situation on a specimen sheet that conforms to conventional natural history reportage and places him within a tradition of botanical collectors in North America. For example, on one drawing Bartram wrote, next to the image of the plant, "No. 8. The Flowers are disposed in a long slender Spike or Catkins," and below the drawing, "This very Singular Shrub grows in boggy Swamps in the South'n parts of Georgia some distance from the Sea coast. it sends up a Number of Slinder stems 10 or 12 feet in hight, flowers very early in the Spring. It is an evergreen."¹⁵ Specimens of the plant appear in three of Bartram's specimen books:

1) in book A, labeled *For Doctor Fothergill, Specimens, Plants of Province of Georgia*, "1. Evergreen Shrub, grow in Copses, in swampy Branches on head or branches of Creeks"

2) in book C, labeled *For Doct'r Fothergill, Remarks on the Specimens of Plants natives of So. Carolina*, "4. A Singular beautiful Shrub; it is an evergreen grows about 10 feet high sending up a Great number of stems from a Root which are divided and subdivided in a very regular maner & adorned with smooth shining leaves the branches terminated by long erect spikes of pale roseate flowers which are succeeded by alated seed vessels trigonal & tetragonal resembling the fruit of Halesia. It grows in Gale bays & wet springy branches"

3) in book E, labeled *Mr. Barclay's Book*, "No. 20. A very beautifull evergreen Shrub Grows 7, 9, 10 feet high the Stems & branches erect, the leaves are of a lucid green & smooth surfaces The branches terminate with Racemes of incarnate flowers & these elegantly decorate the Shrubs the flowers are succeeded by triquetrous seed containing a little nut of kernel—It is a fine Shrub, grows about the borders of wet swamps in the low countries of Georgia & Florida Lat. 28, 29, 30, 31, 32-"¹⁶

All of Bartram's remarks offer some evaluative judgment ("very beautifull"; "fine"; "Singular beautiful"), but for the most part they provide empirical description of the appearance and structure of the plant as well as information about the soil and situation that produced it. On his drawing and in his remarks for all three specimens, Bartram referred to the "swampy" and "boggy" soil in which the plant grew. Even the specimen

sheet from book A, which has the shortest description, notes the soil and situation in which the plant is found. In each case, a botanical object--or, to be more precise, a representation of a botanical object and a representative type of a botanical object--was placed in relation to a specific kind of environment, even as it was collected and prepared to be transported out of that environment. (This specimen was eventually named *Cliftonia*, so named at Fothergill's request for William Clifton, Governor of Florida.¹⁷ It is one of the genera first discovered by Bartram, although he did not receive credit for the discovery.)

Recording the soil and situation on a specimen sheet was a convention of natural history writing; John Bartram's specimen sheets, for instance, confirm its ubiquitous presence. But as with William Bartram's use of the category in the narrative of the "Report," sometimes he pushed the convention in new directions. His rhetorical efforts attempt to emphasize the uniqueness of an isolated botanical specimen or the uniqueness of seeing the specimen in a particular setting at a particular time. Here, for instance, are Bartram's various remarks on a specimen he called "Andromeda."

1) Drawing plate 6: "No. 5. Fig. 1. Andromeda or Kalmea. This extraordinary and very beautifull Shrub is a species of Kalmea, Lin. It is an evergreen, & grows 6 or Seven feet high, the leaves are lanceolated but long and Narrow and blunt pointed. These extraordinary appearances of beautifull Flowers, are more like fiction or the exertions of an eregular fancy than of Nature. It is the Flower increas't to a wonderfull size, they are in this State of a fine Rose or Pink color. Fig. 1. The Flower in it[s] natural size, they are white."

2) Specimen, book A, *For Doctor Fothergill, Specimens Plants of Province of Georgia*, #18: "Evergreen Andromeda."

3) Specimen, book C, *For Doctor Fothergill, Remarks on the Specimens of Plants natives of So. Carolina*, #7 and #8: "Are beautiful Species of Andromeda evergreen, grows 7 or 8 feet high in a various eregular form a many stems from a Root leaning on every side towards the ground, that bend with multitudes of pitcher form flowers that have the smell of a new honey comb, the

Bee visit these flowers continually whence they collect honey, the blossom is of various tints from crimson to a pale rose color & white. It continues a long time in flower, it grows in Gale bays & wet spring branches." [Lyonia Lucida (Lam.) K.Koch]¹⁸

Bartram's remarks on the drawing and the two specimens in book C attend to natural history matters, such as the form of the leaves and the stem, the height, and the soil and situation, even as Bartram classifies other important features of the plant, such as scent and beauty. On the specimen sheet for book C, his writing creates a dynamic scene, of an evergreen laden with flowers and attracting the bees with its sweet smell. Bartram attributes a sense of action to all elements of the scene, even the plants: the root leans on every side, the "many stems" bend with the weight of their flowers, the bees "continually" visit the plants and their long-lived flowers. Even Bartram's description of color evokes a sense of lively variety.

Bartram's writing gives rhetorical shape to nature's dynamism by freezing a moment in time and space, as his remarks in book C suggest. Bartram, unlike his father, had been immersed in a variety of languages of natural description, which he drew on to convey his experiences as well as to pursue his natural history purposes. His remarks on the drawing of the Andromeda, for instance, provide information regarding the soil and situation even as they highlight the impact of the singular specimen on the traveler. In attempting to capture how "extraordinary" the flowers of the Andromeda appear to him, Bartram says they "are more like fiction or the exertions of an eregular fancy than of Nature."

Bartram tended, in the "Report" and in *Travels*, to address issues of credibility directly, by acknowledging the surreal aspect of the descriptions he asserts are nevertheless true. His attention to their wondrousness itself affirmed the veracity of his

remarks. His comment about the huge Andromeda flower serves somewhat the same function, but it also gestures toward nature's own excess. The flowers are "more like fiction" or the work of fancy than of nature, he says, but since we know they are products of nature, we must accept them as part of nature itself. Bartram's comment appears just a few lines after indicating that the Andromeda might be a species of "Kalmea, Lin.," and thus his description of the extraordinary flower is not distinct from taxonomic classification and botanical analysis--"the leaves are lanceolated but long and Narrow and blunt pointed"--but directly linked to it. Bartram's use of figurative language to augment an empirical description of the plant signals another shift in the discourse of natural history. In his remarks on the specimen sheets and drawing, Bartram mingles the languages of wonder, taxonomy, and the pastoral to convey the experience of seeing this splendid plant in flower.

Bartram's portable drawings and specimen sheets may seem to be abstract representations of the Andromeda, removed from their point of origin. They are the objects and the symbols of botanical mobility. Yet Bartram's remarks could also be used to integrate the plant into the narrative of his "Report," and thus into the narrative of his experience in nature. The textual link between specimen sheets and drawings and the narrative mirrors the botanical link between isolated plants and their point of origin--the link between mobility and rootedness. Bartram's description of discovering the Andromeda occurs relatively early in the "Report," in April 1774, while he was traveling in Georgia:

Here too I observed the very singular Species of Ledum or Andromeda, whose little white campanulate Flowers, become monstrous excressences, every Part of the Flower, inlarging proportionably, & being of a deep flesh or rose colour afford a very agreeable apperance, some approaching to the size of a Tea-cup and is on

this account extremely singular & very beautifull. It is a beautifull evergreen Shrub: the wood when dry being very sollid close & fine grained & indures a polish resembling Box wood or Elder.

Once Fothergill received Bartram's shipment of natural and textual productions, he could move between the drawing and specimens of the Andromeda and the narrative of Bartram's discovery of it in the "Report." (Indeed, Bartram's use of the word "monstrous" may have piqued Fothergill's interest.) The relationship between the plant (transportable nature) and its soil and situation (rooted nature) that was inscribed on specimen sheets made it possible to reattach the specimen to Bartram's narrative of his journey, and thus to a narrative of place.

Abetted by Bartram's prose, Fothergill could make an imaginative effort to combine the objects and drawings with the soil and situation from which they had been taken. In this way, the "Report," like epistolary natural history, illustrates how the dynamic process of travel and collection and transplantation was coextensive with the reading and writing that participants did. In the example of the Andromeda, Bartram's writing conveys his own enthusiasm and wonder, making his response as a traveler and reporter integral to the mobility of the plant.

I want to reflect for a moment on this aspect of botanical collection, in which a traveler moved through a landscape looking for the curious phenomenon. This way of seeing involved looking through the familiar and known plants in search of the singular ones. The processes of familiarization--such as classification, gardening, and painting--were in flux throughout the century, as the relationship between nature and the individual transformed. Many of these processes were built on practices of textual exchange and dialogue, such as letterwriting. In the case of the "Report," Bartram's dialogue is, at one

level, with John Fothergill, whom he addresses directly at a few points in the narrative and who must be the audience imagined when Bartram uses the word "you." At another level, Bartram's dialogue is with the landscape itself. His role as reporter is both objective, in that he follows Fothergill's directives and reports on what he sees, and subjective, in that it emerges from his own experience of and appreciation for nature--his own way of looking at the landscape.

For instance, one of the ways the "Report" signals its purpose and suggests movement through time and space is when Bartram tells Fothergill that he has "discovered nothing new" or "observed no new genera of Vigitables" as he moves across the land.¹⁹ Such phrases provide a counterpoint to the moments in the narrative when he does describe something new. "New" means "unfamiliar" in this context, referring to an object that is unknown, unnamed, unclassified. Bartram's prowess and authority as an observer and a sense of shared knowledge with his reader are assumed in such a rhetorical dismissal, even as it obscures particular aspects of a natural landscape. The phrase evokes Bartram the traveler moving across the landscape and it assists Bartram the reporter in moving through the prose narrative of that journey. In a sense, the phrase gives him leave to move on. It provides a rhetorical transition from one natural and narrative space to another.

By contrast, when Bartram, or any other botanical collector, highlights something "new," the declaration provides a stopping point, and the information about soil and situation he provides was a first step in gathering information that would move the plant from being a "nondescript" to a "descript," from "Anonymous" to named, from new to familiar. For example, during a surveying tour through northeastern Georgia, Bartram

describes his “Botanical excursions” around the camp site. After climbing a hill and looking out on a “very agreeable prospect of the Plains below,” Bartram says that he observed “a very curious Shrub.” He then launches into a lengthy description of the shrub:

grows about 2 feet high, olive shaped leaves growing opposite on slender branches, bearing very large oval fruits or berries, rather larger than an olive or Plumb. yellow when ripe, as I was informed by the Indians, they grew single in the bosom of the leaf having a short Pedicile. could find none Ripe neither could I see any flowers. The Indian hunters, cary the Root with them believing it to have a fascinating Power, to bring deer to them. this the Indian Doctors or Conjurers make their People believe; & for which end they hold it in high esteem & make them pay dear enough for it, this was the account I had by an Interpreter present. they do not eat the fruit tho’ it has a great Pulp & seemed to have no disagreeable taste, but the Root very strong & disagreeable both smell and taste. It has also a large kernel & possible very oiley when ripe; in fine It is a Pretty new shrub well worth Notice & may possess qualities (yet undiscovered to us) of great use to mankind. It grows in large patches on high dry stoney & rather barren land.²⁰

Bartram's emphasis on the possibility that the plant may be "of great use to mankind" shows he was well aware of Fothergill's goals for his journey. He provides details about the shrub's soil and situation ("It grows in large patches on high dry stoney & rather barren land"), its botanical parts, and whatever other information he had been able to glean from the Indians. He also offers experiential evidence, noting that the pulp had "no disagreeable taste" while the root was disagreeable in "both smell and taste." The description of this shrub appears as part of the narrative of Bartram's "excursions"—it occurs in time, shortly after his accidental discovery of a plant he calls “cariophylata,” and it occurs in a specific place, on the summit of “the Hill.”

Bartram's specimen sheets also record the location of the discovery of the new and curious shrub. He sent at least two samples to England, one to Fothergill and one to Barclay (along with a drawing, marked No. 5, although it has no other remarks²¹):

1) in book B, For Dr. Fothergill, labeled *On the way to Cherokee Country*, "17. a pretty Shrub. Grow in the Cherokee Country"

2) in book E, *Mr. Barclay's Book*, "No. 5. Anonymous. Physic Nut. Indian name. A very singular Shrub, grows 2 feet high; the stems mostly simple, decumbent. The frute is of the size & shape of an Olive (I never saw the flower it hath a large oval nut, covered with a thin pulp. yellowish whin ripe.) It grows near the Cherokie Mountains Lat. 33. I inquired of the Traders & Indians If it was of any Use or possess't any Vertu. They answered that the Indians carry the ripe frute with them when out on hunts supposing it to have the power of attracting deer & so they call it the Physic Nut or Fascinating Nut"²²

The narrative progress of the "Report" augments the information provided on the specimen sheet to Fothergill. Only by reading backward from the sheet ("a pretty Shrub. Grow in the Cherokee Country") to the "Report," only by looking at the parts of the "Report" that describe Bartram's movement through Cherokee Country, could Fothergill have gathered botanical information about the "pretty Shrub" and its place of origin.

Sometimes Bartram provided explicit references on a drawing to the corresponding narrative description in the "Report," guiding his reader. Such directives explicitly restored a sense of place to an image or a dried specimen, reattaching them to a terrain--with a specific soil and situation--that is recorded in the prose. The category of "soil and situation" was thus easily abstracted in order to travel with the new plant, becoming part of its botanical history and assisting in the advancement of knowledge, and it remained rooted to specificity of place, to the progress of a traveler over a local terrain. In Bartram's hands, the convention fulfills both of these functions of natural history even as his writing registers shifts in the discourses for accentuating the beauties of place and the allure of curious new plants.

Bartram's "Report" records his own increasing familiarity with a territory and its natural productions even as it provides information intended to make the territory familiar

to a reader abroad--to provide a sense of its contours, its topography, its natural specificities, its productive potential, its local inhabitants, its history. Through the eyes of the mobile figure in the landscape, the reader sees the land and its natural productions. Bartram's rendition of another convention of natural history writing, the botanical list, illustrates this point. I referred above to his vivid descriptions of trees, in my brief comparison of John Bartram's and William Bartram's use of the convention of soil and situation, suggesting that while William Bartram often presented straightforward lists of trees, he also crafted passages that added descriptive density to his lists. Even botanical lists were an opportunity for Bartram to exert rhetorical effort in order to convey "true and natural description" (as he puts it in the "Report") as well as some sense of the specificity of being in a particular natural setting.²³ Bartram's writing attempts to make the unfamiliar familiar by conveying his own process of familiarization, even as it suggests, paradoxically, the impossibility of transporting the unique specificities of place.

The following passage, drawn from Bartram's travels through Georgia, illustrates this descriptive richness:

Continuing my ramble about these fruitfull Hills and vales I decended down again to the Creek & traceing its winding courses through these fragrant Groves which led me to the foot of a hill, here a group of fine flowering Trees & Shrubs drew my attention. approaching this joyfull retreat which decorated the banks of the Creek just by a cascade, This noble assembly of vegitable could scercely be paralell'd in America, & would have been difficult for a Botanest on which to fix the preemenence. The Majestick Laurel Tree or Magnolia grandaflora towers above the chiefs of this vegitable Court, whose proud crest adorn'd with waving plumes of the most exquisite white flowers, attended by other beautifull tribes of this noble Family of Vegetables. The Rose Laurell Magnolea Glauca, almost equaling the first in magnitude & exceeded by none, in leaves of a delicate asure green, thick seed with rose like blossoms of the most perfect whiteness. Magnolia Umbrella Tree whose horazontal branches, adorn'd with vast silkey leaves so uniformly disposd in form of an umbrella & crested by the finest flower, the whole presenting a most magnificent Canopy. Magnolia Altissima, Liriodendrum, Sugar maple, Pavia scarlet & white flowerd, Azalia, Stewartia, Calycanthus, &

rose flower'd Chamerododendron & lesser Kelmia in the steep rocky Bank,
bending with their heavy clustres of flowers toward the water.²⁴

Bartram leads up to the botanical list with the phrase "here a group of fine flowering Trees & Shrubs drew my attention," and, given the popularity of flowering trees and shrubs in England in this period, the phrase was sure to pique Fothergill's interest.²⁵ Bartram describes the terrain and uses the category of soil and situation as a way to establish a sense of place for Fothergill in London. He fulfills the obligations of the field journal form, in that he provides information about the botanical productions in a natural situation and their manner of growth.

But in its exuberance and descriptive excess, this is no mere catalogue. Bartram creates a visual scene for his reader through an extended metaphor and the language of botanical nomenclature, differentiating trees by their beauty and establishing a hierarchy and order out of the botanical abundance based on degrees of nobility. Bartram figuratively compares an assembly of trees to a court assembly in order to bring his English reader, a fellow subject of George III, closer to a scene unparalleled "in America." This too is a form of classification, and the catalogue of specific trees at the end of the passage takes on lyric qualities coming as it does after such effusions of praise.

Bartram claims that the "noble assembly of vegetable" was so grand that it "would have been difficult for a Botanest on which to fix the preeminence," and yet that is exactly what he attempts. These are not "new" vegetables that are unfamiliar and therefore worth reporting. Here, he sees familiar trees as a botanist does--their formal shape, their taxonomic relations--and he uses this way of seeing to convey their magnificence for the purpose of revealing and celebrating the unique beauty of this specific botanical assembly. He calls it a "joyfull retreat," offering a subjective response as empirical fact,

which itself marks a change in the expectations of how a traveler could respond to a natural landscape.

The dominant language of botanical classification in the 1770s was Linnaean taxonomy, and Bartram had grown up with access to at least three of Linnaeus's works in his father's library. But a more general sense of classification has been at the center of this history of botanical mobility, both conceptually and rhetorically, and it took many forms. The impulse to classify and categorize plants--whether through character descriptions, scent, color, size, shape, usefulness, ease of transplantation, market potential, and so on--was a necessary response to the influx of new specimens into the Old World and the New. Various modes of classification guided both intellectual and emotional responses to nature, becoming tools to understand and interpret the impact of nature on the self.

Bartram was adept at combining a classificatory impulse with other modes of description, such as landscape gardening, to convey the specificity of American landscape and its botanical brilliance.²⁶ Another example of his use of the botanical list will serve to illustrate this rhetorical ingenuity. In the follow passage, Bartram recounts his second collecting expedition up the St. Johns River in East Florida:

Got off early in the Morn'g and went this day about 12 Miles, passing through Marshes & Swamps, the Shore on either hand close to the water Edge most richly adorned with the gayist Vegetables. The great Rose Hibiscus, The most elegant Crimson Hybiscus, that rises tall above all Plants, spreading into innumerable branches forming a Piramedal Top larger then some Trees, bearing multitudes of Vast Crimson flowers, so resplendant when the Sun shines upon it in the morning the Eye can't behold it without injury to the sight. The smaller flower'd rose col'd Hybiscus clothed in the morning with an amazing profusion of the richest flowers, The white robed Pancratium filling the Air with the most exhilarating fragrance. behind these rise up to view on higher seats, another Order of splended Vigitable: Cephalanthos, Senesio Aboracens, Cornus, Catalpa, the Tall aspiring Amaranth, Sambucos, Palma Christa, the Indian Papaya, profusely adorn'd with garland of

the joyfull airey Climbers, As the various Bignonias. Convolvuls of various species & colours, Eupatorium scandens, Phaseoloides, the beautifull climbing shrub Aster, unfolding her purple mantle spreading over the Shrubs & Trees all about & the Aerial Cucurbita aspiring to the tops of the highest Trees. All this reflected on the gentle flowing surface of the River in the morning exhibits an enchanting theatrical Scenery.²⁷

The surface of the river reflects this riverside scenery, an effect achieved by the way these botanical objects grow individually and in relation to one another: some with crimson flowers, some with white, some closer to the water bank, some "Climbers," some draping over other trees, some "aspiring to the tops of the highest Trees." Bartram's use of the phrase "theatrical Scenery" directs his reader in how to understand this passage, and others in which he describes at length the objects of a region: we might think of "theatrical scenery" as something artificial and created, especially considering the discourse of eighteenth-century English landscape design, but Bartram was describing the way nature achieves this effect on the uninhabited banks of the St. Johns River.

Bartram integrates taxonomic terms with rhetorical flourishes, increasing the descriptive power of those terms and conveying his own pleasure in the scenery. Some of Bartram's botanical lists, as I said above, look like his father's: a straightforward catalogue of plants observed by a disinterested percipient working within a genre of promotional and travel literature. Some, like this one, do something different: they are more evocative, capturing the aesthetic beauty of a landscape and collapsing the distinction between a disinterested and interested percipient in order to extend the catalogue form and the linguistic possibilities for natural description.²⁸

Botanical nomenclature was one of the lenses through which Bartram looked at a landscape, in a way that augmented his appreciation for theatrical scenery and expanded his way of seeing and describing nature.²⁹ Disinterested empirical methods of assessment

and classification brought viewers closer to nature. This claim reflects in part one of the paradoxes of Enlightenment thinking, which is that the empirical methods of the new science aimed for objective disinterestedness even while depending on the individual observations and claims of a particular person. But in a more literal sense, empirical methods taught people how to look at natural objects and nature itself. Indeed, one of the reasons Linnaeus's method flourished in the latter part of the eighteenth century was that it could be learned by anyone, bringing domestic garden spaces into new focus for women and children.

John Ellis's work with the *Gardenia* showed this process of increasing familiarity through closer and more detailed empirical analysis; Bartram's description of the theatrical botanical productions along the St. John's River, using the language of botanical nomenclature, represents another. He too is looking at a natural object--a landscape--and attempting to describe it in all its detail, in order to celebrate it and in order to know it. The catalogue of trees does not represent specimens to be discovered or described; rather, their specific combination creates a scene to be discovered and described, a scene that can be transported to England only through Bartram's prose. No matter how many North American trees and specimens wend their way across the Atlantic, to be cultivated by men like James Gordon, this "enchanted theatrical scenery" could not be duplicated.

Bartram's description of the riverside scenery fulfills an obligation to Fothergill, as Bartram reports on the soil and situation of a new region for his English patron; at the same time this adjective-laden passage asserts the irreproducible beauties of the place. As I said in chapter 1, the introduction of North American botanical specimens into England

in the first half of the eighteenth century fueled an appreciation for "place-making."

Collinson expressed one sort of pleasure in place in his description of wandering around Lord Petre's estate, lost in the new world created by the thousands of American, Asian, and European plantings. Bartram's description suggests a different kind of appreciation of place, drawing on the discourse of English landscape traditions in order to convey the unique specificities of an uncultivated natural place.

The repetition in the passage of the phrase "in the morning" hints that this riverside scene is irreproducible not only in space but also in time. Indeed, the way the passage locates the splendors of the scenery in time--the cycle of a day--contributes to the sense of particularity, specificity, and personal connection. Bartram often used diurnal placement in the "Report" to this effect, illustrating the pleasures that come from seeing natural objects in their native place at specific times of day. In July of 1774, for instance, Bartram took a trip with traders from the east coast of Florida westward through the Alatchua Savannah to the Little St. Juane River. His "Report" describes their day-by-day progress over the land:

Having walked over these pleasant green hills & savanahs, returned to Camp. The evening being extreamely pleasant, a healthy breese was wafted over the plain from Orange Groves on the other side, mixed with a very agreeable musk, played about us, & kept the Musquetoës off. I Shall here take notice that in the Pine Forests of Carolina & Florida, in the coole of the evening just before the sun set a most agreeable musk fills the Air; but what it proceeds from, No one could ever give me a satisfactory account, some tell me it is the Allegator, & some again says it arises from the hoof of the Buck but it seems to me to be more mild & agreeable then what Proceeds from either of these. I am inclined to believe it is produced from a certain pretty little Plant which I find growing abundantly in Savanahs amidst the Pine Forests, whose flowers whilst fresh smell of the most agreeable musk, so extreamely volatile & Transient that It ceases to emit the smell quickly after it is crop't, so that This extraordinary Plant seemes rather to breathe forth a most agreeable musky vapour.³⁰

The aromatic pleasures of this "pretty little Plant" were short-lived, occurring "just before the sun set," and the experience of smelling it at sunset in central Florida was available to the traveling collector, but not to his patron. Some aspects of the plant were simply not transportable. Scent was an important category of judgment and appreciation, another classificatory term and one that Fothergill specified in his set of instructions as a desirable attribute for plants he wanted Bartram to collect. In this case, the scent that Bartram describes could not be transported to England in any way other than his prose.

Bartram's writing highlights the experience of being a traveler in nature. He reports on the natural productions of the territory for an interested patron, but it is his experience of being in a specific place that he attempts to render into language. Bartram's observation--"I shall here take notice"--and his efforts to discover and hypothesize about the source of the "most agreeable musky vapour" illustrate the layers of natural history reportage, even as the passage captures an irreproducible and ephemeral feature of a specific natural setting. His descriptive terms for the musk of the "extraordinary plant"--"so extremely volatile & Transient that It...seemes rather to breathe"--affirms the dynamism and mutability of nature, a mutability linked to time and place.

A few pages later, as Bartram and his companions continued their trek westward, Bartram recorded another observation that highlights the ephemeral quality of the landscape, describing not scent but color:

Got a way early in the morning, passing through extensive Pine Forests, affording excellent Timber and grass range, went over green open planes, here observed a very elegant Species of Mimosa, grows low, the leaves & stalks spreading on the ground amongst short green grass. It has no prickles. At touching the leaves the close together immediately, & fall flat on the ground, they send up from the joints a peduncle 6 or 8 inches in length headed by an oblong tuft of floscule having large yellow apices. They are of various colours, some heads are of a deep crimson rose colour, Yellow & white as snow, the flowers have an agreeable scent

of a damask rose with a little musk, these vast open grassy plains, in the morning presents a very chearfull aspect till towards mid day, when their beauty fades, they wither, & are no longer conspicuous, but then the next morning brings to view a new succession of gay Inhabitants & the plains assume a new scene of gayity & joy.³¹

This passage illustrates the way Bartram's writing incorporates several discursive modes in order to render the experience of being in nature: promotional literature, botanical description, the pastoral. There is objective empirical reportage as well as personal appreciation, empirical description combined with aesthetic pleasure in the view. Using these various modes of description, Bartram attends to the dynamism and mutability of nature, especially in his depiction of the Mimosa's response to being touched and of the short-lived color of the "vast open grassy plains."

Bartram's description of the ephemeral colorful carpet of Mimosa emphasizes the transience and dynamism of the natural world. At the same time, the fact that the ephemeral "scene of gayity and joy" appears each morning contains that dynamism within the temporal rhythms of a day. The cycle of a day, here and in the passage on scent, thus exposes nature's mutability. The fact that the "agreeable musk" appears only at dusk or that the Mimosa's "cheerful aspect" lasts only through the morning gives a temporal meaning to the phenomena, inserting nature's dynamism as revealed in a particular space into a pattern of time. Natural time and historical time are juxtaposed, in a way that draws attention to nature's dynamism and irreproducibility.

Bartram's descriptions of such temporary natural phenomena record natural history as well as a personal history of the sensory experience of being in a specific place. Bartram's writing preserves for his reader what cannot be preserved in a more material way or transported across the sea. Such appreciative descriptions reflect the

transformation of nature into the embodiment of change. Bartram's writing suggests he searched nature for such temporal patterns, not to contain nature's dynamism, mutability, and abundance but to celebrate it. In so doing, his writing discloses a Romantic awareness of the irreproducible specificities of place as well as the impact of nature on the self.

The "Report" may be regarded as an example of a genre of promotional literature, but a genre in transition, as Bartram's distinct voice makes his own experience integral to the findings he records. In this quality of his writing, Bartram exceeded the instructions Fothergill sent him for the trip, finding a purpose in writing about and describing a relationship to nature as a traveler that relied on and went beyond empirical observation. Of course Bartram fulfilled his natural historical obligations to his patron. In the "Report" and on the specimen sheets and drawings that accompanied it, Bartram recorded the soil and situation, the flora and fauna, of the southern colonies. And his specimen sheets explicitly connected him to the process of abstracting natural objects from a specific environment, and setting them in motion to be organized and classified in various ways.³² At the same time, Bartram's prose suggests his awareness that some aspects of nature are irreproducible--dynamic but not transportable--and thus only accessible to the traveler.

As I mentioned in chapter 1, the transportation and transplantation of plants nurtured a figurative language of transplantability, such that Peter Collinson could tell John Bartram in 1756 that "England must be turned up side down & America transplanted Heither."³³ Collinson tended to make easy rhetorical slippages between transporting nature and transporting place: to transplant American plants was to transplant America itself. William Bartram, by contrast, mingled different modes of

description to convey specificity of place, to suggest, in fact, that some aspects of American nature could not be transplanted.

Bartram extended the figurative uses of the languages of natural history to convey a new kind of familiarity with and connection to the natural world. Bartram was not only invested in revealing a new world to his English reader, but was equally intent on discovering this new world for himself, reflecting an altered relation between the self and nature. The "Report" is an early expression of Bartram's attention to the dynamism of nature and the beauties of place, reflecting not only the cultural impact of Romanticism but also confirming the way nature's mobility and various methods of classification enhanced his experience in nature.

* * *

I began this chapter by placing Bartram's "Report to Dr. Fothergill" among the colonial histories of botanical collection and travel in North America, even given Bartram's transitional status. The "Report" captures some of the conceptual and rhetorical aspects of the transition--from promotional literature to the literature of place, from straightforward natural history reportage to celebrations of nature's variety and dynamism, from detached empirical observer to involved empirical observer. I want to conclude by laying out some suggestive biographical details that highlight Bartram's continued involvement in the histories of mobile plants and travel, starting with the fate of the plants he collected during his journey. In so doing, it becomes clear that mapping transitions is a tricky business.

Daniel Solander--student of Linnaeus, friend of Ellis, companion to Banks on two voyages of travel and exploration--was primarily responsible for classifying the

specimens Bartram sent to Fothergill, and his handwriting is on many of Bartram's specimen sheets. Still, the botanical and textual fruits of Bartram's labor were, for the most part, left unattended, to molder in obscurity for some time. In 1788, when Bartram sent his specimen book to Robert Barclay in London, he began his remarks on the specimens with the following letter to Barclay:

I collected these specimens amongst many hundred others about 20 years ago when on Botanical researches in Carolina Georgia and Florida[,] duplicates of which I sent to Doctor Fothergill; very few of which I find have entered the *Systema Vegetabilium*, not even in the last Edition.

The number of specimens that I sent were submitted to the examination of Doctor Solander which by the returns I received from the Doctor (the nos. corresponding with those of my duplicates) appear'd most of them to be either New Genera or Species; soon after Doctor Solander deceas'd & Doctor Fothergill soon after followed him. I have never learn'd what became of the specimens...

Wm. Bartram, Nov. 1788

It is a bit of mystery why Solander did not promptly identify and make public the information about Bartram's collections.³⁴ Joseph Ewan writes, "That nothing had been done to announce [the drawings and specimens] to the scientific public in an era of zealous exertion could only have perplexed William,"³⁵ but there are historical circumstances that offer some explanation.

Most obviously, the political realignments of the revolutionary period shifted the focus away from the North American continent. To highlight the slipperiness of this transition, note that the date on Peter Chester's letter of introduction for Bartram (which I use as an epigraph) is dated September 5, 1775, five months after the Battles of Lexington and Concord had taken place. Bartram sent his final shipment of plant specimens to Fothergill in 1776, but trade between America and England was already being disrupted. (Bartram returned to Philadelphia in January of 1777; his father died in September of that year, shortly before the British Army occupied Philadelphia after the

Battle of Brandywine.) Even before the war, the popular Cook expeditions drew some English interest and attention away from North America. These voyages of imperial science charted a new direction for natural history investigations, as a different sort of community managed the flow of natural objects and information. Kew Gardens, for instance, became the clearinghouse for all plants and botanical information entering England, and the work of botany depended less and less on personal relationships as new professional protocols were established.

Perhaps Bartram did not much mind that his botanical collections were barely able to overcome the contingencies of war and the shifting geographical interest by English and European botanists. There are in fact some incidents in Bartram's biography that suggest a kind of detachment from the work of making plants mobile: he did not send many live plants to his father or to Fothergill (much to their annoyance); he was an unreliable correspondent; and there is evidence that he rejected an offer made by Sir Joseph Banks in 1774 to be a paid collector because the offer of pay was too slight.³⁶

And yet his continued immersion in the world of classifying, cultivating, and transporting plants suggests otherwise. Bartram wrote, with his brother John's assistance, the first nursery catalogue published in America (1783), representing a new phase in the commercial viability of mobile plants. Benjamin Franklin facilitated its publication in France, and Crèvecoeur was a customer. In his correspondence, as well, Bartram showed a continued fascination with the way the observational work of classification enabled one to grow closer to nature.

After all, the history of the mobility of plants in the eighteenth century was inextricably linked to transformations in the relationship between the individual and

nature, and Bartram's epistolary exchanges with Henry Muhlenberg, in particular, illustrate the continued rewards of epistolary natural history. They exchanged letters between 1792 and 1810, and the challenges of classification preoccupied them. In November of 1792, Bartram sent Muhlenberg a "little Book of Specimens of Plants," not, he says, "as new Subjects, or very curious, but as dubious and difficult with me to ascertain their Species." He proceeded to offer his notes and remarks on the specimen. About one sample, he wrote: "12. "Polygonum. I believe a new species, I never observ'd till this Fall. I found it in flower growing in drains and ditches, in our Rich Tide meadows on Schuylkill." Bartram's words emphasize the way the work of classification, and correspondence, brought him closer to nature and to appreciating the botanical diversity of his local space on the Schuylkill River. Bartram stayed in place, becoming more familiar with its natural objects and recording the dynamism of the natural world around him. Nature's variety and mutability were newly visible not in spite of efforts to classify and categorize it but because of such efforts.

In one final illustration of the way Bartram bridged the worlds of travel and collection, of mobility and rootedness, consider that while Bartram looked east, wondering why his specimens had not been, as he wrote to Barclay, "enterd [into] the *Systema Vegetabilium*, not even in the last Edition," he also looked west. In his November letter to Muhlenberg, he wrote, "When, as I frequently percieve in Idea the Vast, boundless dicorated Field for contemplation, & researches, in Natural History, Westward beyand the elevated Mountain, for the ingenious of future generations, am almost ready to wish, that the appointed time of my existence here, had been posponed to that day."³⁷ Bartram's hopes replicate those of his father, of Collinson, of Linnaeus, of

anyone reaching beyond the known natural world in anticipation of new knowledge and delights. Bartram's imagination of the "Vast, boundless decorated Field" reflects the complex way in which this history of the mobility of nature took place within a paradigm of expansion--imperial, commercial, national, natural.

Even though this 1792 letter suggests that Bartram's dreams for travel had retreated into his imagination, in fact the idea of travel was not just an "Idea" but a real possibility. In 1805, Thomas Jefferson organized support for the Red River expedition, in which a new group of traveling collectors set out across an unfamiliar landscape, as they had done two years earlier with the Lewis and Clark expedition. Bartram was invited to participate in this expedition, to take one more trip. His friend, correspondent, and collaborator, Benjamin Smith Barton, wrote to Bartram on November 30, 1805 urging him to join the expedition. After providing additional details about the expedition plan as well as compensation, Barton applied some playful pressure: "Come on. You are not too old. You have sufficient youth, health and thought for the journey. You will render great and new services to Natural Science. Remember that your venerable father continued to make Botanical tours long after he reached your age."³⁸

Bartram's correspondence--not only his Romantic vision in 1792 of the "Vast, boundless decorated Field for contemplation, & researches, in Natural History, Westward beyond the elevated Mountain" but later letters as well--suggests that he was tempted to heed the summons to travel in search of natural productions on behalf of president and nation, even at the age of sixty-six. After all, his father, at the same age, had hearkened to the call of king and country in 1765 in one of the first English explorations of the newly acquired territory of Florida. However, perhaps because of his health, perhaps because of

a leg injury he had sustained in a fall from a tree, perhaps for less tangible reasons, Bartram declined to join the expedition, recommending Peter Custis for the job.

Bartram, like the speakers of "Brachman's Creed" in his *Commonplace Book*, was "contented" with his bounded life in Kingsessing, and he no longer "wandered...in serch of different rarities." Rather than moving over landscapes himself, observing and collecting natural productions, Bartram stayed rooted on the banks of the Schuylkill and observed and recorded nature's movements around him, focusing particularly on patterns of bird migration in the Philadelphia region and patterns of weather changes, as well as studying the botanical productions in his family's garden and along the riverbank. Bartram worked to observe and explain nature's inherent dynamism and mutability, in part by continuing to celebrate the beauties of place.

¹ Letter of introduction for William Bartram. *William's Bartram's Manuscripts, Vol. 1: A Life in Letters*, eds. Thomas Hallock and Nancy E. Hoffman (Athens: The University of Georgia Press, forthcoming).

² Nancy E. Hoffman, *The Construction of William Bartram's Narrative Natural History: A Genetic Text of the Draft Manuscript for 'Travels through North and South Carolina, Georgia, East and West Florida'* (dissertation, 1996), 219.

³ William Bartram, *Commonplace Book (1760-1790)*, 38. Courtesy of Frances Kaighn Robins and the American Philosophical Society.

⁴ John Fothergill to Lionel Chalmers (23 October 1772), *Chain of Friendship: Selected Letters of Dr. John Fothergill of London, 1735-1780*, introduced by Betsy C. Corner and Christopher C. Booth (Cambridge: Harvard University Press, 1971), 394-395.

⁵ The historical circumstances surrounding the production of the "Report to Dr. Fothergill" are a bit uncertain. We know that Bartram wrote the "Report" in two parts, and the best guess is that he sent part 1 to Fothergill in the fall of 1774, probably from Florida, and that he sent part 2 to Fothergill in the spring of 1775 from Charleston. See *William Bartram, Travels and Other Writings*, selected by Thomas P. Slaughter (New York: The Library of America, 1996), 611 (hereafter cited as LOA); Francis Harper, Introduction to "Travels in Georgia and Florida: A Report to Dr. John Fothergill" by William Bartram, *Transactions of the American Philosophical Society*, New Series, Volume XXXIII, Part II (Philadelphia: American Philosophical Society, 1943): 123-132.

⁶ *Observations on the Inhabitants, Climate, Soil, Rivers, Productions, Animals, and Other Matters Worthy of Notice Made by Mr. John Bartram in His Travels from Pensilvania to Onondago, Oswego and the Lake Ontario in Canada, To which is annex'd, a curious Account of the Cataracts at Niagara by Mr. Peter Kalm, a Swedish Gentleman who travelled there* was published in London in 1751 without John Bartram's knowledge. A draft of Bartram's journal describing his exploration of Florida was (most likely without Bartram's knowledge) appended to the second edition of William Stork's promotional tract, *An Account of East-Florida with a Journal kept by John Bartram of Philadelphia, Botanist to His Majesty for the Floridas; upon a Journey from St. Augustine up the River St. John's* (1766).

⁷ *Chain of Friendship*, 391-393 (22 October 1772), 401-404 (4 September 1773); *William's Bartram's Manuscripts, Vol. 1* (7 January 1774) (see n. 1).

⁸ *Chain of Friendship*, 402. The "little journal" Fothergill recommended Bartram keep has never been found. It is presumed to be the source for the "Report," along with the few letters Bartram wrote during his trip, the botanical descriptions that accompanied his specimens, and the *Travels*. Harper, Introduction, 123 (see n. 5).

⁹ *Chain of Friendship*, 402.

¹⁰ William Stork, *An Account of East-Florida with a Journal kept by John Bartram of Philadelphia, Botanist to His Majesty for the Floridas; upon a Journey from St. Augustine up the River St. John's* (1766), 36 (14 January 1766).

¹¹ Slaughter, in *The Natures of John and William Bartram* (185; see intro. n. 18), argues that William Bartram reversed his father's pattern of writing in a personal, familiar, and evocative manner in private exchanges while using a more detached, objective, and impersonal tone in more public travel reports.

¹² LOA, 437.

¹³ LOA, 434

¹⁴ Ewan, *William Bartram Botanical and Zoological Drawings*, 154 (see intro., n. 8). These specimens are preserved in "separate stitched 'books'" in the British Museum (Natural History).

¹⁵ Ewan, *William Bartram*, 51 (plate 9). The drawing can be viewed online in the Picture Library of the British Museum of Natural History (<http://piclib.nhm.ac.uk/piclib/www/index.php>), listed as *Cliftonia monophylla*, buckwheat, image #15940.

¹⁶ *Ibid.*, 159; 162; 165.

¹⁷ Daniel Solander, who was given the task of identifying Bartram's specimens, annotated the drawing "Cliftonia," "adhering to his patrons wish to dedicate the genus to William Clifton, Governor of West Florida, a friend of John Ellis." Ewan, *William Bartram*, 51.

¹⁸ Ewan, *William Bartram*, 50 (plate 6); 160; 162. The drawing can be viewed online in the Picture Library of the British Museum of Natural History (<http://piclib.nhm.ac.uk/piclib/www/index.php>), listed as *Lyonia ferruginea*, staggerbush, image #15937.

¹⁹ LOA, 465.

²⁰ *Ibid.*, 447-448.

²¹ No. 5 suggests it was drawn not for Fothergill but for Barclay since "No. 5" corresponds to the remarks on the plant in "Mr. Barclay's Book." Ewan, *William Bartram*, 165.

²² Ewan, *William Bartram*, 65 (plate 27); 161; 165. The drawing can be viewed online in the Picture Library of the British Museum of Natural History (<http://piclib.nhm.ac.uk/piclib/www/index.php>), listed as *Nestronia umbellula*, physic nut or indian olive, image #15949.

²³ LOA, 441. Bartram's rhetorical style in the "Report" is generally considered to follow a more "plain style," as compared to the *Travels*. Harper, the "Report's" first editor, notes that the "Report" is "a far fresher document than the *Travels*." Introduction, 123 (see n. 5). More recent critics pursue more detailed comparisons of the two works. For example, Hallock points out that the "Report" is "surprisingly restrained in tone," combining "the genres of itinerarium, field notebook, and botanic report," and says that it "lacks the effusiveness and drama that characterizes the later book." *From the Fallen Tree*, 153; see chap. 2, n. 11). Hoffman describes the prose as "terse," and says it shows "no philosophical meditations, few emotional expressions, little or no evocative language" of natural description, and "little reflective consciousness....The movement of the prose is layered, not connected." *The Construction of William Bartram's Narrative Natural History*, 6; 53 (see n. 2). Slaughter says that Bartram "reverse[d] the reportorial style of his father, using the more private genre of personal correspondence for his discussion of productive potential [in the "Report"] and reserving his most romantic prose for the public audience of the *Travels*." He claims that the "Report" is "irrepressibly visual" and "emotionally accessible," suggesting that it even though it is stylistically close to John Bartram's published Florida journal, "adapting the tone of the philosophical reporter of size, distance, terrain, and 'useful' plant life," in fact William Bartram "is a more active, visible presence" in the writing." *Natures of John and William Bartram*, 185, 187.

²⁴ LOA, 448-449.

²⁵ Mark Laird in *The Flowering of the Landscape Garden* (see chap. 1, n. 26) discusses the popularity of flowering trees and shrubs in mid-century England, and describes the creation of the "shrubbery."

²⁶ Bartram's *Commonplace Book* (1760-1790) provides evidence that Bartram enjoyed Akenside's *Pleasures of the Imagination*, and that he had read William Shenstone and Philip Miller on garden design. See *William Bartram's Manuscripts: Vol. 2, "Commonplace Book,"* introduction by Joel Fry (see n. 1).

²⁷ LOA, 499-500.

²⁸ Bartram's artistic renderings, many of which try to capture the denseness of a natural scene, are an important context for these rhetorical scenes, offering another way of understanding his interest in place.

²⁹ Several scholars explore Bartram's use of taxonomic language, but the assumption that taxonomy is an "absolutizing" discourse can limit interpretations of Bartram's writing. See, for example, Bruce Silver, "William Bartram's and Other Eighteenth-Century Accounts of Nature," *Journal of the History of Ideas* 39 (1978): 597-614; Christopher Looby, "The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram," *Early American Literature* 22 (1987): 252-273; Douglas Anderson, "Bartram's *Travels* and the Politics of Nature," *Early American Literature* 25 (1990): 3-17; Peter A. Fritzell, *Nature Writing and America: Essays upon a Cultural Type* (Ames: Iowa State University Press, 1990), especially 138-152; Charles Adams, "Reading Ecologically: Language and Play in Bartram's *Travels*," *The Southern Quarterly* 32, no. 4 (Summer 1994): 65-74.

³⁰ LOA, 482.

³¹ *Ibid.*, 486.

³² Bartram successfully collected and drew specimens, and provided information about their soil, situation and manner of growth. However, letters suggest that he failed to provide Fothergill with many samples of live plants or seeds to sow in his garden. Fothergill wrote a letter to John Bartram on 8 July 1774 complaining that while William had sent him "about one hundred dried specimens of plants, and some of them very curious," he had failed to send him a single seed or plant: "I have paid the bills he drew upon me; but must be greatly out of pocket if he does not take some opportunity of doing what I expressly directed, which was to send me seeds or roots such plants as either by their beauty fragrance or other properties, might claim attention." *Chain of Friendship*, 415 (see n. 4).

³³ Berkeley and Berkeley, *Correspondence of John Bartram*, 392 (see intro., n. 1).

³⁴ Ewan writes that Bartram was "disappointed by Solander's pigeonholing of the drawings and specimens made for Dr. Fothergill, and then by Solander's early death." *William Bartram*, 7.

³⁵ Ewan, *William Bartram*, 11.

³⁶ *William Bartram's Manuscripts*, Vol. 1 (7 January 1774) (see n. 1).

³⁷ *William Bartram's Manuscripts*, Vol. 2 (29 November 1792).

³⁸ *William Bartram's Manuscripts*, Vol. 1 (30 November 1805).

Epilogue

Whatever discoveries shall appear to us afresh, out of the hidden things of Nature, the same words, and the same ways of Expression will remain. Or if perhaps by this means, any change shall be made herein; it can be only for the better; by supplying mens Tongues, with very many new things, to be nam'd, and adorn'd, and describ'd in their discourse.

--Thomas Sprat, *History of the Royal Society*

In *Plants and Empire*, Londa Schiebinger writes, "Eighteenth-century botanical nomenclature served as an instrument of empire detaching plants from their native cultural moorings and placing them within schema comprehensible first and foremost to Europeans. With the rise of modern botany, a uniquely European system of nomenclature developed that swallowed into itself the diverse geographic and cultural identities of the world's flora."¹ I have no argument with this claim, and it expresses an important component of the history of European imperial expansion.

At the same time, one of my discoveries in the course of studying this material was that the Enlightenment preoccupation with classifying and ordering the natural world expressed itself in lively, contested, contingent, personal ways through a variety of textual forms.² The practice of naming plants for people crystallizes the relation of Schiebinger's observation to my realization, and I want to conclude by reflecting on that practice.

I mentioned in chapter 2 that the process of uprooting and transporting plants fostered a tendency to blur the distinction between plants and people, such that plants growing in a garden could symbolize distant friends and correspondents. Attributing personal connections to botanical objects was one way to give meaning to and find meaning in nature, in the effort to make the unknown known. The ubiquitous notion of

curiosity also served to confuse the distinction between plants and people, since *curious* functioned as a noun and as an adjective describing both people and botanical objects.

The practice of naming plants for people added a formal dimension to the connection between plants and people, and, indeed, it was this sort of blurring between plant and person that explains Ellis's disgruntled comment to Linnaeus that "people here look on a little mean-looking plant as reflecting no honour on the person whose name is given to it." It was imperative that one's name be attached to a fine botanical specimen because, as I mentioned in chapter 4, a sense of permanence was bound up in the connection between plant and person. Collinson's letter of gratitude to Linnaeus for giving him "a species of Eternity (Botanically speaking), That is, a name as long as Men and Books Endure"³ illustrates the power of this idea of permanence, as does Garden's hope that he will not outlive his "botanical name."

Linnaeus cautioned botanists to be sure about the status of a genus before attaching a name to it; if further research indicated a new genus was not in fact new, the genus would fade and with it its designation and its honoree. The *Bartramia*, in fact, temporarily endured this fate, when the genus it originally described (in 1747) was collapsed into another. The German botanist Johann Hedwig corrected this situation in 1789, reviving the name and attaching it to a genus of mosses, an appropriate gesture since Bartram greatly facilitated Dillenius's efforts to catalogue this class of plants. (Bartram described his efforts in a letter to Mark Catesby, writing that before Dillenius asked him to collect mosses, he "took no perticular notice of [them] but looked upon them as A cow looks at a pair of new barn doors."⁴) The histories of botanical collection, exchange, exploration, and travel, then, were quite deliberately embedded in Linnaeus's

botanical nomenclature. The past was contained in the name, which could then live on into the future.

The idea of permanence embodied in attaching a name to a plant stood in contrast to the dynamism--rhetorical, material, conceptual--inherent in the work of uprooting and transporting plants. The many textual forms that organized the project of botanical exchange reveal this dynamism most vividly. Private forms, such as letters or commonplace books, provided people like John Bartram, Peter Collinson, Alexander Garden, John Ellis, and William Bartram with expressive space for reflection, wonderment, and surprise, as well as synthesis, disagreement, and theorizing. Nature provoked responses that self-consciously attempted to advance scientific knowledge, and simultaneously expressed a deepening personal connection to the natural world. Nature became more abstract and rational, even as it became more particular and personal--a fact embodied in the *Bartramia*, the *Collinsonia*, the *Ellisia*, the *Fothergilla*, the *Franklinia*, the *Gardenia*, and the *Linnaea*.

These names encode a history of connections between people and nature, as well as a belief in nature's order and stability, as shared forces that drove eighteenth-century transatlantic botanical collection and classification. Various activities--setting plants in motion, writing about them, organizing them, cataloguing them, labeling them, cultivating them--brought nature into a new kind of focus (for those who were interested), and the picture that emerged was of nature's variety, mutability, and dynamism. In response, one could, as William Bartram writes in his *Travels*, revel in the "the unlimited, varied, and truly astonishing native wild scenes of landscape and perspective," or, as Henry Muhlenberg suggests in a letter to William Bartram describing his attempt to study

the "innumerable" class of mosses, become personally acquainted with the infinite variety: "You, my dear Sir, should be a Friend of this Class in particular because your Name Sake *Bartramia* now lives amongst them. I love the little Plant now twice as well because it reminds me of Such worthy Friends."⁵

¹ Schiebinger, *Plants and Empire*, 224 (see chap. 1, n. 22).

² This is one of the crucial reasons to study the archives, as Parrish points out in *American Curiosity* (310-311; see chap. 2., n. 7), and it is one of the reasons that *William Bartram's Manuscripts Vols. 1 and 2* (see chap. 5, n. 1) points in such a fruitful direction for future scholarship.

³ Smith, *Correspondence of Linnaeus*, 5 (13 May 1739) (see intro., n. 5).

⁴ Berkeley and Berkeley, *Correspondence of John Bartram*, 152 (ca. March 1740/41) (see intro., n. 1).

⁵ *William Bartram's Manuscripts, Vol. 2* (10 December 1792).

Appendix of Illustrations

Fig 1: An 1854 depiction of Bernard de Jussieu carrying the Cedar of Lebanon to Paris from England. M. Paul-Antoine Cap, *Le Muséum d'Histoire Naturelle* (Paris: L. Curmer, 1854).

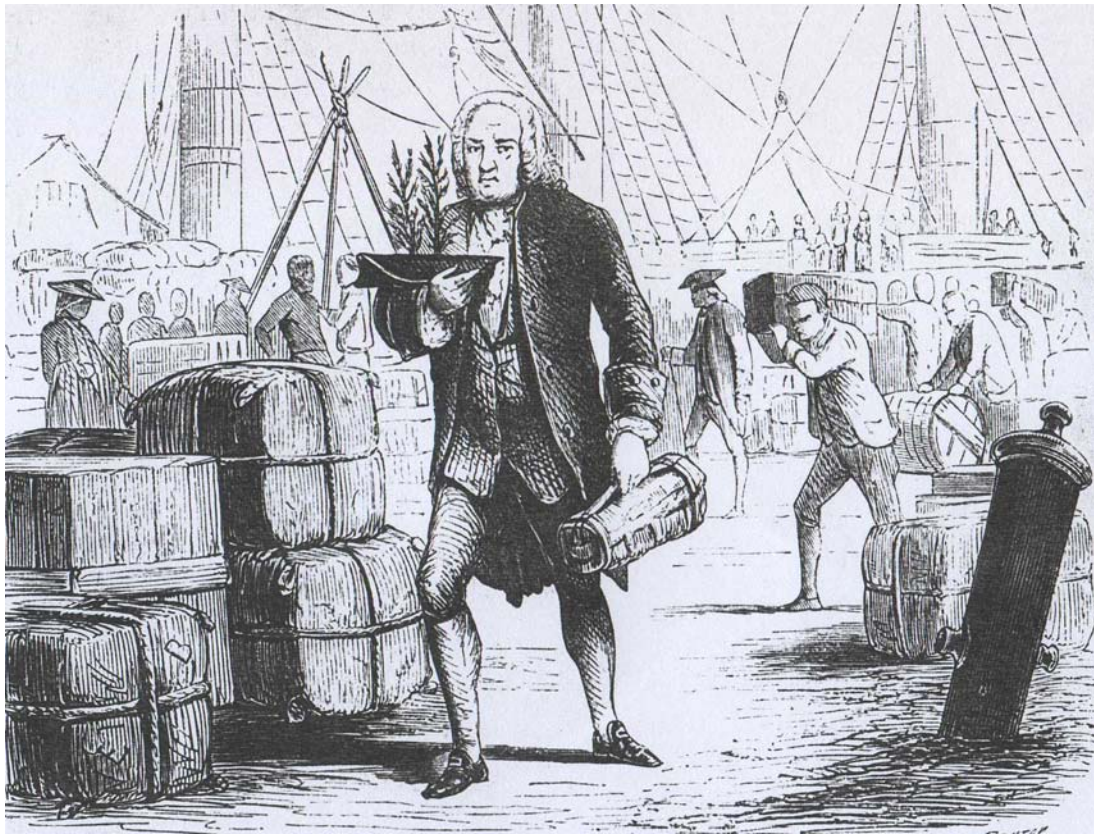


Fig 2: The Cedar of Lebanon Jussieu transported to Paris in his hat, still thriving in the Jardin des Plantes.



Fig 3: "*Theobroma augusta* from the D & D of Portland," sent to John Ellis. Courtesy of the Linnean Society of London.



Fig 4: A sample of "*Chlamydia* from New Zealand" sent to John Ellis. Courtesy of the Linnean Society of London.



Fig 5: John Ellis's drawings of stove designs and a draft letter to James Gordon (Ellis Manuscripts, Notebook 2). Courtesy of the Linnean Society of London.

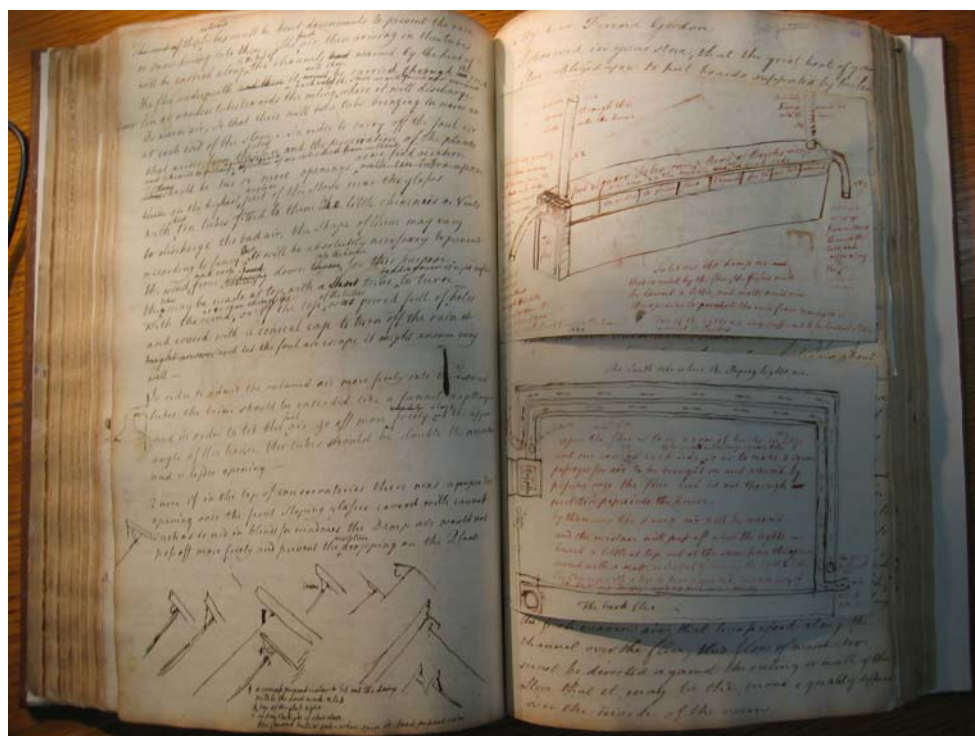


Fig 6: A view of Painshill Park from the vantage point of the Turkish Tent. The Gothic Temple is in the far distance, and the center of the picture includes an example of a Cedar of Lebanon and, below it, the Grotto.



Fig 7: Another view of Painshill Park, looking out at the Turkish Tent from within the Grotto.



Fig 8: Reproductions of eighteenth-century modes of botanical transport, part of the "American Roots" exhibit at Painshill Park" (2005).



Fig 9: John Ellis's "Chlamydia" is positioned in the center of this "theater of plants," part of the "American Roots" exhibit at Painshill Park (2005).



Fig 10: John Ellis's draft letter to Alexander Garden dated May 1, 1758 (Ellis Manuscripts, Notebook 1). Courtesy of the Linnean Society of London.

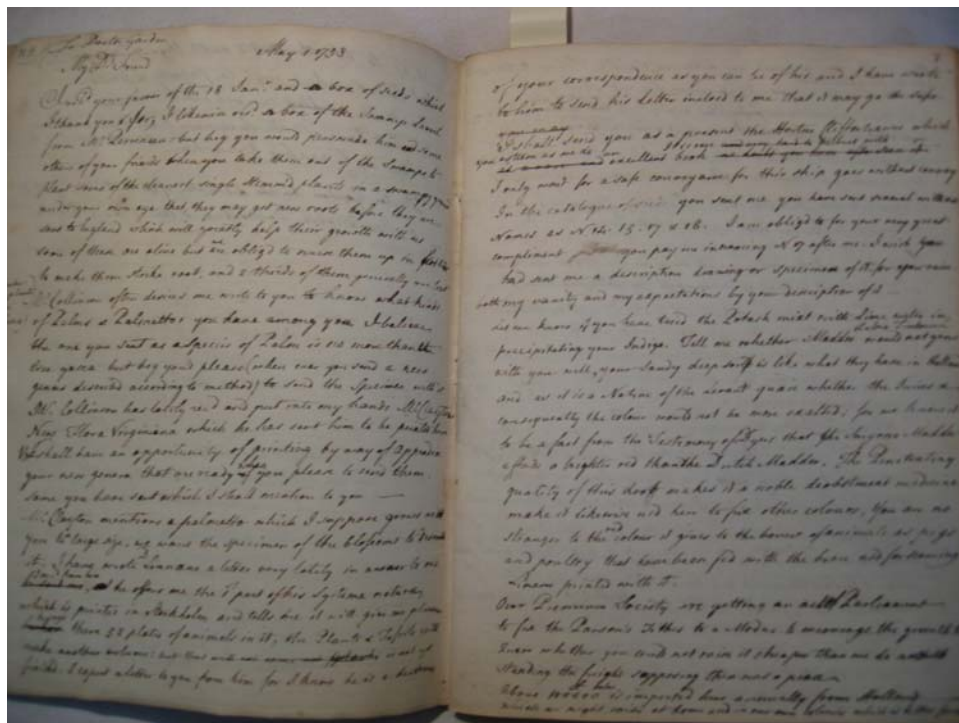


Fig 11: John Ellis's transcription of descriptions and sketches of two plants sent by Jane Colden and John Bartram (Ellis Manuscripts, Notebook 1). Courtesy of the Linnean Society of London.



Fig 12: John Ellis's draft letter to Alexander Garden dated September 11, 1758 (Ellis Manuscripts, Notebook 1). Courtesy of the Linnean Society of London.

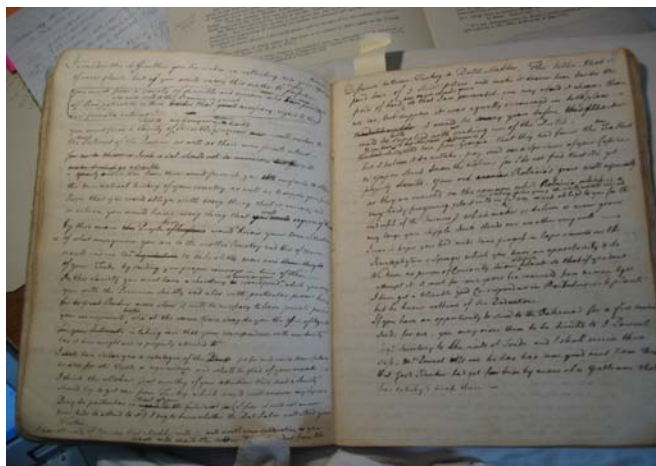


Fig 13: John Ellis's draft of a catalogue of trees and plants to cultivate in the colonies (Ellis Manuscripts, Notebook 1). Courtesy of the Linnean Society of London.

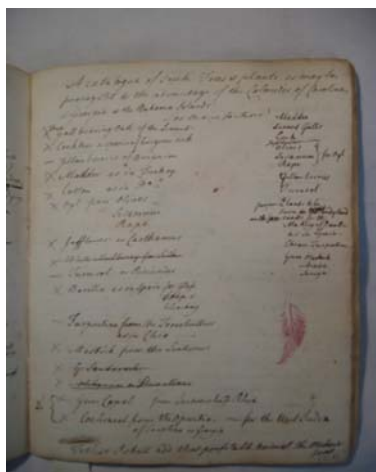
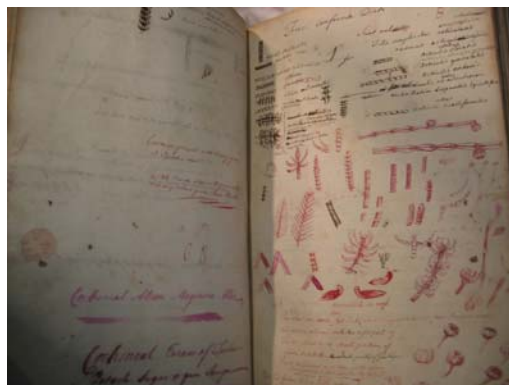


Fig 14: John Ellis's notes and sketches using cochineal ink (Ellis Manuscripts, Notebook 2). Courtesy of the Linnean Society of London.



Figs 15 and 16: John Ellis's notebook sketches of the "Warneria" (Ellis Manuscripts, Notebook 1). Courtesy of the Linnean Society of London.



Fig 17: George Dionysius Ehret's plate of *Jasminum ramo uniflore, pleno, petalis coriaccis*, from *Plantae et Papilliones rariores* (1759).



Curriculum Vitae

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Education

September 1987-May 1991

Wellesley College, B.A. *magna cum laude*, with honors in English

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Rutgers University, Department of Literatures in English, Ph.D.

Teaching Experience

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Instructor, *Expository Writing I*, Fall 1992-Fall 1993, Fall 1995-Spring 1996

Instructor, *Basic Composition*, Fall 1994-Spring 1995; Fall 1997

Instructor, *American Literature: Colonial Period to the Civil War*, Spring 1994

Instructor, *Expository Writing II* (Topic: Native Americans, Puritans, and the Question of History), Spring 1996

Blum Teaching Assistant to Professor Louise Barnett, *American Women Writers Before 1900*, Fall 1997

Blum Teaching Assistant to Professor Michael Warner, *American Literature: Colonial Period to the Civil War*, Fall 1998

Related Experience

Editorial Assistant, *Raritan: A Quarterly Review*, May 1995-June 1999

Textual Consultant, The Library of America, March 1996-September 1998

Research Assistant to Professor Myra Jehlen, June 1997-June 1999

Managing Editor, *Raritan: A Quarterly Review*, July 1999-present

Publications

"'Taste,' 'Curiosity,' and the Letters of John Bartram and Peter Collinson," *America's Curious Botanist: A Tercentennial Reappraisal of John Bartram, 1699-1777*, eds. Nancy E. Hoffman and John C. Van Horne (Philadelphia: Publications of the American Philosophical Society, 2004).

"William Bartram and the Forms of Natural History," *Fields of Vision: Essays on the Travels of William Bartram, Naturalist* (forthcoming)