La Nature est un temple où de vivants piliers
Laisse parfois sortir de confuses paroles;
L'homme y passe à travers des forêts de symboles
Qui l'observent avec des regards familiers.

Nature is a temple where living pillars release
obscure words sometimes. There, we move
through forests of symbols who look on us
intimately.
—Charles Baudelaire, “Correspondances”

Specimens

CORRESPONDANCES

The Rocky Mountain Herbarium now occupies the third floor of the Aven Nelson Memorial Building on the west end of the University of Wyoming campus, near the oldest university building and Nelson’s first workplace. It was built to house the university’s library in 1922; its construction was one of Nelson’s achievements during his university presidency. After a new library was built, in 1960 the botany department and herbarium collection moved out of the Engineering Building, where students (and teachers) still enter under the dictum, “Strive On—The Control of Nature is Won, Not Given.” The staid block in which Nelson’s botanical institutions and objects now reside is a stone’s throw from the house where he lived at Fremont and ninth streets. The herbarium’s director, Ron Hartman, walks to work as Nelson did. Over the door of this building is Aven Nelson’s name. Its cornerstone is engraved: “READING MAKETH A FVLL MAN.”

The third floor of the Aven Nelson Memorial Building is a hive of botanical activity and record keeping. Aside from a few offices and workrooms, most of the floor is one large room. Half of it is filled with herbarium cases, the original heavy wooden ones and newer metal ones alike perched on
The Herbarium of the Rocky Mountain National Park

state-of-the-art movable tracks. The other half of the room is packed with worktables bearing maps, books, and cardboard boxes of unmounted plants; there is a long counter with microscopes under the windows. A photograph of Nelson hangs over a narrow shelf informally displaying Roger Williams’s biography of Nelson, a sample specimen, a guest book, and some pamphlets, but a casual visitor would not really know what sort of place this was. The herbarium’s riches, over 700,000 plant specimens from the Rocky Mountain West and around the world, lie stacked in the dark cabinets. A computer sits ready for additions to the herbarium’s on-line database, an enormous project of data entry; when it’s not occupied, the computer displays one of Nelson’s more acerbic field observations as a screen saver: “a vile and most pernicious weed,” it scrolls. The place is very much a library still. The herbarium has its own collection of noncirculating botanical books, shelved in one corner of the big room. All those cabinets likewise are a library of botanical history and knowledge, shelved by genus and species.

Chaos and order, past and present, reign together in this place. A box of sedges collected and somehow overlooked in the 1890s surfaced mysteriously shortly before I visited for the first time in 1997; they were mounted and filed into the cabinets by the end of the twentieth century. Field notebooks that would be catalogued and squirreled away if they resided in the bowels of the American Heritage Center occupy spare shelf space in the herbarium. Some of them are over a hundred years old. They are not artifacts yet. Fragile as they are, they are still working documents as the staff refines early Rocky Mountain Herbarium plant collection locations for the growing database. These notebooks travel in selected piles from room to room, or to the photocopier downstairs, depending on the errand at hand. Tidily packed cases old and new have to be fumigated for marauding insects, as herbaria have for centuries. Tables are strewn with the shifting geology of student and staff projects that can somehow always yield a spare place to sit. Ernie Nelson—no relation to Aven—the herbarium’s curator, a tall man in cowboy boots and pearl-button shirt, is usually somewhere nearby. Watching a student holding a gluey specimen uncertainly over a sheet, he says, “This isn’t art.” The director, Ron Hartman, is here too, always looking as if he had just come in from the field, wearing shorts in every season. The building itself embraces and organizes the whole enterprise. It is more or less fireproof, one of Nelson’s preoccupations in the herbarium’s (and any library’s) more tentative days.

The connection between plant specimens and books, through the notion of the “library,” gives us an entry to understand what specimens are and the kinds of information they might embody, through and beyond botany. An “herbarium” was, originally, a book: about plants, to be sure, an “herbal,” but by the eighteenth century also a bound book of specimens. A book that described and contained objects of nature. The modern herbarium is different only in degree: not a book, but an entire library of books, both about and containing natural objects. That the Rocky Mountain Herbarium is in fact housed in a former library, and that Nelson made both tangible realities, gives us a place to sit among the boxes and cases, books and plants, finished and unfinished projects. This will remind us to think about the connections between books and plants, descriptions and objects of nature, remembering that books are objects too, and perhaps seeing what sorts of places we inhabit with both of them.

Imagine we’ve signed in—you, I understand, tentative y—and cleared a space between a surprisingly vivid Siberian iris (acquired by exchange long ago from the Gray Herbarium for some Rocky Mountain plant or other) and a pile of plants you’ve never seen before, layered in newsprint, that might have been collected last summer or anytime in the last fifty years. We don’t have to catalogue those. What can we do here? I am writing to someone who is reading: we know what books are. These magnificent, intricate things scattered around us on the table can be opened as well.

EXPLOITATION DU TEXTE

The lure of a plant specimen lies in the relationship between what it was in life and what it has become, both a distance and a presence. The specimen has been removed from a place, and transformed by a person who isn’t usually available to describe the moment or place of collection; the reality of the plant lingers. Wherever it’s found, in its living and pressed forms, a specimen is unique. Pressed, dried, and mounted on paper, it is no longer a living plant, no longer fills three dimensions, and has been removed from the landscape that gave rise to it. Has it lost too much to be useful or captivating? Unlike illustrations—colorful and realistic as these can be—a mounted plant is in some way the plant itself. It is irrefutable material evidence of life, literally drawn from life. Isolated and framed on its white background, a pressed plant draws attention to itself formally; it invites and allows scrutiny long after its living form would have ceased doing so. The unique and mundane reality of the plant can become secondary to abstract scientific or aes-
thetic ends. Fundamental to botanical science, taxonomic study locates the plant in a phylogenetic order; aesthetic study responds to the form, texture, and color of a specimen as a composition. (Sculptor David Winter wrote about specimens, “I found that a blade of grass, flattened and isolated on the page, had tremendous graphic power.”) Still, the presence of the plant, flattened and dry as it may be, is a silent reminder that there is and was more.

But first, the basics. Living plants become specimens through the process of finding, numbering, pressing, drying, identifying, and finally mounting them on sheets of white paper. Numbering, pressing, and drying plants begin in the field. Identifying and mounting them take place indoors. A plant’s collection number from the field follows it into the herbarium, accompanied by an internationally recognized botanical name (with the name of the authority who first identified it), the date and place of collection, and the name of the collector, all presented on a label glued to the lower right-hand corner of the herbarium sheet. The sheet may be stamped with the name of the herbarium as well.

Small plants fit easily on a sheet of newsprint in a press—12” x 18”—but with larger plants, more active arrangement takes place. What the collector has in mind is the size of the standard herbarium sheet: 11.5” x 16.5”. Large plants have to be bent “accordion style (V-, N-, or W-shaped, etc.)” when they are pressed so that they fit the finished sheet. When attaching pressed plants to herbarium paper, a collector might be tempted to center each specimen—an aesthetic choice—but some guides caution against it because the pressed pile will become lopsided and unstable. (It is taken for granted that a plant is labeled on the paper “right-side up” as it would be seen in life.) Although scattering plants over the pages keeps the lower end of the pile of specimens from getting thick with roots and stems, most specimens are framed as the central objects of these 11.5” x 16.5” compositions. When the plants are bent to fit the page, the process of framing is even more obvious.

Each specimen takes its place with others of its species in a folder, and the folders are stacked with others of the same genus, organized in cabinets throughout the herbarium usually in phylogenetic order. In the Rocky Mountain Herbarium, red folders designate a genus of Wyoming species. This library of plants is a scientific collection, no longer any recognizable plant community. Still, the contemporary work of the Rocky Mountain Herbarium refers to these communities regularly—documenting especially endangered species, those likely to be disturbed by mining, poor range man-

agement, or development. A specimen has two “places”: one in its habitat, one in a named botanical order.

A specimen in an herbarium also accumulates a variety of meanings by virtue of its place of origin, the habits of its collector, and the cumulative knowledge and disputes of those specialists who study it.

A plant is identified by a name that embeds it in the history and shifting conventions of botanical nomenclature, the ongoing project of naming the order of nature. One plant of the genus Delphinium in the Rocky Mountain Herbarium was renamed five times (including different genus names) before becoming a “Delphinium” again, all dutifully recorded in successive layers of plant and botanists’ names on the label. A plant’s two-part species name, the first of which identifies its genus, links it with other individuals physically resembling it in successively more comprehensive groups: a species, a genus, a family, and a division of plants. Beyond the taxa of the plant kingdom lie all other living creatures. A plant’s botanical name links a plant to the classifying habits of the person who named it, much but not all of which is shared by his or her colleagues, either when the plant’s novelty is first published, or in the decades or centuries to follow. Needless to say, plant names are not particularly stable. Each one is more like an argument than an object.

The entire system allows botanists to orient themselves in “reading” a plant in many ways. They may look into a comparison with other plants from similar habitats, historical periods of collection, or species, or into the conventions of other collectors and collections. Identify even a single variable in this layered network of relationships around a given specimen—consider, for example, the domain of the inquiring specialist’s expertise—and we begin to identify a context in which specimens can be read.

As specimens, pressed plants embody scientific information for botanists. The practice of making and keeping specimens is therefore closely bound up with the history of scientific investigation of natural objects and the conventions of representing them, an amply documented history. An important thread of this history, to which we’ll return, hinges on the name, “herbarium.”

The “herbarium” was originally a book-length compendium of medicinal knowledge of plants, an “herbal,” and many works of this kind were illustrated, commonly so even in the time of Pliny and Dioscorides at the turn of the last millennium. The shortcomings of illustration were noted at the time: “Not only is a picture misleading when the colours are so many,”
wrote Pliny, "particularly as the aim is to copy Nature, but besides this much imperfection arises from the manifold hazards in the accuracy of copyists." Such remarks suggest Pliny at least valued some form of realism in illustration. Pliny and Dioscorides both observed plants themselves first hand, and recommended field experience to others, a point Agnes Arber and Violet Dickinson make about Renaissance herbalists as well. After centuries of manuscript copying and in a spate of fifteenth-century republication of classical texts, it was clear that illustrations had acquired ends that were not strictly speaking "realistic," and that mimetic accuracy in representation with the growth of interest in the natural world in the Renaissance demanded new technologies for production and reproduction, including learned technologies of perception: what an illustrator expected to see in any plant form.

Renewed observation and study of nature was kindled by the availability of classical works (including Pliny and Dioscorides) in print, and the deluge of new flora encountered in European exploration and conquest outside Europe. Realistic illustration aided identification of widely known plants—known by people other than oneself—in the field, and captured images of plants from the "New World," unknown in Europe or the classical world, that viewers or readers might never have seen otherwise. As artists' paintings and drawings became more "accurate" to accommodate curiosity and study of known and unknown plants, printed copies of illustrations, originally accomplished by woodcut, were eventually produced with more sophisticated woodcut engravings and innovations in metal engraving and lithography (and later of course many types of photography)—all media through which an artist's representation of a plant or a more direct image of the plant itself could be reproduced and circulated throughout a community of collectors and scientists. The skill of the artists was paramount in rendering original illustrations both accurate and useful, if botanists were the expected audience; an artist's botanical knowledge (or the botanist's artistic ability) might eliminate one step in the transfer of desirable information from the plant to the botanical community. The skill of the engravers was also important, and again, if an artist was a skilled engraver, or an engraver was especially fluent in translating the techniques of brush and color to etched line and pattern, accurate translation of the original illustration into print reproduction was more likely. Add to this the problem of color—used as part of the original painting or drawing and applied after engraving and printing, if applied at all before color printing was possible—and it should be obvious that botanists and artists striving for naturalistic accuracy in reproduced illustration, from the fifteenth century onward, were fighting against a thicket of things that could go wrong.9

This effort toward realistic accuracy in plant illustrations and their print reproduction led to astonishing virtuosity among Renaissance painters and engravers. What was really happening was a shift in the kind of information any illustration was supposed to convey, a demand for a new kind of information for which a simpler style would eventually suffice.10 Rather than a full impression of all the plant's color, texture, and form accessible to paint and ink—beautiful as the result of such an effort can be—botanical illustrations need offer only enough information to identify a plant, information fairly easily conveyed in the stylistically simple drawings that characterize modern (and the most ancient) botanical texts. A botanical illustration does not have to represent the plant itself, but its most visible identifying features—it is a tool, a "map" to the real plant's "territory." What is left of the fuller sensual (even visual) recognition of a plant lies in its elaborate textual description. These simplifications remain preferable to some authors even though photography is available. If you think of the difference between a map of a place and a photograph of it, you will grasp the difference, which hinges on the use of illustration. The era of unparalleled aesthetically rich botanical illustration for scientific purposes passed with the sixteenth century.

Changes in plant illustration during and after the Renaissance were accompanied by an emerging scientific orientation toward natural objects, whose first aim was the identification and classification of those objects. Botany emerged as a new practice from the age-old medicinal knowledge of plants, establishing itself as a science related to, but separate from, medicine by Linnaeus's lifetime (1707–1778). Linnaeus understood the value of good illustration—he was especially pleased when botanist, painter, and engraver were all the same person—but he also understood that illustrations alone could never be a perfect record of the information embodied in the plant world. He recommended keeping an herbarium, a collection of pressed plants, as well.11

Luca Ghini (c. 1490–1556), an Italian professor holding the first chair of botany established at the university in Bologna in 1534, is credited with keeping the first collection of pressed and mounted plant specimens for study, a practice that spread throughout Europe through Ghini's students. Between the sixteenth and eighteenth centuries, this kind of collection was a hortus siccus, hortus hyemalis, or hortus mortus, before French botanist and physician Pitton de Tournefort used the term "herbarium" to denote such a col-
lection in a publication of 1694. Dry garden, winter garden, dead garden. The herbarium’s connection to the garden was not, of course, accidental; physicians had been nurturing gardens for teaching and medical practice for a very long time. Ghini’s accomplishment was surely practical; like Dioscorides and Pliny before him, and Linnaeus after him, Ghini would have understood the limited reliability of illustration for plant identification. The plant itself, preserved dry under pressure and mounted on paper, was its own form of illustration, drawn directly from the garden. Gardeners of the hortus siccus brought the garden indoors and bound its pages into books, where like all books, it could be read again and again in any season, in any lifetime, barring insects, mold, flood, or fire. One of Ghini’s students, Gherardo Cibo, began compiling such a dry garden in 1532 that survives to this day.

Linnaeus dispensed with binding specimens, and stored them loose-leaf, horizontally, so he could rearrange and add them, an innovation appropriate to a man (and an era) concerned with the order as well as the expanding contents of nature well beyond the confines of the European apothecary’s garden. The practice of binding books of specimens (even for multiple copies of published works) persisted into the nineteenth century, but after Linnaeus, the standard practice of plant collection in botanical institutions was loose-leaf, unbinding the hortus siccus. The bookishness of the dry garden did not disappear, though. Its transformation into the “herbarium” by Turrefort and Linnaeus gave the scientific plant collection a name borrowed from the old tradition of illustrated medical herbal books.

These books are not merely “outdated,” or inaccurate, but possibly charming artifacts. The rules for good illustration were different before the Renaissance. And, as a glance at a modern botanical line drawing of a plant shows, ours is not an era of complex illustration technique, scientifically. What was the purpose of early illustration? In what way may that have survived into the present through the “herbarium”?

Manuscript illustrations were, historically, both decorative and emblematic. Their use as emblems opens another interpretive avenue in the vicinity of our specimens. Manuscript illustrators relied on emblem books and other manuscripts as sources for illustration, copying and recopying emblems for hundreds of years before they were transferred to print early in the Renaissance. This process both magnified the “distance” between the copy and any real plant or animal that may have been the original object of the picture, and created a tradition of stylized images, however poorly drawn, that were icons or symbols rather than attempts at realism. As new plants and animals were found outside Europe, illustrators struggled to portray them on maps and in manuscripts without a known pattern or first-hand familiarity, resulting in pictures of, say, bison and beaver that look utterly otherworldly to us now. (New World plants did not figure as prominently as animals on maps, because they were less formally distinctive from known plants, and therefore less useful than animals as emblems of unfamiliar places.) The stylized quality of these illustrations was bound up with a very old understanding of what images were for; they were “used diagnostically... just as banners identified knights.” It was the illustration’s emblematic use that Renaissance artists abandoned in creating illustrations for new sciences, when illustration became “datum as well as symbol.”

At home in their own era, however, copied emblems had widely recognized and longstanding folk, religious, and medical meanings. Herbalists were full of images copied by hand, and then copied by woodcutters for printed herbals, “reproducing schematic icons of particular plants.” Agnes Arber reproduced a number of these images in her history of herbals, including a fifteenth-century woodcut of plantain that is neatly symmetrical, bearing a scorpion over the central leaf in the composition, and a snake winding among the plant’s roots, signifying plantain’s use in treating stings and snake bite. She also included several fifteenth- and sixteenth-century images of the mandrake, a plant in the nightshade family with narcotic properties, whose roots were thought to resemble a human being. Each of these illustrations depicts the roots of the plant in explicitly human form; the earliest image, from about 1481, shows a dog leashed to one of the root’s legs—a visual reference to the perhaps thousand-year-old advice to avoid digging this plant oneself (tying it to a dog instead, lured by meat just out of reach, to pull the mandrake up).

Though Arber understood how much of this early tradition would be abandoned by scientific botany by the end of the historical period she covers (1470–1670), she attempted to understand the conventions of printed versions of medieval herbals on their own terms. “Some of the figures have a special charm,” she wrote, “and, in their decorative effect, recall the plant designs so often used in the middle ages to enrich the borders of illuminated manuscripts.” The use of compositional symmetry, lack of realistic proportion, and the inclusion of symbolic elements of a plant’s use, meanings, or habitat, were surely intentional, not failures of technique. The artist understood “his work as symbolism,” not scientific draftsmanship in the modern sense. “Before an art can be appreciated, its conventions must be ac-
cepted. It would be as absurd to quarrel with the illustrations just described as to condemn grand opera because, in real life, men and women do not converse in song. Illustrations “were often so conventional, and the descriptions so inadequate, that it must have been an almost impossible task to arrive at the names of [observed] plants by their aid alone. The idea which suggests itself,” she concludes, “is that a knowledge of the actual plants was transmitted by word of mouth, and that, in practice, the herbs were used only as reference books, from which to learn the healing qualities of herbs with whose appearance the reader was already familiar. If this supposition is correct, it perhaps accounts for the very primitive state in which the art of plant description”—as well as illustration—“remained during the earlier period of the botanical renaissance.”

Images in herbals were certainly unreliable as representations of the plants themselves, but they were probably “an attempt to preserve the arcane nature of the knowledge” in herbals, “even the very corrupted images of the early printed herbals serving as aides-mémoires.” That is, if they were not likely used to identify plants, it is likely they could be used to remember things about them: their properties, meanings or uses, or arcane knowledge of any kind. Identification could take place in person, with someone who knew what he or she was talking about; this is why plant specialists have always understood the value of basic field work among live plants. But the history, lore, uses, habitat, and so on would have to be remembered somehow by the novice or expert—learned and memorized by the novice, and remembered in great quantity over long periods of time by the expert.

If learning and memory were the point of medieval and Renaissance herbal emblems, the more stylized, exaggerated, and unrealistic they were, the more useful in fact they might have been. Medievalist Frances Yates argued that stylized, symbolic imagery was part of a classical rhetorical technique, the “art of memory,” renewed and christianized in the Middle Ages. This tradition was carried on by orators and later priests, particularly Dominicans, many of whom practiced and wrote about the memory arts, and were noted for their prodigious memories (including Thomas Aquinas and Giordano Bruno). Preachers, like all orators, have an occupational obligation to memorize a great deal of information in some order; theologians, of the scope of Aquinas, have an entire cosmos (and its order) to work with. For Yates, the longevity of formal memory technique helps explain the character of medieval art, and the persistence of iconic, “unrealistic” emblems and symb-o}
The inner art of memory works like this: imagine a complex building that you know well, a temple or a mansion (a house will do); if it's a real building, visit it repeatedly. Memorize its rooms so that you can traverse them in any sequence in your mind. Either memorize or imagine permanent objects throughout each room. Once the plan and the contents of the house have been mastered, you can use them to learn and memorize new material, even to see new relationships between objects or ideas you would not have thought about otherwise. Memory figures are often people who are grotesquely, obscenely, or improbably clothed or posed. But memory figures can be objects as well. In either case, memory figures are symbolic of a fragment of the material to be memorized, and can be positioned throughout the house in the order in which they are to be remembered.

Simonides and other sources, even centuries later, described specific “rules for images,” and techniques for memorizing both ideas and words. An idea (or word)—justice, for example—is to be embodied in an image. Some images could be used repeatedly, over generations—say, a blind female figure holding scales. Whatever the idea, its image should be striking, and perhaps idiosyncratic to one’s own memory and experience; images should be placed at regular intervals throughout the house; they should even be placed in “well-lit” areas in the mind. Ideas are figured or refigured from the work of one’s own imagination or the storehouse of images already available. Memory for words involves creating an image for every word of a text, a prodigious undertaking that would demand a very large, elaborately furnished house, not to mention a fertile imagination; as an extra step in rote memory, most writers on the subject evidently didn’t dwell on it, and neither does Yates. For a list (perhaps a taxonomy), as opposed to an argument or long oration, this form of rote memorization would be very useful. In any case, fluency with fantastical images, their imaginative manipulation and combination, was at the heart of the art of memory. From the classical period onward, the more striking the figures, the more easily recalled they were in the memory mansion. Many of them, Yates believes, found their way into manuscripts and books.

We have access to some of these images still, in the cosmos of astrology and the tarot, including the personification of Justice, which is the figure for the astrological sign Libra, and also appears in standard tarot decks. The astrological sky is almost certainly a memory mansion (one of many), renovated over the centuries to sort human and non-human nature and history into twelve signs and twelve houses, inhabited by symbolically significant, distinctive, and mobile figures—the lively characters of the sun, moon, and planets (of which we now have eight; before the eighteenth century, there were five). The tarot expands this already complex system to include cabalistic numerology in the four suits of numbered and court cards (forerunners of our playing cards), and adds a layer of figures, the twenty-two trump, or trionfi, which are startling figures in an overarching pageant of human experience, reminiscent of centuries of lists of virtues and vices, as Yates suggests indirectly. Petrarch appears to be a seminal source of contemporary astrology and tarot, as well as medieval and Renaissance memory technique more generally.

Yates explores a variety of other memory mansions, voluptuously imagined to house an enormous quantity of information. Dante’s circles of heaven and hell, like many versions of the medieval and Renaissance cosmos (including the astrological sky), were elaborate structures, often illustrated, that functioned as repositories of accepted or argued truths and ideas, all vividly figured in vast organized storehouses of memory and knowledge. The structures Yates explores with greatest interest are the “theater” of Giulio Camillo (which was intended to hold all available knowledge, a model of which was actually built in the sixteenth century and which had some resemblance to the architecture of Shakespeare’s Globe Theater), and Giordano Bruno’s sixteenth-century “memory wheels,” which likewise were intended to be comprehensive in capacity (including, presumably, the history of the art of memory itself—a fact embodied in repetitions of the founding story of the art). Both men believed their structures, and the arrangement of knowledge in them, had occult properties, a belief related to heresies for which Bruno would be burned finally in Rome in 1600.

What Yates offers is a compelling case for the importance and widespread practice of the memory arts, including the production of memory figures and the “mansions” in which they lived, from the Middle Ages through the Renaissance. The art would have been familiar to learned people who still lived in an era when comprehensive knowledge could be imagined, when all the books of the world, not just those pertaining to one’s “specialty,” might conceivably be read. Say, then, that the herbal was illustrated to offer ready-made memory figures for the novice and mementos to the expert—a historical point I will leave others to document; I offer it here as an exercise. If these are memory figures in need of a mansion, what sorts of mansions could these figures inhabit?

The herbal book, as a concrete object, could itself be such a mansion,
though it would be more like a hut because the figures would be very crowded. Each leaf of printed paper could be a conceptual “place” if the author or copyist was inclined to organize, and not merely list, the contents. Gardens were a more flexible layout for memory, floral or any other kind. Simon Schama suggests this connection in Landscape and Memory (1995). The medieval and Renaissance garden gathered plants and natural forms together with human artifacts (and artefacts), organized in space, to teach and remember, as well as delight. In the sixteenth century, Bernard Palissy designed “a garden of ‘natural secrets’ where adepts and initiates could comprehend the primordial structures of creation,” including the four rivers of Eden. Palissy was a hydraulic engineer as well as a naturalist and a chemist; he was also a Platonist, and a comprehensive gatherer of Renaissance understanding. His four rivers, and the four ornamented “grottoes” through which they coursed, no doubt partook heavily of divisions of the cosmos. Camillo and Bruno would have recognized. He believed that the “varieties of natural form ought, if correctly discerned, to correspond to the many faces of God. So if the right formulae of inquiry were applied, those laws (and the countenance of Divinity) could be revealed to the learned. It might then be expressed in symbolic, exemplary form. His secret garden was a route to knowledge that was simultaneously scientific and mystical.” Botanical gardens were “another way to gather in all the diversity of the natural world, the better to expose its underlying regularity, . . . to re-create the botanical totality of Eden. . . . [A]n exhaustive, living encyclopedia of creation could be assembled that would again testify to the stupendous ingenuity of the Creator.”

A garden as a memory mansion, regardless of its original intention or the assumptions about “nature” that gardens as such allegedly embody, expands substantially if we look at it as a structure in which all knowledge might be figured, placed, and remembered (not just knowledge of the nonhuman world). It is a special place, but it may be a mistake to assume it “bring[s] the primal world into the shelter of the garden.” This house of memory is not a shelter. It is a structure for organization and recollection. It doesn’t just keep something (in or out), but displays and demonstrates what is thought to be true both inside and outside its walls. The library is another space like this, conveniently relieved of the burden of being anything but a structure (culturally or historically telling as this structure may be in a given era) for sorting, storing, and making knowledge available. The outdoors itself is an-

other such space—a very big house, the Big Inside we might say, rather than the Big Outside—and likewise not always a shelter.

The hortus siccus and its transformation into the herbarium—with its preoccupation with naming the order of the plant world during and after the eighteenth century, and the possibility of adding to and rearranging its contents—embodies both, the endlessly expanding “garden” and library. Both refer to the Big Inside, the living habitat of human and nonhuman beings. The herbarium became botanical nature’s mansion of memory. Botanical knowledge is arranged in a remembered order throughout a familiar building (and “building”), from the ferns and mosses through the composites, arranged by division, genus, species, and finally alphabetical order. Botanists are always ready to add a new genus or reduce one to synonymy and rearrange specimens accordingly. The whole shifting complex order is figured by none other than the plants themselves—striking, unique in their endless variety.

(Se) Souvenir

Eriogonum umbellatum. Wild buckwheat. Given to a former lover who kept a bouquet of darkened dry buckwheat flowers from an outing with someone else. This buckwheat glowed with the pastel green, pink, and yellow of its living form, under glass in its frame.

Rosa woodsii. Wild rose. Sent to a friend because the rose is her flower, her emblem, tattooed on her flank.

Mertensia ciliata. Bluebells. For a man to whom all blue flowers are bluebells, while he scours the ground for all kinds of arrowheads.

Oxypolis campestris. Loco. A warm inside joke for a therapist friend perches on a shelf in her office.

Linnaea borealis. Twinflower. Given to a colleague because of its scientific name, returned to me because of its common name.

Rose-of-Sharon. Lives in the pages of my dictionary, slowly disintegrating, since the last summer I spent with my grandmother.
Anemone. My daughter's middle name. Grows in alpine grassland, as she does.

These are all souvenirs and mementos, though not all of the same kind. They are obviously not scientific specimens either, but they figure knowledge as well as some private sentiment. The memories they embody are complicated, capturing parts of my relationships with specific people as well as my experience with "nature," usually in specific places. Rose-of-Sharon and buckwheat: lost time, places, and people. The quintessential souvenir. The others are not nostalgic. Bluebells: difference in proximity—you see this, I see that, though we are both looking and will enjoy many afternoons like this on this mountain. Roses, loco: recognition over time—I know you, I will see you again. Twinflower: a breach, an impossible knot of interpretation, a grim puzzle. Anemone: where you were born, how you thrive, your long continuous intertwining with me from that day to this. These plants are the specimens that remind me to look for varieties of memory in other specimens.

Specimens inexorably embody memory of all kinds. A specimen soaks it up and exudes memory as an aura. The source of its aura, as Walter Benjamin suggests about works of art, is its uniqueness enmeshed in a tradition. It is flattened but not flat; what is left of its three dimensions is a palpable texture of its life in a nonhuman history, and testimony to its history afterwards. Specimens are impossible to reproduce, obviously. The tradition in which they are embedded brings both natural and human history together through memory. Without memory of any kind, "the melancholy man sees the earth revert to a mere state of nature. No breath of prehistory surrounds it: there is no aura."27 Even a naturalist requires this prehistory—it is her very subject.

An aura is made up of "the associations which, at home in the mémoire involontaire, tend to cluster around the object of a perception."28 An aura is very definitely a physical effect of a thing (on a person) in a place and its history there, a proximity that can be tasted, smelled, heard, or felt as well as seen. Literally an exhalation, it's not a hidden supernatural light.29 Referring to Freud's Beyond the Pleasure Principle (1920) on the subject of memory, Benjamin's use of the "involuntary memory" signals that this aura is not an effect of consciousness. Objects that concentrate large volumes of involuntary memory (for instance, what I think human or nonhuman nature is, not to mention what I'm doing with this fragment of it in my hand, and what it makes me think about) are deliberately wrested into consciousness as specimens, known and recognized in the scientific order of the herbarium. But we would have to define a specimen as including the paper and the label, not just the plant itself (which has no value as a specimen without the authority of its date and place of collection and the name of the collector), and so specimens cannot escape the aura of a larger memory. With only a pressed plant in hand (or a live one for that matter) and no direction for memory, there is no relationship, no history, no meaning: the highly artificial label actually guarantees the continuity of an aura that extends back beyond the history of science and the scientist. Antisentimentally, specimens are explicitly given to (natural) history and the (human) traditions of sampling and describing it; what we would call the personal memory (sentimental or otherwise) is usually lost. That does not mean it was not felt. The scientific specimen both obscures and expresses an aura.

About the work of art, Benjamin says its uniqueness "is inseparable from its being embedded in the fabric of a tradition," a fabric shattered by reproduction. The value and use of the work of art is the result of its being an "original," not a forgery, carrying the authority of authenticity from its beginnings in the hands of the artist through decades or centuries of its history, including "the changes which it may have suffered in physical condition over the years as well as changes in its ownership." What value and use? "We know that the earliest art works originated in the service of ritual—first the magical, then the religious kind. It is significant that the existence of the work of art with reference to its aura is never entirely separated from its ritual function." The connections possible here to indigenous (including European pagan) land-based ritual and memory suggest again how widely "natural objects" might be significant as occasions for nonscientific, but not exclusively personal, cultural memory. The religious cult value of an object "would seem to demand that the work of art remain hidden. Certain statues of gods are accessible only to the priest in the cella; certain Madonnas remain covered nearly all year round; certain sculptures on medieval cathedrals are invisible to the spectator on ground level. With the emancipation of the various art practices from ritual go increasing opportunities for the exhibition of their products"—masses give way to symphonies, frescoes and mosaics give way to paintings. Similarly, unique natural objects and landmarks embedded in ritual give way to objects collected and circulated by scientists in the service of science, more widely visible. Eventually, mechanical reproduction of music in sound recordings, and of the visual arts by
photography, bring a depthless art into wide circulation. Likewise, images of “nature” easily possessed in hand replace habitation among nonhuman beings structured and made familiar by visitation and ritual. 30

Certain botanical practices suppress the aura of specimens, but they can only do so incompletely. Botany, like all sciences, has been active in the disenchantment of the world, the “death of nature.” Let’s take modern science at its word, that its revelations are profane. We could say further, following Benjamin, that botanists relentlessly scatter a plant’s aura, capturing conscious systematic knowledge from involuntary memory, removing a plant from its traditional place (“nature,” literally killing it in the process), and establishing it in a wholly artificial, universally accessible tradition. It’s interesting, too, that specimens are treated as reproductions even though they can never be reproduced. Botanists regularly collect “duplicates” of a single plant—multiple specimens of the same species from the same date and place of collection—for sale or exchange with other botanists.

But the “type specimen”—one designated as the standard—remains filed at the home herbarium, and herbaria are not identical. Each of these, too, has a history. Herein lie more of many dusty wisps casting an aura around specimens. When we are talking about natural objects as souvenirs of science, it is impossible to erase or reduce their native authenticity, and some part of a person’s relationship to them, even if we cannot know the full dimensions of that relationship. Benjamin spares a few tantalizing words on the authenticity of nature (in an essay preoccupied in the end with photography and film): mechanical reproduction of art interferes with “a most sensitive nucleus—namely its authenticity... whereas no natural object is vulnerable on that score.” Itself endlessly original, nature is the source of all originals, by which I mean the source of all unique and enduring relationships through memory. About the withering of the aura of works of art, Benjamin says:

The concept of aura which was proposed above with reference to historical objects may be usefully illustrated with reference to the aura of natural ones. We define the aura of the latter as the unique phenomenon of a distance, however close it may be. If, while resting on a summer afternoon, you follow with your eyes a mountain range on the horizon or a branch which casts its shadow over you, you experience the aura of those mountains, of that branch. This image makes it easy to comprehend the social bases of the contemporary decay of the aura.... Namely, the desire of contemporary masses to bring things ‘closer’ spatially and humanly, which is just as ardent as their bent toward overcoming the uniqueness of every reality by accepting its reproduction. 31

We shouldn’t expect Benjamin, urbane denizen for whom Paris was the capital of the nineteenth century, to dwell much on the properties of natural objects. It’s enough to say he hit on something essential to nature as an experienced and remembered entity: the relationship is both a distance and a connection through perception and memory. An intimate distance. The aura of the mountains and the shadow of the branch ultimately lie in the memory of resting that summer afternoon, with a proclivity to follow distant lines and notice shadows. Presumably one would follow and notice again; the objects of perception would vary, but the proclivity to look (and hear, smell, taste, and touch) would remain constant.

Too often we assume the moment of experience and perception is “lost,” which is why we collect souvenirs: to remember (or create) what was unique and fleeting, personally. Susan Stewart writes that the souvenir, which might be some natural thing, “must be removed from its context in order to serve as a trace of it, but it must be restored through narrative and/or reverie. What it is restored to is not an authentic,” that is, a native context of origin but an imaginary context of origin whose chief subject is a projection of the possessor’s childhood.” In this way, the souvenir is part and parcel of the decline of the aura Benjamin describes. The souvenir refers to a primordial loss (a modern understanding of both childhood and the past as irretrievable), captured nostalgically, like the full “prelapsarian” world signaled by the representative collection. “We might thus say that all souvenirs are souvenirs of a nature which has been invented by ideology.” 32 (Is there any other kind?) Curiously the specimen makes possible both the (public) narrative of a plant’s place in the order of nature, as well as reverie on the date and place of its collection by a person. Nostalgia does not explain all collection and recollection.

The form of the collection, which “relies on the box, the cabinet, the cupboard, the seriality of shelves,” 33 itself refers to a longstanding and widespread form of memory, not just those habits of naming, classifying, and ordering what is known that we might judge harshly, not just “scientific,” and not nostalgic. Originally, as Celeste Olalquiaga points out, collected natural objects were “read allegorically,” “in a universe where worth was measured mainly by objects’ ability to stimulate the imagination.” 34
gories were not personal, and referred not to the past but to the burgeoning present of all available knowledge, which collections of all kinds attempted to pool together. What tied them to memory was not nostalgia (whose contemporary scourge had not been invented yet), but the need to remember what was known. They were (and are) organized spatially in such a way that revealed the accepted meanings of the objects of the collection, which referred directly to human and nonhuman nature, the world at large, as it was—as it was understood to be exactly then.

“Natural collections followed the classification models available to them, mainly the medieval *arboreis scieniaturn* and *ars memoriae* (tree of knowledge and art of memory), chains of facts whose memorization was considered a form of knowledge.” Olalquiaga’s dismissal of the memory arts as a tool for organizing information is odd, since she describes the “fragments of an extraordinary narrative...constituted in the continuous repetition of anecdotes” that settled around given objects of nature, each repetition adding “a new layer of glamour to something that was already very lightly attached to reality” — in her view, in any case. The aura of natural objects was the result of these layers of repeated stories. And, typically, “naturalia [were] not seen as belonging intrinsically to nature but rather as independent manifestations of cosmic powers.” As a result, the “chains of facts” committed to memory actually placed objects of nature in a particular order, which connected them, hardly randomly, by the very habit of finding “correspondence or contiguity (similarity or proximity),” to the order of God. As one of Giordano Bruno’s characters says in *The Expulsion of the Triumphant Beast* (1584), “natura est deus in rebus,” nature is God figured in things. We would do well to remember this outlook. There would be no need to see natural objects as “belonging intrinsically to nature” until about the seventeenth century; human and nonhuman beings belonged to God and each other, in great unifying webs of correspondences and intimacies, resemblances and distinctions, the whole cosmos nested in layers of such resemblances, microcosm to macrocosm. The “prose of the world” was its poetry first; prose would come in huge volume later. And significantly, webs of correspondences would evaporate from science (and scholarly practices eager for scientific “precision”) to be concentrated in literature and the arts.

Long since stripped of its most obvious allegories and lore, the order of botanical nature is still organized on the principle of resemblance, forming an open-ended archive of botanical knowledge and material. Plants most like each other in physical form are found near each other in space, and thereafter filed alphabetically. Form determines the place where any species as such might be found — what lies beyond the abstract “place” is the natural place, also recorded.

The long effort to catalogue nature coincided with the long effort to catalogue all knowledge, much of it increasingly available in books, which were, in turn, catalogued themselves. Natural objects no longer bespoke a divine order, books were no longer alive with magic like Prospero’s, and structures of organization no longer provided direct communion with God (like Bruno’s memory wheels), but knowledge about the things of the world nevertheless moved into old patterns of organizing and remembering their place.

Early systems of library classification, like that of sixteenth-century Conrad Gesner, constructed a “tree of knowledge that proceeded by successive divisions,” beginning in Gesner’s case with twenty-one of them, according to Roger Chartier. Chartier does not tell us what they were, but memory divisions figured by the seven classical liberal arts were common (grammar, rhetoric, dialectic, arithmetic, geometry, music, astronomy — second nature to scholars by Gesner’s time, and not an implausible way to suggest organizing a library). Add to these any combination and types of philosophy, virtues, or theological knowledge, in sevens, threes, and fours, and a comprehensive framework resonating with the known medieval cosmos resulting in twenty-one of something is likely. A fourteenth-century fresco depicting the knowledge of Thomas Aquinas has twenty-one divisions (with allegorical personifications as well as historical human representatives of each): the seven liberal arts, along with three theological and four cardinal virtues, and seven other figures that Frances Yates concludes “represent [other] theological disciplines or the theological side of Thomas’s learning.” Twenty-one divisions would have been a familiar scheme.

Gesner’s contemporaries abandoned the divisions and figures of the memory arts in creating systems of library classification, relying on the old technique of alphabetization and whatever list of topics the classifier thought pertinent, creating a flat and abstract order for an emerging understanding of the world itself as a depthless realm of facts. But in defining categories of knowledge, these topics take on additional depth, hardly disrupting the history of memory. A “topic” is a division of memory by place in the traditional memory mansion: “Topics are the ‘things’ or subject matter of dialectic [rhetoric] which came to be known as *topoi* through the places in which they were stored.” Antoine du Verdier imagined an all-inclusive library in the sixteenth century, and published a catalogue that both represented this ideal
library, and served as a template by which people might build their own collections. About his list du Verdier noted, “As in the Library divers books are organized, where they are kept as if in their proper place, thus many divers Authors and books are here put in such an order that at first sight one can locate them in their place and thus remember them [my emphasis].”

What is striking is not that knowledge (even comprehensive knowledge) was released from the concatenated orders of knowledge passed down through the Middle Ages, but that books themselves in a physical, serial order, figured their own place in knowledge, the better to remember them, exactly like memory figures. Overt allegory may have disappeared, and along with it the fantastical accretions of memory figures for ideas and things, but the expectation that things were learned and remembered in place and in order did not—from the knowledge of knowledge (in libraries and books) down through all the objects and events of the world (in the herbarium and museum). We might be nostalgic for the lost allegorical world, as Olalquiaga suggests: “after being fragments of a magical universe collected by the scientific-mystical vision of the Renaissance, naturalia became the scattered debris of that vision, their allegorical impact doubling as the dust of forgetfulness began to cover them with allure of a world—and a whole way of life—now most definitely gone.” But its habits of memory were not gone entirely, and show no sign of disappearing. What is striking is that books and other objects, including plant specimens, became their own memory figures without further embellishment.

The library and its microcosm, the herbarium, are a memory of memory, and not just a souvenir. Se souvenir was a verb long before souvenir was an eighteenth-century noun. Its reflexivity—in English, to recall to oneself, to recollect—suggests the repeated nature of familiar remembered things, not necessarily the neurotic repetition of a lost singularity. The organization especially of a scientific collection reminds us to remember, not just what may have been “lost,” but what is believed to be. Its very structure teaches us again how to remember: putting things in places, and revisiting them over and over. This is why the story of Simoniades belongs at the beginning of a memory treatise. It performs what the treatise is about, a figure for the technique, itself memorable and a reminder to pay Simoniades. What the remembered things are and what places they occupy change dramatically over time. But the longevity of the expectation of repeated familiarity with some spatial order is remarkable. One learns by repeated exposure, committing things to memory but also expectation. “We do not need or desire souvenirs of events that are repeatable,” but that does not mean that we don’t need or desire to remember these, too.

Moreover, memory of things which have a place in a figurative order becomes very easily memory of places, which is the fund of memory in this tradition. Arranging objects, cataloguing them, ordering them, possibly displaying them (and their order), recapitulates a memory of memory, but also perhaps a placement of place: what or where any “place” is.

In medieval and Renaissance gardens, we might easily anticipate gardeners-scholars’ “control of nature,” and curiosity about the Creation. But further, by creating a place with an order (if perhaps the imagined order of Eden), all creation was grounded in a specific place, which was in fact the premise underlying a cosmos ordered by resemblance. A collection in a garden, recapitulating divine order and history, was a reminder that every place was exactly such a place, riddled with signs, bearing the secrets learned people knew how to read, or could learn in a garden, by walking through, paying attention, and remembering. Perhaps the garden is a mnemonic of what a place is, not what “nature” is. This suggestion has little to do with gardens or “nature” as such, and more to do with what a place might be good for, including but exceeding the objects of nature. We should not be surprised to find evidence of this phenomenon outside the garden.

Unpacking his library, Benjamin invites us to look in on him and his books, “in the disorder of crates that have just been wrenched open, the air saturated with the dust of wood,” “not yet touched by the mild boredom of order.” The aura of his books saturates this essay and opens his memory. “Everything remembered and thought, everything conscious, becomes the pedestal, the frame, the base, the lock of [the collector’s] property. The period, the region, the craftsmanship, the former ownership—for a true collector the whole background of an item adds up to a magic encyclopedia whose quintessence is the fate of his object.” There is an elegiac, “magical side” to the collector: “As he holds [his objects] in his hands, he seems to be seeing through them to their distant past as though inspired.” This sounds like simple nostalgia. But Benjamin is more interested in the “childlike element” of the collector, who renews the world (and creates himself) by acquiring new (old) things. Memory has to be ordered somehow; presenting the ways he acquires his books “is something entirely arbitrary[,] . . . merely a dam against the spring tide of memories which surges toward any collector as he contemplates his possessions.” Tellingly, travel is among Benjamin’s techniques in finding books: on “the wide highway of book acquisi-
tion," visiting various shops, "how many cities have revealed themselves to me in the marches I undertook in the pursuit of books!"57

These places belong to the fate of his books because they belong to the history of the collector. Having filled nearly all his cases between noon and midnight (one might say working through memory places, symbolically significant divisions of the day), Benjamin says, "Other thoughts fill me than the ones I am talking about—not thoughts but images, memories. Memories of the cities in which I found so many things," he begins, leading us all over Europe to "the rooms where these books had been housed" when he was a student, "and finally my boyhood room, the former location of only four or five of the several thousand volumes that are piled up around me." The past is present at this late hour, palpable, continuous. Amid the smell of wood dust, late at night he says, "I put my hands on two volumes bound in faded boards," scrapbooks his mother had made for him, "the seeds of a collection." It is from this origin, in a family, from remembered places, with books Benjamin can touch and smell, that the essay draws rapidly to a close. The continuous renewal of a book's fate does not mean in the end that books have not come (false) alive in the collector; rather, he says, "it is he who lives in them. So I have erected one of his dwellings, with books as the building stones, before you, and now he is going to disappear inside, as is only fitting."58 We don't see the exact order of the collection, but we definitely see the force of memory bound to places he knows, a memory mansion of books from places that defines the history and memory of the collector.

In another instance, Benjamin clearly demonstrates that this propensity to spatial memory collects more than nostalgia. "One-Way Street" is a self-generating tour through found objects along a route, "named Asja Lacs Street after her who as an engineer cut it through the author."59 We begin at a filling station, and proceed through a variety of signs, each illuminated by aphorisms, observations, speculation, forward and backward in time, some themselves describing this structure of memory and thinking along a route: "The power of a country road is different when one is walking along it from when one is flying over it in an airplane. In the same way, the power of a text is different when it is read from when it is copied out. . . . Only he who walks the road on foot learns the power it commands. . . . Only the copied text thus commands the soul of him who is occupied with it, whereas the mere reader [and the air traveler] never discovers the new aspects of his inner self that are opened by the text [and the road]."60 This observation is "filed" under Chinese Curios, anticipating Borges's Chinese encyclopedia which this street and its haphazard (and sometimes scarily funny) accumulation of things and even lists resembles. "Commanded" by the one-way Asja Lacs Street and signs along its route, all recreated in his hands, Benjamin considers both his "inner self" opened by these objects as well as the outer world full of crowds, politics, instincts, and intellectual history, a great amalgam of impressions. He is both copying and thinking, walking and creating a landscape, remembering and learning.

"One-Way Street" is a serious daydream, imaginatively structured as a place by flight of both imagination and memory. Another serious daydreamer, Gaston Bachelard, lays before us a cornucopia of places—specifically houses and parts of houses—in which memory and experience curl, huddle, and sprawl. His aim in The Poetics of Space (1958) is to "show that the house is one of the greatest sources of integration for the thoughts, memories and dreams of mankind." Simonides would have agreed. Bachelard repeatedly sides with the daydream over the world of realistic fact, inviting the reader over and over, on the threshold of some space, to enter and dream: "we have to induce in the reader a state of suspended reading. For it is not until his eyes have left the page that recollections of my room can become a threshold of oneirism [deliberate dreaming] for him." Bachelard disappears into his room as Benjamin disappears into his book building. It would be a mistake to go in looking for them—a truly nostalgic project; they warn us anyway that they've disappeared. What we should find rather are our own routes, our own rooms. Some but not all of this daydreaming is nostalgic. Like Benjamin's return to routes, "a dreamer of houses sees them everywhere, and anything can act as a germ to set him dreaming about them." Bachelard's "houses" include landscapes and shapes in them; bringing in nests, shells, trees, Bachelard uses the house as the dream portal to his "album of concrete metaphysics."61

These are the last words of a grand tour through intimate spaces, and it is important that they come at the end rather than the beginning. Had they opened his book, we would perhaps expect a comprehensive, fixed catalogue. As it is, they conclude a thought on "becoming," which, through one of Rilke's images of a tree, has "countless forms, countless leaves," which "in spite of everything, illustrate the permanence of being." If, he says, "If I could ever succeed in grouping together all the images of being...Rilke's tree would open an important chapter in my album of concrete metaphysics." Bachelard's humility is rhetorical, like his repeated observations that realists will dismiss his daydreaming. The "album," introduced at the very end of a
primer on being and becoming through spaces, is neither possible nor desirable. It is the final invitation to dream and think in which Bachelard climbs his tree and vanishes.

Bachelard's formulaic dismissal of the dismissive critic anticipates a reader's claustrophobia in all those cabinets and corners, just as we might be nonplused by Benjamin's (re)collection. The atmosphere may be cloying; maybe he needs to get out more. "When I relive dynamically the road that 'climbed' the hill, I am quite sure that the road itself had muscles, or rather counter-muscles. In my room in Paris, it is a good exercise for me to think of the road this way. As I write this page, I feel freed of my duty to take a walk: I am sure of having gone out of my house." Really? Or, "Unfortunately, being, as I am, a philosopher who plies his trade at home, I haven't the advantage of actually seeing the works of the miniaturists of the Middle Ages, which was the great age of solitary patience. But I can well imagine this patience, which brings peace to one's fingers." Impatient with Bachelard, we would in fact be speaking of ourselves. After all, "The house we were born in is more than an embodiment of home, it is also an embodiment of dreams. ... Our habits of a particular dreamtime were acquired there." If we reject the "house" where he was born and the habits it engraved in him, we are by rejecting it perhaps thinking of our own.

There are many routes to, through, and about places, and at the same time about memory, which are taxonomies, lists, catalogues, and collections damp or dusted over with the concerns and memories of their collectors. Many of these lie outside, or, like the herbarium, come from outdoors, and not surprisingly they say as much about us (and dreaming) as they do about "nature." Simon Schama, who offers us many gardens and landscapes, begins Landscape and Memory on the Thames of his childhood, finding a flow of history in spite of himself, densely mapped. He follows it through wood, water, rock, and finally all three together—to a specimen, in fact, the "wild hairy huckleberry," a prize of Thoreau's backyard, and of our very long walk with Schama. "[T]he backyard I have walked through—sauntered through, Thoreau might exclaim—is the garden of the Western landscape imagination: the little fertile space in which our culture has envisioned its woods, waters, and rocks, and where the wildest of rhythms have insinuated themselves into the lie of our land," a serious pun. Through the huckleberries in Thoreau's hand, Schama closes his book with an observation: "For this is what the unappetizing little fruit, finally, had to tell Thoreau, and us: It is in vain to dream of a wilderness distant from ourselves. There is none such. It is the bog in our brain and bowels, the primitive vigor of Nature in us, that inspires that dream."

This surely is the primordial history and enduring connection between memory and place. Our relationship to both courses through the objects that embody memory of places, tells us what places are, have been, or could be, how they are related to one another and to us, and who we are and have been as well. Some of this information is scientific—the scientific collection does not escape the relationship between memory and place—but the scope of the relationship is broader than what science has become. That we make (our) nature through and in place, through and in objects, including natural ones, is a point that goes further than arguing the social construction of nature.

The association of memory, traversed space, encountered objects, and created places, various enough in European traditions, is not even exclusively European in practice. Working from another direction, David Abram describes the Australian aboriginal experience of landscape through Dreamtime songs and stories: "it is the land itself that is the most potent reminder of these knowledge, since each feature in the landscape activates the memory of a particular story or cluster of stories," and he adds, "even within European culture there is a celebrated example of this propensity, albeit in thoroughly altered form," the art of memory. Using Frances Yates, Abram notes that "the classical orators had to construct and move through such topological matrices in their private imaginations," while "the native peoples of Australia found themselves corporeally immersed in just such a linguistic-topological field, walking through a material landscape." Abram also refers to the work of Keith Basso, which documents Western Apache memory and knowledge residing in revisited landscapes with eloquent place names in Wisdom Sits in Places (1996). For Western Apache people, simply speaking a place name, or saying names in sequence—without any further gloss in conversation—involves a whole library of useful, amusing, or otherwise immediately necessary information. Textual literacy profoundly altered the techniques of reading and remembering the places of the world, inspiring catalogues, orders, collections of all kinds, and books themselves, including memory treatises. But the phenomenon of intimate distance—the experience of knowledge, memory, forms of encounter, hearing, reading, and reciting—remains bound with objects in places, both abstract mnemonics and real landscapes. Some of these effects are public and shared, like the most explicit use of the herbarium specimen, the Dreamtime landscape of
cultural memory, or the murmured but continuous landscape memories of Europe. Some are private and idiosyncratic, beyond the name and date of a collection to an experience in a place that is not ours and probably not recorded anyway. All of us nevertheless learn and remember what we believe is ours from the Big Inside.

**Routes**

Olaquiaga enters and leaves the “artificial kingdom” of marine kitsch through her glazed hermit crab, Rodney. Benjamin steps out into Marseilles, Moscow, Berlin, Paris, and streets of the imagination. For all its closed interiors, Bachelard tours a vast poetic imagination through the objects and forms of the house. Susan Stewart, interestingly, critical of nostalgic forms, assembles a still catalogue of the perversions of memory as close and airless as Bachelard’s cellar. We see her neither come nor go, leaving only an inscription over the museum door, “For my mother and grandmothers.” What she gives them we can guess is bound with warm familiarity, however complex; what she gives us are artifacts she’s left behind, scrupulously documented (one might say scientifically), tagged specimens, though not when or how she collected them: a collection without a collector and without order: not a place. Because the book “is a collection and not a chronicle,” no narrative or reverie can transform the collection nostalgically. She has secured for herself the authority of a collection that escapes nostalgia because it is not “hers”; Stewart lays out a taxonomy, not a route. It’s not clear where we go if we follow her. Those who give us routes give us landmarks, invitations, and significant divisions of both “outside” and “inside.” They do not say “you are here,” but something more like, “this is one way to get anywhere.” Remember a river, unpack your books, read poems and dream of houses, look into the glassy eyes of a captured crab (he will look back).

Or in this case: sit in this old library, the herbarium, with these plants, and remember. Remember where you learned to read the prose and poetry of the world. Remember how you learned to remember. The plants on the table, whose origin in nature is both convoluted and certain, for which a full and precise memory will leave only traces on the labels, are not a place to finish but to start. Where would you go from here?
Geranium viscosissimum
Fragaria
Potentilla arguera
Erigeron annuus
Potentilla quinqufolia
Lithospermum ruderale
Castilleja sulphurea
Foeniculum
Two mustard
Snowshoe hare
Valeriana acetabula
Senecio integerrimus
Fraxera speciosa
Lupinus caespitosus
Antennaria microphylla
Astragalus agrestis
Serviceberry
Creeping Oregon grape
Prairie smoke
Balsamroot
Sticky geranium
Meadow rue
Antelope bitterbrush
Calypso bulbosa
Clematis occidentalis
Grouse whortleberry
Silvery lupine
Lonicera utahensis
Streptopus amplexifolius
Gooseberries
Currants
Honeysuckle
Paradise
Fraxillaria atropurpurea
Aquilegia canadensis
Lonicera involucrata
Black elderberry
Western thimbleberry
Western serviceberry
Cascade mountain ash
Highbush buckleberry
Red raspberry
Ribes
Engelmann spruce
Douglas fir
Lodgepole pine, Pinus
ubiquus
Braided loosewort
Showy gentian
Mountain bluebells
Viola canadensis
Valerian
Spring beauties
Mahonia repens

Album

Aries

Ruth Elizabeth Ashton was born 29 November 1896 in Roxbury, Massachusetts.

Ruth told Aven’s biographer, Roger Williams, that she was “reared on Martha’s Vineyard where her interest in plants first blossomed during her childhood.”

Former student Jane Ramsey, who took classes from Ruth in Rocky Mountain National Park and interviewed her in 1984, said she was “devoted to botany” and that knowing plants was a “life-long passion.”

Friends described how she “came alive in the midst of flowers, wild or domesticated.”
Ruth's parents, Willard and Grace Ashton, were evidently both high-minded and fairly wealthy. They ran a settlement house in Boston, and began looking into recreational and real estate opportunities in Estes Park, Colorado, in 1905. Willard commissioned a design by Frank Lloyd Wright for an inn in nearby Horseshoe Park, but discarded the design and built an Adirondack-style lodge instead.

As a young woman, Ruth had sufficient resources to buy 240 acres above Estes Park herself in 1925, and named her property Skyland Ranch.

5-25-56 written a few miles up canyon of Lake Park of the Gunnison where Sue has just caught one nice fish in very muddy & high water—saw an ouzel about which flew up side canyon where is a small stream of clear water . . .

Aven Nelson hired Ruth in the herbarium in 1933 because her work on a popular guide to Rocky Mountain National Park plants "squared well with his own ambitions for a dual-purpose manual." Once she began work, Aven described her as "very competent and as sympathetic to the proposed format of the revised manual."

In a Christmas card in 1931, Ruth's friend, Anna Lute, wrote, "I had no inkling of your plans. I did think however that you seemed happier than usual the evening of your nice party—and I am sure with your many common interests your life together will be the happy one which we all wish you."

James Feucht, editor of Green Thumb magazine, thanked Ruth in 1961 for her series on gardening with Colorado wild plants: "We are always pleased to receive your well-written and authoritative articles."

Ruth was well informed, gentle as a teacher, "humble with her knowledge." Jane Ramsey remembered how Ruth taught a class about fragile tundra ecology in part by teaching students how to walk through it, from one rock to the next.

Grace Ashton suffered an illness that precipitated the family's first move to Martha's Vineyard early in Ruth's childhood. After 1905, Grace went off with the children for months at a time to Iowa, Illinois, Estes Park, and Martha's Vineyard, interrupting their formal educations but teaching them herself at home. She believed they could learn more from the outdoors than they could in a classroom.

Grace was interested in botany and loved flowers; with her mother's copy of Gray's Manual, Ruth collected flowers and leaves around Estes Park and identified them for her mother. For Grace's fortieth birthday in 1905, Ruth and her sister decorated the cake with forty different species of wildflowers.

Ruth returned to Colorado after college to work. She remained in Colorado after her husband's death.

Friends remembered Ruth as a "shy, retiring and very private person, not easy to know."

Illustrator and friend Beatrice (Bettie) Willard said of Ruth that she had "a deep affection for, devotion to, and comprehension of the land and its diverse plant cover. . . . She expresses profound quiet reverence for the natural world through everything she says and does."

Orra Phelps (1895–1986) was another woman whose mother's intense (in this case professionally trained) interest in plants, and equally intense family instability, gave her a medium for both enjoying and learning about the natural world, and creating her own world of work and companionship all of a piece with the Adirondack wilderness where she lived. Her mother
botanized to be alone; Orra’s botany and Adirondack mountaineering was social.17

Reflections—objects passing behind me (as I sit in the car) are imperfectly reflected in the opposite glass of the windows—by turning to reality I see the true, correct image.18

LEO

Ruth intended to run a girls’ camp at Skyland Ranch. This never materialized, but as a young woman she taught informally in Rocky Mountain National Park, hoping to become a park naturalist. Decades later, after her husband’s death, she was able to teach there regularly as a naturalist.19

She published five field guides over the course of her career, illustrated guides to places she visited often herself. Her favorite was the 1969 Handbook of Rocky Mountain Plants. She thought the Plants of Zion National Park (1976) was her most beautiful.20

At Skyland Ranch, at the age of ninety, the “wildflowers in the meadow, many transplanted by Ruth, delighted her, as they always had.”21

She bequeathed most of her property to close friends who enrolled it in a permanent land trust.22

VIRGO

Ruth arranged her husband’s final residences for his comfort and pleasure, moving with him to Oklahoma for a few years in the 1940s to escape the long winters of Wyoming and Colorado. Moving back to Colorado in 1949, she planted a garden he could enjoy. She moved him into a nursing home when she could no longer care for him herself, keeping a house nearby, reminding his daughters to write to him, and old friends to visit.23

In her 1961 article series on gardening with Colorado “wildings,” Ruth provided a list of useful species, and mentioned where these were commercially available; some nurserymen, like Harry Swift of Boulder, were happily making more Colorado specimens available all the time, but her recommendations were horticultural, not commercial. Presumably those interested would find and relocate their own plants. She had seen fendlerbush on limestone cliffs at Mesa Verde State Park, and she had had one for several years; “We hope this species will soon be available from nurseries.” About pussytoes, she wrote: “I collect it in the wild . . .”; creeping juniper was still difficult to obtain from dealers, but she wrote, “I have collected several plants which are thriving.”24

Trail Ridge 6-9-59

On top at 9 A.M. with Bettie. Windy but not very cold at Rock Cabins. Primula ang. abundant and showy in bloom,—big clumps and scattered small groups & singles—Eritrichium, fairly numerous phlox just beginning, geum, mertensia, draba beginning to bloom, no silene nor Arenaria—Rock cut—nothing out Tundra leaves: Ranunc. adonis abundant & beautiful—leaves inconspicuous, Caltha coming, sedum in fl bud, Besseya in bloom in the Cobrezia, Thlaspi well out, Floydia in fl bud, Saxifrage rhomb. fl bud. Low willow around little ponds in bloom, both staminate & pistillate the pistils well out, stamens just beginning.25

LIBRA

Ruth married Aven Nelson on her birthday in 1931, and began a long partnership traveling and collecting and working with him in the Rocky Mountain Herbarium.

She traveled often with women friends and collaborators. Two of them completed the illustrations for field guides: Beatrice Willard and Dorothy Leake. In her seventies, working in Zion National Park in Utah, she traveled with her illustrator, Tom Blaue.

May 21. Packed up—took pictures of B. Fremontii & Mt. Peale—mist came over the mountains & a few rain drops. Beth & I dug seedlings of the Maho-
nia (B. fremontii) repens was there also. Sun came out—2 lovely hummingbirds came to the yellow fls. There were orioles, summer warblers etc. in the cottonwoods. Left about 10:30—Decided to skip Natural Bridges as weather was very threatening & we drove thru a heavy shower. Found Peraphyllun soon after leaving Monticello—lunched in a juniper forest & dug a few rooted layers of Peraphillum. Near Dove Creek the red plowed fields, young green wheat & sagebrush made lovely color picture against the dark sky—saw lots of beautiful shrubs of Peraphillum...26

**SCORPIO**

Ruth could not get work in Rocky Mountain National Park as a naturalist in the 1920s, even though she attended the Yosemite School of Natural History in California to improve her credentials; she believed being a woman was the problem. The park did not hire a female naturalist until 1955.27

Some of her friends believed Ruth was "stifled by her marriage to Aven. Only after she was widowed, for example, did she resume long visits to her beloved Skyland Ranch which Aven had found boring because it lacked a large variety of plants."28

**SAGITTARIUS**

Ruth finished high school in a girls' boarding school on Cape Cod, and began college at Mount Holyoke. She completed some of her college credits at the University of Wisconsin in 1924. Though she took all the botanical courses available at Mount Holyoke, she graduated with a major in English. A family she'd met in Madison hired her to work at their camp in Colorado, near Longs Peak (and near Estes Park).29

She began graduate work in botany at Colorado Agricultural College in 1925, completing a flora of Rocky Mountain National Park for her thesis, which was published in 1933.

"She'd throw her hands back and kind of clasp them behind her hips. She had about a three-quarter list and it was a pretty good angle for scouting ten feet in front of her. That's the way she walked everywhere. She was in that pose about 100 percent of her waking hours and it served her quite well."30

Ruth's property above Estes Park sweeps down a hillside from the pine forest. The view pours into the cupped valley below, and up thousands of feet onto the face of Longs Peak and its close companions.

**Black Canyon of the Gunnison N. Monument**

June 15, 1958

...Climbed up the so. side of pass—found many fine large clumps of Erichium in full bloom—also Trifolium dasysphyllum, Thlaspi, potentilla and the finest tufts of Androsace subumbellata that I have ever seen. Photographed the Erichium and would have taken the Androsace & Thlaspi but the wind was blowing a gale... .

In Gunnison we found out from a F. [forest] S. [service] man that the road over Black Mesa from Cimarron, to Crawford & then on to the Nat. Mon. was open & in good shape—so serviced the car there & left with the intention of camping at Soap Creek—turned off at Sapinero & drove about ten miles—decided we'd missed the way to Soap Creek so camped near Pioneer Point—a lovely high mesa, but below Black Mesa—had good aspen wood to burn and sagebrush perfume. I wakened at 4:45 and watched the sun light come—first on the rim of Black Mesa, then on the tops of the tallest trees, then on the shoulder of the mesa north of us—As it came down the green wall of Black Mesa small groves of white stemmed aspen in grassy glades came into clear focus—The sky was a great wide clear dome, supported by the low rim of far-away mesas (encircling us but far off, except for the wall). We started rolling at 8.45, down the hill & then up the mesa side in long switchbacks—stopping every little ways to look at flowers.31

**CAPRICORN**

Working on her thesis, she asked Aven Nelson for help identifying plants; that was how they met. The Nelsons' earliest collecting notebooks show her...
still learning plant species. She wrote in the genus name of a plant, if she knew it, and left the species designation to her husband. By 1940 the collection notebooks were almost entirely in her handwriting.

The Albuquerque Journal “published a perfectly correct story under a rather snickering headline: ‘Savant, 72, and Bride, 35. Expect to Work and Play Together, They Say Here.’ A press photograph also revealed the great disparity in their ages and conveyed the impression of an old goat nibbling tender grass.”12

Tom Blaue, working with Ruth as a young man, remembered her as teach-erly rather than motherly, and demanding. “She went to bed every night thinking about what she was going to do the next day. There wasn’t too much casual about her in the sense that she never, to use the modern terminology, went with the flow of things. She had plans and agendas and she adhered to them quite closely.”13

Def. of species
Dr. Stabler—Aiken—5/8/56
“A species is a group of organisms which look alike, which produce offspring which look like themselves, whose members are able to interbreed and produce fertile offspring.” In a species there is always variation and the great problem is where to draw the line. “Subspecies have a meaning” but don’t overlook the species name. See R. J. Peterson on subspecies in “A Field Guide to Western Birds.”14

May 29, 1938
#2461 Solidago squarrosa Muhl. A rare goldenrod
#2462 Solidago flicicantha L. another rarity
[She took three specimens of each.]15

AQUARIUS

When Ruth wrote botanical keys for her field guides, her “original keys were remarkably simple; but to achieve that simplicity, she omitted keys to a number of plant families, genera, and even species that she treated in her text. It may be that the casual user of the book was never inconvenienced by the omissions—or never discovered them.” Williams revised the keys in her Handbook of Rocky Mountain Plants to include “not only . . . all groups and species mentioned in the text, but . . . numerous additional species likely to be found within our range that cannot be treated in the limited space of an introductory text.”16 Williams’s revision “completes” Ruth’s scheme by filling in “omitted” keys and adding more of his own.

Williams does for the field guide what anyone might do with the documents of Ruth’s life, filling in blanks with a purpose defined outside the subject. No biography (or scholarly project of any kind—even a field guide) avoids this condition. Faced with inevitably incomplete data, what happens is a relationship between two subjects: the one making inquiries, and the stuff followed as if it were a trail left behind. The changes Williams made in the book underscore the amateur practice of taxonomic botany—Williams’s avocation. Any other person approaching her work or any of her documents would do the same thing, filling in a picture of some kind by whatever habits—patterns—of thinking and knowing or even being they already have.

What her original text offers among the lively physical descriptions (and keys), like many other popular field guides (which often do not provide keys), is what we might call “lore”:

Bitterroot, Lewisia rediviva, an amazing plant brought back from Montana by the Lewis and Clark Expedition in 1806, revived after many months in a dried condition and, when planted, bloomed. It was given the name rediviva, meaning to live again. The new genus was named in honor of Meriwether Lewis, leader of the expedition. The little green tufts of slender leaves come up in winter on bare ground or under snow, but they have withered almost completely away by blooming time. The showy many-petaled pink blossoms dot gravelly terraces and stony places that receive abundant moisture in early spring. The thick roots were a staple food for the Indians of the northwest, who boiled them until the bitterness disappeared. The plant, the state flower of Montana, is known to grow in only a few places in Colorado and southern Wyoming, but it is abundant farther north and west, and in the Grand Canyon area.17

About silver buffalo-berry, she writes that its “female flowers produce quantities of oval, red or orange berries, which are sour but edible.” About Pedicularis, she notes that the “name lousewort is an old English plant name, and Pedicularis is merely the Latin form of it. It was once believed that cows
who ate this plant became infested with lice.\textsuperscript{36} Elk thistle “is the species that saved Truman Everts, a lost explorer in Yellowstone in 1870, from starvation. The peeled root and stems are pleasantly flavored and nourishing, and they are eaten by elk and bears.”\textsuperscript{37} \textit{Erigeron coulteri} was named “for John Merle Coulter of the University of Chicago, who, as a young man, had accompanied F. V. Hayden on exploring expeditions and collected plants at high altitudes, in Colorado in particular. He prepared the first manual of Rocky Mountain botany, which was later revised and expanded by Aven Nelson.”\textsuperscript{38} (This is not the only time her husband’s name appears in her text.)

Scientific classification systems did away with exactly this sort of embroidering centuries ago. Her attention to habitat, historical associations, ethnobotany, common and Latin names, as well as the taste of edible things, and a tendency to remember her husband’s contributions, give us footholds outdoors and in the book, something to remember a plant by or learn a little botanical Latin—threads linking plants with other things we might be interested in, or linking them with her own memory. Beyond the habitat and physical appearance of plants, there is no taxonomy organizing whatever might appear in these entries. An older natural history, they are rather layers of fragments around each object.

\textit{Pisces}

The Ashtons separated in 1905, during the first summer the family spent in Estes Park.

Ruth was widowed 31 March 1952. In April she was on the road collecting; in July, vivid prose description breaks abruptly into the serial collection list for the first time:

\begin{itemize}
\item 7/1/52 from Highland Camp (alt 10,008 ft)—O’Dea, Bakersville—7 miles west from top of Loveland Pass—3 above Silver Plume steep road 3 miles to Stevens Mine, about 12,000 ft. (above timberline) much Rydbertia in full bloom, Erysimum niveum some in seed—Silene acaulis at its best—Columbine (coerulea) coming into bloom—lovely buds—good color—some A. saximontana, phlox condensata (?), Claytonia meg. in bloom, penstemon Harbourii one plant in bloom a few others in bud in scree above old trail leading up eastward from buildings, Senecio soldanella in bud, lovely Mertensia—erigerons
\end{itemize}

(see collecting notes). \textit{Ranunculus eximus} in swales recently freed from snow—the mountains about very patchy with snow—much \textit{pinus aristata} along upper part of road & apparently in an open stand on very steep wall to east of valley—cones at high tips dark purplish blue—\textit{Floydia} abundant in edge of forest just below [timber] line.\textsuperscript{39}

7-7-59 Leaving Skyland—\textit{Gaillardia} coming into bloom, \textit{Galium boreale} in full bloom on lower Long Hill—\textit{Pent. alpinus}, wild roses out, miner’s candle, pink geranium, potentillas, seeds of \textit{pulsatilla} gone—\textit{Penstemon semilatilis} making a great show of color—sucus in bud, harebells coming out.\textsuperscript{40}

To:
Ruth Ashton Nelson
6/6 The Roseate, Blossom-filled
Fields on the Light-kissed Hill-
crests of the New Jerusalem

Letters

12 September 2000

Dear Mrs. Nelson,

I'm writing because I have been working with the papers you left to the University of Wyoming archive, and your collection books at the Rocky Mountain Herbarium. I have been interested in the work of the herbarium since I came to the university in 1997 and have been grateful to be able to look at your collection lists and those of your husband. I met Dr. Roger Williams soon after I read his biography of Dr. Nelson. He and his book have been very helpful in forming a general picture of Dr. Nelson's life and some of your collaboration with him, but reading through your papers has raised a number of questions that I would like to ask you directly, if I could. I am happy to answer any questions you may have about the project I am working on. I understand Dr. Williams was concerned that I not in any way jeopardize the work of the herbarium, and I want to assure you that my interest in that institution and the work you and Dr. Nelson did to sustain its stems from a deep respect for your careers here.

I am especially interested in what drew you to botany, and to Colorado, as well as the nature of your collaboration with Dr. Nelson.