When the Pilgrims landed in America in 1620, though the coast was "stern and rock-bound," and the immediate vicinity "full of woods and thickets" (Bradford, 1897), the Northeast was by no means covered by forest. As Betty F. Thomson points out, almost without exception the earliest explorers and settlers commented on the treeless areas they saw, from the Saco Valley south as far as and beyond the Hudson, and up into the river valleys of New York State. Verrazano, travelling from Narragansett Bay in 1564, reported "open plains twenty-five or thirty leagues in extent, entirely free from trees or other hindrances." In what are now our Southern states the same open plains existed.

These great tracts had been cleared by the Indians for their farming, and the underbrush in the forests was set on fire every spring to improve the growth of grass necessary to game animals.

Edward Hyams observes that had the Pilgrims made their landfall further north, in Maine, they would have found cultivated orchards of apples and pears, planted a good ten years before their arrival by the Baron de Saint-Castine and his French colony. Indeed, the French in Canada initiated the flow of plants eastward. Many

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of the plants the English settlers found in New England already were growing in the Jardin du Roi in Paris.

Myth and fancy have long been a part of our image of our forefathers. Research into the horticultural practices of the time and attention to the revelations in contemporary accounts help to dissipate some of the untruths.

Picture, if you will, what might be regarded a typical early New England scene. A log cabin stands in a clearing, its doorway framed on one side by a lilac bush, and on the other by a forsythia. Near the house is a pond, over which a weeping willow droops. A pasture stretches beyond, bright with dandelions, daisies, and red clover. A house mouse sits by the cellar door, hoping for a handout and keeping a wary lookout for the red fox skulking in the wood.

This nostalgic picture is false in every particular. The scene described could not have been found in its entirety before the nineteenth century.

Log cabins did not exist in the first English colonies. They first were built by the Swedish in Delaware between 1637 and 1665. Most of the houses built in Boston by the first English settlers were made from boards cut from the black locust tree (Robinia pseudoacacia) (Miller, 1763).

As for the plants mentioned, the common lilac (Syringa vulgaris) was the earliest plant to reach this country from Europe, but it is not native. Introduced to Europe by way of Turkey during the reign of Queen Elizabeth, its date of entry into America is in some dispute. Lilac is mentioned growing in New Amsterdam in 1655. It was a much loved shrub, one of the very few imported plants that was not thought to have medicinal value. In the next century, covered wagons carried lilacs to the Far West.

Forsythia (Forsythia suspensa) was a much later introduction. Originally from China, it was introduced from Japan into Holland in 1833 by Verkerk Pistorius. It reached England in 1844. American horticulturists learned of it in 1846 from British journals and were quick to import it.

Peter Collinson, the Quaker botanist, recorded the arrival of the weeping willow (Salix babylonica) in England in 1740: "Mr. Vernon, Turkey merchant at Aleppo, transplanted the Weeping Willow from the River Euphrates and brought it with him to England. It was planted at his seat at Twickenham Park where I saw it growing in 1748. This is the original of all the Willows in England." According to a possibly apocryphal, but pleasant story, Alexander Pope, the "Wicked Wasp of Twickenham", planted a willow from a green withe on a package of figs sent from Smyrna by his friend Lady Suffolk. The tree flourished, and the story has it that a young British officer carried a twig to America, where it was planted in Abingdon, Virginia, and gave rise to most of the weeping willows in the United States.
The field strewn with familiar wild flowers certainly had wild flowers, but they could not have been the ones listed. Dandelions are not native, but escapes from cottage gardens, where they were grown for "sallets". Daisies (Chrysanthemum leucanthemum) also were garden escapes. Red clover (Trifolium pratense) came by ship with the cattle, as did Queen Anne's lace (Daucus carota), chicory (Cichorium intybus), most weedy buttercups (Ranunculus), orange hawkweed (Hieracium aurantiacum), and a host of others. John Josselyn recorded in 1672 "some forty kinds of weeds sprung up since the English planted and kept cattle in New England." The expectant house mouse also came with the cattle. The red fox, although indigenous to the Far West, was brought to the eastern seaboard by English gentry for hunting.

Contrary to a widely held image of the native American Indians as painted savages, tomahawks raised high, the Indians met by the Pilgrims were as often curious, even helpful, as hostile. The first Thanksgiving feast was shared by Pilgrims and Indians.

Many of the Indians in the North had gardens of a kind, where they grew maize, beans, pumpkins, squash, tobacco, and a few flowers, including roses and sunflowers. They knew how to force seeds into germination by sowing them in a compost of powdered, rotten wood placed in flat boxes of bark, which were hung in the smoke of the cooking fire. They also were aware that it was important to grow plants in isolation to obtain a pure strain.

Corn, when planted by hand according to the Indian method, requires neither draft animals nor farm equipment: "Their manner of planting is this, they make a hole in the earth with a sticke, and into it they put foure graines of corn and two of beanes . . . their women and children do continually keepe it with weeding" (Thomas Harriott, "A briefe and true report of the new found land of Virginia", 1590). William Bradford relates how the Puritan settlers were taught how to plant corn by Squanto, an Indian who had been to England and could speak English. "Also he tould them excepte they gott fish & set with it (in these old grounds) it would come to nothing" (Bradford, 1897). It has been claimed that the Puritans might well have starved without the native knowledge of planting corn by hand (Hedrick, 1950). Indeed, what seed had been brought from England failed the first year: "Some English seed they sew, as wheat & pease, but it came not to good, eather by the badness of the seed, or lateness of the season, or both, or some other defecte" (Bradford, 1897).

Pumpkin or pompion (Cucurbita pepo) was another plant among the Indians' principal crops which the English settlers immediately adopted. From "The Forefather's Ballad", handed down from early days in the Plymouth Colony, comes a plaintive cry:

We have Pompion at morning and Pompion at noon,  
If it were not for Pompion we should be undone.
One of the palo verdes (Parkinsonia aculeata) from Linnaeus's Hortus Cliffortianus (pl. 13, 1737). These shrubs or small trees of the legume family are native to Mexico and southern Arizona, but they are widely cultivated throughout the desert regions of the southwestern United States and have become naturalized in many areas. The genus was named by Linnaeus in honor of John Parkinson, one of the foremost English herbalists.
For all the knowledge gained from the Indians, the original settlers were not as proficient farmers as one might suppose. According to the anonymous author of *American Husbandry* (1775), the "embattled farmers" were "the greatest slovens in Christendom." Once a field had been cleared and exhausted, it was far easier to clear more land than to go through the arduous process of renewing the soil. The destruction by English farmers of the primeval forests continued in far greater measure what the Indians had begun. The truth of the matter is that to the early settlers there seemed to be an unlimited supply of land; at least so they acted. George Washington described the problem further in a despairing letter to Arthur Young:

... the aim of the farmers in this country, if they can be called farmers, is, not to make the most they can from the land, which is, or has been cheap, but the most of the labour, which is dear; the consequence of which has been, much ground has been scratched over and none cultivated or improved as it ought to have been; whereas a farmer in England, where land is dear, and labour cheap, finds it his interest to improve and cultivate highly, that he may reap large crops from a small quantity of ground.

The German farmers in Pennsylvania, more frugal and efficient by far than the English, were an exception.

In the South the land was even more acutely decimated by the "one crop" system. Tobacco, cotton, and indigo plantations exhausted the soil.

It was not only farming that changed the virgin territories. The settlers built their ships from white oak (*Quercus alba*), and their fences and furniture from the eastern red cedar (*Juniperus virginiana*). They made their torches from the pitch in pines, their brooms and wheels from pignut (*Carya glabra*), the black powder for their muskets from the pussy willow (*Salix discolor*), and beer from the sweet birch (*Betula lenta*). Many species suffered for their utility. Flowering dogwood (*Cornus florida*) was badly decimated in New England because of the excellence of its wood for spindles. By 1750 the Atlantic white cedar (*Chamaecyparis thyoides*) had become extremely scarce; the whiteness of its wood made it attractive for flooring, and whole logs often were used in house building.

The great stands of white pine (*Pinus strobus*), some containing trees 150 feet high, were the worst to suffer. England needed masts for her navy, and paid as much as one hundred pounds apiece for the taller trees. Indeed, the quarrel between England and her American colony over the ownership of the great white pine forests acerbated an already tenuous relationship. The English marked the trees suitable for masts with a blaze known as the King’s Broad Arrow, reserving the trees for the Crown, and severely punished those pioneers who ignored the hated sign. The pioneers retaliated by dressing
as Indians, who were exempt from the restriction, and cut down the trees at night. The revolutionaries clad in Indian garb who threw the tea into Boston Harbor thus had a precedent of many years standing. The importance of the disputes over the white pine is memorialized in the revolutionary flag of Massachusetts, which depicts a single white pine.

An interesting aspect of the early settlers’ use of plants is the role played by plants in the slowly emerging discipline of medicine.

The Puritan housewife, living in a totally religious culture, still held to the medieval belief that God had created all plants for the use of mankind. Thomas Hooker (1586–1647), minister of Hartford and one of New England’s most powerful preachers, elucidated this doctrine in “The Application of Redemption” (1659): “For all outward things are for the body, the body for the soul, the soul is nextly for God.”

Herbals were indispensable to the pioneer household. The best were those by John Gerard and John Parkinson. Gerard, Warden of the Company of Barber-Surgeons in London, published his herbal in 1597; it was corrected and amplified in 1633 by Thomas Johnson. Gerard had a wide acquaintance among plant collectors. Parkinson, botanist and apothecary, published *Paradisi in sole, paradisus terrestris* in 1629. (The title, literally, “terrestrial paradise of the park in the sun”, is a pun on the author’s name (Henrey, 1975).) The first known copy of Parkinson’s herbal in New England was in the library of Leonard Hoar, President of Harvard College. After Hoar’s death, this copy was given to Increase Mather, and his son Cotton Mather.

Closely following the precepts of these herbals, the housewife grew in her garden plot such plants as comfrey (*Symphytum officinale*) for bruises and broken bones, false hellebore (*Veratrum viride*) for scurvy, borage (*Borago officinalis*) — “Borage always brings courage,” as Parkinson translated Pliny — and a host of other dubious remedies.

However, a new concept in the curing of disease was beginning to be explored. The Doctrine of Signatures no longer was in high repute, and it was believed that there might be a universal panacea for all mortal ills. Sassafras (*Sassafras albidum*) was believed by both the Indians and the newly arrived settlers to be this universal remedy. It was one of the first exports sent by Captain John Smith from the Jamestown Colony. In 1602 the price of sassafras in England was 336 pounds sterling the ton. Merchants of Bristol, England, sent two ships across the Atlantic in 1603 for the sole purpose of gathering sassafras, finally finding it near Long Island Sound. Thomas Jefferson regarded it as a purely ornamental plant, so presumably by his time belief in its curative powers had been abandoned.

Despite what might seem in some aspects a bleak picture of ignorance, cupidity, and bad land management, the discovery and colonization of America resulted in an exchange of flora between nations which benefited mankind both horticulturally and aesthetically.
Sassafras (Sassafras albidum) and "The Tyrant" (actually the eastern kingbird, Tyrannus tyrannus), from Mark Catesby's The Natural History of Carolina, Florida, and the Bahama Islands (vol. 1, pl. 55, 1754). Many of Catesby's plates include both flowers and fruits on the same branch, which at least in the case of the sassafras is unlikely to occur in nature. As shown in the legend, Catesby compared sassafras to the cornelian cherry (Cornus mas), a plant which it superficially resembles in flower.
When one considers that the voyage from England to America and back, even as late as 1702, when the first Atlantic mail service was inaugurated, took anywhere from 90 to 116 days, it is astounding how many plants were imported and exported. Only about six American plants were in cultivation in England before 1600. By 1700 there were 150, and in the next century hundreds more. Science universally was regarded as having no concern with political squabbles, so the constant wars of the first two hundred years had little effect on the movements and affairs of botanists, except for the additional risk of loss of material at sea.

Because of the depletion of English forests, trees were the original exports. Northern white cedar (*Thuja occidentalis*) was the first tree sent to Europe from America; according to Alfred Rehder, it is probable that it first was sent to France in 1536. It reached England sometime between 1536 and 1596. The only pine growing in England at this period was the Scotch pine (*Pinus sylvestris*). By 1743 the pitch pine (*P. rigida*), and the scrub pine (*P. virginiana*), and other conifers such as the balsam fir (*Abies balsamea*), the Atlantic white cedar (*Chamaecyparis thyoides*), the eastern red cedar (*Juniperus virginiana*), and the eastern hemlock (*Tsuga canadensis*) had all crossed to England.

As early as 1670 the English introduced Mediterranean fruits into the southern states. Oranges, lemons, apricots, limes, and pomegranates were grown at the Charles Town Colony. Some fruits from Europe had reached America before the English. Peaches were introduced by the Spaniards into Florida. The Indians became so fond of the fruit that by the time of the first English settlements, peach trees were found growing in Indian villages as far north as they would grow, and west to the present states of Arkansas and Texas. Peach brandy was one of the first drinks made by the colonists.

Many of the trees we now take for granted as our own are not native. The “Tree of Heaven” (*Ailanthus altissima*), the white poplar (*Populus alba*), the European weeping birch (*Betula pendula*), the horse chestnut (*Aesculus hippocastanum*), and the Norway maple (*Acer platanoides*) all were sent from England in the late seventeenth and early eighteenth centuries.

The peanut (*Arachis hypogea*) which originally was carried from South America to the Old World tropics by Portuguese sailors, was brought to Virginia on the slave ships from Africa. Other ethnic groups increased our horticultural stock. Homesick Scots introduced ling (*Calluna vulgaris*). The Netherlands brought a wide range of flowers, including numerous sorts of roses, crown imperials (*Fritillaria imperialis*), lilies (*Lilium candidum*), peonies, and, of course, tulips.

Besides the importations by the various ethnic groups, and the unnamed settlers and housewives, there were individuals who earned a place in history by their contributions to the exchange of plants. The
two John Tradescants, father and son, can be regarded England's first plant explorers. John the Elder, who died in 1638, had travelled to Russia, Algeria, and Holland as gardener to Charles I. John the Younger, sent to Virginia by his father in 1637, also made two later journeys, bringing home a wide variety of material. The American columbine (Aquilegia canadensis), the cardinal flower (Lobelia cardinalis), bee-balm (Monarda fistulosa), sundial lupine (Lupinus perennis), the New England aster (Aster novae-angliae), red-osier dogwood (Cornus sericea), and a spiderwort, which Linnaeus named Tradescantia virginiana in the elder Tradescant's honor, were all growing in the Tradescant garden by 1656. The younger Tradescant also introduced to England the tulip tree (Liriodendron tulipifera), the American plane tree (Platanus occidentalis), and the red maple (Acer rubrum).

Linnaeus (Carl von Linne, 1707–1778), the Swedish botanist, was the first to devise a usable and uniform system of binomial nomenclature, as well as a readily accessible system of classification. His system brought order out of a chaos that had obtained since the days of Dioscorides, and was of immeasurable value to collectors like Mark Catesby, and John Bartram, both of whom were among his correspondents. Linnaeus also named many plants. Several early American plant explorers, and their European correspondents and patrons, are memorialized in his generic names: for example, Banisteria, Collinsonia, Fothergilla, Kalmia, and Tradescantia.

Henry Compton, Bishop of London, Head of the Church for the American Colonies, was an early patron of plant exploration in North America. He grew over a thousand species of tropical plants and about half as many hardy trees and shrubs in his famous garden and greenhouse at Fulham Palace, and he sent John Banister (1654–1692) to America. Banister compiled a catalogue of American plants and was the first to send back to England the sweet bay (Magnolia virginiana), the swamp azalea (Rhododendron viscosum), and the Virginia bluebell (Mertensia virginica). He died young and tragically, during a trip to the lower Roanoke River in Virginia, when another man on the trip mistook him for a wild animal and shot him (Ewan & Ewan, 1970).

Indeed, it is surprising that as many botanists survived as did, so parlous were the times. From 1702 to 1783 the English, and frequently their American colonies, were engaged in Queen Anne's War, the War of Jenkins's Ear, King George's War, the French and Indian War, and, finally, the War for American Independence. Totally undaunted by these disturbances, the collectors went about their business with a dedication and fervor at which we can only marvel.

Mark Catesby (1682–1749), an English botanist, made two long trips to America and the Bahamas, and after twenty years of work, published, in 1747, The Natural History of Carolina, Florida, and the Bahama Islands. Peter Collinson wrote to Linnaeus, "Catesby's noble
One of Mark Catesby's notable plant introductions to England, the common catalpa (Catalpa bignonioides) is still considered in that country to be among the finest of summer-blooming trees. In the plate above, from Catesby's Natural History (vol. 1, pl. 49, 1754), the catalpa is a backdrop for "The Bastard Baltimore" (the orchard oriole, Icterus spurius); the accompanying description was the first published account of the plant.
work is finished.” Noble it is indeed, the first natural history of this country, magnificently illustrated in large part by Catesby, who taught himself engraving to accomplish it. He was as avid a collector as the other early plant explorers, sending his seeds back in gourds, and was responsible for introducing to Britain the American beauty berry (*Callicarpa americana*), the common catalpa (*Catalpa bignonioides*), sourwood (*Oxydendrum arboreum*), and the Virginia stewartia (*Stewartia malachodendron*).

Peter Collinson (1694–1768), a London Quaker merchant, was another moving force in the exchange of plants between America and Europe. He corresponded with Georg Stellar, a German plant collector in Russia, and with Pierre d’Incarville, a French botanist exploring in China, but is most famous for his long correspondence with John Custis, father-in-law of Martha Custis Washington, and his thirty-five year friendship, by letter, with John Bartram. He sent Custis double Dutch tulips, Guernsey lilies (*Nerine sarniensis*), carnations, and auriculas among many other plants. In return, Custis sent him such native shrubs as bayberries (*Myrica pensylvanica*), mountain laurel (*Kalmia latifolia*), and yaupon (*Ilex vomitoria*).

One of the many letters Collinson sent to Custis introduced “a downright plain countryman.” This was John Bartram (1699–1777), a Philadelphia Quaker and widely travelled farmer, who taught himself Latin and botany, and through Collinson’s efforts in his behalf, was made botanist to King George III in 1765. An even more impressive tribute came from Linnaeus, who said that Bartram was “the greatest natural botanist in the world”. Bartram harvested the first American rhubarb, and flowered the first horsechestnut (*Aesculus hippocastanum*) in his garden on the banks of the Schuylkill River, the first botanic garden in America, and one of the first to become commercial. He introduced more than two hundred plants to England during the years he and Collinson conducted their “settled trade and business”. Goat’s-rue (*Tephrosia virginiana*), wild monkshood (*Aconitum uncinatum*), the common shootingstar (*Dodecatheon meadia*), wild sweet william (*Phlox maculata*), and poison ivy (*Toxicodendron radicans*) were but a few of his offerings, the last mercifully a failure in England. On his last expedition, when over seventy years old, he discovered with his son William a stand of franklinia (*Franklinia alatamaha*) in Georgia. Fifteen years later William returned to the spot and gathered seeds. The Bartrams called the tree “Franklinia” after “the illustrious Dr. Benjamin Franklin.” It has not again been found in the wild since the early nineteenth century.

William Bartram (1739–1823) did not have the tremendous staying power of his father and drifted from job to job with no success. An excellent draughtsman, he finally was paid by Dr. John Fothergill to collect plants in Florida, and made a long journey through the southern states. The journey is described in his curiously illustrated book *Travels through North and South Carolina, Georgia, East and
Mountain laurel (Kalmia latifolia) from The North American Sylva (vol. 2, pl. 68, 1818) of F. Andrew Michaux, who traveled with his father André through the southeastern United States. A widespread shrub of our Eastern forests, Kalmia latifolia is the most familiar member of a small genus of American shrubs named by Linnaeus in honor of one of his students, Peter Kalm, who explored eastern North America on behalf of the Swedish government in 1748.
West Florida, published in Philadelphia in 1791, fourteen years after William completed his travels. The book supplied imagery to Coleridge, Wordsworth, and Chateaubriand. To the Indians, Bartram was known as Puc Puggy, the Flower Hunter.

Other countries than England produced dedicated collectors. Pedr (Peter) Kalm (1715-1779) was Finnish. A pupil of Linnaeus, who maintained that “all Lapland could be rendered fertile by the introduction of appropriate American plants,” Kalm’s travels through America were as much a commercial as a botanical expedition. He visited Bartram in Philadelphia, admiring his encyclopedic knowledge, as did everyone who knew him. Kalm collected in Canada as well as the Delaware River region, returning to Sweden in 1751 with a harvest of new material, to the delight of Linnaeus, who rose from a sick bed to welcome him.

The French botanist André Michaux (1746-1803) visited England in 1779, bringing home many of the foreign plants in cultivation there. Marie Antoinette sent Michaux to Asia with Xavier Rousseau (cousin of the philosopher), and Michaux sent home from Aleppo his first collection, including Michauxia campanuloides, a flower greatly admired by the Victorians, but now not often seen in cultivation. Continuing on his own through Syria and Persia, Michaux brought back among other treasures, Rosa persica. In 1784, together with his fifteen year old son and the Scotsman John Fraser, Michaux explored and collected in Georgia and South Carolina. He also made many expeditions on his own, from Florida to Hudson’s Bay and as far west as the Mississippi. He started a nursery at Ten Mile Station, north of Charleston, and from seed brought by sailing ships trading with China, he introduced to America the maidenhair tree (Ginkgo biloba), the crape-myrtle (Lagerstroemia indica), the silktree (Albizia julibrissin), and many other important additions to our cultivated flora. He brought or sent back to France an immense collection of 60,000 living plants and ninety consignments of seeds.

These dedicated explorers and collectors were supported by a wide spectrum of patrons. Benjamin Franklin was a staunch friend and supporter of Bartram and Collinson. In Collinson’s account book one finds the Dukes of Norfolk, Richmond, Bedford, and Argyle, and the Lords Petre, Bute, Leicester, and Marlborough; nursemens, lady gardeners, and Virginia plantation owners also contributed for plant collecting. Even the Prince of Wales twice begged and paid for boxes of plants. The burgeoning interest in plants transcended the still rigid class system, and a man with a new or curious plant was welcome at any door.

Having begun with an impossible picture, we can end our brief history by describing two actual eighteenth century gardens. George Washington and Thomas Jefferson were eager collectors and cultivators. Mt. Vernon and Monticello, both brilliantly laid out, both replete with fine trees, shrubs, and flowers from both sides of the Atlantic,
represent the epitome of what could be done with what had been discovered in the plant world.

Mt. Vernon, designed with meticulous care by Washington, was so ambitious, so demanding with its large variety of material, that it is no wonder his papers contain a great number of questions and directions concerning every sort of shrub and tree. Throughout the French and Indian War, the Revolution, and his terms as President, he wrote a steady stream of detailed instructions to a succession of overseers, ordered plants from various nurseries, Bartram's among them, and asked for advice and stock from gardening friends. His plantation was the delight of visitors, and his loving care and incessant planning is reflected even today in the excellent restoration of his property. It was from Mt. Vernon in 1797 that he wrote a Mr. J. Anderson: "I am once more seated under my own vine and fig tree . . . and hope to spend the remainder of my days . . . in peaceful retirement; making political pursuits yield to the more rational amusement of cultivating the earth."

Thomas Jefferson, among his myriad other talents, was an accomplished naturalist and botanist. He began planting at Monticello in 1766, keeping a garden book in which he entered every plant he used, noting its progress, and, in the case of vegetables — every one of which he grew, with all its varieties — when it came up, and when it was eaten. While at the French Court from 1784 to 1789, he sent home hundreds of seeds and roots. In England he made a study of the great gardens and from his notes incorporated many of their features at Monticello. His plantings were informal and eclectic, and included figs, acacias, pomegranates, almonds, olives, and nectarines, as well as the more familiar nut and fruit trees: walnuts, peaches, filberts, cherries, apples, plums, and pears. Monticello also is now restored to much of its former splendor.

Our difficult beginnings culminate here triumphantly. We forever should be grateful for those men who established such strong roots across the Atlantic and whose roots, today, still are spreading.

References

The franklinia or Franklin tree (Franklinia alatamaha) taken from The North American Sylva (vol. 2, pl. 59, 1818) of F. Andrew Michaux. After its original description, the franklinia was often considered to be a species of Gordonia, along with the loblolly bay (G. lasianthus) of our southern states. However, the unique structure of its capsule has prompted most modern taxonomists to classify it in a genus by itself.

"Great soft-shelled tortoise" from William Bartram's Travels through North and South Carolina, Georgia, East and West Florida (1791).