FIRST INTRODUCTIONS

While there is no doubt that a limited number of woody plants were carried from eastern Asia into Europe before the 18th century--some credited to Marco Polo--only scant, often anecdotal records document these early peregrinations of plants from East to West. Ironically, one of the first woody ornamentals to be introduced from eastern Asia into Europe in the 18th century was a plant now considered to be extinct in nature and a "living fossil" to boot! By the middle of the 1730s, *Ginkgo biloba* L., the maidenhair tree or ginkgo, was established and growing in the botanical garden at Utrecht, the species having been brought back to the Netherlands on board a Dutch East India Company ship that had called at their Japanese outpost on the island of Deshima in Nagasaki harbor. While other plants were ultimately to follow from Japan in ginkgo's wake, a handful of species were to arrive in Europe from China before the Japanese flora and the many plants of horticultural importance included in that flora were to become known in the West.

While Chinese merchants were able to limit their business with western traders at Canton and at the Portuguese-held port of Macau, by the middle of the 18th century Jesuit missionaries had been able to penetrate the Chinese Empire to a limited degree. As a consequence, a mission had been established in the imperial city of Peking. It was there that one French Jesuit Father, Pierre Nicholas le Chéron d'Incarville, began collecting the seeds of a number of the more notable trees and shrubs cultivated in the environs of that great city. Sometime before 1747, d'Incarville entrusted a few of his collections to a member of a Russian caravan that visited the Chinese metropolis every three years. As a consequence, the seeds of two Chinese species--*Koelreuteria paniculata* Laxmann, the golden rain-tree, and *Sophora japonica* L., the pagoda tree or scholar's tree--found their way to Europe and eventually to the Jardin des Plantes in Paris. The seeds of these two species germinated in French soil and were soon being cultivated on a limited basis in other European botanical gardens. By 1753, for example, the pagoda tree was growing in England, and in 1811 it was being grown in a glasshouse at the Elgin Botanical Garden in Manhattan, New York City.
On occasion, d'Incarville was able to make additional shipments of seeds to European correspondents, and Philip Miller received seeds of *Ailanthus altissima* (Miller) Swingle, the tree of heaven, at the Chelsea Physic Garden in London in 1751. Eventually, plants raised from this seedlot were shared with plantsmen throughout Europe and with William Hamilton, who later introduced the species into North America when he planted the tree of heaven on the grounds of "The Woodlands," his Philadelphia estate. Little did Hamilton or other enthusiastic plantsmen of 18th century America realize that by the end of the twentieth century the tree of heaven would have invaded native American woodlands and have become synonymous with the city environments and the urban sprawl of present-day America.

**ROBERT FORTUNE AND THE EDWARDIAN CASE**

While the first introductions of trees and shrubs from China and Japan arrived in European ports during the 18th century, it is not known how many seedlots failed to germinate after prolonged sea voyages or being carried on the long overland routes that connected Europe with eastern Asia. Coupled with the fact that both China and Japan were essentially closed to the western world, would-be plantsmen and horticultural explorers were greatly restricted and so had little access to Asian germplasm. It was not until the Opium War of 1840 had been waged and won by the British and the Treaty of Nanjing signed in 1842 that China was forced to relax her grip on trade with western nations, and foreigners were allowed to travel more freely within the confines of eastern China.

Shortly after the Treaty of Nanjing had been signed and the so-called treaty ports had been opened along China's eastern seaboard, the Horticultural Society of London decided that the time was ripe to send a plant collector to the Celestial Empire with the express purpose of introducing horticultural novelties into cultivation in England. The Horticultural Society selected Robert Fortune as their agent, a Scotsman with little previous training, and Fortune sailed for China aboard the *Emu* early in 1843.

All told, Robert Fortune ([Fig. 1](#)) was to visit China and other eastern Asian countries on four occasions between 1843 and 1859, first for the Horticultural Society and on subsequent trips as a representative of the English East India Company and the government of the United States. And, on all of his trips, Fortune was extremely successful in introducing plants that would become extremely popular in cultivation in the West and would begin the transformation of European and American garden landscapes to those which we know today.

Included among the plants with which Fortune's name is associated are many of the now widely-grown cultivars of the tree peony or moutan (*Paeonia suffruticosa* Andrews) and an even larger number of cultivars of the camellia (*Camellia reticulata* Lindley and *C. japonica* L.), cultivars which had been selected and grown by generations of Chinese horticulturists. The golden larch [*Pseudolarix amabilis* (Nelson) Rehder] ranks as one of the unique, deciduous conifers introduced by Fortune, as does the equally ornamental lacebark pine (*Pinus bungeanus* Endlicher), mature specimens of which develop an exfoliating bark that is mottled white and gray. Fortune was also the first to send the cryptomeria (*Cryptomeria japonica* (L. f.) D. Don) directly to both Europe and North America in 1844. Likewise, Fortune sent plants of the Chinese fringe tree (*Chionanthus retusus* Lindley), an outstanding ornamental shrub or sometimes a small tree, which is closely related to the American fringetree (*Chionanthus virginicus* L.) of the southeastern United States. A third species (*Chionanthus pygmaeus* Small) of this small genus in the olive family has yet to enter the horticultural marketplace on a large scale, but is endemic to Florida.

Still other woody plants introduced by Fortune include such horticultural favorites as the double-file viburnum (*Viburnum plicatum* Thunberg), the old-fashioned weigela of Victorian gardens (*Weigela florida* (Bunge) A. DC.), the greenstem forsythia (*Forsythia viridissima* Lindley) one of the first species of this exclusively Asian genus to reach the West, and the winter honeysuckle (*Lonicera fragrantissima* Lindley & Paxton). Also included in the list of Fortune introductions are the common pearlbushe [*Exochorda racemosa* (Lindley) Rehder] an extremely floriferous shrub in the Rosaceae which has been recently neglected in cultivation but which is deserving of far greater popularity, the Chinese abelia (*Abelia chinensis* R. Brown), and fortune rhododendron (*Rhododendron fortunei* Lindley), the first of the evergreen type, as opposed to species of the azalea group, to be sent from China. Last, but certainly not least in this abbreviated catalogue of Fortune's woody plant introductions, mention must be made of the white-flowered Chinese wisteria [*Wisteria sinensis* (Sims) Sweet `Alba']. Lastly, it should be remembered that the old-fashioned bleeding heart...
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During his travels in eastern Asia, Fortune set the standards for future plant hunters who were to follow in his footsteps. Because travel was highly restricted, he was unable to penetrate very far westward into the vast Chinese Empire to any great extent but was limited to travel on the highly populated eastern seaboard. As a consequence, Fortune was able to sample the garden flora of China, and it is to this subset of the overall Chinese flora that the majority of his introductions relate. His success in sending living plants to Europe and North America, moreover, was greatly increased by his use of the Wardian case, which had been invented by a London physician, Nathaniel Ward, shortly before Fortune's departure for China in 1843.

PHILIPP VON SIEBOLD AND GEORGE ROGERS HALL IN JAPAN

While Robert Fortune was busily searching for and collecting Chinese plants for shipment to England in Wardian cases, a German Physician in the employ of the Dutch East India Company was actively soliciting living plants and plant specimens from an adoring circle of Japanese friends at the Dutch outpost on the man-made island of Deshima in Nagasaki harbor. Philipp Franz Balthasar von Siebold's opportunities for travel in Japan were even more limited that those of Fortune in China. Nonetheless, and largely due to his skill in performing successful cataract operations on sight-impaired Japanese, von Siebold was able to establish a network of Japanese friends who were willing to repay the adept physician by responding to his requests for specimens, living individuals, and seeds of Japanese plants. The living plants were sometimes established in the small botanical garden on Deshima, but other plants and their seeds were more often than not smuggled onboard Dutch ships for transport to Europe. Thus, the first large consignments of Japanese plants followed in the wake of the ginkgo and were destined to be added to the garden floras of Europe, and eventually, North America.

It was not until the Treaty of Kamagawa had been signed in 1854—as the result of an early example of gunboat diplomacy by Commodore Matthew Perry—that Japan, like China, was forced to open her long-closed doors to foreigners. But unlike their continental neighbors, the Japanese adapted far more quickly to the presence of foreigners, even adopting many western customs and technological advances. As a consequence, travel bans were less rigidly enforced, and the country became open to general foreign travel at an earlier date than in China.

While Phillipp von Siebold turned these circumstances to his advantage, he was joined in Japan in 1859 by an American physician, George Rogers Hall (Fig. 2), who had left the hospital he had helped to establish in Shanghai a decade earlier to join the lucrative trade that had already been established between Japan and the United States. A native of Bristol, Rhode Island, Hall had maintained contacts with friends in New England, and in 1861, Hall entrusted several Wardian cases filled with Japanese plants to F. Gordon Dexter, who was returning to Boston. Once in Boston after the long sea voyage from Yokohama, Dexter delivered the plants into the care of Francis Parkman, widely noted for his historical studies but also one of Boston's leading horticulturists.

Many of the plants introduced by Hall in his first shipment of Japanese plants as well as in subsequent shipments sent to the Parsons nursery company of Flushing, Long Island, were obtained from von Siebold, while others had been collected by, or for, Hall himself. This was the first time that shipments of Asian plants came directly to New England, and a large proportion of the species included were or had been introduced simultaneously into Europe by von Siebold.

Included among the plants sent by von Siebold to Europe and Hall to North America were many Japanese species that have become commonplace ornamentals in western parks and gardens. An abbreviated listing would begin with the Japanese yew (Taxus cuspidata Siebold & Zuccarini), a conifer that has been utilized extensively as a landscape plant since its introduction into North America by George Rogers Hall. Other conifers introduced by Hall include the so-called umbrella pine [Sciadopitys verticillata (Thunberg) Siebold & Zuccarini], ten garden forms of the sawara cypress [Chamaecyparis pisifera (Siebold & Zuccarini Endlicher), and the beautiful hinoki cypress [Chamaecyparis obtusa (Siebold & Zuccarini) Endlicher], slow-growing forms of which are frequently trained as bonsai. The kobus magnolia (Magnolia kobus DC.), and the well-known star magnolia [Magnolia stellata (Siebold & Zuccarini) Maxim.] and Japanese crab apples (Malus floribunda Van Houtte and M. halliana Koehne f. parkmanii Rehder) now enliven North American landscapes in spring as does the Japanese wisteria [Wisteria floribunda (Willd.) DC.], while Japanese...
maples (*Acer palmatum* Thunberg and *A. japonicum* Thunberg) add color and interest to our gardens and parklands in summer and fall. The Japanese zelkova [*Zelkova serrata* (Thunberg) Makino], another Hall introduction that concludes this brief listing, is now widely cultivated as a replacement for native American elms ravaged by Dutch elm disease.

**OPENING OF THE CELESTIAL EMPIRE**

In 1860, while von Siebold and Hall were sampling the Japanese flora for horticultural novelties, the Chinese were forced to lessen the restrictions on foreign travel in the Celestial Empire. Under the terms of a new treaty, western missionaries were free to travel and establish missions anywhere they chose in the Chinese kingdom. Two years later, in 1862, a French Lazarist priest by the name of Armand David (Fig. 3) was to arrive at his order's mission in Peking and was subsequently to undertake three great journeys of exploration to inaccessible regions of China. The second of these trips, which occupied the years between 1868 and 1870, proved to be extraordinarily important botanically and ultimately led to the horticultural investigation of the western Chinese flora. On this second trip, David prepared dried botanical specimens of upwards of 1,500 species of plants that were new to science, and included among his haul was the astonishingly beautiful and botanically unique dove tree (*Davidia involucrata* Baillon). All in all, the specimens Abbé David forwarded to the natural history museum in Paris attested to a far richer flora in western China than anyone could have predicted.

Similar shipments of dried botanical specimens were to arrive at the herbarium at the Royal Botanical Gardens, Kew, beginning in 1885. In this instance, the plants had been gathered by Augustine Henry, a medical officer in the Imperial Chinese Maritime Customs Service based in Ichang on the Yangtze River in Hubei Province, a post one thousand miles inland from the east coast port of Nanking. Like David's specimens received in Paris, Henry's collections indicated a floristic richness that no one could have predicted. Upwards of five hundred new species, twenty-five new genera, and an entirely new family of plants were based on Henry's dried specimens. And included in his haul were specimens of the dove tree, the same species Abbé David had collected earlier from a location roughly one thousand miles to the west. So beautiful were the specimens of the *Davidia* that Daniel Oliver, a botanist at Kew, wrote "*Davidia* is a tree almost deserving a special mission to Western China with a view to its introduction to European gardens" (Oliver, 1891).

Reading these words prompted Sir James Veitch (Fig. 4), head of the Chelsea branch of the Veitch family's nursery empire in England, to travel to Kew to see the specimens for himself. He too, was beguiled by the beauty of the specimens and asked Kew's director, Sir William Turner Thiselton-Dyer, to recommend an individual to send to China with the specific purpose of introducing the dove tree into cultivation. Thiselton-Dyer recommended twenty-five year old Ernest Henry Wilson (Fig. 5), a recent graduate of the diploma course at Kew to undertake the task. Wilson was hired by the Veitch firm, and in 1899 he left England for China on what would be the first of two plant hunting expeditions for the Veitch nursery. Wilson's first expedition between the years 1899 and 1902 ended in complete success--seeds of the dove tree were collected in quantity--and the second trip between the years 1903 and 1905 was equally successful. On both trips, Wilson introduced an incredible number of horticulturally significant plants, many of which had been known in the West only as they were represented by the dried herbarium collections of David and Henry.

News of the collecting activities of David, Henry, and Wilson had not escaped the notice of Charles Sprague Sargent (Fig. 6), the first director of Harvard University's Arnold Arboretum. Sargent was keenly interested in the Asian flora, and he had personally inaugurated the Arboretum's botanical and horticultural exploration of Asia when he traveled to Japan in 1892. As a consequence of his four month sojourn, Sargent was able to author the *Forest Flora of Japan*, the first thorough scientific study of the woody plants of the island nation. Moreover, he was able to introduce a significant number of Japanese plants into American gardens. Notable Sargent introductions that have remained popular to the present day include the Sargent crab apple (*Malus sargentii* Rehder), Sargent cherry (*Prunus sargentii* Rehder), the long-stalk holly (*Ilex pedunculosa* Miquel) and the commonplace hill azalea (*Rhododendron kaempferi* Planchon), which was quickly christened the torch azalea once it was in cultivation in the West. Other introductions resulting from Sargent's 1892 trip include the Nikko maple (*Acer maximowiczianum* Miquel), one of the trifoliate species, and one of the precocious flowering magnolias, the anise-leaved or willow-leaved magnolia [*Magnolia salicifolia* (Siebold & Zuccarini) Maximowicz].
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While Sargent's Japanese exploits served to whet his appetite for additional Asian plants to be tested in the Arnold Arboretum, by 1900 he realized that due to his age—he turned 59 in 1900—he would be unable to undertake strenuous field work in China. As a consequence, Sargent turned his attention to locating another man who might serve as the Arboretum's agent in China, and the unparalleled success of Ernest Henry Wilson's trips for the Veitch nursery firm between 1899 and 1905 were uppermost in Sargent's mind.

After hard-fought negotiations, Sargent was finally able to enlist the services of Wilson on behalf of the Arnold Arboretum. In late December of 1906, Wilson once again departed for China, returning to Boston in 1908. A fourth trip was begun in 1909 when Wilson undertook his second expedition under Arboretum auspices. This journey, unfortunately, ended in catastrophe when Wilson's leg was broken in two places when he was caught in a landslide in the valley of the Min River in northwestern Sichuan Province. Despite this crippling mishap, Wilson returned to the Arnold Arboretum, where he was given a permanent appointment, and he spent the better part of the second decade of the twentieth century collecting for the Arboretum in Japan, Korea, and Taiwan. Wilson's success as a plant hunter and in introducing new Asian species into western horticulture are well-known, Alfred Rehder, well-known taxonomist at the Arnold Arboretum, credited Wilson with having introduced over 1,000 species previously unknown to cultivation.

While space does not allow a complete listing of Wilson's introductions, mention will be made here of several of his more notable plants collected in eastern Asia. This list begins with the extremely popular beauty bush (Kolkwitzia amabilis Graebner), a shrub of easy propagation and one which became commonplace across North America in Wilson's lifetime. The paperbark maple [Acer griseum (Franchet) Pax], Schmidt's birch (Betula schmidtii Regel), and the Korean stewartia (Stewartia koreana Rehder), are three outstanding Wilson introductions that have year-round landscape appeal due to their interesting ornamental bark. Both the paperbark maple and the Korean stewartia produce exfoliating bark, that of the maple cinnamon colored, while that of the stewartia is mottled and gives a piebald appearance to the sinuous trunks of the small trees. The bark of the Schmidt birch, by contrast, is similar to that of our native shagbark hickory.

Other ornamental trees introduced by Wilson include several outstanding magnolias of the Yulana section, the most noteworthy being Magnolia sprengeri Pampanini in its cultivar 'Diva', while Sargent's magnolia (Magnolia sargentiana Rehder & Wilson), and Dawson's magnolia (Magnolia dawsoniana Rehder & Wilson) are also extremely beautiful ornamental species. Flowering crabs also number among Wilson's introductions, and the so-called tea crab [Malus hupehensis (Pampanini) Rehder] is one of the most notable, while the Chinese sand pear [Pyrus pyrifolia (Burman f.) Nakai] also ranks high as a spring-flowering ornamental. The evergreen Viburnum rhytidophyllum Hemsley has been widely planted, and the Korean forsythia (Forsythia ovata Nakai), perhaps the hardiest of all species of forsythia, has played an important role in hybridization programs that have developed a series of hardier cultivars that have expanded the ornamental range of these early spring flowering ornamentals into regions with colder winter climates. Wilson was also the first to introduce the kiwi fruit or Chinese gooseberry (Actinidia chinensis Planchon), into cultivation in the West, and it was his material that ultimately led to the establishment of the kiwifruit industry in New Zealand. Certainly, any listing of Wilson introductions must include the regal lily (Lilium regale Wilson), and this brief catalogue will end with the hardy silk tree [Albizia julibrissin (Willd.) Durazz. 'Ernest Wilson'], which extended the ornamental use of this interesting summer-flowering tree into the northeastern United States. This was one of the very last plants Wilson introduced into cultivation during his long and productive career as a plant hunter in eastern Asia. Seeds from which this hardy strain of the silk tree were grown were collected in the garden of the Chosen Hotel in Seoul, Korea, in 1918, shortly before Wilson was to return to Boston at the conclusion of his final Asian excursion.

Few plants were introduced into North America from the temperate regions of eastern Asia between 1918--when E.H. Wilson returned from the Orient for the last time--and the end of the Sino-Japanese and Second World Wars. Political upheaval and wartime conditions combined to make this period one in which horticultural and botanical pursuits in that geographical area were temporarily set aside. Yet, just as the bamboo curtain was falling around communist China, news of the discovery of a strange new, deciduous conifer came to the attention of Elmer D. Merrill, then director of the Arnold Arboretum. Collaborating with Chinese colleagues, Merrill was able to send a small sum of money that enabled the Chinese to mount an expedition to collect the seeds of the new tree, and the plant was successfully introduced into cultivation in the West early in 1948, before the species had even been named and described by Chinese botanists. Ironically, this tree, the last to be introduced before China became off-limits to
American collectors, was, like the ginkgo, a living fossil that was on the edge of extinction in its native habitat. The dawn redwood (*Metasequoia glyptostroboides* Hu & Cheng) received great notoriety in the press shortly after its introduction, and the tree is widely cultivated across North America and Eurasia today.

**RECENT RENEWED EXPLORATIONS**

A new era in plant introduction from eastern Asia began in 1980 as a consequence of ping-pong diplomacy. In the late 1970s, American and Chinese botanists reestablished relationships through reciprocal exchanges of delegations to the People's Republic of China and the United States. In 1979, it was decided that future collaboration should include the participation of American botanists on field trips in China, while Chinese botanists would be invited to join American colleagues in field work in the United States, and invitations were forthcoming from the Academia Sinica for American participation in the first Sino-American Botanical Expedition in 1980. As a consequence of that inaugural undertaking, five American botanists were able to travel to western Hubei Province where collections of both botanical specimens and germplasm were made for a three month period. Several new ornamental species were introduced into American gardens as a result, and notable among these were the so-called seven-son-flower (*Heptacodium miconioides* Rehder), an interesting fall-flowering shrub in the honeysuckle family, the Zen magnolia (*Magnolia zennii* W.C. Cheng), a precocious flowering species from eastern China that had previously eluded collectors, and Yu's mountain ash (*Sorbus yuana* Spongberg), a simple-leaved species not previously known and described as new by an expedition participant.

Given the floristic richness of eastern Asia—the flora of China alone is estimated to consist of 30,000 species of vascular plants compared to an estimate of 10,000 species for all of North America north of Mexico—the future remains bright for further introductions of landscape trees and shrubs of great potential value in western landscapes. And the decade since 1980 has seen renewed participation by the American and European botanical and horticultural communities in collaboration with their Asian colleagues in realizing this potential. Previously little-known plants and totally new ones as well are destined to enter the horticultural marketplace as the twenty-first century approaches.

**REFERENCES**


**Fig. 1.** Robert Fortune (1812-1880) represented the Horticultural Society of London (now the Royal Horticultural Society) as a collector in China shortly after the Treaty of Nanjing had brought the Opium War to a close. Through his use of the Wardian case, Fortune was able to introduce many of the best-known Chinese garden plants into cultivation in Europe and North America. (Photographic Archives of the Arnold Arboretum.)
Fig. 2. George Rogers Hall (1826-1899) of Bristol, Rhode Island, the physician turned trader who first sent living plants in Wardian cases from Japan directly to New England. (Photographic Archives of the Arnold Arboretum.)

Fig. 3. The Abbé Armand David (1826-1900), the first naturalist to collect the dove tree (*Davidia involucrata*), which was named to honor his many contributions in making the natural history of China better known scientifically. (Photographic Archives of the Arnold Arboretum.)
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Fig. 4. Sir James Veitch (1840-1924), head of the famous Veitch nurseries of Chelsa and Coombe Wood, who first employed E.H. Wilson to go to China to introduce the dove tree into cultivation in western gardens. (Photographic Archives of the Arnold Arboretum.)

Fig. 5. Earnest Henry "Chinese" Wilson with his wife Helen (née Ganderton) and their daughter Muriel Primrose in a photograph taken in Japan. Wilson undertook four major expeditions to China between 1899 and 1911 and spent much of the second decade of the present century exploring for plants in Japan, Korea, and Taiwan. (Photographic Archives of the Arnold Arboretum.)
Fig. 6. Charles Sprague Sargent (1841-1927), first director of the Arnold Arboretum of Harvard University. Sargent inaugurated the Arboretum's interest in eastern Asia in 1892 when he personally visited Japan and introduced many new Japanese plants into American gardens. (Photographic Archives of the Arnold Arboretum.)