



The Chinese Species of *Camellia* in Cultivation

Bruce Bartholomew

Though new camellias have been introduced to the West from China for 250 years, only a quarter of the known species are yet cultivated here

China is the origin of many cultivated plants that now are grown throughout the world. Some of them, such as the peonies, chrysanthemum, wintersweet, and osmanthus, traditionally were grown in Chinese gardens. In most cases these Chinese garden plants started being brought into cultivation in the West in the Eighteenth Century, and the earliest introductions of live plants from China were mostly restricted to garden plants. Another and far richer source of cultivated plants has been the indigenous flora of China, particularly of the mountains of southwestern China. These wild plants were brought into cultivation from the late Nineteenth Century through to the present, after Western collectors and, more recently, Chinese collectors, started exploring the riches of the Chinese flora.

The genus *Camellia* includes species in both of these categories; thus, the history of the introduction of *Camellia* species into Western gardens spans the period from the first half of the Eighteenth Century up to the present. Even with this long history, only about one in four of the currently recognized species is in cultivation in the West, or even in Chinese botanical gardens.

Opposite: *Camellia euryoides* as depicted in Loddiges's Botanical Cabinet in 1832. This small, white-flowered camellia was unknown in the wild for over a century after it was described from cultivated material.

Camellia is basically a Chinese genus, some nine out of ten of its species being endemic to China. Its main center of species diversity straddles the Tropic of Cancer across southern China. Diversity drops rapidly to the south and more gradually to the north. Although most of its species are continental, the genus extends to the islands of Japan, Taiwan, and Hainan, one species, *Camellia lanceolata*, reaching the Philippines and Indonesia.

The genus as a whole has primarily a subtropical and warm-temperate distribution, and even the most northerly species have only a moderate degree of frost hardiness. As a result, camellias as garden plants are restricted to areas with relatively mild climates; in areas with more severe climates, plants must be grown in greenhouses during the winter. As horticultural plants, the most important species are the more temperate ones in the genus, with *C. japonica* being by far the most prominent. In fact, if one mentions camellias, the image that comes to mind for most people is this species.

Camellia japonica

Camellia japonica was the first species to be brought into cultivation in the West, and although it was described on the basis of

material from Japan, probably all the early introductions during the late Eighteenth Century and early Nineteenth Century were from China. Linnaeus named the species in 1753 on the basis of the illustration and description in Engelbert Kaempfer's *Amoenitatum Exoticarum Politico-Physico-Medicarum*, published in 1712. Kaempfer's work was the result of a visit to Japan from 1690 to 1692, when he was employed as a doctor by the Dutch East-India Company. The earliest illustration of *C. japonica* in the West was by the English apothecary James Petiver, who published a description and illustration of this species in his *Gazophylacii Naturae & Artis* in 1701 based on a collection sent back to England from China by James Cunningham. Cunningham's collections were among the earliest specimens of Chinese plants available to Western botanists. Cunningham collected his specimens when he was a physician in the service of the English East-India Company, which had established a trading post, or factory, as they were then called, on Zhushan (Chushan) Island, opposite the city of Ningpo. Although the post lasted only a few years, Cunningham collected plants representing about 600 species, which he sent back as herbarium specimens to James Petiver and Leonard Plukenet. Among them were specimens of *Camellia japonica* and *C. sinensis*, as well as of *C. fraterna*, although the last specimen was not determined until the 1950s. The Petiver and Plukenet collections were later purchased by Sir Hans Sloane, and Sloane's collection became the foundation of the British Museum (Natural History).

Neither Cunningham nor Kaempfer was responsible for bringing *C. japonica* into cultivation in the West, and although this species is a conspicuous element in the forests of southern Japan, the earliest introductions were all from Chinese gardens. The first plant for which we have any historical record

was one grown by James Lord Petre at least as early as 1739. This plant was the model for the first color illustration of a *Camellia* in the West, which was used as a prop for an illustration of a Chinese pheasant published by George Edwards in 1745. The origin of Lord Petre's plant is not known, although it is obviously a cultivar of *C. japonica* and must have been brought back from China by one of the ship captains of the English East-India Company. Lord Petre died of smallpox at the age of 29 in 1742, but many of his plants were taken over by his gardener, Philip Miller, who was in charge of the Chelsea Physic Garden, and it is quite likely that his *C. japonica* was among them. During the second half of the Eighteenth Century, *C. japonica* was grown in England, but its popularity can be traced to the importation of several specific cultivars from China in the late Eighteenth Century.

During this period the British were rapidly expanding their trade in southern China, and ship captains were encouraged by wealthy British horticulturists to bring back plants for their gardens. Two *C. japonica* cultivars, 'Alba Plena' and 'Variegata', are of particular note. They were brought back to England in 1792 by Captain Connor of the East-India Merchantman *Carnatic*, and were illustrated in *Andrews's Botanical Repository* in 1792. The great enthusiasm for growing *C. japonica* from the end of the Eighteenth Century through most of the Nineteenth Century can really be dated from the importation of these two cultivars. Over the next few decades there was a great flurry of interest in this species, as can be seen from the sumptuously illustrated books and hand-colored plates in periodicals of the early Nineteenth Century. Between 1792 and 1830, at least twenty-three cultivars of *C. japonica* had been introduced from Asia, most if not all of them from China. Subsequently, a great many new cultivars have been named from seedlings grown

in the West, as well as from later introductions from Asia. At present, there are several thousand named cultivars of *C. japonica*, with many more being named every year.

Camellia sinensis

The second species to be brought into cultivation in the West was *C. sinensis*. This species was known to be the source of tea that had been imported to England and Europe since the Seventeenth Century. Live plants of *C. sinensis* may have been cultivated in England as early as 1740 by Captain Geoff,

who was a director of the East-India Company and brought plants back as a gift for his wife. However, it appears that these plants died, and therefore that the first person to cultivate plants of this species in Europe successfully was Linnaeus.

Linnaeus was familiar with the tea plant from the publications of Siebold, and it was on the basis of Siebold's published description of the tea plant, and the accompanying illustration, that Linnaeus named the genus *Thea* in 1735 and the species *T. sinensis* in 1753. However, it is quite certain that when Linnaeus named this species he had not yet



Two renditions of *Camellia sasanqua* from Curtis's *Botanical Magazine* (1859 and 1940, respectively) The plant in the left-hand drawing is called "*Camellia sasanqua* var. *anemoniflora*," the anemone-flowered variety.

seen a living plant or even a dried specimen of it. *Thea* is no longer recognized as a separate genus, and the species *T. sinensis* has been transferred to the genus *Camellia*. By the middle of the Eighteenth Century, tea was already an important import from Asia, and there was considerable interest in obtaining living plants of *Thea sinensis*. Although Sweden did not have as significant a role in the commerce with eastern Asia as did England, Portugal, or the Netherlands, there was still a Swedish East Asia Trading Company, and it was through the efforts of the Swedish captain Carolus Gustavus Eckerberg that Linnaeus was able to obtain live plants. The seeds were obtained in China and were planted in pots shortly after Eckerberg set sail for Europe. Live plants were presented to Linnaeus on October 3, 1763. Although *C. sinensis* is the only species of any major economic importance in the genus, it has never received much attention as a garden plant.

Camellia sasanqua and *C. oleifera*

The first two species of *Camellia* to be described were also the first two to be brought into cultivation, but this pattern did not always continue with subsequent species. The third species to be formally named according to the binomial system of Linnaeus was *C. sasanqua*. It was named by Thunberg, one of Linnaeus's students who made major collections in both Japan and South Africa. Although it is a Japanese species and thus beyond the scope of this article, *C. sasanqua* must be mentioned because it has been confused with several subsequently described and introduced Chinese species. *C. sasanqua* had been known by earlier travelers to Japan, as it was mentioned by Siebold, but unlike *C. japonica* and *C. sinensis*, this third species was not named by Linnaeus. *C. sasanqua* remained somewhat of an enigma

up until the latter half of the Nineteenth Century. The illustration in Thunberg's 1784 *Flora Japonica* is rather cursorily drawn, and although there is a specimen of it in Thunberg's herbarium, both botanists and horticulturists repeatedly confused *C. sasanqua* with other species from the mainland of Asia. It was not until after Japan had opened its doors to Western contact that live plants of *C. sasanqua* were grown in the West, in the second half of the 19th century.

Japan was quite effective in insulating herself from contact with the West, except for limited trading contact through the port of Nagasaki. China was not as successful. The



Camellia oleifera (Edwards's Botanical Register, 1826).

Portuguese were the first major European traders to deal directly with China, and their trading port of Macau dated from 1557. In 1790, a Portuguese, Joannis de Loureiro, published a very important, although somewhat sketchy, account of the plants of southern China and of what is now Vietnam. Among the plants he described were four *Camellia* species. Most of these have turned out be variations of *C. sinensis*. Some of Loureiro's specimens were sent to Sweden and ended up in the British Museum, and others remained in Lisbon and have disappeared, except for those which were stolen by Napoleon's army and are now in the Natural History Museum

in Paris. Unfortunately, *C. drupifera* is not among the specimens that are extant. Loureiro's description of this species is incomplete, and confusion over its identity has led various botanists to apply the name to what are in reality various other species. Because of this confusion and the lack of an extant Loureiro specimen, the name now used for what may well be Loureiro's *C. drupifera* is *C. oleifera*.

The name *Camellia oleifera* was first used by Clarke Abel for a plant that he found when he accompanied Lord Amherst's embassy to the Chinese Court. Essentially all earlier botanical collections from China were from coastal areas, and it was fortunate that the Amherst embassy had a naturalist along during its trek across eastern China. *Camellia oleifera* is one of the most common species in China, largely because it is used as an oil crop, a fact implied by the specific epithet, which means "oil-bearing." This species was first brought into cultivation in 1803, fourteen years before Abel described it. A double form of *C. oleifera* was sent back to England by William Kerr, who was a plant collector for Kew in Canton. The plant brought back to England as *C. sasanqua* was named 'Lady Banks's Camellia' and was listed in the second edition of Aiton's *Hortus Kewensis*. Single forms of this species were subsequently brought back to England and can be seen in early Nineteenth Century publications on camellias.

Camellia maliflora

The next Chinese camellia introduced to the West was *C. maliflora*, which is a double-flowered *Camellia* brought back from China by Captain Richard Rawes for Thomas Carey Palmer. This *Camellia* was illustrated in 1819 in *Curtis's Botanical Magazine* as *C. sasanqua* 'Palmer's Double', but in 1827 John Lindley recognized it as a distinct species and



Camellia maliflora (Curtis's Botanical Magazine, 1819)

named it *C. maliflora*. This species has small, double, pink flowers that measure only about 4 centimeters (1.5 inches) in diameter. The species has never been found in the wild, even as a simple-flowered form, and it is quite likely that it is in reality a hybrid species.

Aside from *C. japonica*, probably the most important species to horticulture described during the 19th century was *C. reticulata*, although its horticultural potential was not fully realized until over a century later. The history of this species's introduction to the West is quite different from that of *C. japonica*, and the impact of *C. reticulata* on the cultivated camellias in the West is still at a rapid stage of development. One of the main virtues of this species is its large flowers, with the flowers of some cultivars such as



Camellia reticulata (*Edwards's Botanical Register*, 1827).

'Dali Cha' having a diameter of 22 centimeters (8.7 inches).

Introduction of *Camellia reticulata* into Western Gardens

Because of the rather interesting history associated with this species and my own involvement in the recent developments concerning introduction of cultivars from China, I would like to give a more detailed account of facts surrounding its introduction into Western gardens. *Camellia reticulata* was described by Lindley in 1827 on the basis of a cultivated plant introduced to England in 1824 by J. D. Parks and given the English name 'Captain Rawes's Camellia', in honor of the ship's captain who brought what was apparently the same cultivar from China in 1820 for Thomas Carey Palmer. Lindley expressed concern that this camellia was sterile and questioned whether it deserved designation as a species, but the plant was obviously different from any previously known camellia. The reason for the sterility of this cultivar is that it is a triploid, although all later material of this species has been shown to be hexaploid. The exact origin of the 'Captain Rawes's Camellia' is uncertain but it must have been obtained as a potted plant in either Macau or Guangzhou (Canton). A second cultivar of the same species was brought back from China by Robert Fortune, probably during his second expedition to China, between 1848 and 1851, when he was collecting plants in China for the nursery of Standish and Noble. This cultivar was named 'Flore Pleno' by Lindley in 1857, but the cultivar name usually given to this camellia in England is 'Robert Fortune'. We now know this cultivar to be the one grown in Yunnan as 'Songzilin', or "pine cone scale." Throughout the Nineteenth Century, *C. reticulata* was known in the West only by

these two cultivars.

It was not until the 1930s that Otto Stapf, an Austrian botanist at Kew, recognized some of the plants grown from seeds collected by the Scottish collector George Forrest as wild forms of *C. reticulata*. Forrest's collections were made near the town of Tongchong (formerly known as Tungyueh), near the Burmese border of Yunnan Province. Tongchong was the base of operations for Forrest during his various expeditions to China and also the customs station for commerce between Burma and China. In addition to collecting herbarium specimens, Forrest sent seeds back to Great Britain, where plants were grown by J. C. Williams of Caerhays Castle, Cornwall. In 1935 Robert Sealy, who took over Stapf's work on camellias when Stapf died in 1933, published the first illustration of the simple-flowered *C. reticulata* grown from Forrest's seeds.

The next stage in the introduction of *C. reticulata* into Western gardens can be traced to a 1938 article by the Chinese plant taxonomist, H. H. Hu, published in the *Journal of the Royal Horticultural Society*. Professor Hu presented a paper on the horticultural resources of China in which he mentioned that Kunming was a center of camellia cultivation and that some seventy cultivars of outstanding value were grown there. Although Hu does not give the source of his information, it seems certain that his information was from a 1930 publication in Chinese by the scholar Fang Shu-mei. In Fang's publication, *Tiannan Chahua Xiaozhi*, seventy camellia cultivar names are listed, although only a fraction of these names can be allocated to *C. reticulata*. It is surprising that none of the Western plant collectors who passed through Kunming from the late Nineteenth Century through the middle of the Twentieth Century mention these magnificent cultivated camellias.

Cultivars of *Camellia reticulata*

The first detailed information on the Kunming *C. reticulata* cultivars was in an article presented by T. T. Yü at the 1950 magnolias and camellias conference in England. Professor Yü had been working at the Fan Memorial Institute of Biology's botanical research station in Kunming during the late 1930s and early 1940s. One of his interests at the time was the cultivated camellias of Kunming. In the Kunming area many large trees of *C. reticulata* grow in the courtyards of temples such as those in Xishan and in Heilongtan. The latter of these is in fact right next to the research institute where Professor Yü was



Camellia euryoides (Edwards's Botanical Register, 1826).
See page 12.

working. In addition, Professor Yü had available to him the extensive camellia collection made by Mr. Liu, a wealthy merchant and camellia fancier. Professor Yü was able to identify eighteen cultivars of *C. reticulata* and four cultivars of *C. japonica* being grown in the Kunming area, and it is about these cultivars that he reported in his 1950 article.

The discrepancy between the seventy cultivars listed by Fang and the eighteen described by Yü can be attributed to the difference in approach of the two authors. Fang was not a botanist but a traditional Chinese scholar, and he based his list only in part on his own observations and drew liberally from the Chinese horticultural literature dating back to the Ming Dynasty. Most of these older names were cultivars of *C. japonica* and were not even from Yunnan. Professor Yü, on the other hand, was trained as a botanist and based his work on actual observations. After World War II, Professor Yü went to the Royal Botanic Garden, Edinburgh, where he worked on the eastern Himalayan species of *Cotoneaster*, and it was at the end of his stay at Edinburgh that he presented his paper on the Kunming camellias. He had also written a longer treatise on the subject that he hoped to get published in the West. When Professor Yü returned to China in 1950 the manuscript was in the possession of Robert O. Rubel of Mobile, Alabama, who operated a camellia nursery and who had been in correspondence with Mr. Liu in Kunming and, through this contact, with T. T. Yü. When Yü was in Edinburgh he sent his manuscript to Rubel, who planned to publish it. However, Yü returned to China in late 1950 before the publication was complete, and Rubel lost contact with him. In 1964 Frank Griffin published a photolithograph copy of the original typed manuscript, complete with handwritten corrections. It was with great pleasure that in 1980 I was able to present Professor Yü with a copy of this publication, which he did not

have.

In the late 1940s two American camellia growers, Walter Lammerts and Ralph Peer, independently tried to obtain plants of the Kunming *C. reticulata* cultivars. Through their efforts, what at the time were believed to be nineteen cultivars were obtained from Kunming. Several of these cultivars were subsequently lost, and some of the cultivars were mislabeled, so it appears that only fourteen cultivars were in fact successfully introduced to the West. These cultivars have been responsible for a great resurgence in interest in camellias and have been used extensively for hybridizing as well as being grown for their own merits.

Following these initial introductions, contact with people in China was for the most part impossible, and for many years no further introductions took place. In the 1960s Colonel Tom Durrant of New Zealand systematically straightened out those cases where there was confusion over which cultivars had in fact been brought out of China in the 1940s. He was able to show that the true cultivars of 'Jiangjia Cha', 'Baozhu Cha', and 'Daguiye' were not being grown in the West. When New Zealand established diplomatic relations with China in the 1960s, Durrant was able to obtain several of the cultivars that had not been introduced in the late 1940s or that had been subsequently confused.

During the 1960s, a Japanese camellia grower, Ikada, discovered that there were additional cultivars still in Yunnan, and he started to obtain those that he could. He also made available to the English-speaking world some of the information on Kunming *reticulatas*.

Recent Work in China on *C. reticulata*

In 1978 I had the great privilege to be a member of the Botanical Society of America's del-

egation to the People's Republic of China, along with Richard Howard of the Arnold Arboretum and eight other American botanists. We were very fortunate to be able to visit the Kunming Institute of Botany. Kunming had just been opened to foreigners, and we were among the first delegations to be able to include Kunming in their itinerary. I was particularly interested in finding out about the work on garden varieties of *C. reticulata* being done at the Kunming Institute of Botany.

In 1958 T. T. Yü and Y. Z. Feng published a small book on the Kunming *C. reticulata* cultivars. This Chinese work basically contained much of the same information as the English publication that was written by Pro-



Camellia kissi (Loddiges's Botanical Cabinet, 1832) See page 13.

fessor Yü before 1950 but not published until 1964. However, there were two additional cultivars, 'Jiangjia Cha' and 'Tongzimian', which were not known to Professor Yü in the 1940s. 'Tongzimian' is a particularly interesting cultivar. An old cultivar from the Dali area about 400 kilometers (250 miles) west of Kunming, it is the only cultivar with almost white flowers.

After the Yü and Feng book was published, the work at the Kunming Institute of Botany concentrated in two directions. One was the selection of new cultivars from seedlings grown at the Kunming Institute of Botany, and the other was an investigation of the cultivars grown in the Dali area. The culmination of this work was an article by G. M. Feng and Z. M. Shi that was published in the short-lived journal *Zhiwu Yinchong Xuhua Jikan* ("Plant Introduction and Domestication"). This article was published at the beginning of the Cultural Revolution, and almost all the new cultivars mentioned by Feng and Shi no longer exist. However, the old cultivars survived and are still being grown.

Since the Cultural Revolution, work has concentrated on selecting and naming new cultivars at the Kunming Institute of Botany and on surveying the wild *C. reticulata* plants growing in the Tengchong area. As mentioned above, in the area around Tengchong are to be found single-flowered plants of *C. reticulata*. Whether these plants can really be called wild or semicultivated is hard to say. The plants are not grown in orchards, but the seeds are harvested and the oil expressed and used as a cooking oil. Mature plants of *C. reticulata* reach 10 meters (33 feet) or more in height and are, in fact, small trees. In a few areas this species forms camellia forests. These camellias have been systematically surveyed and numbered, and superior forms have been given cultivar names. Among these cultivars are not only single-flowered forms but some that are semidouble

and double. The culmination of this work is a book on the *Camellia reticulata* cultivars of Yunnan, which has been published both in a Chinese and Japanese edition. An English edition is in press. These editions are in reality different books, because the texts are somewhat different, as are the sets of illustrations. Unfortunately, the named cultivars in the Tengchong area exist only as the parent plants and have not yet been propagated. If local farmers decide to use any of these trees as firewood, which does happen, the cultivars involved will be lost forever.



Camellia rosaeiflora (Curtis's Botanical Magazine, 1858).
See page 13.

Since 1979, I have been attempting to obtain all of the Yunnan cultivars of *C. reticulata* and to distribute them to interested botanical gardens in the West. In cases where there is no question about the identity of the cultivar already growing in the United States there has been no need to obtain additional material from China, but if there has been any question concerning the correct identity, as there is with 'Baozhu Cha' and 'Daguiye', I have been able to obtain additional scions from Kunming even though the plants grown under these cultivar names are grown in the United States. I have obtained almost all of the old cultivars grown in Yunnan, as well as the new cultivars named at the Kunming Institute of Botany. However, I have obtained only one of the Tengchong cultivars, 'Xiaoyulan', which, as far as I have been able to ascertain, is the only cultivar of the more than thirty Tengchong cultivars that is currently being grown in Kunming.

Since 1981 it has been impossible to obtain any additional camellia cultivars from Kunming because of regulations imposed by China. I do not know the reason for these restrictions, but they have essentially stopped all exchange in camellias. At present we have available 65 of the 105 cultivars currently recognized in China, which is four times the genetic diversity with which the growing of this species became established in the early 1950s.

Other Species

Camellia euryoides is another species that was first known as a cultivated plant. It was named by Lindley on the basis of a plant that flowered in March 1826 in Cheswick Garden, England. The plant had been the rootstock for a *C. japonica* brought back to England by John Potts, a plant collector for the Royal Horticultural Society in India and China in 1821 and 1822. This same species appeared

as a rootstock from plants brought back to England by Parks in 1824. For over a hundred years this small, white-flowered camellia was known in the West only from cultivated plants, but it has now been found in the wild, in Fujian, Guangdong, and Jiangxi provinces.

The next species to be brought into cultivation was *C. kissii*. This species is very widespread from Nepal all the way to southeastern China and Southeast Asia. It was described by Wallich in 1820, and live plants of it were obtained in 1823 by Samuel Brooks, who was a nurseryman particularly interested in importing Chinese plants.

Camellia rosaeflora is another species that was first described from a rootstock plant. The species was described by Hooker in 1858 on the basis of a plant that had long been grown at Kew as *C. euryoides*. *Camellia rosaeflora* was subsequently lost but rediscovered as a cultivated plant in Ceylon in

1935. More recently, the species has been found as a wild-growing plant in Hubei, Jiangsu, Sichuan, and Zhejiang provinces, China. It is interesting to speculate on the origin of the plants of *C. euryoides* and *C. rosaeflora* on which these two species were described. From the currently known wild distribution of these two species, it seems quite likely that *C. euryoides* was being used as rootstock for *C. japonica* in Guangzhou, whereas *C. rosaeflora* was being used as rootstock in Shanghai.

Camellia rosaeflora was the last Chinese species of *Camellia* to be successfully introduced to the West during the Nineteenth Century, although the Japanese species *C. sasanqua* apparently was brought into cultivation in France by 1869 and in England ten years later. Additional Chinese species were described during the Nineteenth Century, including *C. assimilis*, *C. caudata*, *C. edithae*, *C. fraterna*, *C. grijsii*, *C. hongkongensis* and *C. salicifolia*. Except for *C. hongkongensis*, which was briefly grown at Kew, none of these species were introduced to the West before the present century.

Twentieth Century Introductions

Comparatively few camellias were introduced during the first half of the Twentieth Century. A notable species is *C. cuspidata*, collected by E. H. Wilson in 1900 when he was collecting for the nursery of Veitch and Sons. Plants grown from the Wilson seeds first flowered in 1912 and were reported and illustrated in the *Gardeners' Chronicle*.

The most important introductions during the first third of the Twentieth Century were those by George Forrest. As mentioned above, Forrest collected in Yunnan between 1913 and 1931. During this period he was responsible for sending back seeds of *C. reticulata*, *C. saluenensis*, *C. taliensis*, and *C. tsaii*. Of these four species, the first two are the most



A double-flowered variety of *Camellia rosaeflora*
Reproduced from *Gardeners' Chronicle* (1928)

important as garden plants.

The next period of *Camellia* introduction from China started in the late 1920s and 1930s and has continued with major interruptions to the present. The first two botanical gardens in China were the Sun Yat-sen Botanical Garden in Nanjing and the Lushan Botanical Garden on Mt. Lushan in Jiangxi province. In the 1930s, both *C. fraterna* and *C. pitardii* var. *yunnanica* were obtained from the Lushan Botanical Garden, and possibly a few other species now grown in the United States were sent out of China during this period.

It appears that from the late 1930s to the late 1970s no camellias were introduced to



Camellia cuspidata, a species with a shrub habit, photographed in the Royal Botanic Gardens, Kew, by E. J. Wallis. Photograph from the Archives of the Arnold Arboretum.

the West from the mainland of China except *C. reticulata*. However, there were two very interesting introductions from Hong Kong. In late 1955, Mr. C. P. Lau of the Hong Kong Herbarium found a single plant of a new and very spectacular *Camellia* in the New Territories of Hong Kong. This new species was named *C. granthamiana* the following year, in honor of Alexander Grantham, the Governor of Hong Kong at the time. This *Camellia* has a single white flower up to about 14 centimeters (5.5 inches) in diameter. This species has many characteristics that place it as one of the more primitive members of the genus. *Camellia granthamiana* has now been widely propagated both from seeds and cuttings.

Another very interesting species from Hong Kong is *C. crapnelliana*, which was described from a single tree discovered in 1903 on the southern side of Mt. Parker on Hong Kong Island. The plant was collected only once, and that only for herbarium specimens. The species has large, glossy leaves, single white flowers, and smooth, brick-red bark. In 1965, Mr. Y. S. Lau of the Hong Kong Herbarium rediscovered what must be the same tree, but this tree has not yet flowered. In 1967, Father Joseph Ly found this species growing in dense woods in Mau Ping, New Territories, and a subsequent search found 58 trees bearing fruit and flowers, as well as several seedlings. This rediscovered species has now been extensively propagated in both Hong Kong and the West.

Recent Introductions

Since the normalization of relations between China and the United States quite a few *Camellia* species have been obtained from Chinese sources. The species that has received the most attention is *C. chrysantha*, which is a yellow-flowered species from Guangxi province. There has been a great deal of inter-

est in this species since it was described in 1965 by Professor H. H. Hu, in an article on fourteen new species and varieties belonging to *Camellia* and segregate genera.

On January 23, 1980, I received five seeds of *C. chrysantha* at the University of California Botanical Garden, of which I was curator at the time. The seeds were sent to me by Professor Zhang Aoluo, who was then the director of the Kunming Botanical Garden. Professor Zhang had also sent five seeds to William L. Ackerman, of the U.S. National Arboretum, as well as five seeds each to people in Japan and Australia. These were the first seeds of this species sent out of China through regular channels, although some years earlier either seeds or scions had been obtained by camellia growers in Japan. The seeds sent by Zhang were collected in December 1979 by staff of the Kunming Botanical Garden at the Malu commune, Fengcheng county, in Guangxi, at an elevation of 300 meters (975 feet). Both Ackerman and I were able to germinate four seeds, and the resulting eight plants have been extensively propagated and distributed to botanical gardens and camellia growers on both the east and west coasts of the United States and abroad.

The main importance of yellow camellias, of which more than ten species have been described, is the hope by *Camellia* hybridizers to incorporate the genes for yellow flower color into other cultivated camellias, resulting in a much wider range of colors than now available. One of the problems is that *C. chrysantha* is in a different subgenus, the subgenus *Thea*, from the majority of cultivated species and hybrids, which belong to the subgenus *Camellia*.

Over the past few years I have been able to obtain seeds and scions of a number of other Chinese *Camellia* species from the Kunming Botanical Garden and other botanical gardens in China. Of particular importance are

C. chekiangoleosa, *C. polyodonta*, and *C. semiserrata*, all of which belong to section *Camellia* and will be spectacular garden plants with large red flowers. Other species that I have been able to obtain include *C. cordifolia*, *C. forrestii*, *C. gigantocarpa*, *C. grijsii*, *C. octopetala*, *C. vietnamensis*, *C. yuh sienensis*, and *C. yunnanensis*. Most of these species have been distributed to camellia growers and botanical gardens in the United States. At present, almost fifty of the more than two hundred described *Camellia* species are in cultivation in the West, but still more than three-quarters of the currently recognized species have yet to be grown as cultivated plants, even in China. I hope that many of these remaining species will be cultivated in China and that the exchange that began in the late 1970s will resume for the enjoyment of people in both China and the West.

Bruce Bartholomew, collection manager for the Department of Botany, California Academy of Sciences, has made four trips to China in the last decade.