

FATHERS OF BOTANY

The discovery of Chinese plants by European missionaries

JANE KILPATRICK

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DEDICATION

For Drew, Ginny and Sally

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Botanists and Explorers

MISSIONARY-BOTANISTS

Bodinier, Père Émile (1842-1901) collected around Beijing and in Hong Kong before collecting in the Guiyang area after his return to Guizhou in 1897

Cavalerie, Père Pierre (1869-1927) collected in southern Guizhou

David, Père Armand (1826-1900) collected around Beijing and made three extended journeys between 1866 and 1874 to Inner Mongolia, to Baoxing on the borders of western Sichuan, and to the Qinling and eastern Jiangxi

Delavay, Père Jean Marie (1834-1895) collected extensively in north-west Yunnan, particularly in the Cang Shan and Heishanmen ranges, and around Lijiang

Ducloux, Père François (1864-1945) collected around Kunming, Yunnan after 1897

Esquirol, Père Joseph (1870-1934) collected in Guizhou

Faber, Pastor Ernst (1839-1899) German Protestant missionary who collected in Guangdong and was the first to collect plants on Emei Shan in 1887

Farges, Père Paul Guillaume (1844-1912) collected in the Daba Shan in north-east Sichuan

Incarville, Père Nicholas le Cheron d', SJ (1706-1757) Jesuit missionary at Beijing 1741-57 and the first missionary to collect plants in China

Genestier, Père Annet (1858-1937) Père Soulié's travelling companion to the Tibetan borderlands

Giraldi, Padre Giuseppe (1848-1901) Italian Franciscan who collected in northern Shaanxi

Maire, Père Édouard Ernest (1848-1932) collected plants in north-east Yunnan after Père Delavay's visit to Longki in 1894

Martin, Père Léon (1866-1919) botanized with Père Bodinier in Guizhou after 1897

Monbeig, Père Théodore (1875-1914) collected at Cigu and Cizhong in the Tibetan borderlands – both now in Yunnan

Perny, Père Paul (1818-1907) the first missionary to collect in Guizhou

Scallan, Father Hugh (1851-1927) Irish Franciscan who collected in northern Shaanxi

Silvestri, Padre Cipriano (1872-1955) Italian Franciscan who collected in north-west Hubei

Soulié, Père Jean André (1858-1905) made extensive collections around Kangding, Tongolo, Yaregong (now in Sichuan) and Cigu (now in Yunnan) then in the Tibetan borderlands

BOTANISTS AND PLANTSMEN

FRANCE

- Bureau, Professeur Édouard** (1830-1914), botanist and Director of the Herbarium at the Muséum d'Histoire Naturelle, Paris
- Decaisne, Joseph** (1807-1882) botanist and Director of the Jardin des Plantes
- Franchet, Adrien René** (1834-1900) botanist at the Muséum d'Histoire Naturelle who classified the missionaries' plant collections
- Henry, Louis** plant-breeder at Jardin des Plantes, Paris
- Lemoine, Victor** (1823-1911) nurseryman at Nancy and gifted plant-breeder
- Milne-Edwards, Professeur Henri** (1800-1885) zoologist and Director of the Muséum d'Histoire Naturelle, Paris
- Vilmorin, Maurice Lévêque de** (1849-1918) nurseryman with an Arboretum at Les Barres in the Loire valley who received seeds from the missionaries and introduced many of their discoveries

RUSSIA

- Maximowicz, Carl** (1827-1891) botanist and Keeper of the Herbarium at the Imperial Botanic Gardens in St Petersburg, who classified the collections Potanin made in China in 1884-1886

BRITAIN

- Bulley, Arthur K.** (1861-1942) wealthy alpine enthusiast who founded Bees Nursery in Cheshire in 1903 and sponsored plant-hunters including George Forrest
- Hemsley, William Botting** (1843-1924), botanist and Keeper of Herbarium at Kew and author of *Index Florae Sinensis*
- Hooker, Sir Joseph Dalton** (1817-1911) botanist and Director of Royal Botanic Gardens at Kew who collected rhododendrons in Sikkim in 1848-1851
- Thistleton-Dyer, Sir William** (1843-1928) succeeded Hooker as Director of Royal Botanic Gardens at Kew 1885-1905
- Veitch, Sir Harry** (1840-1924) nurseryman, and head of the firm of James Veitch and Son of Chelsea and Coombe Wood near London, who sponsored E.H. Wilson's first two expeditions

ITALY

- Biondi, Antonio** (1848-1929) wealthy botanist who worked with the Botanical Institute in Florence and inspired Padre Giraldi and Padre Silvestri to collect plants

- Sprenger, Carl** (1846-1917) German plantsman with a large nursery in Naples who received seed from the Italian missionaries

AMERICA

- Fairchild, David** (1869-1954) botanist and explorer responsible for foreign plant introductions for the US Department of Agriculture
- Gray, Asa** (1810-1888) botanist and Professor of Natural History at Harvard University who formulated modern theories of plant distribution
- Rehder, Alfred** (1863-1949) German-born botanist who worked on Wilson's specimens at the Arnold Arboretum
- Sargent, Charles Sprague** (1841-1917) Director of the Arnold Arboretum in Boston who employed E.H. Wilson from 1906 onwards

EXPLORERS AND PLANT COLLECTORS IN CHINA

- Berezhovsky, Mikhail M.** (1848-1912) Russian naturalist who accompanied G.N. Potanin and also collected independently
- Bretschneider, Dr Emil** (1833-1901) physician and botanist at the Russian Legation in Beijing
- Bunge, Alexander von** (1803-1890) German-Estonian botanist who investigated the flora of the Beijing area
- Cooper, Thomas** (1839-1878) British merchant and consular official who travelled in the Tibetan borders in 1868
- Davies, Major H.R.** British cartographer who travelled through Sichuan and Yunnan in 1894-1900 and made the first detailed map of the region
- Farrer, Reginald** (1880-1920) British plant-hunter in Gansu and northern Burma
- Forbes, Francis** member of the American firm of Russell & Co. who collected plants in China
- Forrest, George** (1873-1932) Scottish plant-hunter in Yunnan and the Tibetan borders who collected initially for Bees Nursery and introduced many of the plants discovered by Père Delavay
- Fortune, Robert** (1812-1880) first professional British plant-hunter in China
- Gill, Captain William** (1843-1882) British traveller who visited the Tibetan borders in 1877
- Hance, Henry** (1827-1886) British customs official in Guangzhou and expert botanist
- Handel-Mazzetti, Freiherr Heinrich** (1882-1940) Austrian botanist who collected plants in western China 1914-1919
- Henry, Augustine** (1857-1930) Irish plant-collector who worked for the Customs Service in China and made an extensive collection of the flora of Hubei for Kew
- Kingdon-Ward, Frank** (1884-1958) collected in the Tibetan borders for Bees Nursery in 1911-1913
- Kirilov, Porphyri V.** (1801-1864) physician and botanist at the Russian Legation in Beijing
- Maries, Charles** (1851-1902) collected in Hubei for Veitch's nursery in 1877-1879
- Mesny, William** (1842-1919) originally from Jersey and a Major-General in the Chinese army who travelled with William Gill and collected plants for Henry Hance
- Meyer, Frank** (1875-1918) Dutch plantsman who made four expeditions between 1905-1918 for the US Department of Agriculture and the Arnold Arboretum
- Orléans, Prince Henri d'** (1867-1901) French explorer and plant-collector who met Père Soulié at Kangding 1890 and Cigu in 1895
- Pratt, Antwerp E.** (1852-1924) British naturalist who met Augustine Henry in 1887 and Père Soulié in 1889 and 1890
- Przewalski, Nicolai** (1839-1888) Russian explorer who made three expeditions to northern China 1870-1885
- Potanin, Grigory** (1835-1920) Russian explorer and plant-collector who travelled through Gansu and northern Sichuan in 1884-1886; and through Sichuan to Kangding, where he met Père Soulié in 1893
- Purdom, William** (1880-1821) collected for Veitch and the Arnold Arboretum, and then travelled with Reginald Farrar
- Rock, Joseph** (1884-1962) Austrian-born American botanist and ethnographer who lived near Lijiang from 1922-1949
- Rockhill, William Woodville** (1854-1914) American traveller who met Père Soulié in 1889 and 1892
- Wilson, Ernest Henry** (1876-1930) British plant-hunter who collected plants for Veitch and then the Arnold Arboretum, principally in Hubei, Sichuan and the Tibetan borders, and introduced many plants discovered by Père David and Père Farges

Gazeteer

Note: 'Q' is pronounced – approximately – 'ch' hence Qinling = *Chinling*, etc.

CITIES, TOWNS AND VILLAGES

<i>Pinyin</i>	<i>Old Style</i>	<i>Pinyin</i>	<i>Old Style</i>
Badong	Patung	Kangding	Tatsien-lu/Tachien-lu
Baihanluo (Beixia luo)	Balhang/Lou-tse-kiang	Kunming	Yunnan-fu
Baotou	Paotow	Lijiang	Likiang
Baoxing	Moupine/Moupin	Malu, Guangxi	La-fou, Kwangtung
Beijing	Peking	Mengzi	Mongtse/Mengtse
Binchunglu	Champutong	Menhuoying	Mo-so-yn
Caka'lho (Yanjing)	Yerkalo	Moxi	Mosimien
Chengde	Jehol	Pianjiao	Pin kio
Chengdu	Chengtu	Qutong	Chu-tung
Chongqing	Chungking	Shiyan	Siang-yang
Cigu	Tsekou/Tsiku	Tengchong	Tengyueh
Cizhong	Tsedjerong/Tsed-rong	Tianjin	Tientsin
Dali	Tali	Tumd Zuoqi	Saratsi
Dapingzi	Tapintze	Weixi	Wei-his
Deqin	Atuntse/Atuntzu	Xiao-Weixi	Hsiao-weihsi
Eryuan	Lankong	Xinjiang	Sinkiang
Gansu	Kansu	Xuanhua	Suanhwa
Gualapo	Koua la po	Yantai	Chefoo
Guangzhou	Canton	Yibin	Sui fu
Hankou, now part of Wuhan	Hankow	Yichang	Ichang
Heqing	Hoking/Hoching	Zhongdian	Chung-tien
Hohhot	Kweisui	Zunyi	Tsen-y/Tsuni
Hongshanding	Hongchantin/Hung-shan-ting	Tongking (now north Vietnam)	Tonkin
Huanjiapin	Houang kia pin		

PROVINCES

<i>Pinyin</i>	<i>Old Style</i>
Anhui	Anhwei
Guangdong	Kwangtung/Kuangtun
Guangxi	Kwangsi
Guizhou	Kweichou/Kueichou
Henan	Honan
Hubei	Hupeh
Jiangxi	Kiangsi
Jiujiang	Kiukiang
Qinghai	Tsinghai
Shaanxi	Shensi
Shandong	Shantung
Shanxi	Shansi
Sichuan	Szechwan/Szechuan
Zhejiang	Chekiang

MOUNTAINS, RIVERS AND PASSES

<i>Pinyin</i>	<i>Old Style</i>
Dadu River	Tung Ho
Emei Shan	Omei Shan
Heishanmen	Heechanmen
Huang He	Hwang Ho/Yellow River
Lake Qinghai	Koko Nor
Lancang Jiang	Upper Mekong River
Luoping Shan	Lopinchan
Maogushan	Mao Kou Shan
Nu Jiang	Upper Salween River
Qinling	Tsinling
Xi La Pass	Sela

INTRODUCTION

It was most pleasing to find that many of the Catholic missionaries busied themselves in collecting material for the advancement of science. In so doing they were certainly not motivated by any desire to supplement their meagre stipends, but by genuine enthusiasm for their subject, of which they often had considerable knowledge.

HEINRICH HANDEL-MAZZETTI[†]

SO MANY OF OUR FINEST ORNAMENTAL plants come from China that it would be difficult to find a park or garden anywhere in the temperate world without at least one Chinese plant on display. The first plants to arrive in the West were those grown in Chinese gardens such as wisteria, magnolias and roses. This only changed after Britain and France forced China to grant access to the Chinese interior at the end of the Opium Wars in 1860. Westerners were then able to investigate the plants of previously inaccessible areas of western and central China, and they quickly realised that this vast country was home to one of the richest and most varied floras in the world. When dried plant specimens began to reach Europe and America, they proved a revelation to botanists and horticulturalists alike. Western plantsmen immediately wanted to grow the new discoveries and professional plant-hunters were swiftly despatched to western and central China to collect living material. When we discuss the discovery of Chinese plants today, we usually do so in connection with the plant-hunters and nurserymen who first introduced them to our gardens.

In many cases, however, professional plant-hunters were not the first Westerners to explore the richest botanical areas and discover eye-catching new plants. The botanical pioneers were a number of Catholic missionary-priests sent to live in China's remote heartlands in the decades after 1860. Several of them were so fascinated by the diverse flora they saw around them

that they spent their limited free time exploring their districts, collecting and drying thousands of plants which they sent back to European botanists for study. It was quickly apparent to these botanists just how important the missionaries' investigations were, and they marked their appreciation by naming several plants after their discoverers. Today, many of these plants are well-known to gardeners: *Davidia involucreta*, *Buddleja davidii*, *Paeonia delavayi*, *Ilex pernyi*, *Ilex fargesii*, *Rosa soulieana*, *Rhododendron souliei*, *Callicarpa bodinieri* var. *giraldii*, *Rosa hugonis*, *Acer fabri*, *Deutzia monbeigii*... But who now remembers the men behind the names?

Perhaps the chief reason why the missionary-botanists commemorated in these names have been forgotten is that little is known about the individual priests. The missionaries were self-effacing men who lived isolated lives deep in the Chinese countryside. They were devoted to the wellbeing of their scattered communities and uninterested in the botanical fame that was rightfully theirs. They did not write about their experiences, or describe the plants they found and, as their discoveries were reported in specialist botanical periodicals usually only read by experts, few outside a narrow circle of professional plantsmen heard of them.

This is in sharp contrast to the professional plant-hunters who followed in the missionaries' footsteps. Their discoveries and adventures were widely reported: they helped classify the



ABOVE

Rosa soulieana in midsummer.

plants they collected, gave lectures, and often wrote books and articles about their travels. The wealth of information about the adventures and discoveries of plant-hunters like E. H. Wilson and George Forrest has proved invaluable for biographers and historians and, over the years, these men and others like them have come to dominate accounts of plant discovery in China. Their achievements were certainly outstanding, but glossing over the missionary-botanists' contribution distorts the true picture. This narrative aims to redress the balance, as only when the extent of the missionary-botanists' achievements is recognised, can we properly appreciate the debt we owe them.

The account focuses particularly on the lives of four great French missionary-botanists – Père Armand David, Père Jean Marie Delavay, Père Paul Guillaume Farges and Père Jean André Soulié – but also includes other French priests who collected plants, particularly Père Paul Perny, Père Édouard Maire, Père François Ducloux, Père Émile Bodinier, Père Pierre Cavalerie and Père Théodore Monbeig. Franciscan missionaries were also involved – Italian Padre Guiseppe Giraldi and Padre Cipriano Silvestri, and Irish Father Hugh Scallan – as was German Pastor Ernst Faber, the only Protestant missionary to make significant plant collections.

It is true that Père Armand David is still relatively well-known: but then *Davidia involucrata*, the dove or handkerchief tree, is especially celebrated, and he is also famous as the discoverer of the giant panda and Père David's deer. His remarkable talents as a naturalist were recognised by his contemporaries and his superiors permitted him to devote himself to investigat-

ing the natural history of various unexplored areas of China. He made several natural history expeditions and kept detailed journals throughout. These were published at the end of each of his journeys, so that knowledge of his discoveries quickly became widespread. In this, he resembled the later professional plant-hunters much more than his fellow missionary-botanists.

Some of these later plant-hunters – particularly E. H. Wilson, George Forrest and Frank Kingdon-Ward – are frequently mentioned in this account as their activities so often overlapped with those of the missionary-botanists. This is hardly surprising as they arrived in China hard on the missionary-botanists' heels, explored many of the same areas and introduced to cultivation several noteworthy plants first discovered by the missionaries. Essential biographical information and brief details about the plant-hunters' various expeditions have been provided in order to clarify the narrative; readers who are interested in learning more are referred to the plant-hunters' own writings, various biographies, and histories of plant-hunting in China.

The missionary-botanists' story is more than just an interesting historical curiosity as their discoveries continue to be important in a number of different disciplines, particularly conservation, medical and scientific research, and horticulture. Specific examples have been provided throughout the narrative but some general points can be made here.

Conservation

Without the priests' determined collecting in all weathers and in all seasons and the long hours they spent patiently preparing their specimens, we would know far less about the extraordinarily rich and diverse native flora of western China and – because habitat destruction proceeded as fast as it did – many of the plants they found between 1869 and 1914 would now have vanished without trace. It is thanks to these largely forgotten priests that so much of the native flora was preserved, classified and described. The thousands of herbarium specimens they collected provide an invaluable record of the native Chinese flora that is used by botanists today as a benchmark against which they can compare their own collections.

So many of the plants collected by the missionary-botanists proved to be new to science that contemporary theories of plant classification had to be considerably amended to accommodate the discoveries. The range of adaptations revealed was so extensive that botanists were able to pinpoint the origin of several important genera such as *Rhododendron*, *Primula*, *Gentiana* and *Pedicularis*. Further detailed study of the missionaries' collections led to a better appreciation of the evolutionary links between species and genera, and this led, in turn, to a greater understanding of global plant distribution patterns and to further developments in the new science of plant geography. Distribution patterns based on the missionaries' initial discoveries

are still being refined today, as new locations are fitted into the existing scheme.

The descriptions in botanical journals of the plants found by the missionary-botanists helped to inspire nurserymen and wealthy gardeners – who wanted to grow the new plants themselves – to fund plant-collecting expeditions by professional plant-hunters, which led to the introduction of hundreds of new plants to Western parks and gardens, and to the discovery of even more hitherto unknown plants. Without the missionaries' initial explorations, plant-hunters like George Forrest would not have arrived in China as soon as they did and many plants subsequently introduced to cultivation might already have disappeared from the wild. The nurserymen and private individuals who received the new plants were quick to supply them to botanic gardens on both sides of the Atlantic, where curators further distributed the plants to colleagues around the world. This rapid circulation of newly-introduced plants among scientific establishments, where they could be cared for by highly-skilled professionals, has contributed markedly to their preservation: today many wild populations are under threat due to the degradation and destruction of their native habitat.

Research

The importance of conservation is emphasised by the fact that some of the missionaries' plant discoveries, which were not of particular significance at the time, have now become the focus of medical and scientific research into human and plant diseases.

Horticulture

Nurserymen found that many of the newly-discovered Chinese plants had considerable ornamental value and they ensured that, within a remarkably short time, they were commercially available. Gardeners were so anxious to acquire the latest introductions that nurserymen expended every effort to meet the demand and saw to it that the new plants, which had at first been expensive rarities, were soon generally obtainable. They are now so widely disseminated among Western parks and gardens that their survival is secure, even if they should disappear from the wild; and for those of us who cannot visit the areas explored by the missionary-botanists, growing the garden-worthy plants they discovered is the next best thing.

Many of the missionaries' discoveries proved excellent garden plants in their own right, but Western nurserymen were also quick to recognise their breeding potential and used them to develop new ornamental plants such as *Deutzia x elegantissima* 'Rosealind' and *D. x hybrida* 'Magicien', Asiatic Hybrid Lilies and North Lilies, and varieties of *Astilbe x arendsii*. Gardeners today continue to benefit from plants bred from those first introduced over a century ago.



ABOVE

Corydalis flexuosa 'Père David' in midsummer in Marion Pollard's Somerset garden.

Some plants discovered by the missionary-botanists are still being introduced to our gardens: *Corydalis flexuosa* discovered by Père David in 1869 and introduced to the West in the 1990s has since proved a fine perennial in cultivation, as has Père Delavay's *Podophyllum delavayi* and *Epimedium* species such as *E. fargesii* and *E. leptorrhizum* discovered by Père Farges and Père Bodinier and introduced in the past twenty years. Trees like *Nothaphoebe cavaleriei* discovered by Père Cavalerie, *Acer fabri* found by Pastor Faber, *Mahonia duclouxiana* found by Père Ducloux and *Euonymus phellomanus* discovered by Padre Giraldi proved such fine ornamental plants when recently introduced to cultivation that horticulturalists can anticipate them becoming more widely available.