

## The Perils of Plant Collecting

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Those who explored the world of plants from the seventeenth to the early twentieth century came from many different backgrounds. Gardeners, farmers, physicians, missionaries, soldiers and sailors all emerged from their professions into a life of solitary journeys. They often travelled in areas that were unexplored, risking starvation, disease, injury and violence from animals and unfriendly natives. They were driven by a love of plants, a wish to discover and introduce new plants to fellow gardeners. Perhaps nature was using them to ensure the survival of threatened species. Their training had involved a study of botany, specimen collection and preservation. The nature of the terrain they had to explore meant that skills in route finding, canoeing, horse riding, climbing and hunting were required. There was also a group of individuals associated with the explorers who employed, sponsored, encouraged them and ensured that their specimens were identified, preserved or grown. Today there are still many discoveries to be made, but perhaps more importantly plant explorers are still at the forefront of the work involved in rescuing and conserving plants threatened by the mismanagement of the environment.

Chinese botanists were collecting and cultivating roses 5000 years ago.<sup>1</sup> More recently, in 1500 BC **Queen Hatshepsut** of Egypt took an expedition to West Africa in search of the Frankincense tree, *Boswellia carter*. Her collection of trees can be seen on a carved relief at Karnak, in lower Egypt. Botanists on **Alexander the Great's** expedition to Asia (331-323 BC) brought ivy, banyan, bamboo and banana back to Europe. **Aristotle** is given credit as the founder of botany, although his pupil **Theophrastus** (370 – 285 BC) did all the fieldwork. Both Alexander and Theophrastus were pupils of Aristotle. Theophrastus incorporated the results of Alexander's botanical discoveries in his work *The Enquiry into Plants*. Aristotle then incorporated that work into his own two botanical texts which established botany as a science.<sup>2</sup>

In the twelfth century, **Albertus Magnus**, Bishop of Regensburg was trained in botany in Padua. This city became the site of Europe's first botanic garden in the sixteenth century. But Magnus was probably the first systematic plant hunter. Four hundred years later, **Conrad Gesner**, from Switzerland provided the first list of alpine plants, but died of plague before his work was published.<sup>3</sup> The sixteenth century also saw the botanical exploration of New Spain (Mexico), undertaken by Philip II's physician **Francisco Hernandez**.<sup>4</sup>

### *The mentors and associates of the plant hunters*

Plant hunters were encouraged and often sponsored by botanical societies, nurseries, and individuals with a scientific interest. Prominent among the latter were the following individuals.

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<sup>1</sup> T. Whittle, *The Plant Hunters* (London, Heinemann, 1970), p. 16.

<sup>2</sup> W.T. Stearn, 'Botanical exploration to the time of Linnaeus', *Proc. Linn. Soc. Lond.* 169 (1956–1957), 185.

<sup>3</sup> Stearn, 'Botanical exploration to the time of Linnaeus', 183.

<sup>4</sup> *Ibid.*, 185.

**The Bishop of London, Henry Compton (1632-1713)** had been a mercenary soldier. He established a botanical garden in his palace at Fulham, to which his missionaries sent specimens of plants from around the world. He was then dismissed for scheming against King James II.<sup>5</sup> **Hans Sloane (1660-1753)** was an Irish physician of Scottish descent, President of the Royal Society, and also of the Royal College of Physicians of London. As a young doctor Sloane travelled to Jamaica in the employment of the Duke of Albermarle, and there collected more than 200 species of plants. He became Director of the Chelsea Physic Garden. His collection overall of 50,000 books and specimens became the foundation of the British Museum.<sup>6</sup> **Joseph Banks, (1743-1820)** was the botanist on Cook's first voyage of circumnavigation, and was at the centre of English botany. He founded the Horticultural Society in 1804.<sup>7</sup>

**Carl Linnaeus, or Linne, (1707-1778)** from Sweden, was also a plant hunter. He was called the 'little botanist' at school and often played truant to look for plants. He was fascinated by plant names, and was encouraged by his father, who was a priest and amateur botanist. Linne studied medicine, but a chance meeting with a clergyman, Olaf Celsius in a botanic garden, encouraged him to pursue botany as a career.<sup>8</sup> In 1732 he undertook a solo plant hunting journey in Lapland, travelling over 3,000 miles in four months. However his published work was mainly derived from specimens received from other botanists and plant explorers. Although he qualified in medicine and practised for a time in Stockholm, Linnaeus, as he titled himself, took up a full-time academic post in botany, becoming Professor of Botany, Dietetics and *Materia Medica* in Uppsala from 1741 to 1778. He travelled to England in 1736, visited the Chelsea Physic Garden, and met Hans Sloane. His entire collection of plants was acquired for Chelsea by Sir James Edward Smith (1759 – 1828), a physician, for 1,000 guineas, at the suggestion of Banks.

Linnaeus' *Systema Naturae* was published in 1735 and *Species Plantarum* in 1753, which has been described as 'year one' in botanical nomenclature. He introduced a binomial naming of plants, based on their sexual organ characteristics, providing one name for the genus (or allied plants) and another name for the species (or specific type). This provided the basis for unanimity in plant identification. It was later extended to the animal kingdom, and remains the valid method of nomenclature across all living creatures, animal, vegetable and microbial to this day. Linnaeus is also credited with inventing the thermometer in which the freezing point is 0 and boiling point 100, prior to Celsius proposing 0 as boiling and 100 as freezing. It should be noted that the present 'Celsius' scale uses Linnaeus' order of scale.

**Thomas Jefferson, (1743-1826)** was the third President of the United States and author of the Declaration of Independence. But he was also the father of American forestry and garden weather observation.<sup>9</sup> He conceived the most ambitious exploration of the North American continent (see below). **John Lindley, (1799-1865)** was a botanist in many respects like Linnaeus. His life was filled with unceasing activity. He was assistant librarian in Bank's library, and was commissioned by the Horticultural Society to paint roses and larches, thereafter becoming assistant secretary to the Society. He was appointed Professor of Botany at London University and was made secretary of the Horticultural Society in 1822. His tenure of office spanned the expeditions of David Douglas and Robert Fortune (see below). He was regarded as the foremost orchidologist of the nineteenth century. He saved Kew from liquidation: the Lords

<sup>5</sup> Whittle, *The Plant Hunters*, p. 36.

<sup>6</sup> *Ibid.*, p. 186.

<sup>7</sup> S.A. Spongberg, *A reunion of trees* (Cambridge MA, Harvard University Press, 1990), p. 41.

<sup>8</sup> W.Blunt, *The Compleat Naturalist. A Life of Linnaeus* (London, Collins,1971), p. 117.

<sup>9</sup> Spongberg, *A reunion of trees*, p. 53.

of the Treasury objected to the costs of running Kew when it lost Royal Patronage in 1837. They intended to demolish the glass houses and sell Kew's plants to the Horticultural Society's gardens at Chiswick. Lindley proposed 'patriotic' reasons for retaining Kew as a powerful means of promoting natural science, and as a centre for the British colonies, with a herbarium and a library.<sup>10</sup>

### *The plant hunters*

Plant hunters in the main were unwelcome guests on the expeditions of others, especially in the seventeenth to the nineteenth centuries. Thus their geographical focus was often global, as they were carried on board from one circumnavigation to another. Frequently there was overlap between regions of interest. In addition, the collectors themselves would meet by chance in distant locations. For this paper, the experiences of travellers to two principle continents are reviewed: North America, and Asia. Hazards over this period affected not only the collections, but also the lives of the collectors themselves. Table 1 lists the explorers and their various pathologies. While there were several early deaths, those who survived usually lived well on into their 60s and 70s. Indeed, malaria was not a common cause of early mortality, and only one death from tuberculosis is recorded.

**TABLE 1: Plant explorers, their pathologies, and ages at death.**

Engelbert Kaempfer (1651-1715)	Malaria, nephrotic syndrome (64).
Carl Linne (1707 - 1778)	Angina pectoris, sciatica, multiple strokes (71).
Francis Masson (1741 - 1805)	Froze to death (64).
Carl Per Thunberg (1743 - 1828)	Near drowning (85).
Andre Michaux (1746 - 1803)	Near drowning, died from malaria (57).
John Fraser (1750 - 1811)	Near drowning, died following horse-fall (61).
Archibald Menzies (1754 - 1842)	Asthma (80).
George Vancouver (1758 -1798 )	Chronic renal failure (40).
Meriwether Lewis (1774 - 1809)	Malaria, syphilis, gun shot, suicide (35).
William Clark (1770 - 1838)	Malaria, syphilis (68).
Thomas Coulter (1793 - 1843)	'His health suffered severely in his travels' (50)
Philip Franz von Siebold (1796-1866)	No recorded pathology, in spite of shipwreck (60).
David Douglas (1799 - 1834)	Rheumatic fever, blindness, gored to death (35).
William Lobb (1809 - 1864)	Multiple strokes (55).
Robert Fortune (1812-1880)	Malaria (68).
John Charles Frémont (1813 – 1890)	Frostbite, fevers, dehydration, diarrhoea (77)
John Jeffrey (1826 - 1854?)	Frost bite, killed by Indians / died in desert (28?).
John Gould Veitch (1839 - 1870)	Tuberculosis, died after lung haemorrhage (31).
Armand David (1826 -1900)	Malaria, typhus, pneumonia, poisoning, near drowning (74).
Jean Marie Delavay (1838 - 1895)	Bubonic plague (57).
Augustine Henry (1857 -1930)	Malaria (73).
Ernest Wilson (1876 - 1930)	Crush injuries, died after motor accident (74).

<sup>10</sup> W.T.Stearn (ed.), *John Lindley. Gardener – Botanist and pioneer Orchidologist.* (Woodbridge, Suffolk, Antique Collectors Club, 1999), p. 54.

*Plant hunting in North America, Mexico, South Africa, and the West Indies*

**Carl Per Thunberg (1743-1828)** was a Swedish physician and botanist.<sup>11</sup> A pupil of Linnaeus, he was appointed surgeon to the Dutch East India company and travelled to South Africa in order to learn Dutch before proceeding to Deshima, a small (236 by 82 paces) artificial island, off Nagasaki in Japan. This had been created by the Japanese to accommodate foreigners, who were forbidden to enter the mainland except on the mandatory annual visit to pay homage to the Shogun and his Samurai in Yeddo. They were only allowed there if they could speak Dutch, hence his visit to South Africa.

In South Africa he met an Aberdonian, Francis Masson (see below), who was a gardener from Kew sent by Joseph Banks as plant collector. Masson had travelled to Capetown in 1772 on the first stage of Cook's second voyage round the world. He learned field craft with a Swedish mercenary which probably saved his life when hunted by a group of escaped convicts when he was plant hunting alone on Table Mountain. Together Thunberg and Masson undertook two expeditions, making outstanding discoveries including *Strelitzia* (the Bird of Paradise flower) named after George II's wife Charlotte Sophia of Mecklenberg - Strelitz. Thunberg was almost drowned when he and his horse, in fording a river against advice, disappeared into a submerged hippopotamus pit.

In 1775 Thunberg travelled to Deshima but his movements were restricted. Non-the-less he was able to collect many seed and plant specimens in a round-about way from fodder brought by the Japanese from Nagasaki to feed the Dutch livestock. He was also able to persuade students to bring him botanical specimens. Thunberg travelled to London, made himself known to Banks and studied Kaempfer's (see below) manuscripts and specimens. He returned to Sweden, wrote a *Flora Japonica* and succeeded Linnaeus as Professor of Botany.

**Francis Masson (1741-1805)** returned to Kew, and Banks dispatched him to collect plants in Madeira and the West Indies.<sup>12</sup> In Grenada he was drafted into the local militia to defend against French attack. He was captured and imprisoned by the French during which time many of his specimens perished. On the return journey to England a hurricane destroyed the remainder. Following a return trip to South Africa he was dispatched to North America. The ship was captured by a French privateer and the prisoners were subjected to severe hardship and near starvation before being transported to New York. Masson then proceeded north to Canada collecting specimens but froze to death near Montreal.

Banks was acquainted with two other collectors in North America. John Fraser, a Scot, and Andre Michaux, a Frenchman, he met in Carolina in 1787. **John Fraser (1750-1811)** had a clothing business in London but after developing tuberculosis travelled to convalesce in Newfoundland.<sup>13</sup> There he developed an interest in collecting plants, sending specimens to a friend William Forsyth, curator of the Chelsea Physic Garden. Forsyth and his colleague Joseph Banks encouraged Fraser to consider becoming a full time collector. After setting up a nursery business in Sloane Square, London, he undertook his first journey plant hunting in the eastern states of North America in 1784. After meeting Michaux (see below) they travelled together

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<sup>11</sup> A.M. Coats, *The Quest for Plants* (London, Studio Vista, 1969), p. 251.

<sup>12</sup> T. Musgrave, C.Gardner, W. Musgrave, *The Plant Hunters* (London, Seven Dials, Cassell, Orion Publishing Group, 1999), p. 39.

<sup>13</sup> Coats, *The Quest for Plants*, p. 281.

collecting in the region of the Savannah River. Their relationship was strained, since Michaux regarded Fraser as having insufficient knowledge of botany.

In 1796 Fraser travelled with his North American plants to the court of Catherine the Great in St. Petersburg, becoming Imperial Collector to her successors Czarina Maria and Czar Paul. Following the assassination of Paul, (possibly on the orders of his brother), the appointment was terminated and outstanding payments to Fraser withheld. Despite further visits to Russia he was never fully remunerated. In 1800 Fraser and his eldest son travelled to Cuba but were shipwrecked on the way, losing all their belongings. They were rescued and completed the journey to botanize, meeting and making friends with Humbolt (from Berlin) and Bonpland (France). Father and son returned to the eastern states and made one of their most important finds, *Rhododendron catawbiense* (Mountain rosebay), on Bald Mountain, by the Catawba River in North Carolina. Some authorities suggest that Michaux had discovered it earlier. When John Fraser was returning to Charleston his horse fell, seriously injuring him. He returned to England but died after a prolonged period in bed, aged 61 years.

**Andre Michaux (1746-1803)**, the son of a farmer, studied botany in Les Jardins des Plantes in Paris and undertook plant exploration in France, Spain, Persia and around Bagdhad.<sup>14</sup> He was subjected to robbery and violence during journeys in Syria. The French government selected him to proceed as collector to North America, introducing European plants to America and sending seeds and plants back to the Jardin des Plantes in Paris and to Marie Antoinette's estate at Rambouillet. His first year, 1785, saw him dispatch 5000 trees to France. Like John Fraser he explored the Allegany Mountains and travelled throughout the eastern states collecting in virgin terrain. He established holding nurseries near New York and Charleston, Carolina. On a collecting visit to the Bahamas he dispatched specimens to Banks in London.

Returning to Charleston, Michaux learned of the French revolution and his funding was discontinued. He continued to collect however and embarked on his most arduous journey into Canada towards Hudson's Bay. He returned to Charleston after eight months and proposed a transcontinental botanical exploration to the American Philosophical Society. It was 1793 and Thomas Jefferson had already formulated plans for a journey of exploration, having been encouraged by the discovery and surveys of the Columbia River by Robert Gray, U.S. commander of 'Columbia' and by George Vancouver who commanded H.M.S. 'Discovery'.

Michaux was selected by Jefferson to lead the expedition. However, a minister from the French Republic arrived and called on the services of Michaux. The Americans suspected that Michaux would be used as a spy, and he was instructed to leave the country. He left America in 1796, but his ship was wrecked off Holland. He escaped drowning but lost many specimens. On his return to Paris he found that most of the 75,000 trees he had sent earlier had been lost as a result of the Revolution. Unpaid and disheartened he set about writing a history of American oaks and a *Flora Boreali Americana*. He then was persuaded to join an expedition to Australia. Michaux decided to stop for some time to explore Madagascar but contracted a fever (malaria) and died.

**Archibald Menzies (1754-1842)** was a Scots physician, trained in botany at the botanic garden in Edinburgh.<sup>15</sup> His first plant hunting was in the Scottish Highlands and the Hebrides on behalf of two London physicians John Fothergill and William Pitcairn. Pitcairn became President of the Royal College of Physicians, and had a private botanic garden. Menzies saw action in the

<sup>14</sup> Ibid, p. 282.

<sup>15</sup> G.Hull, 'Archibald Menzies (1754 – 1842), a respected surgeon/naturalist', *J. Med. Biog.*, 9 (2001), 226 – 230.

closing stages of the American Revolution serving as a naval surgeon under Admiral George Rodney. Menzies devoted his free time to plant collecting when based in the West Indies and Nova Scotia sending specimens to John Hope, Keeper at the Edinburgh botanic garden and to Joseph Banks. He undertook two voyages round the world as ship's surgeon. The first, from 1786 to 1789, on 'The Prince of Wales', had a mission *en route* to trade furs from North America to China. Joseph Banks encouraged him to collect botanical specimens including 'Winter's bark' (*Drimys winteri*) from Tierra del Fuego. This plant had been used on Francis Drake's exploration of the Strait of Magellan in the sixteenth century as an antiscorbutic.

Menzies collected and dispatched these plants to England but the ship carrying them sank. On his second circumnavigation he was appointed naturalist on HMS 'Discovery', commanded by George Vancouver. Vancouver had been a midshipman on the 'Resolution' commanded by James Cook on his second circumnavigation voyage in 1772. On Cook's third voyage Vancouver was an officer on 'Discovery', a companion ship. He was almost killed himself during the fatal attack on James Cook in the Sandwich isles.

Menzies had to fulfil the dual role of physician and botanist. During the voyage of circumnavigation a survey of the west coast of America was to be undertaken. Menzies and Banks devised a wooden plant house for storing plants during the four year voyage. Its presence on the quarterdeck and the need for a seaman to assist Menzies annoyed Vancouver. On the return journey, the captain withdrew the sailor from 'plant' duties. Many plants were damaged by torrential rain and incoming sea water, leading to an acrimonious confrontation which almost led to Menzies' court martial. Collecting was mostly the result of coastal sorties, but he was the first to reveal the botanical riches of the west coast of America.

His many discoveries and introductions included the Monkey-Puzzle tree, *Araucaria araucana*, (having kept and planted seeds he had been served at a meal eaten in Chile), *Sequoia sempervirens* (the coast redwood), *Arbutus menziesii* (Madrona), *Thuja plicata* (the Western red cedar) and the Nootka Cypress (*Chamaecyparis nootkatensis*, renamed *Xanthocyparis* recently). During the four year expedition (1791-1795) only four sailors died, one from the 'flux', two were drowned and one death followed eating 'poisoned' mussels. Menzies eventually left the Royal Navy after developing asthma, and took up medical practice in London. In 1828 he was visited by an admiring David Douglas (see below). Little did either of them realise that Menzies' former commanding officer, George Vancouver would be indirectly, and posthumously associated with Douglas's untimely death, aged 35 years. Vancouver had earlier died of Bright's disease (kidney failure) in 1798. The 'Douglas fir' (*Pseudotsuga menziesii*), well known to Europeans, was collected and named by Douglas after Menzies, who had recognised it as a separate species

The discovery and survey of the Columbia River, together with the purchase of Louisiana from the French in 1803 provided impetus for Jefferson's plan to organise an expedition traversing North America, hopefully by an all water route. With Michaux's departure for France, Jefferson appointed a fellow Virginian and friend, **Meriwether Lewis (1774-1809)** to lead the venture 'to find the shortest and most convenient route of communication between the United States and the Pacific ocean, to take notice of the country you pass through, its general face, soil, river, mountains, its productions animal, vegetable and mineral.'<sup>16</sup>

Lewis chose **William Clark (1770-1838)** as his co-commander. Lewis was the botanist, having been taught the rudiments by Jefferson as they walked in the Presidential garden. He was introduced to the Linnean system of nomenclature and received instruction in specimen

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<sup>16</sup> Ibid., p. 60.

preservation from Benjamin Smith Barton, Professor of Botany at the University of Pennsylvania. Lewis would also be the lead physician for the ‘Corps of Discovery’, having learned folk medicine from his mother. Clark would act as back-up physician, but he was the skilled cartographer (instructions were given that copies of all maps were to be made on birch bark) and boat handler.

The return journey covered over 6,000 miles (1803-1806) but an all water route was marred by the need to traverse the Bitter-Root mountains, between Montana and Idaho, a trek of 340 miles on land, rather than water. The water route on the Ohio and Missouri rivers was undertaken on two pirogues (flat bottomed row boats constructed of wooden planks) and a specially designed masted keelboat. They also carried six canoes. The Corps of Discovery that eventually traversed the continent consisted of 45 men. In the winter of 1804 they camped in North Dakota with Mandan Indians and met a Shoshone Indian woman, Sacagawea, a fifteen year old wife of a French Canadian trader, Touissant Charbonneau. Both would act as interpreters during Indian contacts, but the process was complicated. Sacagawea understood and spoke only the Indian language, her husband translated that into French and another French-speaking-American relayed it to Lewis in English.

Sacagawea was pregnant and had a prolonged and painful labour during which Lewis as ‘midwife’ eased her distress by administering a drink made from the rattle of a rattle snake. She carried her infant son from North Dakota to the Pacific coast and back. The river journey and the camp sites were plagued by mosquitoes, gnats and ticks, necessitating the coating of bare skin with hogs’ lard, and eating in campfire smoke. Travelling on foot and preparing camp was made difficult by the widespread prickly pear and encounters with grizzly bears. One such encounter by Lewis was nearly fatal. After shooting a buffalo he had not reloaded his rifle and a bear ran at him at full speed with an open mouth. He was pursued for about 80 yards into a river, and waist deep Lewis turned and presented the point of his espartoon (a lance). The bear declined combat!

On another occasion Lewis was mistaken for an elk by one of his companions who was short sighted in his only ‘good’ eye. A bullet passed through buttocks. When they reached the Rockies, horses were purchased from the Shoshones and an Indian named ‘Old Toby’ acted as guide over the Bitter Root mountains. The name Bitter Root derives from a small alpine plant (*Lewisia rediviva*) that Lewis discovered in the mountains in 1806. A year earlier as the expedition approached the continental divide he had encountered Indians eating dried roots of the same plant which Lewis found had a bitter taste.

The journey back east over the mountains was one of the great forced marches of American history. An old Shoshone guide led them over the Rockies. They spent the winter at Fort Clatsop on the Pacific coast, near Astoria, Oregon, at the mouth of the Colombia River. Clark recorded: ‘The winds violent. Trees falling in every direction, with gust of rain hail and thunder, this kind of weather lasted all day. Certainly one of the worst days that ever was!’<sup>17</sup> The Corps of Discovery returned home to a heroes’ welcome in 1806. They had discovered and described 178 new plants, more than two thirds from west of the continental divide. Lewis’ first description of a plant unknown to science was the Osage apple (*Maclura pomifera*) or Bow wood tree, named after the Osage Indians who so esteemed the wood for making bows that they would travel 100 miles in quest of it and trade a horse and blanket for one bow.

The expedition encountered ‘fever and ague and bilious fever’, throughout the whole course of the Ohio River. Lewis spent one third of his budget on Peruvian bark, mosquito nets and hogs’ lard for the management and prevention of malaria. Dysentery was common: they had

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<sup>17</sup> Ibid., p. 339.

not learned the Roman Legions' practice of putting vinegar in drinking water. The commonest medical problem was syphilis. Although there is uncertainty as to whether both leaders were infected, all other members of the Corps were. It was treated with calomel. Other medicaments for various ailments included 'thunder clappers' (an explosive purgative of calomel and jalap), tartar emetic, laudanum, Glauber's salts, saltpetre and alcohol. One hundred and twenty gallons of whiskey were taken, since Lewis' motto was 'Don't run out of booze until there's no turning back'. The main food item was 'portable soup', which consisted of dried beans and vegetables. During the journey they held 'surgeries' for Indians.<sup>18</sup>

On their return, Lewis was appointed Governor of the Louisiana Territory but was not cut out for political life and started drinking even more heavily, was unlucky in love and had several attempts at suicide. He finally bled to death after multiple cuts with a razor. Clark became superintendent of Indian affairs, also for the Louisiana Territory. The history of the expedition was written by Nicolas Biddle, helped by Clark, and published in 1814. However, Clark received not a penny in royalties. Neither Lewis nor Clark were given any credit for most of their discoveries, since the publication run was limited, and the rediscovery and renaming of plants, animals, birds and even rivers by other explorers followed swiftly.

Two trees link **David Douglas (1799 – 1834)**<sup>19</sup> with Lewis and Clark. Western Larch (*Larix occidentalis*), and Western Yellow Pine (*Pinus ponderosa*) were discovered by the Corps of Discovery and introduced by Douglas following his solo journeys traversing some of the route taken by the American explorers. David Douglas was from Scone in Scotland, trained in botany and horticulture under W.J. Hooker, Professor of Botany at Glasgow University. He became the first botanical collector for the Horticultural Society, travelling in 1823 on his first expedition to the Eastern states of North America to collect fruit and vegetables. His second journey, in 1824 started on the west coast exploring the Oregon and the Columbia rivers. For two years he lived in tents, deerskin lodges and Thuja bark huts (made from the bark of the Western red cedar), travelling on foot, on horse and by canoe some 2,100 miles in 1825, 4,000 miles in 1826 and 1,000 miles in 1827. At times he would ford rivers swimming on his back holding his collection above the water. In 1826 on his way to the Kettle falls (now under the Grand Coulee dam in the State of Washington), he started to develop ocular symptoms due to sand, sun and snow, that eventually led to loss of vision in one eye. He observed large edible seeds in the tobacco pouches of Indians, and named the species *Pinus lambertiana* (sugar pine) even before seeing the tree. He eventually discovered the trees, and since they were of great height he had to use his gun to obtain cones. Indians appeared in war paint and after some tense minutes he made a quick retreat with three cones. When returning, his canoe overturned and he lost much of his collection. Douglas instilled some awe or even a sense of dread in Indians by his drinking Epsom salts, (which looked to them like boiling water), wearing spectacles and lighting his pipe with a lens and the sun.

He described tea as 'the monarch of all food after fatiguing journeys'. In 1827 he crossed the Rockies and travelling towards York factory on Hudson's Bay<sup>20</sup> started to develop polyarthritis, diagnosed as rheumatic fever which continued during his return journey to England

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<sup>18</sup> Ibid., p. 148.

<sup>19</sup> D. Douglas, *Journal during travels in North America, 1823 – 1827* (London, William Wesley and Son, 1914).

<sup>20</sup> This was the base of the Hudson's Bay trading company. Furs would be collected from the trappers and despatched back to the United Kingdom. It was situated on the western side of Hudson's Bay, near the confluence of the Nelson and the Hayes Rivers, some 150 miles south of Churchill.

in 1828. When in London he and the surgeon naturalist John Scouler visited Archibald Menzies. Little did they know that Menzies' former commanding officer, George Vancouver, when a midshipman on Cook's last circumnavigation journey, was involved in landing cattle on the Sandwich isles in 1779. 55 years later, in 1834 one of the descendants of these cattle, a bull, gored Douglas to death.

Douglas returned to North America in 1829 and surveyed the Columbia River valley. This survey remained the most accurate one produced for 150 years. In San Francisco, in 1832 he met **Dr. Thomas Coulter (1793 - 1843)**. Coulter qualified in medicine in Dublin and studied botany in Geneva. After meeting Douglas he travelled as medical officer for a mining company to Mexico, hoping to have time for botany. However, he found his time taken up with surveying and assaying metals, as well as medical duties. Some cacti were collected, but four robberies and a shipwreck reduced his acquisitions and he resigned. Coulter travelled and collected in the Monterey area with Douglas, then proceeded alone to botanize in the Arizona desert. He returned briefly to Mexico where he tended to the sick in the midst of a bloody revolution. He was involved in a business venture which failed, but nevertheless returned to Britain in 1834 with 50,000 specimens. Coulter accepted the post of curator of Trinity College in Dublin. All his journals and manuscripts were lost in transit between London and Dublin.

Douglas travelled to the Sandwich isles in 1832 but was unable to undertake any collecting as a result of 'rheumatic fever'. He returned to California then decided to attempt a journey north and cross the Bering Straits into Siberia. When in London he had encountered Heinrich Mertens and they had discussed comparing the flora in both continents at similar latitudes. Indian conflict prevented progress. He was returning on the Fraser River by canoe with Billy his black Scotch terrier and Willie Johnston, a trapper, and they overturned on the Red Rock rapids. Douglas almost drowned in a whirlpool and lost all his collection and journals. Disheartened, he returned to the Sandwich isles. Crippled with arthritis and blind in one eye, he stumbled into a wild bull trap and was gored to death.

Following the death of David Douglas, two plant hunters were sent to retrace some of Douglas' steps collecting seeds and specimens of his finds, and plants that he may have missed. The Scottish Oregon Association sent John Jeffrey to Hudson's Bay in 1850, and the Veitch nurseries in Exeter (see below) sent William Lobb to San Francisco in 1849. **John Jeffrey (1826 – 1854?)** was a Scot, employed as a gardener at the Edinburgh Botanic garden in 1839.<sup>21</sup> The head gardener, James McNab considered him as a potential plant hunter when he volunteered to ascend a high tree to remove a broken branch. His North American travels commenced in 1850 at York factory on Hudson's Bay. He travelled 1,200 miles in winter on foot with dogs and sled in temperatures 30 to 40 degrees below zero. He traversed the Rockies in May 1851, journeying to Vancouver Island. He then explored the nearby Fraser River, and Mount Baker, the Puget Sound, and the Cascades, Shasta and Scott Valleys. In 1853 he was collecting in the Umpqua valley, Siskiyou Mountains and San Francisco bay. When in San Francisco he suffered some illness, then after sending off his collection, in January 1854 travelled alone to join an American expedition at fort Yuma preparing to explore the Gila and Colorado Rivers.

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<sup>21</sup> J. McNab, 'On the Discoveries of Mr John Jeffrey and Mr William Brown, Collectors to the Botanical expeditions to British Columbia between the years 1850 and 1866', *Trans. Botanical Soc. Edinburgh*, xi, (1871), 322 – 338.

F.V. Colville, 'The Itinerary of John Jeffrey, an Early Botanical explorer of Western North America', *Proc. Biol. Soc. Washington*, xi, (1897), 57 – 60.

Jeffrey was never heard of again. It was thought he might have been killed by Spanish robbers or Indians, died in the desert or was taken with 'gold fever'. In 1854 and 1860 some of his belongings and collection were retrieved, including specimens of a new *Chamaecyparis lawsonii* (Lawson's cypress). Charles Lawson, an Edinburgh nurseryman and Provost of Edinburgh, who sponsored William Murray to try and locate Jeffrey, named the tree after himself. Jeffrey sent 1,700 specimens of trees, shrubs and herbaceous plants. In two years he introduced almost as many new conifers as Douglas. Bearing in mind that Douglas explored virgin forest, Jeffrey's collections do him great credit.

**William Lobb (1809 – 1864)**<sup>22</sup>, a Cornishman, was employed by Veitch nurseries to collect plants in America. He travelled to South America in 1840, traversing Brazil, Chile, Argentina, Peru, Columbia and Equador providing the first description of the Araucaria forests and sending seeds back to England, since Menzies plants had failed to thrive. In 1848 Lobb travelled to California, Oregon and the Sierra Nevada collecting more plants. In 1853 Lobb attended the inaugural meeting of the Californian Academy of Science where he was shown a specimen from the 'Big Tree' by Dr Albert Kellog, a physician, botanist and gold prospector. He in turn had been given the sample by A.T. Dowd, who had encountered it in 1852 while chasing a wounded bear. The Cornishman immediately went to collect specimens and seeds, which he personally delivered to the Veitch nurseries in England. A Scotsman, J. Mathews had introduced the plant some months before. The tree was named *Wellingtonia* in honour of the Duke of Wellington. Lobb returned to California to finish his contract with Veitch, against the advice of friends and family. He died in San Francisco following a stroke in 1864. It is possible, though not recorded, that Jeffrey and Lobb met in San Francisco. **John Charles Frémont (1813 – 1890)** from Georgia, USA, was at one time a teacher of mathematics on a US naval vessel.<sup>23</sup> He then trained in topographical work and when on a survey in 1841 observed a botanist who accompanied the party. During the Civil war he was a Union General Officer and became Governor of the territory of Arizona. Frémont undertook five expeditions.

The first two, in 1842 and 1843, completed the maps between the edge of the American frontier along the Missouri river and the west coast, including the Oregon trail. The second was the most remarkable, traversing 5500 miles in fourteen months. This voyage progressed at first south from the mouth of the river Kansas Pueblo, next north-west to Wyoming, then west to Idaho, and south again to the Great Salt Lake in Utah. He then went west over the Sierra Nevada in winter, into the Mohave desert, through eastern California into NW Colorado, and then back through the prairie lands of Kansas. His party consisted of 42 men and included the scout Kit Carson and Delaware Indians as hunters. They transported a field gun over the Sierra Nevada just to show that it could be done. As a result of his five expeditions he discovered nineteen new genera of plants, more than 40 plants bearing his name. Like all plant hunters he lost many specimens as a result of camp flooding and loss of a pack mule down a chasm. During his third expedition, from 1845 to 1847, Frémont supported the US settlers during the Bear flag revolt against Mexican rule. This revolution eventually led to California being added to the United States. He discovered the Incense Cedar after crossing the Sierra Nevada near the Sacramento River in 1846. Perhaps his greatest contribution to botany came from the Mojave Desert – the Joshua tree, *Yucca brevifolia*.

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<sup>22</sup> Musgrave et.al., *The Plant Hunters*, pp. 131 – 153.

<sup>23</sup> Coats, *The Quest for Plants*, p. 322.

*Plant hunting in Asia (China and Japan)*

**Engelbert Kaempfer (1651 – 1715)** discovered *Ginkgo biloba*, in Japan in the seventeenth century. This ancient species was the first wooded tree to have evolved, and had survived 200 million years. In China it had been called ‘Yin Kuo’, meaning ‘silver fruit’, but was only re-discovered in the wild in China in 1905. Europeans called it the Maiden Hair tree, (named after the Maiden Hair fern with similarly shaped leaves, also found in China). It was also called the Duck’s Foot tree. Kaempfer found it in cultivation in Japan. Kaempfer was a restless genius, whose talents included medicine, botany, music, art, mathematics, astronomy and languages, including Japanese. He was the first European to write about the history and culture of Japan. He stated that in 700BC a Chinese Emperor ordered his personal physician to take 300 young people to the uninhabited islands off China to collect plants that were reputed to bestow immortality. They had to be collected by ‘pure young hands’, otherwise the plants would perish. The physician and his flock decided to settle and the nation of Japan was created.<sup>24</sup>

Kaempfer was born in Germany, received his medical education in Krakow (now in Poland) and joined a Swedish mission to Russia and Persia. He remained in Persia for four years collecting and compiling the first Persian flora. He joined the Dutch East India Company as Chief Surgeon to the Dutch fleet and travelled to Deshima, off Nagasaki, where he immediately preceded Carl Per Thunberg, already mentioned. The only means whereby Kaempfer could collect botanical specimens and learn about Japanese history and culture was by persuading Japanese students to bring samples and other items in exchange for tuition in medicine, mathematics and astronomy, lubricated by ample supplies of European liquors. On his two journeys to Yeddo, he travelled guarded at all times and was locked in at night. He was made to sing, dance and mime like a clown before the Shogun. On his return to Germany he became physician to Count de Lippe of Westphalia and published a flora and a history of Japan.<sup>25</sup> Most of his manuscripts, drawings and specimens were acquired by Hans Sloane in London.

**Philip Franz Balthazar von Siebold (1796 – 1866)** was a skilled German ophthalmologist and botanist who became deeply attached to Japan and its culture. As a Surgeon Major in the Dutch army he travelled to Deshima in 1826 and was given freedom to travel around Nagasaki practicing his specialty and undertaking the first cataract surgery in Japan. He received plant specimens and doubtless other forbidden Japanese items from patients in payment. Following his marriage to a Japanese woman he was permitted to live on the outskirts of Nagasaki where he established a botanic garden and plant nursery. They had a daughter, and von Siebold planned to remain in Japan. His plans were shattered when, during his stay in Yeddo, and whilst paying homage to the Shogun he committed a treasonable offence: he had obtained an Imperial map of Japan, which was forbidden, on pain of death. The map was discovered and von Siebold incriminated by an informer, when the ship carrying his belongings was wrecked on his journey back to Nagasaki. He was imprisoned, then banished, leaving his wife and child in Japan. The court astronomer who had given him the map, and the informer both committed *Hari Kari*, the Japanese term for ‘happy dispatch’. This method of terminating one’s existence by abdominal ripping was a ritual that all Japanese boys were taught, including the nature of the occasions on which it was to be performed.

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<sup>24</sup> E. Kaempfer, *The History of Japan. Together with a Description of the Kingdom of Siam 1690 – 92* (Glasgow, James MacLehose and Sons, 1906), Vol 1, vi, p. 131.

<sup>25</sup> W. Muntshick, Engelbert Kaempfer, *Flora Japonica (1712) Reprint des Originales und Kommentar* (Wiesbaden, Franz Steiner Verlag 1983).

After his banishment von Siebold still managed to smuggle out 400 specimens and many Japanese antiquities. He returned to Antwerp in 1829 when this city was in the midst of hostilities between the Belgian Waaloons and the Dutch. Being a Dutch employee his possessions were confiscated and the plant specimens seized by other horticulturalists. He managed to retrieve about 80 plants, and returned to Leiden where he set up a nursery business specialising in oriental species. In collaboration with a Munich - based botanist he published a *Flora Japonica*. Back in Europe he retained Japanese customs, wearing a Kimono and was accompanied by his servant who was dressed likewise. On his brief return to Japan 30 years later, in 1859 von Siebold met Robert Fortune (1812 – 1880) (see below) in Nagasaki. Fortune was on his final plant collecting trip and had spent the time collecting from Japanese nurseries.

Simultaneously another plant hunter had arrived in Japan, having been shipwrecked off Ceylon with the loss of all his possessions. This was **John Gould Veitch (1839 - 1870)**, the grandson of the Scottish founder of the Exeter based nursery.<sup>26</sup> By this time Deshima was in ruins. Japan had opened up to foreigners but travel was dangerous as feudal Princes and their Samurai encouraged anti - European activities. Veitch travelled to Yokohama where the British consul invited him to be Imperial botanist on the first European ascent of the 14,000 foot sacred Mount Fuji. Veitch undertook the first study of plant zonation with altitude and collected many species for introduction to Britain, although these had previously been discovered as dried specimens by Kaempfer and Thunberg.

Veitch also provided an interesting description of the overnight stop prior to reaching the summit of Mount Fuji. The single roomed dwelling, which measured 25 feet by 11 feet, had to accommodate eight Englishmen, their servants, the host, hostess and their children. The door served as window and chimney. Swarms of fleas prevented sleep. The next day, on the summit, they disregarded the sacred nature of the mountain by firing a multiple pistol volley and drinking champagne in honour of Queen Victoria. Veitch shared a ship with Robert Fortune as they transported their specimens to Shanghai. He undertook plant exploration in the Philippines and Australia, contracted tuberculosis and died from pulmonary haemorrhage, aged 31.<sup>27</sup>

*Pseudolarix amabilis*, also known as Chinese golden larch, (the sole member of its genus), was discovered by **Robert Fortune (1812 – 1880)** as a Peng Jing or ‘cultivated dwarf’, the Chinese forerunner of the Japanese bonsai trees.<sup>28</sup> Later he was to find and collect seeds of wild specimens. He discovered *Cephalotaxus fortunei* (the Chinese cow’s tail pine) on the same trip. Robert Fortune was a Scot, trained at the Edinburgh Botanical Gardens and appointed plant collector for the Horticultural Society at a salary of £100 yearly. He was instructed to test Wardian cases<sup>29</sup>, to find a blue peony, a yellow camellia and to try and obtain tea plants.

Tea production was a closely guarded secret in China. Fortune travelled by Java and Hong Kong, collecting plants on the way. His ship was nearly wrecked twice and was finally wrecked off the coast of China. While repairs were being undertaken, Fortune went collecting in nearby hills and was attacked. He was beaten, chased and badly assaulted with bricks, but escaped having lost all his possessions and clothes. Up to that point he only carried an umbrella as some form of protection. Thereafter he made sure he was well armed and showed no quarter!

<sup>26</sup> J.H.Veitch, *Hortus Veitchii* (Chelsea, London, James Veitch and Sons, 1906).

<sup>27</sup> J.G.Veitch, ‘Diary kept by J.G.Veitch during his trip to Mount Fusi Yama’, *The Gardeners Chronical and Agricultural Gazette*, January 19, 1861, 49 -50.

<sup>28</sup> R.Fortune, *Three years wandering in the North Provinces of China* (London, John Murray, 1847).

<sup>29</sup> Dr Nathaniel Ward, physician and amateur naturalist created a portable closed glass case for transporting live plants.

Local priests invited Fortune to join them on a boar hunt, and he almost met his death falling into a boar pit. He described his thoughts about the fate of his predecessor David Douglas in a similar situation, as he clung to a branch that saved him. Fortune contracted malaria. As the journey continued he was summoned from his sick bed when four pirate junks with crews of about 40 closed in on his own junk. While his crew hid below deck he described events:

‘As soon as they came within 20 or 30 yards, I gave them the contents of both barrels, raking their decks. The helmsman fell and doubtless several others were wounded. I had a severe attack of fever at the time and was in a most deplorable condition’.<sup>30</sup>

On the following day another fleet of six pirate junks appeared. To deceive them, Fortune dressed his crew in his own spare clothing and provided them with pieces of wood to resemble guns, but with the first pirate salvo, they all disappeared below deck. He fought them off alone. The second expedition was commissioned by the English East India Company in 1848, during the anti-European Tai-Ping rebellion. Speaking Chinese and disguised as a Chinaman, ‘Sing Wah’, he managed to enter the forbidden tea plantations. Some 20,000 plants were smuggled out inside Wardian cases. In addition, Fortune persuaded Chinese tea growers and tea makers to accompany him to Calcutta. This was in 1857, in the midst of the Indian mutiny. His introduction of tea plants to India formed one of the foundations of the Indian tea industry, although another Scot, Robert Bruce had discovered tea plants in Assam in 1823.

Fortune’s final Chinese expedition was undertaken on behalf of the American government. He collected tea plants during the second of the ‘Opium Wars’ when Queen Victoria’s Britain was the world’s biggest drug dealer.<sup>31</sup> Fortune’s team were transported to the United States just as the Civil War broke out. The entire consignment was lost in the turmoil. Fortune has been described as humourless, but clearly he was an astute business man with a good eye for garden plants with wide appeal. He managed to persuade many Chinese to part with plants from their gardens. His cool head during crises, as well as that essential, ‘good luck’, enabled his survival in dangerous places. He acquired many valuable works of art, and published two successful accounts of his travels. He retired to farm in southern Scotland, with another house in London.

**Armand David (1826 – 1900)**<sup>32</sup>, was a French Lazarist priest who undertook the most extensive and dangerous travels in China. He was sent to Peking to teach science and natural history. He was also highly knowledgeable in the fields of mineralogy and geology and his religious order permitted him to pursue all these interests. Despite malaria, typhus, pneumonia, near fatal poisoning and near drowning at various times, he completed three expeditions.

His first expedition was towards the Mongolian frontier, the second to the edge of Tibet and the third to the eastern provinces. On the first journey he was accompanied by a Mongolian ex - Buddhist monk as guide. Tigers, wolves, bears, boars, leopards, panthers and mounted Chi-ma-Tse bandits, who ate the hearts of victims, were a constant danger. David and his party had to sleep with their donkeys in their tent to avoid attack by wolves. In a village they passed through,

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<sup>30</sup> R.Fortune, *Three years wandering in the North Provinces of China* (London, John Murray, 1847) p. 394.

<sup>31</sup> Whittle, *The Plant Hunters*, pp. 158,159.

<sup>32</sup> F.C.Stern, ‘The discoveries of the Great French Missionaries in Central and Western China’, *Proc. Linn. Soc.*, 156 (1943 – 44) 16 – 20.

twelve people had been devoured by wolves in the preceding month. On his second journey he was the first European to see a panda and discovered a new species of deer that brayed like a donkey, 'Père David's Deer' (*Elapharus davidianus*). At an altitude of 6,000 feet he discovered *Davidia involucrate* named the Dove tree on account of the two snow white bracts that enclose the flower head. David was shipwrecked on the Han River rapids, losing his possessions and 1,000 specimens. When he returned to Paris after his last expedition, of the 2,000 specimens that he had sent to the Musee d'Histoire Naturelle, more than half had been lost. He finally left China in 1874.

David met our next explorer **Jean Marie Delavay (1838 – 1895)** in Paris in 1881, when the latter was on leave from his work in China.<sup>33</sup> The meeting led to the cataloguing and preserving of his plant collection in the Natural History Museum of Paris, and the publication of *Plantae Delavayanae* in 1889. Delavay, a Jesuit missionary, retrieved for Europe the blue poppy, *Mecanopsis betonicifolia*, in 1884 at an altitude of 12,500 feet on the Lichiang range in north-west Yunnan. This was only one of the 1,500 new discoveries that he made. As the most thorough of all collectors, he spent most of his botanizing time on one mountain. This was Mount Tsmemei-Shan, in the Tapinze range, north east of Talifu. He climbed it 60 times from all sides in all seasons collecting over 200,000 specimens of 4,000 species. It took more than 50 years to catalogue these in Paris. Unlike David he was not given time by his religious order to collect plants. Most of his time was devoted to missionary work and caring for the sick peasants. He developed bubonic plague and lost the use of one arm but continued his work. He died in the permanently hot, wet and misty environment of Yunnan.

**Augustine Henry (1857 – 1930)**<sup>34</sup> was in China at the same time as Delavay. Born in Dundee, educated in Ireland, he qualified in Medicine in Belfast and Edinburgh. Henry left Ireland because of a depressed economy and political unrest, and joined the Chinese Imperial customs service as customs and medical officer. He was instructed to study Chinese herbal medicines, but through boredom started to collect botanical specimens. These he sent to Kew for identification and asked for information on collecting techniques. The director encouraged him to continue, and so began his life's work in botany and, in particular forestry, as he observed the deforestation taking place in China. Henry explored the precipitous Yangtse Ichang gorges and discovered one *Davidia* tree, sending the first specimen to England. David's specimens had all been lost in transit. He collected 1,000 specimens during his first season.

The quality of the specimens was so highly regarded by Kew that he was given leave to undertake two further plant collecting expeditions. He discovered more than 500 new species. After contracting malaria he returned to Ireland to convalesce. He married and the couple travelled to China. Mrs Henry contracted tuberculosis and had a pulmonary haemorrhage in Singapore. They decided that she should travel to the United States with Henry's sister and he would follow when he had leave. She died before Henry could leave China. They had been married for three years.

Henry was moved to various posts in a troubled China. In 1896 the anti - European Boxer uprising led to gangs of armed bandits roaming the country in search of Europeans and Christians. Many missionaries were killed, including a close female missionary friend of Henry's. He describes awakening one morning to find three heads hanging from a tree outside his customs post. Henry seemed to avoid danger and took the upheaval philosophically. His

<sup>33</sup> E.H.M.Cox, *Plant Hunting in China* (London, Collins, 1945) p. 45.

<sup>34</sup> S.Pim, *The Wood and the Trees. A Biography of Augustine Henry* (London, MacDonald, 1966).

stature, blue eyes and red beard, being similar to the Chinese image of a devil may have afforded him some protection, but luck was probably more important. He could be roused, as might be deduced from the following description of the opium smoking ex-pirates, who acted as boatmen on the Yangtse:

‘Rudeness, inefficiency and general hellery surpasses belief. MacCallum and I however, fought our crew with strong language and a few blows and got them thoroughly cowed. They worked hard in the rapids but I am extremely sorry we did not kill a few.’<sup>35</sup>

Peking was under siege with great loss of life, and the death of his faithful head collector ‘Old Ho’ from malaria were events that persuaded him it was time to return to Ireland after nineteen years of life in China. He had one further task to fulfil. Veitch’s nursery in Exeter, England was sending another plant hunter to try and obtain a further supply of seeds of *Davidia*, and asked Henry to direct him to the one tree he had discovered. This was **Ernest Wilson (1886 – 1930)**, an English gardener, trained in horticulture in Birmingham and Kew, and employed by Veitch.<sup>36</sup> He was delayed in Hong Kong by an epidemic of plague and this probably saved his life. A group of bandits had taken Wilson’s intended route the day he had been due to travel. When he met Henry the latter gave him the roughest of maps purporting to identify the location of one tree, the *Davidia*, which was the only one Henry knew of, in an area the size of New York State. Henry had to move posts, and they set off together, meeting the British consul on the way. The Consul was killed by bandits a short time after meeting Henry and Wilson.

Augustine Henry left China for Ireland on the last day of the nineteenth century, leaving Wilson to search for the tree. Wilson was quite different from other plant hunters. He decided not to learn the language, preferring to have a good servant who could speak ‘pidgin’ English and cook. He travelled with the largest retinue of any explorer: there were eighteen carrying coolies, one head coolie, two sedan chairs with porters, two handymen, two soldiers and one servant. Sedan chairs were, in Wilson’s view, most important even when carried piecemeal, being an outward sign of respectability. He also carried cumbersome photographic equipment. When Wilson located Henry’s *Davidia* tree it had been cut down and the wood used for construction purposes. He decided to follow in David’s footsteps, and eventually located a grove of *Davidia* trees in a fairly inaccessible situation overhanging a sheer drop. When returning down the Yangtse he was shipwrecked and almost drowned, with the loss of many possessions, photographic material and specimens. The *Davidia* tree was not lost.

His next expedition to China was on behalf of the Arnold Arboretum, in Boston, Massachusetts. He discovered *Lilium regale*, the Regal Lily. At one point his expedition lost its way and they almost starved to death. His first consignment of many thousands of bulbs perished on the sea journey to America. Wilson and his wife then emigrated from China to the United States. He returned to the Min river valley in China to collect more Regal Lily bulbs. After the harvest he and his party were descending a steep, narrow high level track when they were engulfed in a landslide. Wilson was buried and sustained a serious injury to one leg. It was splinted with the camera tripod where he lay, but he could not be moved and an oncoming caravan of 50 laden mules walked over him. He required multiple surgical procedures, was close to amputation, but refused and was left with what he called a ‘lily limp’. After four expeditions

<sup>35</sup> Ibid., p. 74.

<sup>36</sup> E.H.Wilson, *A Naturalist in Western China* (London, Cadogan Books, 1986), Volumes 1 & 2.

to China between 1899 and 1911, he became director of the Arnold Arboretum. Wilson and his wife were killed in a motoring accident as they were planning to retire back to England.

The most colourful plant hunter, however, was **William Dampier (1651 – 1715)** botanist, navigator, gifted but cruel leader and ruthless pirate.<sup>37</sup> He ran away to sea as a boy and jumped ship in Mexico. He worked with foresters in Yucatan. Among these lawless men he learned the ways of piracy, and set out looting and fighting en route to China taking every opportunity to collect plants, sending them to the botanic garden in Oxford. He was the first Englishman to reach Australia, was marooned at one time and rowed 200 miles in a native canoe to Sumatra. He returned to England and wrote a book entitled *Voyage Round the World* which included descriptions of tropical plants. He was acclaimed by London society, dined out with Pepys and Evelyn, then was commissioned by the Admiralty to explore north - west Australia.

On his return his ship was wrecked off Ascension Island. He lost many plants and possessions. He was then accused of cruelty towards a fellow officer, and was court-martialled. Subsequently he was promoted to the overall command of two ships. The captain of one ship was a physician by the name of Dover, the inventor of Dover's powders. Dover had disagreements with the ship's master, Alexander Selkirk, who requested that he be put ashore on the island of Juan Fernandez. Dampier was accused of brutality and drunkenness on their return, and was dismissed from the service. He became a privateer and rescued Selkirk, *alias* Robinson Crusoe, four years, four months and four days after he went ashore.<sup>38</sup>

### *Conclusion*

Plant explorers do not conform to any broad description. Theirs was a profession that often led to greater personal loss than gain. As compulsive collectors with many differing 'alter egos', they were driven by a need to explore nature and share their discoveries. Their escapades seem to entwine major historical events. Few of us know of, or give thought to these pioneers whose efforts have helped to shape our landscapes. This review provides a brief glimpse and will perhaps stimulate further study of the lives of plant hunters.

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<sup>37</sup> Whittle, *The Plant Hunters*, pp. 37 – 40.

<sup>38</sup> D. Preston and M. Preston, *Pirate of Exquisite Mind: Explorer, Naturalist, and Buccaneer: The Life of William Dampier*. (London, Penguin Group, 2005).