

The Discovery and Rediscovery of the Horse Chestnut

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We have only to imagine Paris in May without the blossoming horse chestnuts (*Aesculus hippocastanum*) lining its avenues to appreciate a statement attributed to Thomas Jefferson: "The greatest service which can be rendered to any country is to add a useful plant to its culture." It was not until the sixteenth century that the horse chestnut was cultivated outside the Ottoman Empire, but once the first twigs and seeds had arrived from Istanbul, it quickly found its way into gardens throughout western Europe and is now in cultivation in temperate regions all over the world.

The horse chestnut's native distribution is restricted to the Balkan peninsula; however, knowledge of its native habitat remained confused until the late nineteenth century, with most botanists believing its origins to be in Asia. Linnaeus, for example, wrote in 1753 that the horse chestnut grows in the more northern regions of Asia; and the tree's common name in French—*marronnier d'Inde*—still refers to a supposed Asian origin. In fact, so strong was the belief in the Asian origin of horse chestnut that in the early 1800s, when the report of an Englishman's discovery of horse chestnut growing wild in the Pindus Mountains of Greece was published, it was not believed; and it was not until eighty years later that the Balkan origin of horse chestnut was finally accepted.

The Introduction of Horse Chestnut to Western Europe

The first written report on the horse chestnut is found in a letter that Willem Quackelbeen (1527–1561) wrote from Istanbul in 1557 to Pietro Andrea Mattioli (1501–1578), a physician then living in Prague. Quackelbeen was at the time physician to Augier Ghiselin de Busbecq (1522–1592), ambassador of Ferdinand I, the Holy Roman Emperor, to Sultan Suleyman II, "the Magnificent," under whose reign the Otto-

man Empire had reached the climax of its political and military power, extending at that time through most of the Balkan peninsula and including all of what is now Hungary as well as parts of modern Romania, Slovakia, Moldavia, and Ukraine. Quackelbeen's letter to Mattioli includes the following statement:

A species of chestnut is frequently found here [in Istanbul], which has "horse" as common second name, because devoured three or four at a time they [the horse chestnuts] give relief to horses sick with chest complaints, in particular cough and worm diseases.

Since the horse chestnut does not occur naturally in Istanbul or its surroundings, Quackelbeen was almost certainly referring to a tree cultivated in Istanbul, where it is still popular today and where many specimens of considerable size can be seen. Mattioli's answer to Quackelbeen, dated Prague, 4 December 1557, includes several questions concerning the novel tree and implies that Quackelbeen may have included seeds with his letter.

Earlier, Mattioli had written about Quackelbeen's finding to Ulysse Aldrovandi (1522–1605), a well-known naturalist who in 1567 would become co-director of the newly founded botanic garden of the University of Bologna. In his 1561 letter to Aldrovandi in Bologna, Mattioli mentioned specifically the "very large leaf consisting of five leaflets" and wrote that "the fruit [seed] does not differ much from our common chestnut [*Castanea sativa*], but is only somewhat more round." This may indicate that Mattioli had also received a branch of the horse chestnut from Quackelbeen or a drawing based on it, since leaf characters are not mentioned in Quackelbeen's letter.

The first printed illustration of the horse chestnut was published by Mattioli in Prague in 1563. It is a woodcut included in his *New Kreüterbuch*. The accompanying text merits



From Joseph Jacobi Plenck, *Icones Plantarum Medicinalium, Centuria III*, published in Vienna, 1790

attention: "There is also another foreign genus of chestnuts which I have had depicted here because of its beautiful form. The very famous Augherius [Ghiselin de Busbecq], the legate of the Christian Emperor at Istanbul, has sent me this twig with fruit from there. It is a tall tree, it has leaves similar to those of the castor bean plant [*Ricinus communis*], they have six splits down to the petiole, which is long and thin. The spiny shells are similar in size to ours [those of *Castanea sativa*], but they are yellowish, in each of them there is a chestnut thicker and

rounder than ours. The rind [testa] of this chestnut is blackish with the exception of the front part where it is attached to the spiny shells, where it is whitish and has the form of a heart. Below this rind there is no further skin as is the red wrinkled skin of ours. They taste nearly like ours, but sweeter and not so good to eat. The Turks call them horse chestnuts because they help panting horses." Mattioli thus provided an excellent description and a good comparison with a tree he knew well; born in Siena and later living in Gorizia, near the border that separates modern Italy from Slovenia, he must have been familiar with the European sweet chestnut from childhood. It is clear from the woodcut that unripe fruits of the horse chestnut were used for the drawing; and since Mattioli describes the testa as blackish, it may indicate discoloration of the immature fruits when dry. The possible sources of the materials used for Quackelbeen's description and for the woodcut are of interest because they bear on the question of when and where the horse chestnut was first cultivated in Western Europe. A close study of the material in various archives provides some clues.

The first clue appears in the introduction to Mattioli's *New Kreüterbuch* of 1563. In it the author thanks his correspondents for sending plant material, the first mentioned by name being Jacob Anton Cortuso (1513–1603), a patrician of Padua and later the fourth prefect of the Padua Botanic Garden. Cortuso reported in 1563 that he had sent a drawing of the horse chestnut from Padua to Ulysse Aldrovandi in Bologna. This drawing may have been based on a specimen that Cortuso had received from the Levant, but it is not impossible that Cortuso already had a cultivated specimen in his garden.

Another correspondent mentioned by Mattioli was Ulysse Aldrovandi himself. In Aldrovandi's famous *Erbario Dipinto*, also called *Iconographia Plantarum* and now at the

Biblioteca Universitaria in Bologna, we find an illustration of the horse chestnut annotated “Kananon Ippeion. *Castanea sativa*.” This watercolor is a precise match of the woodcut published in Mattioli’s *New Kreüterbuch* and may be either a copy of the woodcut, the pattern on which the woodcut was based, or a copy of the pattern. Whichever it was, one aspect of the woodcut and of its twin, the Bologna watercolor, remains enigmatic: since both illustrations show a fresh specimen (in the watercolor of the *Erbario Dipinto* the leaves are painted greenish), the drawing could not have been made from material transported by sixteenth-century means from Istanbul to either Vienna or Bologna; after a journey of that duration the horse chestnut twig would have arrived wilted, if not totally dry. It seems that the illustrator either worked in Istanbul and sent his painting to a correspondent in the West (Mattioli in Prague, Aldrovando in Bologna, Cortuso in Padua, or someone else); or he worked in the West, managing to make a dried twig appear alive or using a live specimen already growing there. Available documents do not allow us to know which of these possibilities is correct.

However, Aldrovandi’s herbarium, kept today at the Istituto Botanico of the University of Bologna, contains yet another clue: a leaf of the horse chestnut annotated “*Castanea equina flore albo*.” This specimen can neither be dated nor the provenance given, but it must have been incorporated into the herbarium prior to Aldrovandi’s death in 1605, making it one of the oldest leaves of this species in existence. It may have been sent to Bologna by one of Aldrovandi’s correspondents in the Ottoman Empire, but it may also have come from a tree cultivated in western Europe—in Bologna itself, or in Cortuso’s Padua, or perhaps in Florence, in the garden of the Duke of Tuscany, where Jean Bauhin (1541–1612), another famous physician and naturalist, mentions having seen a horse chestnut, apparently before 1569. (In fact, a short biography of Bauhin written in 1963 mentions that he had visited the Tuscany region in 1562.)

No city, however, has better documented evidence for cultivation of the horse chestnut at an early date than Vienna. Clusius, a court servant



Aesculus hippocastanum L. illustrated in *Ulysse Aldrovandi's Erbario Dipinto*, Vol 5, f 167, ca. 1560.

of His Roman Imperial Majesty Maximilian II, gives us the background in his *Rariorum aliquot stirpium historia*, published in 1583. Writing about *Prunus laurocerasus* (cherry laurel), Clusius says that a specimen “was sent here [to Vienna] from Istanbul at the beginning of the year 1574, and again in the year 1581 . . . Maybe two years later, at the beginning of January 1576, I received from the very famous David Ungnad, Imperial Ambassador to the Emperor of the Turks, his small tree.” The implication is that living trees were indeed transported in winter from Istanbul to Vienna, no doubt on the backs of horses, mules, or camels.

Four pages later Clusius reports on the horse chestnut: “I have not seen its flower or fresh fruit; it was brought here [to Vienna] from Istanbul in 1581 under this name [*castanea equina*].” Since Clusius describes the unfolding of the leaves in spring, there must have

been a living specimen in cultivation in Vienna at that time—and one may assume that *Aesculus hippocastanum*, like *Prunus laurocerasus*, had originally been sent there by David Ungnad Graf von Weissenfels (d. 1601), one of Busbecq's successors as ambassador to Istanbul. From capitals like Vienna and Florence or towns with famous botanic gardens like Padua and Bologna, horse chestnuts could be quickly distributed to other regions in central and western Europe, as was indeed the case.

Rediscovery in the Wild

Little is known about the discovery in the 1790s of horse chestnut growing in its native habitat by John Hawkins, a many-sided gentleman traveler from Cornwall. His diaries and notes were ruthlessly burnt in 1903 (although his correspondence survived) by the owner at that time of Bignor Park, Hawkins' residence in Sussex, and the only known reference to his finding the horse chestnut is the cryptic note "*Ae. Hippocastanum* . . . In Pindo et Pelio montibus. D. Hawkins," found in the *Florae Graecae Prodromus*, published in England in 1806. Did Hawkins visit these two mountains situated in the remote parts of modern Greece and, if so, at what time?

A letter from Hawkins to his mother dated 14 September 1795 shows that he had visited the mainland of Greece in the late spring of 1795, and a note in one of his archaeological papers published many years later (1820) makes it clear that he had been as far as "Yannina" (Ioánnina, in the center of the peninsula), which is very near the Pindus Mountains and within the range of the horse chestnut's natural distribution. It is

SEMANTICS

Balkan semantics are complex: several languages are spoken in the area; for many centuries four scripts were used; and all Balkan languages comprise many words taken over from other tongues. This last observation applies to the common name of the horse chestnut. The similarity between the fruits of the widespread sweet chestnut and of the much more local horse chestnut is reflected in the common names of the latter. In its native area the following names are used:

Serbia: *divlji kesten*, wild chestnut; *beli divlji kesten*, white wild chestnut; *gorke kesten*, mountain chestnut

Macedonia: *divlji kesten*, wild chestnut

Greece: *hippocastanon*, horse chestnut

Bulgaria: *konski kesten*, horse chestnut

Albania: *gështenja e kalit*, horse chestnut

Surprisingly, Quakelbeen's association of *Aesculus hippocastanum* with horses has also survived in most languages spoken outside the Balkan peninsula—in the German *Rosskastanie*, spelled today almost precisely as it was spelled by Mattioli in 1563; in the English horse chestnut; and in the Italian *ippocastano* and *castagno equino*. Among the few exceptions to the general rule are the French *marronnier d'Inde* and Italian *castagno d'India*, both of which reflect the earlier belief in a more easterly habitat. It should be noted, however, that seventeenth-century sources give *chastagne de cheval* as the French name for the horse chestnut, indicating that the nomenclatural association of the tree with India is of a more recent date.

there that he probably first encountered this spectacular tree. A record of a visit by Hawkins to Mount Pilion also exists, found among the recollections of James Thoburn, his servant. In this region, which according to Thoburn he visited in late spring of 1797, Hawkins may have seen the horse chestnut again. And, while passing a second time through the contemporary province of Epirus in the spring of 1798 on his way from Mesolongion via Ioánnina to Durrës in modern Albania, Hawkins may have seen natural stands of the horse chestnut yet a third time. Hawkins is not known to have collected herbarium material of the horse chestnut, however, and although his finding was properly

published in the *Florae Graecae Prodrumus*, the botanical community did not believe it, no doubt remembering earlier errors in the literature. Even well-known dendrologists like Carl Koch (1809–1867), then at the University of Berlin, believed the horse chestnut to be native to regions much further east, such as the Himalayas, and a specialist of the Balkan flora, Heinrich Rudolf August Grisebach (1814–1879), professor of botany at the University of Göttingen, did not even mention Hawkins' claim in his *Spicilegium florae rumelicae et bithynicae* (1843–1844). Edmond Boissier (1810–1885), on the other hand, mentioned Hawkins' discovery only to refute and even misattribute it. He wrote in his monumental *Flora orientalis* (1867) that the horse chestnut had allegedly been found growing wild "in the mountains of northern Greece . . . by Sibthorp [read Hawkins], but I have nowhere seen spontaneous specimens. Probably originating in the mountains of India, everywhere cultivated." It was only in 1879, more than eighty years after Hawkins' discovery, that Theodor von Heldreich (1822–1902), then director of the botanical garden in Athens, was able to confirm it. In 1878, the Treaty of Berlin that followed the Russo-Turkish War had resulted in parts of modern Greece (Thessaly and the southern part of Epirus) being ceded by the Ottoman Empire to the Kingdom of Greece. Heldreich made use of this change in Balkan affairs to visit the area, still wild and unsafe, in the summer of 1879. Since his report, published in Berlin in 1880, comprises the first known description of the horse chestnut's native habitat, it is quoted here at length:

When my guide Nikitas told me in the Chelidón Mountains in Evritanía of a "species of wild chestnut" growing in a ravine in the lower zone of the silver fir I thought of the *Castanea vulgaris*, sometimes common here, the wild form with its smaller fruits here called "wild chestnut," in contrast to the pruned variety with bigger fruits, but since he stated the leaves also to be different, the fruits very bitter and not to be eaten, I did not shy at the detour any more. How great was my surprise to see here in the wilderness on rocky outcrops of a ravine a group of horse chestnut trees covered with half-ripe fruits! . . . All these localities are situated in the

lower zone of the silver fir, at an altitude of 1000 to 1300 m [3,300–4,250 feet]. They are shady, more or less humid ravines amidst woods.

Heldreich lists five localities, all in "Eurytanien" and "Phthiotis," where he was convinced that the horse chestnut was truly wild and indigenous, growing "in the most remote, uninhabited mountain regions." He even reports the common name then used among the Greeks of the area (wild chestnut) as well as the local use of the fruits, which were fed to horses to cure them of a cough. A specimen collected by Heldreich and kept in the Naturhistorisches Museum in Vienna corroborates this second rediscovery; it is labeled "Evritanía, on Mount Chelidón in the silver fir zone above the village Mikrochorio, c. 1000–1750 m. [3,300–5,800 feet], spontaneous in shady ravines, at a locality called Kephaloovoysi, 11 August 1879."

It should be noted that in its native habitat the horse chestnut is never found as the solitary, monumental tree of considerable age that is so common nowadays in parks and gardens, but as one of the many elements of a mesic wood and not growing to be very old; this may explain the difficulty of finding it in the wild. In subsequent years (1950, 1980, and again in 1990) the ecology of this tree has been studied repeatedly and Heldreich's report confirmed many times. In May of 1881, central Greece was also transferred from the Ottoman Empire to the Kingdom of Greece, resulting in yet more confirmations of Heldreich's rediscovery and more searching in adjacent areas for *Aesculus hippocastanum*. In 1883 it was Georgios I, king of Greece, visiting his new provinces accompanied by a "Mr. Munter, director of the royal estates." The latter confirmed Heldreich's report—in the steep valley of the river Arakthos and on the southern slopes of the Pindus Mountains they, too, observed natural stands of the horse chestnut.

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