

Pierre Magnol: His Life and Works

Tony Aiello, *The Morris Arboretum of the University of Pennsylvania*

Having long admired the beauty and diversity of the genus *Magnolia*, I have known for quite some time that the name honors the French botanist Pierre Magnol (see van Manen, *Magnolia* 2003). But it was only in the last year that I started to wonder about the life of the man for whom this wonderful genus was named. After searching for biographical information I quickly learned that there was very little accessible information on Magnol, despite the popularity of growing magnolias. With this in mind, I began digging deeper and was inspired to write this article. Most of the biographical sources I found were in French from the 1800s, with the more recent information in English from an obscure book chapter (Stearn 1973).

Pierre Magnol (8 June 1638–21 May 1715 (Barnhart 1965)) was a leading 17TH century botanist who was born, lived, worked, and died in Montpellier in southern France, and was widely known throughout Europe for his botanical knowledge and erudition. He came from a family of apothecaries: his grandfather Jean Magnol, father Claude, and brother Cesar, all took up that profession (Dulieu 1959). From a young age Magnol had been inspired to botanize in the area surrounding Montpellier, and being one of the youngest members of his family, had more choice and desired to become a physician (Dulieu 1959).

To many Americans, myself included, Montpellier is a somewhat obscure and relatively unknown place (although on further investigation it sounds like a fascinating city to visit). However it was one of the leading educational, commercial, and administrative centers in Medieval and Renaissance France. Located seven miles from the Mediterranean coast, and an important trading station for spice importation in the 10TH century, the city received its charter in 1141. The city remains the chief administrative and commercial capital of the Herault *département* and Languedoc-Roussillon *région* of southern France. A very cosmopolitan city, Montpellier was influenced heavily by Arab science and medicine (Duval 1982), and students from all over Europe were attracted to its famous medical school that developed under the influence of Arabs, Jews, and Christians (Harant 1954). The University of Montpellier was founded in 1289, and the Jardin Royale de Montpellier, the first to be founded in France, was formed in 1593 by Henry IV of France, who donated the botanic garden as an institution dedicated to teaching medicine and pharmacology.



Bust of Pierre Magnol photographed at the Montpellier Botanic Garden. (Image courtesy of the Hunt Institute for Botanical Documentation.)

Montpellier is recognized by the specific epithet of several plants, including Montpellier maple (*Acer monspessulanum*), Montpellier rock rose (*Cistus monspeliensis*), and pincushion flower (*Scabiosa monspeliensis*).

The study of medicine and botany were inseparable during Renaissance and Enlightenment Europe, and the university and botanic garden in Montpellier attracted some of the leading botanists of the 16th and 17th centuries. Guillaume Rondelet, Charles de l'Ecluse (Clusius), Francois Rabelais, Leonhard Fuchs (from whom we get the name *Fuchsia*), and a more infamous doctor, Michel Nostradamus, all studied at the University, while the first director of the botanic garden was Richard de Bel-leval (Harant 1954). Other well known botanists who followed Magnol include Pierre-Marie-Auguste Broussonet (for whom the genus *Broussonetia* is named), and the very well known Augustin-Pyramus de Candolle, who was responsible for naming more plants still recognized today than anyone but Linnaeus (Iseley 1994). In the late 1800s, the botanic garden's director was Jules-Emile Planchon, most famous for discovering the disease *phylloxera*, which was creating an economic crisis by destroying the native grapevine rootstock throughout France.

In this light, one can see that Magnol came of age in one of the intellectual and botanical capitals of its time. He matriculated at the University of Montpellier in May 1655 and qualified as a doctor in January 1659 (Dulieu 1959). In 1663 received a *brevet de medecin royal* or royal diploma of medicine, an honorary title without official function (Dulieu 1959). Magnol was a devoted and brilliant student of botany and medicine, and he travelled throughout Languedoc and further afield to the Alps and Pyrenees to pursue his botanical interests. Despite Magnol's superior qualifications and being the leading candidate for the chair, he was denied the position of professor of medicine due to religious discrimination in 1664 and again in 1667 (Stearn 1973). Magnol was a Protestant, and because of blatant religious discrimination he was turned down for a royal promotion in favor of a Catholic. Being refused the professorship must have come as a major disappointment to this 29-year old man, just beginning his career. It was many years before Magnol received the professional title that he so richly deserved.

Magnol was not alone in bearing the weight of such religious discrimination. Montpellier was home to a large population of Protestants, who at the time were heavily discriminated against and persecuted in France. France had been plagued by the Wars of Religion throughout the late 16th and early 17th centuries (Encyclopædia Britannica. 2003a). After many decades of civil war, Henry IV of France, himself a former Protestant who converted to secure his right to the throne, promulgated the Edict of Nantes in 1598. This Edict confirmed Roman Catholicism as the state church but granted a large measure of religious freedom and full civil rights to Protestants, who were also given the right to hold public office and who retained their fortresses in certain cities. The Edict of Nantes ended nearly 40 years of religious strife and civil war that had left France tottering on the brink of disintegration (Encyclopædia Britannica. 2003b).

The Edict did not end religious persecution in France, especially once the law was revoked by Louis XIV in 1685. The revocation of the Edict led to hundreds of thousands of Protestants leaving France for elsewhere in Europe and America (Encyclopædia Britannica, 2003a). This exodus of a huge portion of the educated bourgeois class stunted France's development during the succeeding Industrial Revolution.

Despite being denied official recognition, Magnol had a brilliant and productive career. He was recognized by his contemporaries as one of the leading European botanists (Stearn 1973). He was a correspondent and friend of the famous English botanist John Ray, who visited Montpellier in 1665–66 and wrote that, "Monsieur Marchand and Dr. Magnol were the most skilfull [sic] herbalists I met with in France" (Stearn 1973). After their meeting, the subsequent work of both men was influenced by their mutual respect, and in his *Historia Plantarum* (1686–1704) Ray speaks highly of Magnol's work and botanical contributions (Morton 1981, Williams 1988). Likewise, Linnaeus held Magnol in great esteem and commented on the apt linkage between the characters of genera and their eponyms when he wrote that, "*Magnolia* was a tree with the most splendid leaves and flowers named for the most splendid botanist" (Stearn 1973). Magnol also devoted himself to teaching a large number of medical students at the university, taking them on botanical excursions throughout the area surrounding Montpellier. Among Magnol's most important students were Joseph Pitton de Tournefort, whose major contribution was codifying the concept of the genus (Isely 1994) and Antoine de Jussieu, the first member of a French botanical dynasty who provided the first scientific description of the coffee plant (Stearn 1973, Gillispie 1970).

As he travelled with his students Magnol gathered observations and records of plants and assembled these in his first work, *Botanicum Monspelienne sive Plantarum circa Monspelium nascentium* (1676) which catalogued the plants in the region of southern France, Languedoc and Montpellier. This work included 1354 species, using the pre-Linnean polynomial Latin descriptive phrases adopted by Gaspard Bauhin's 1623 *Pinax*, rather than the binomial names that are so familiar today.

In this work, Magnol listed the plants alphabetically, and gave notes on habitats and localities, medicinal or other uses, characteristics, and months of flower. Many of the plants are very recognizable and the first one listed is *Absinthium seriphium* or what we know as absinthe (*Artemisia absinthium*). The last plant described in this work is *Zizypha sativa et sylvestris*, which we know as the lotus tree (*Ziziphus lotus*), the European relative of the jujube, an Asian plant used as an excellent dessert fruit. In between these two are many other plants that we recognize, including *Acer major*...*falso platanus* (sycamore maple, *Acer pseudoplatanus*), *Acer*

campestre (hedge maple), *Acer monspessulanum* (the eponymous Montpellier maple).

One of my favorite entries in the *Botanicum* is listed as *Capparis spinosa folia acuto*, now called just *Capparis spinosa*, or the caper of culinary fame. Magnol wrote, "*qui aceto condiuntum et in obsoniis frequentissime adhibetur vulgo Taperos*," or roughly translated as, a sour or pickled condiment that is frequently eaten with bread at meals. This work also described the natural habitats of various plants; for example, "*Iris palustris lutea, sive Acorus adulterinus...in rivula Laterae et vicinus omnibus paludibus...Monspeli Martio et Aprili florentum abundare*." This translates as, the yellow marsh iris, or false acorus (what we know as *Iris pseudacorus*, the yellow flag iris) [grows] among the streams of Latera, and of all the neighboring marshes. Around Montpellier it blooms abundantly in March and April. And, as a cat owner and lover, I was glad to see that Magnol listed catnip (*Nepeta cataria*) as *Mentha cataria vulgaris et major* and describe it growing abundantly near small streams and throughout the city.

Ten years later, *Botanicum Monspeliense* was printed as a second edition (Magnol 1686), identical to the first except for an appendix listing an additional 106 species. It was this work that Linnaeus knew and considered as one of the best floras then published, citing its accurate and erudite contents (Stearn 1973). Linnaeus used Magnol's second edition in developing his famous 1753 *Species Plantarum* and *Flora Monspeliensis* (1756, 1759) (Stearn 1973).

Magnol's most lasting contribution to botany came with the publication of his 1689 work, *Prodromus historiae generalis plantarum, in quo familiae plantarum per tabulas disponuntur*. This work was informed by Magnol's wide travels through southern Europe, which led to the development of a natural classification of plants (Gauteron 1811, Morton 1981). The great contribution of the *Prodromus* was Magnol's use of the term 'family' to describe groups of plants with associated common features. These families represented fairly natural groupings and pointed the way to the formation of a new and very useful taxonomic group (Morton 1981). In the *Prodromus* Magnol developed 75 tables, allowing for easy classification and identification of plants.

Magnol's concept of plant families was made possible by observing affinities in animals. He observed that in animals there were distinct *familiae* based on special characteristics and therefore that among plants there could be analogous groups with distinctive characteristics, such as bulbous or culm-bearing plants (Morton 1981, Stearn 1961). He also noted that these families could be further subdivided, for instance, the legumes into those with one, three, or more leaflets. Magnol wrote that (Stearn 1961 translation from the *Prodromus*):



Colored engraving (plate 27) of *Magnolia virginiana* (*M. glauca*) from Bigelow's American Medical Botany. (Image courtesy of the Hunt Institute for Botanical Documentation.)

This relationship between plant and animals has given me the opportunity to place plants in certain families (I call them families by comparison with the families of mankind) but because it seemed impossible to select the distinguishing features of families from the frutification alone I have taken various parts of the plants in which the distinguishing features and characters are chiefly to be found, the roots certainly, stems, leaves, flowers, and seeds; and there is a certain likeness and affinity in many plants which does not rest upon parts taken separately but in the total composition, which strikes the sense but cannot be expressed in words.

This was Magnol's seminal work, and his natural classification of plant families permeates a broader understanding of plant affinities. For instance, one can easily recognize members of the rose, heath, or magnolia families, and in doing so we have Pierre Magnol to thank for this intellectual paradigm.

The publication of the second edition of the *Botanicum Monspelense* and the *Prodromus* came as Magnol was finally receiving the official titles that he had so long deserved, although not without a personal cost. As mentioned above, the Edict of Nantes was revoked in 1685, leaving Protestants with very few choices: conversion, emigration, or persecution. Magnol chose conversion and in October 1685 he abjured his religion and became a Catholic, opening the way to hold public office that had been denied for twenty years of his career (Dulieu 1959). One can only speculate how Magnol felt at this point in his life having to relinquish his faith in order to achieve professional standing and remain in his home town. As a result of his conversion, Magnol was appointed as demonstrator of plants at the University in 1687 (Dulieu 1959, Gillispie 1970).

In 1694, thanks to the intervention of his old friend Guy Crescent Fagon, who had become a physician to the king, Magnol received a royal commission as professor of plants at Jardin Royal de Montpellier, occupying one of four chairs created in 1498. He was also appointed director of the Jardin for a term of three years (Gauteron 1811, Stearn 1973). After his term as director had expired, Magnol, now nearly 60 years old, was honored with a royal *brevet* which gave him the title of Inspector of the Garden during his life (Gauteron 1811, Gillispie 1970).

Magnol's last publication during his life was the 1697 publication of *Hortus Regius Monspelensis, sive, Catalogus plantarum quae in Horto Regio Monspelensi demonstrantur*, which was a catalogue of the plants growing in the Botanic Garden. There is a wonderful dedication to the king in this work. Magnol writes (author's translation):

To the King: Sire, After the honor that Your Majesty has appointed to me for the culture and demonstration of plants of his Royal Garden of Montpellier; I believed it was my job to fulfil exactly my commission and to provide you with an accurate account of what I have done to execute Your Majesty's Orders. To satisfy the last of the obligations, I present him

with a short description of the garden in its present state. It [the garden] is augmented by so great a number of plants that [while] it is enough to have seen it as it was, when I began to cultivate it by your Order, and to see it as it is today [is] to recognize that I have forgotten nothing in restoring it in little time to its ancient luster. I can assure your Majesty that among all of the plants that today make up its richness and ornament, there are among them many very beautiful and very rare, which were entirely unknown to our predecessors.

As with the earlier *Botanicum Monspeliense* it is fascinating to look through this work and recognize many familiar garden plants of today, despite their Latin polynomials. Magnol listed *Capsicum majus vulgatius* *Piper lindicum*, or what we call *Capsicum annum*, the hot chili pepper. It had not taken long for this New World plant to quickly find a place in European gardens. I was also surprised to see listed *Toxicodendron triphyllum glabrum*, our *Rhus radicans* or *Toxicodendron radicans*, poison ivy, and I feel very sorry for the gardeners who had to grow this plant! Others in this work include plants that are found in most gardens today, such as *Acanthus sativus vel mollis* (*Acanthus mollis*) and *Acanthus aculeatus* (*Acanthus spinosus*), the two most commonly grown bear's breeches. Other recognizable genera include *Laurocerasus*, or cherry-laurel, which we now know as *Prunus laurocerasus* and *Ilex oblongo ferrata folio*, probably *Ilex aquifolium*, the English holly.

In 1703 Magnol's status was honored by his countryman Charles Plumier naming the first magnolia (van Manen 2003), a name that was later applied to *Magnolia virginiana*. Plumier's use of the name *Magnolia* occurred during Magnol's lifetime, although I have found no documentation that he knew of this honor. We can only assume that he would have known of this great distinction and been honored and flattered to be recognized.

In Pierre Magnol's later years he continued to devote himself to botany and the promotion of knowledge. In 1706 he was one of the founding members of the Société Royal des Sciences de Montpellier, holding one of three chairs reserved for botany. Shortly afterwards, in 1708, his brilliant student Tournefort died prematurely at the age of 52 (Barnhart 1965, Dulieu 1959) and his seat in the Académie Royale des Sciences de Paris was accepted by Magnol 1709. One can only imagine Magnol's state of mind at this point: an aged 71-year old man moving to Paris, bastion of the Catholic religion that had long prevented his receiving his well-earned accolades and professional positions; moving there to fill the seat of one of his most brilliant and renowned students while leaving his beloved homeland. It is not surprising that Magnol did not last long in Paris. Although he was well received by his new colleagues, his age and the climate forced him to return relatively soon to southern France. Once back in his hometown, he divided his time between his teaching and his private garden (Dulieu 1959).

Magnol's last years were spent in his beloved Montpellier, where, "because of his age, which was quite advanced, and his infirmities, those that follow the ordinary hardship [and] weariness of a botanist, he went back for some time to his homeland. [There] in a small garden ... he cultivated a collection of very rare and curious [plants]. He passed his hours of recreation in the garden, which he held open to all those who were curious to see the strange plants, or those who wished to converse with him" (author's translation from Gauteron 1811). And so passed the last years of the life of Pierre Magnol, a very pleasant way for a botanist to spend his final years.

When you next are in your garden enjoying your magnolia collection, think of Pierre Magnol for whom this genus is named, and his garden and studies in southern France, his great understanding and appreciation of the natural world, his contributions to botanical history, and his perseverance in the service of his life's calling. ~

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Author's Note

Pierre Magnol married Alix Fabre in September 1671, with whom he had several children, including Antoine, who became a noted botanist in his own right (Dulieu 1959). Antonie Magnol posthumously published a work of his father's *Novus character plantarum* which was an attempt at classification based on floral morphology and is considered by many to be an inferior work.

Acknowledgements

The author would like to thank Charlotte Tancin, for her help at the Hunt Institute of Botanical Documentation, Nick Gutowski for his Latin translations, and Debbie Rodgers for her French translations.



Capparis spinosa