

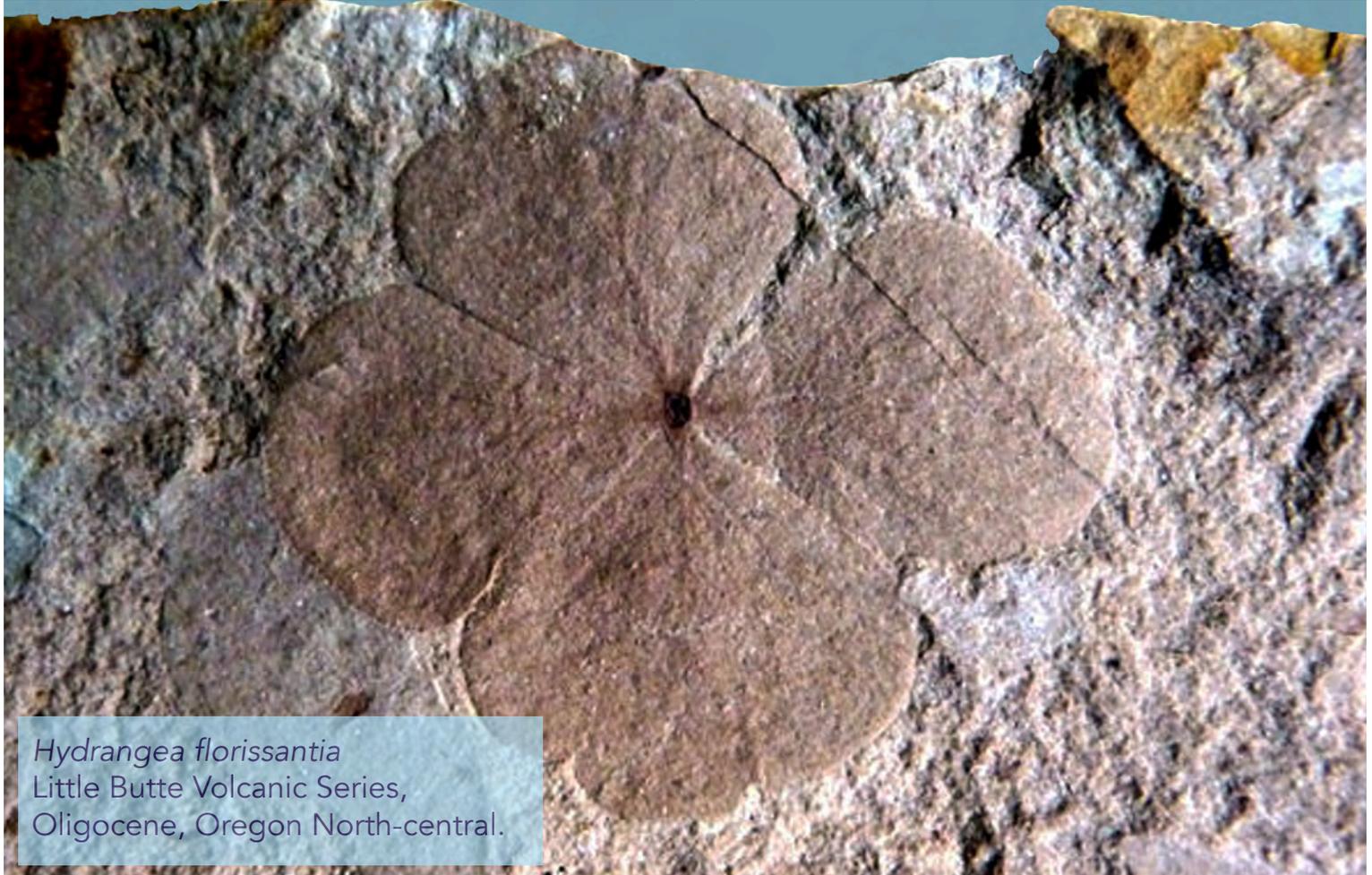
JOURNAL

FRIENDS OF THE "SHAMROCK" HYDRANGEA COLLECTION

Journal n° 29 - 2018



www.hortensias-hydrangea.com



Hydrangea florissantia
Little Butte Volcanic Series,
Oligocene, Oregon North-central.

A message from the President *Bryan Woy*

Dear friends of the 'Shamrock' Collection and Garden,
I'm writing this in the rainy and windy month of January 2018: the weather is mild, raising fears of a repeat of last year's weather pattern, when an early spurt of plant growth was damaged by a late frost.

Fortunately, our collection's temperate coastal location enabled us to survive unscathed this period of frost, so damaging for gardens further inland.

We can therefore contemplate this new season with relative confidence, knowing that we are equipped to proceed with the necessary watering in case of a prolonged dry spell. This was the case last year with 50,000 litres taken from our reservoir. This year, we are experimenting with planting new plants using water-retaining crystals, which should limit the amount of watering required. *(following page 2)*

A message from the President

Bryan Woy

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For all gardens and especially those where hydrangeas are grown, reflection is needed today to adapt to future climate change. Your Association, as far as possible, will endeavour to help you take the necessary measures: choice of plants, growing conditions, and good ecological practices.

At the same time, we are contributing to national, European and international efforts to help plant collections fulfil their conservation role in a world that is undergoing unprecedented climate change. As an active member of the C CVS (the French conservatory of specialized plant collections), your Association is putting all its experience and its network of relations at the service of the noble cause of safeguarding the planet.

By supporting our Association, you are contributing to the involvement of us all in meeting the challenges that lie ahead.

New members

Marie-Madeleine BARLE

Élisabeth BELLEGO

Bernie & Janique BOUTRY

Corinne BRENNE & Robert ARNOUX

Annie-Claude BRUNEVAL

Xavier CRAS

Ghislaine & Pierre CRESCENTINI

Nathalie DOAT

Henri GAUD

Marie-Claire GIRARDIN

Stéphane & Hélène GUEDE

Christine GUIGON

Marianne GUELY & Saïd NJEIM

Marianne JULIA

Valérie LOBRY & Benoît GRANGER

Marcin KOWALCZYK & STACHAK Tatiana

Hélène & Dimitri KRAUTCHUK

Jean-Baptiste & Sophie LEROY

Béatrice & Philippe MOUTON

Véronique OZANNE

Yves & Béatrice PETER

Jean-Marc SCHOEPFER & Pascale GICQUEL

Marie-Odile THOUVENIN

Dominique & Corinne VINCENS

New introductions

H. Bel Alexandre'

H. 'Black Trombone'

H. 'Claire'

H. 'Corsage'

H. 'Elizabeth'

H. 'Éloïse'

H. 'Fanfare'

H. 'Golacha'

H. 'Harrow's Blue'

H. 'Hirose-no-Hana'

H. 'Kanmara'

H. 'Kronentor'

H. 'Lime Rickey'

H. 'Mistral'

H. 'Murasaki Kobai'

H. 'Sonnenstein'

H. 'Style Pink'

H. Table Rose'

H. 'Tandem'

H. 'Wow time'

H. 'Zoé'

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Editorial team: Mark Brown, Jean-Paul Davasse, Gwendal Diabat, André Diéval, Michael Dirr, Robert Mallet, George E. Mustoe, Bryan Woy

Chief Editor: Corinne Mallet

Layout: Corinne Mallet

Drawings and French-English translation: Bryan Woy

English-French Translation: Robert Mallet

Rewriting: Corinne Mallet

Proofreading: Isabelle Canovas, J.-P. Péan, Bryan Woy

The articles in this journal are published under their authors' responsibility.

Thanks to the American Hydrangea Society *and its President*

We have long been in close contact with this association, founded by Penny McHenry, (four lecture tours by Corinne and Robert Mallet, starting in 2001), and the A.H.S invited us again last October. Two people have been particularly involved in this adventure: our permanent correspondent, Ozzie Johnson (Vice-President), whose articles we regularly publish in our Journal, and Jean Astrop our wonderful hostess, who comes to see us every year here in Varengeville. On the Web we reserve for the A.H.S. the first taste of our Journals translated into English by our President Bryan Woy. The A.H.S. regularly contributes to our research costs and disseminates the fruits of our discoveries in its columns. Robert's lecture on the theme of "Hydrangea-mix", encouraging the use of a greater number of mixed cultivars in public and private gardens, was followed by a large assembly, where one could recognise Michael Dirr, Mal Condon (from Cape Cod), Ozzie Johnson, Lisa Bartlett, Elisabeth Dean and her husband Gene Griffith (Wilkerson Mill Gardens), Sandy Jonas (past president, and publisher of the A.H.S. Newsletter) and many other active A.H.S. members. The President, Gloria Ward, gave a warm presentation to the lecture and, the next day, was keen to accompany us with Ozzie Johnson and Sandy Jones to visit the Bailey Nursery and the 35-hectare park of the Atlanta Historic Center (see page 8). We cannot thank the A.H.S. enough for its support, which has been so precious to us during the years of our collection's development and also now in our day-to-day activities and research.

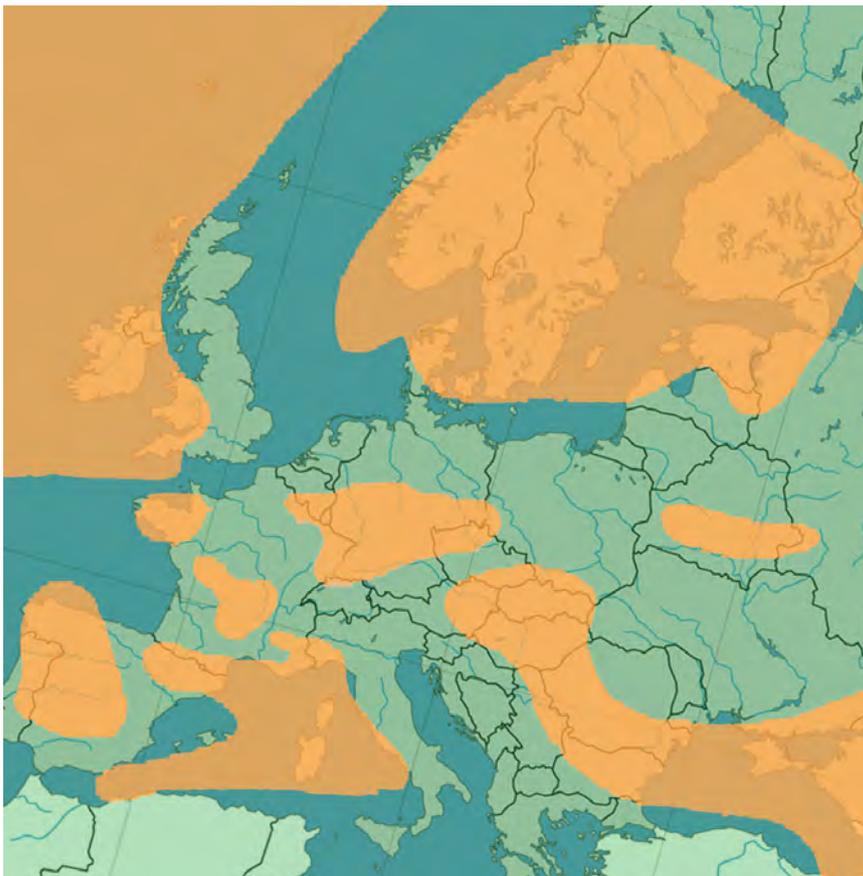
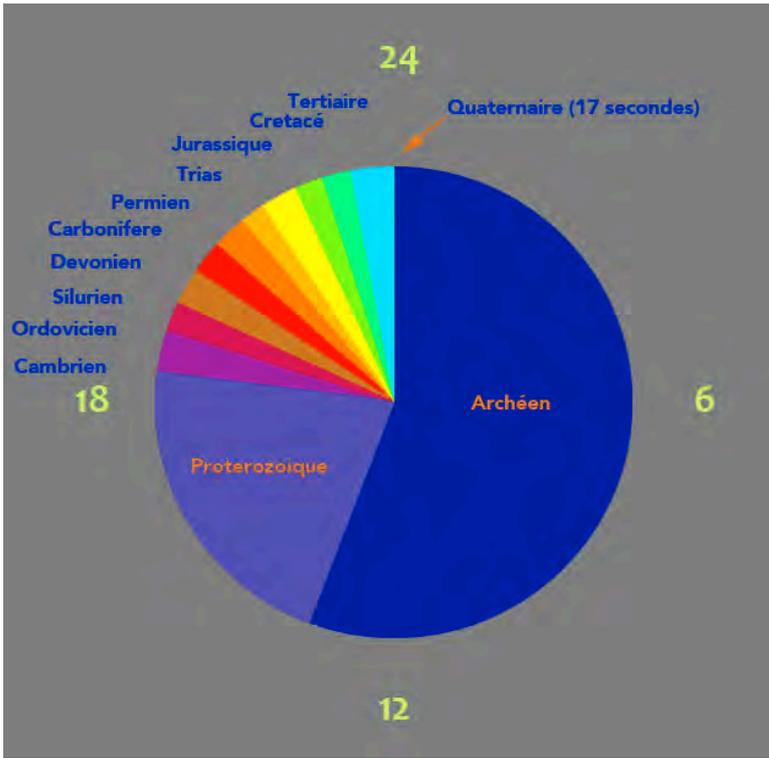
Thanks for 2017

The Association thanks all members and friends who have contributed in a thousand different ways to the upkeep and the future of the Shamrock Collection. Firstly, all the friends who participated in the success of our annual sale of hydrangeas, starting with Bérengère de Bodinat and Bruno Blanckaert for once again welcoming us to their home, "Casanova". Among the team of regular members we should mention Martine Merlin, Bernard Tordeurs, Jean-Pierre Péan, Galia Guillaume, Gilbert Baudoin, André Diéval, Madeleine Alves, Daniel Kuszac, Guy Lahogue, Josiane and Henri Lamache, Jean-Marie and Christiane Rouet, Christiane Le Scanff, Anne Nicolle, Antoine Brunet of "Jardiland" (who transported plants) as well as the professionals who support us by supplying us every year with plants from their production: Kees Eveleens of "Hortensia France Production", Lionel Chauvin of "Chauvin Diffusion", , Jean-Paul Davasse of "Boos Hortensia", Henri Mercier of "Sicamus", Bruno Malinge of "Malinge Horticulture" and especially Jean Renault, always an ardent contributor, and Didier Boos of "HW2" who coordinated it all. For continuing work in the car park and the collection, we cannot thank enough Henri Guyomard and Dominique Hébert, as well as the shock team of André Diéval, Madeleine Alves and Daniel Kuszac, Jean-Marie Rouet for logging work, with the precious help of Hervé Lepetit. For pruning and routine upkeep, the team from "La Traverse" educational centre, led by the ever-faithful Marie-Jo Boulanger; and the regular Tuesday quartet: Jean-Marie Rouet, Christiane Le Scanff, Anne Nicolle and Claire Perrin.

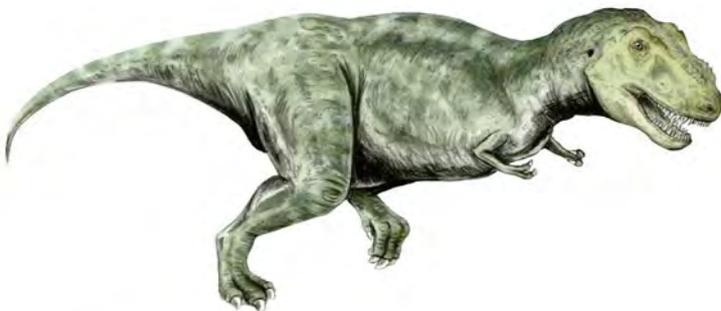
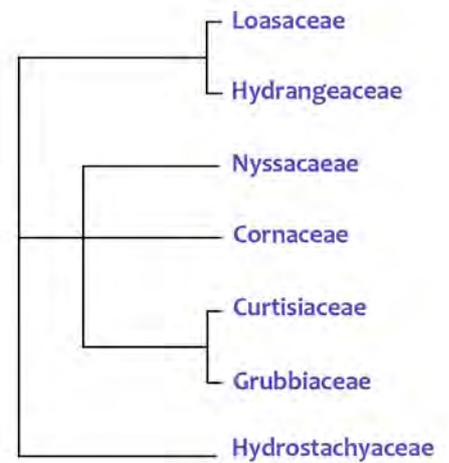
Hydrangeas are Cornales

Illustrations

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order of Cornales



Hydrangeas are Cornales

Mark Brown

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The Hydrangeaceae family are part of the Cornales clade, a group of seven families of relatively modern angiosperms¹ that evolved around 89.9 million years ago in the Coniacian², a geological era, that commemorates the well-known French town of Cognac (Coniacium in latin), established in 1857 by Henri Coquand, a French palaeontologist. The climate at that time was much warmer and more humid; semi-tropical. About a third of the surface of today's dry land was under the sea. France was composed of three main islands: the Ardennes, the Massif Central and the Armorican region of Brittany. Coral reefs abounded with atolls crowned with araucaria groves; salt water crocodiles patrolled the warm shallow seas. The Alps had not yet formed. The Tethys Sea was the southern edge of Europe. Africa was still a long way from our coast. Angiosperms were spreading rapidly in the Coniacian but were still not dominant.

The appearance of bees in the early Cretaceous helped them to evolve more rapidly. They coevolved in strict collaboration. Forests were mostly still conifers, araucarias, cedars, podocarps, and various basal Cupressaceae such as *Cunninghamia*, *Taiwania*, *Arthrotaxis* and *Metasequoia*. There were various species of ginkgos too. Forming the understory alongside yews and cephalotaxus were various primitive ferns such as the Gleicheniales³, Osmundaceae, tree ferns, brake and maidenhair ferns and Dennstaedtiaceae.

Various small primitive mammals abounded and could even become dominant in some biotopes. But it was the dinosaurs that ruled with Triceratops being the dominant herbivore and Tyrannosaurus being the top carnivore. Birds were well diversified at the time but flew alongside the pterosaurs⁴.

It was in this world that the first Cornales saw the day. Hydrangeaceae themselves arrived quite soon afterwards. They are a sister family to the Loasaceae, which contains only of herbaceous plants with conspicuous petals. We sometimes see the Blazing Star, *Mentzelia lindleyi*, a lovely bright flowered Californian annual of this family, grown in gardens. But many of this family have fierce stinging hairs!

Illustrations on page 4, from left to right and from top to bottom: Geological Time Clock: The time passed since the creation of the Earth is represented in the form of a 24-hour clock. We can compare the huge length of the first (Archean) period with the brevity of the Quaternary era, the one in which we live. - A present-day forest of araucarias and, below, a Gleichenia: *Dicranopteris linearis*. - Table of land that emerged in the Coniacian age in red, compared to current land (in light green) - Table of families representing the order of Cornales. - On the left, a tyrannosaurus facing a triceratops.

Hydrangeas are Cornales

Illustrations

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Illustrations on page 6, from left to right and from top to bottom: *Mentzelia lindleyi* by Arvind Kumar, *Davidia involucrata* by Myrabella, *Cornus canadensis* by D. Gordon E. Robertson, *Hydrangea scandens* by R. Mallet (in the 'Shamrock' garden), *Carpenteria californica* without reference, *Kirengeshoma palmata* by Kenpei, *Philadelphus satsumi* by Kenpei, *Deinanthe coerulea* by Dominicus Johannes Bergsma.

Hydrangeas are Cornales

Mark Brown

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The Hydrangeaceae themselves are shrubs, occasionally herbaceous with a rhizome, and sometimes even lianas. They are mostly found in the temperate to sub-tropical zone of the northern hemisphere with just a few outliers that have spread down along the Andes south to Chile.

Many of the Cornales have conspicuous petaloid bracts. The most famous example is *Davidia involucrata*, the handkerchief tree. But on the other hand, there is *Nyssa*, the Tupelo Tree which has insignificant flowers with no colourful bracts but the most wonderful autumn colours.

The dogwoods themselves in the section Benthamidia have the most spectacular petaloid bracts. There is also the small arctic woodlander *Cornus canadensis* with a pseudo-capitulum⁵ surrounded by six white involucreal petaloid bracts. This tendency to produce petaloid bracts is interesting when one thinks of our garden hydrangeas that we would surely never grow if they had no bracts!

But in the Hydrangeaceae itself we can also find large decorative true flowers such as the magnificent *Carpenteria californica*, the beautiful *Deinantho coerulea* with the softest blue flowers and the superb *Kirengeshoma* with flowers that look like they are made of yellow wax. And don't forget the stars of spring, the philadelphus with that heady scent which recalls many a childhood garden.

According to the latest genetic analysis now included on the Angiosperm Phylogeny Group website, *Schizophragma*, *Decumaria*, *Cardiandra*, *Dichroa*, *Pileostegia* and *Platycrater* are all now part of the *Hydrangea* genus so maybe this is an opportunity to create some amazing and original new hybrids? And I wish good luck those of you are trying to make a collection of *Hydrangea*!

1: The division of Angiosperms or Magnoliophytes includes flowering plants, and therefore plants that bear fruit. Angiosperm means "seed in a container" in Greek, as opposed to gymnosperms ("naked fruit").

2: The Coniacian is a geological stage of the Upper Cretaceous. It is between -89.8 ± 0.3 and -86.3 ± 0.5 million years, after the Turonian and before the Santonian.

3: The Gleicheniales order is an order of ferns that includes the following three families: Dipteridaceae, Gleicheniaceae, and Matoniaceae.

4: Pterosaurs are an extinct order of flying reptiles that appeared in the Upper Triassic 230 million years ago and disappeared at the end of the Late Cretaceous 66 million years ago during the Cretaceous-Tertiary extinction.

5: The capitulum is a type of inflorescence. These are flowers without peduncles grouped on a receptacle, surrounded by bracts. This inflorescence characterises the family Asteraceae (Compositae). The daisy is a typical example of a plant with a capitulum.

Note by Corinne Mallet : The plants mentioned in the last paragraph are all very different from those of the genus *Hydrangea*, and some live in the same areas of distribution as this genus: however, they have never hybridised with hydrangeas, which demonstrates that they really do belong to different genera.

F i v e p a r k s i n f i v e d a y s

Robert Mallet

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Two successive trips, one to Atlanta in the United States and the other to England around London, visiting five quite different parks in the space of five days, apart from the wonder they brought us, allowed us to distinguish different ways to organise plant collections in which hydrangea collections can find a place.

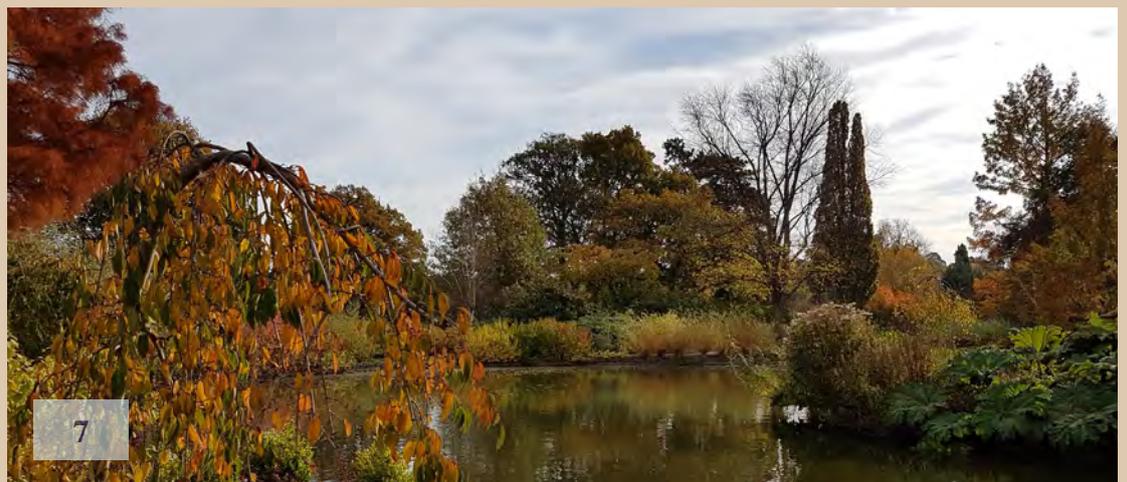
1. A natural park (35 ha): belonging to the Atlanta History Center. Guided by the enthusiastic Sarah Roberts we discovered a wetland (bog garden) containing representative flora from the state of Georgia (*Taxodium*, *Osmonda regalis*). In a higher, dryer area, *Magnolia macrophylla*, like those I contemplated in my childhood in the park of Montméry planted in the nineteenth century by Théodore Haviland in Ambazac, near Limoges. At the entrance there is a brand-new history centre, hosting exhibitions.
2. A naturalised or scenic park (8 ha): Smith-Gilbert in Kennesaw, directed by Ann Parsons. The beauty and diversity of this magical and picturesque place impressed me greatly. The garden manager, Lisa Bartlett, has been deeply involved in a “revival” of this park. Its botanical wealth has doubled over time with the naturalisation of certain species. Among other very attractive characteristics that make the visit worthwhile: rugged terrain, rockery and waterfall, a magnificent collection of very old bonsai, as well as the koi carp pond.
3. A modern botanical park: the Atlanta Botanical Garden’s Gainesville location. This new park is the second botanical garden in the region. Paths wind over the rugged terrain of this very large site and are accessible to people with reduced mobility. The plantations are discovered at each bend of the road in irregular groups, planted with art (a mixture of hydrangeas with variegated polygonatum, for example). Its dynamic designer Ethan Guthrie planned this seemingly sudden creation by storing the planned plants in advance. A large wooded area, still inaccessible to the general public, is home to a large collection of hydrangeas. A greenhouse for propagating rare plants collected during expeditions is there to prepare the future.
4. A landscaped English park: Wisley Park (UK). Jean-Pierre Péan and I were able to discover some parts of this park that are extremely rich in botanical plantations, most often with flowering plants, planted in the shade of majestic trees (splendid *Metasequoia glyptostroboides*). The hydrangeas, which used to suffer from late frosts in the lower part of the park, have now been installed in the upper part, and today present a beautiful and well labelled collection where the spotlight is on *H. paniculata*.
5. A park belonging to an enlightened enthusiast or explorer: Maurice Foster’s “White House Farm” (UK). Like Ozzie Johnson’s garden near Atlanta (Marietta), this garden near Sevenoaks is full of rare plants, all of them individually beautiful, and forming part of a general plan of great beauty. It is, among other things, one of the first and oldest hydrangea collections in England. We should note the importance of following up each botanical “find” in its development, ensuring that it grows and flowers correctly, especially, with *Hydrangea*, that of the immense species of the *Asperae* sub-section. It was Maurice who bred by successive crossings the famous *Hydrangea* ‘Hot Chocolate’, which is quite hardy in our gardens. For this you need a botanist’s eye as well as that of an artist and gardener. This park also includes (like Wisley) a part designed as a very well-maintained arboretum of incredible wealth.

Five parks in five days

illustrations

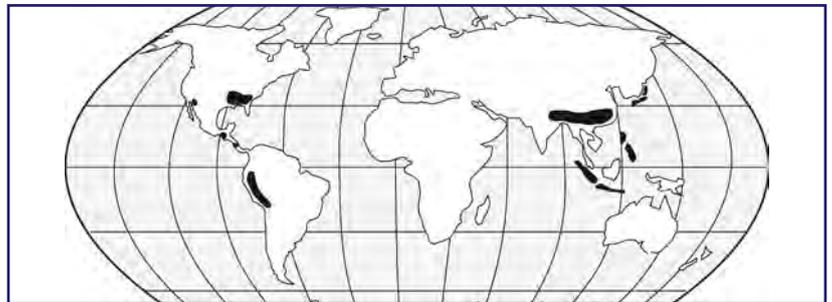
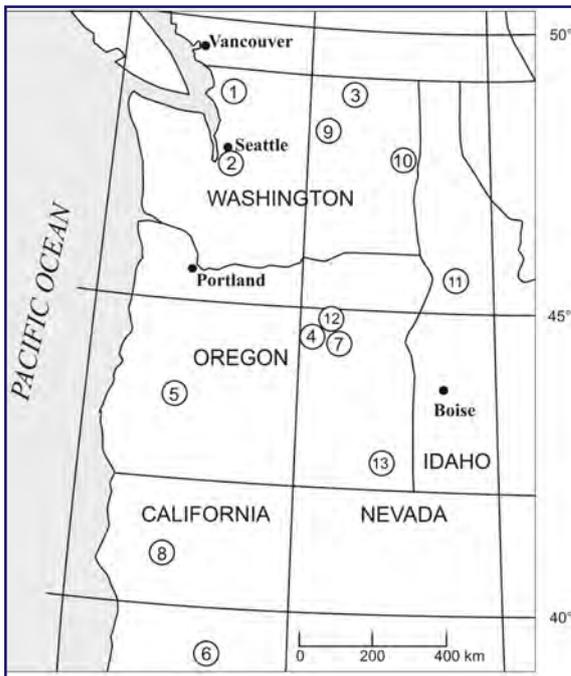
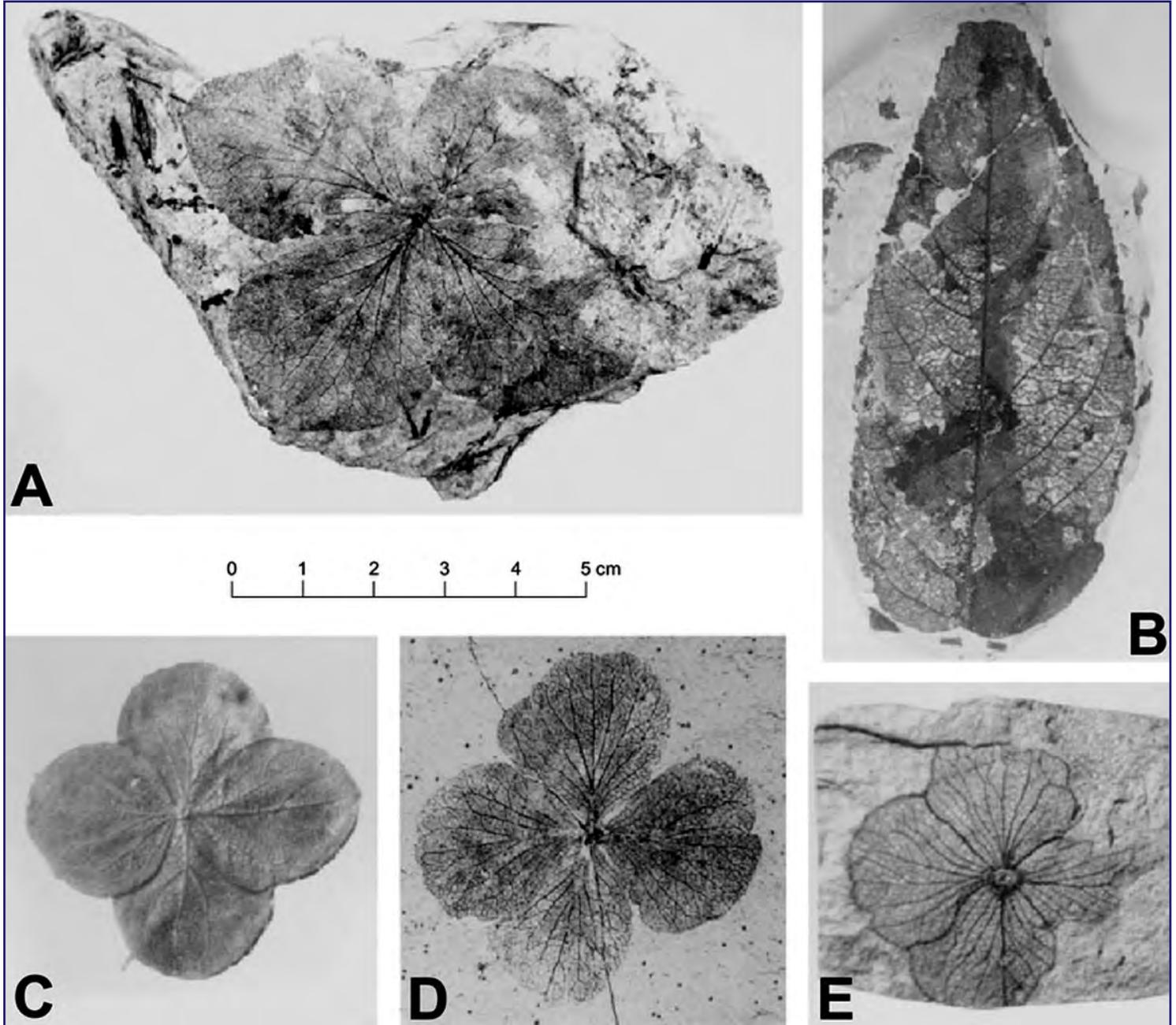


Illustrations; 1: Atlanta Historic Garden (U.S.A.), 2: Atlanta Botanical Garden (ABG) (U.S.A.), 3 & 4: Smith-Gilbert Garden (U.S.A.), 5: Maurice Foster in his "White House Farm" garden (U.K.), 6: Lisa Bartlett with *H. quercifolia* inflorescences, 7: Wisley (U.K.)



Fossils of the *Hydrangea* genus illustrations

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Illustrations on page 10, from left to right and from top to bottom: Photographs of hydrangea fossils (enlarged); Figure 1. A, *Hydrangea* sterile flower, Chuckanut Formation, Late Paleocene (?) Bellingham Bay Member, WWU-02-2-7, collected by Harold Crook on the WWU CD-5 site, Chuckanut Drive, Skagit County; B, *Hydrangea* leaf, Chuckanut Formation, Late Eocene (?) Padden Member, not enumerated, collected by Elaine Mustoe, WWU-BK1 site, Bellingham; C, Sterile flower of the present-day *Hydrangea strigosa* REHDER, location and specimen n° not recorded (Brown, 1937); D, *Hydrangea* sp., Clarno Formation, Eocene, UF9962 (University of Florida), Gonser Road Clarno locality 238, Central Oregon (Manchester, 1994); E, *Hydrangea bendirei* (Ward) Knowlton, Latah Formation, Miocene, U.S. National Museum, specimen 36979, in the lower town of Spokane (Knowlton, 1926). 2: Map showing collection locations of hydrangea fossils on the west coast of the U.S.A. 3: Planisphere showing (in black) the present-day distribution of the genus *Hydrangea*.

Introduction

Flowers are among the rarest of fossils, and the diversity of floral remains in Washington deposits partly explains our state's reputation as a paleobotanical treasure house (Wehr, 1995; Wehr and Manchester, 1996; Pigg and Wehr, 2002). This floral record is expanded by the discovery of *Hydrangea* fossils in the early Tertiary Chuckanut Formation near Bellingham. The first Chuckanut Formation *Hydrangea* specimen was an incomplete sterile flower found near Chuckanut Drive in Skagit County in 1987 by Burke Museum affiliate paleobotanist Don Hopkins. In 2000, Harold Crook collected a better specimen at this site (Fig. 1A) from strata near the base of the 6,000 m thick Chuckanut Formation. These beds are probably late Paleocene, as indicated by fossil pollen (Griggs, 1970; Reiswig, 1982) and fission track ages of detrital zircons (Johnson, 1984). A well-preserved *Hydrangea* leaf fossil (Fig. 1B) was found in 1996 in a utilities excavation near Bellingham in rocks of the Padden Member, the youngest stratigraphic unit in the Chuckanut Formation. This leaf fossil is probably late Eocene, but the age of the Padden Member has not been clearly established (Mustoe and Gannaway, 1997). (...)

Geologic range

Hydrangea fossils have previously been reported from paleofloras that range in age from Paleocene to Miocene (Fig. 3). Hollick (1925, 1936) described *Hydrangea* specimens from Paleocene and Eocene rocks of Alaska. Eocene *Hydrangea* leaves are preserved in the Goshen paleoflora of west central Oregon (Chaney and Sanborn, 1933) and the Chalk Bluffs and Weaverville paleofloras in northern California (MacGinitie, 1937, 1941). Wehr (1995) noted the presence of undescribed *Hydrangea* specimens from two localities in the Eocene Puget Group of western Washington. Flower imprints have been collected from the Eocene Clarno Formation (Fig. 1D) and Oligocene John Day Formation of Oregon (Manchester, 1994; Meyer and Manchester, 1997) and from Oligocene fossil beds at Florissant, Colorado (LaMotte, 1952). Miocene occurrences of fossilized *Hydrangea* flowers and foliage in Washington include the Latah Formation near Spokane (Fig. 1E; Knowlton, 1926) and at Grand Coulee (Berry, 1931). Other Miocene examples come from Whitebird, Idaho (Berry, 1934), and the Mascall and Trou Creek paleofloras of Oregon (Knowlton, 1902; MacGinitie, 1933; Arnold, 1937). *Hydrangea* fossils have also been reported from the Miocene Shantung flora of China (Hu and Chaney, 1940)

Discussion

Hydrangea fossils occur in both subtropical and temperate paleofloras, demonstrating climatic tolerances that are much greater than that of extant hydrangeas. The geographic distribution of extant *Hydrangea* species (Fig. 4) is strikingly different from the currently known ranges of fossil species. The presence of *Hydrangea* remains in both the oldest and youngest strata of the Chuckanut Formation provides evidence of the ability of the genus to adjust to climatic change during the early Tertiary.

Fossils of the *Hydrangea* genus

George E. Mustoe

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Mustoe and Gannaway (1997) used the Climate-Leaf Multivariate Program (CLAMP) method of Wolfe (1993) to study paleoclimate of the Chuckanut Formation. They calculated a mean annual temperature (MAT) of 15°C and a mean annual range of temperature (MART) of 10°C for the Bellingham Bay Member, which is at the base of the formation. These results are indicative of subtropical rain forest, as confirmed by the presence of abundant palm leaf fossils (Mustoe and Gannaway, 1995). The paleoclimate of the Padden Member, which is at the top of the formation, is quite different, with a MAT of 12°C and a MART of 18°C. The cooler climate and greater seasonal difference represent a warm temperate environment more like conditions where *Hydrangea* flourishes today. A similar trend is recorded in central Oregon, where *Hydrangea* fossils occur in both the Eocene subtropical Clarno paleoflora and in the warm temperate Bridge Creek paleoflora of the Oligocene John Day Formation. The same trend is true of other occurrences (Fig. 3), where *Hydrangea* fossils are present in Paleocene and Eocene subtropical paleofloras and in warm temperate paleofloras of later epochs. Our knowledge of the response of *Hydrangea* to paleoclimatic influences is limited by the fact that plant remains are likely to be preserved only under favorable geologic conditions, and few regions have paleofloras that span a broad age range. Perhaps *Hydrangea* had broad climatic tolerances during the early Tertiary, contemporaneously inhabiting both subtropical and temperate environments. This interpretation is supported by the observation that two types of *Hydrangea* leaves have been found at middle Eocene fossil beds at Republic, Washington, a warm temperate paleoflora (Wolfe and Wehr, 1991; Wehr and Hopkins, 1994). Alternately, the genus may have initially evolved in subtropical forests and migrated to temperate environments during the Eocene. The latter interpretation is consistent with the observation that *Hydrangea* fossils have not been found in the middle Eocene temperate floras at McAbee and Princeton, British Columbia. More study is required to answer this question. Meanwhile, *Hydrangea* fossils provide a reminder of the possible pitfalls of using floristic analysis to determine paleoclimate. Floristic analysis compares plant fossils to extant taxa that are inferred to be their nearest living relative. The climatic tolerances of the living plants are assumed to be similar to those of ancient ancestors. According to this hypothesis, *Hydrangea* fossils would be considered indicators of temperate climate. *Hydrangea* fossils are also a reminder of a second source of error: the search for a nearest living relative works only if the taxonomy of plant fossils can be correctly ascertained. *Hydrangea* leaves bear resemblances to those of other plant families, making identification problematic unless venation is preserved in detail. LaMotte (1952) lists instances where *Hydrangea* remains have been incorrectly assigned to the genera *Celastrus* (a tropical vine), *Fraxinus* (ash family), *Juglans* (walnut family), and *Rhus* (sumac family).

Fossils of the *Hydrangea* genus

George E. Mustoe

The flowers are more distinctive, but in the past *Hydrangea* fossils have been misidentified as *Marsilia*, *Porana*, and *Euonymus* (genera from three families of tropical vines). Both of these sources of error are avoided with vegetational analysis, which uses morphological features of dicotyledonous leaves as an indicator of climate. The CLAMP method (Wolfe, 1993, 1995) is the best-known example of this technique, but several alternative computational schemes have been proposed (Wing and Greenwood, 1993; Gregory and McIntosh, 1996; Herman and Spicer, 1997; Wilf, 1997). Each method has its supporters and detractors, and the reliability of each technique is a subject of debate. For example, calculations of the MAT for the Clarno paleoflora range from 14.3° to 18.8°C depending on the method that is used (Wiemann and others, 1998). Like the difficulty of forecasting next week’s weather, the determination of ancient climates is presently a less-than-certain endeavor.

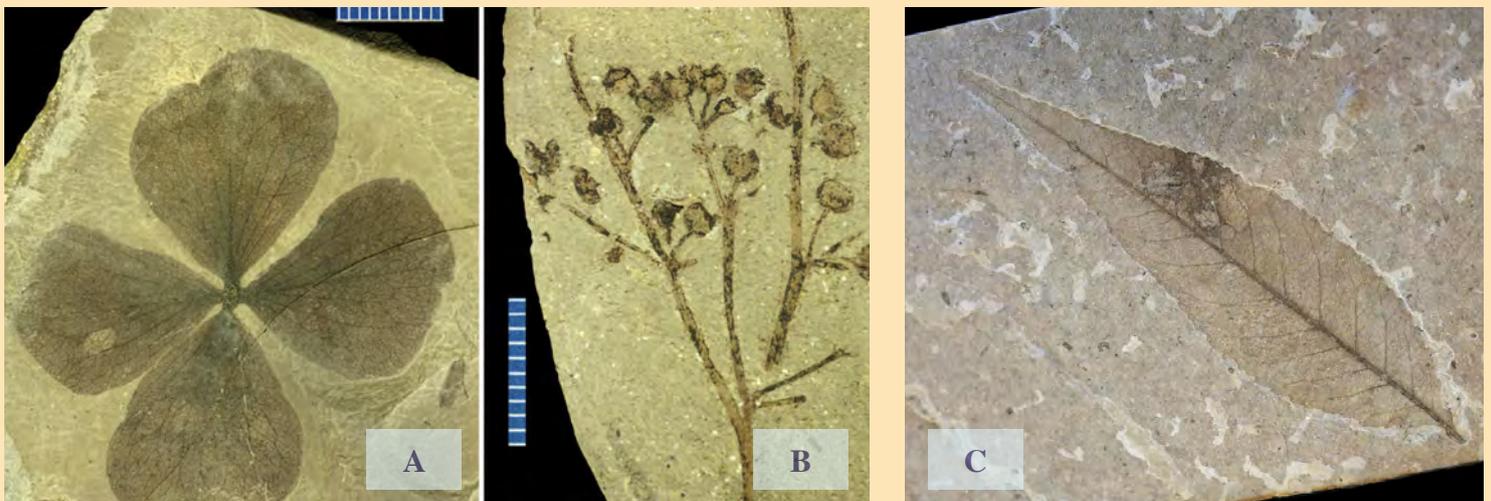
* This article was published under the title “*Hydrangea* fossils from the early Tertiary Chuckanut Formation”, by George E. Mustoe, in January 2002, and posted on the ResearchGate website in September 2014: <https://www.researchgate.net/publication/266138575>

The Cenozoic Era (Tertiary and Quaternary period)

The Cenozoic Era is the one in which we live. We are currently in the Quaternary period and in the Holocene epoch. The previous era was the Pleistocene, which began 1.6 million years ago, and which marks the end of the Tertiary. During the Tertiary period, the first epoch, the Paleocene, began 66.4 million years ago, the second, the Eocene, 57 million years ago, the third, the Oligocene, 36.8M years ago, the fourth, the Miocene, 23.7M years ago, and the last, the Pliocene, 5.3M years ago.

Eras	Periods	Epochs
Cenozoic	Quaternary	Holocene
		Pleistocene
	Tertiary	Pliocene
		Miocene
		Oligocene
		Eocene
		Paleocene

Other photos of *Hydrangea* fossils



From left to right: *Hydrangea knowltonii* flower and remains of fruits, from the Clarno Formation, Middle Eocene, at West Branch Creek, Oregon, U.S.A. – A. Sterile perianth(UF-230-19187). - B. panicle infructescence showing fruits with their styles (UF-230-18155). Scale bar 1 cm. C. *Hydrangea fraxinifolia* leaf found at Florissant Fossil Beds National Monument, Colorado, by Ron Wolf.

Hydrangeas in Brittany

Robert Mallet

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It seems the success of hydrangeas in Brittany is a result of both climatic and biotope conditions favourable to growing them, which would not have been the case in the acidic Hercynian regions of central France, which are much colder. The widespread schist soils in the area would have favoured the blueing of hydrangeas (a colour much appreciated in this very Catholic country, blue being the colour of the Virgin Mary). After that, chemical cultivation methods for forcing blue flowers took over, because of lower production costs.

Here is the list of new hybrids offered for sale in the 1930s, which seem to have been a period when there was a real boom in the sale of hydrangeas in Brittany; this on a rather local scale because plant buying expeditions to other regions would probably have been too expensive. (1):

'Merveille,' Henri Cayeux, 1932

'Président Doumer', Henri Cayeux, 1932

'Gartendirektor Kunert', Matthes, 1931

'Henrich Seidel,' Matthes, 1931

'Kluis Superba', Kluis, 1932

'Europa', H. Schadendorf, f 1931

'Altona,' H. Schadendorff, 1931

These varieties were the result of older cultivars:

'Otaksa', Philipp von Siebold, 1850

'Thomas Hogg', Thomas Hogg, 1880

'Maréchal Foch', E. Mouillère, 1919

'Goliath', Matthes, 1923

Other, white-coloured hybrids were offered, including the famous 'Madame Emile Mouillère', E. Mouillère, 1909, offered for religious festivals, and still others in red, such as 'Ami Pasquier', E. Mouillère, 1930.

It is thanks to all the old ladies who, instead of throwing away the potted plants they were given once they finished flowering, would prune them and plant them in their gardens or around churches the following season, that hydrangeas spread throughout Brittany.

(1) Notes de technique horticole : l'hortensia en Bretagne. Revue Horticole, 1936 – 1937 (pages 605-608)

Illustrations left-hand page, top to bottom: *H.* 'Merveille', *H.* 'Gartendirektor Kuhnert', *H.* 'Heinrich Seidel', *H.* 'Kluis Superba'. Right-hand page, top to bottom and left to right: *H.* 'Europa', *H.* 'Altona', *H.* 'Maréchal Foch', *H.* 'Goliath' and *H.* 'Président Doumer'.



The first propagators of hydrangeas *

Gwendal Diabat

15

The first nurseries to have propagated hydrangeas in France were those of Cels and Audebert. The first, Jacques Cels, was a renowned horticulturist from Montrouge in the late 18th century, who has a Paris street named after him. He would have been the first to import into France, from Kew Gardens, hydrangeas brought back from the East as live specimens by Joseph Banks. Cels cultivated them, it seems, without much success, and other sources cite a certain Mr. Williams in Sèvres as the first to have introduced hydrangeas to France. Audebert neveu, meanwhile, was a florist in Paris at the beginning of the 19th century who bought hydrangea plants, either from Cels or Williams, and by planting them in peaty soil and watering them abundantly, produced beautiful flowers and launched the fashion for hydrangeas in France.



References:

Revue Horticole, 1830 p. 271

M. Poiteau

“The hydrangea was known before Audebert, but we did not know how to grow it. It remained small and without merit; however, when, by reasoned cultivation, Audebert had increased its volume tenfold, considerably increased the number, extent, and the brilliancy of its flowers, the hydrangea seemed the most beautiful plant in the world; everybody wanted to own it, its popularity became prodigious, and if Audebert had known how to profit from the vogue, the hydrangea alone would have made him a brilliant fortune.”



Revue Horticole, 1872

Bossin (contributor to the Revue)

“The first gardener (nurseryman) florist who had an exclusive monopoly on the Hydrangea in Paris, when it was introduced to France, was, we believe, Audebert neveu (not to be confused with Audebert fils, of rue St Jacques) whose establishment, if we remember well, was located in the Boulevard d’Enfer (No. 12, rue and barrière d’Enfer). The ease with which he propagated the plant from cuttings allowed him to enrich the gardens of almost all the châteaux and town houses, and all that in spite of the unfortunate events which were



taking place at the time. The first hydrangea flower ball we saw in 1808 struck us with admiration, and we measured it with our hats, that none of them could cover ... Audebert rightly enjoyed a well-deserved reputation. All those who, like us, knew him, can confirm our opinion of this excellent man, one of the patriarchs of horticulture, and a contemporary of Cels, Fion, Noisette, Boursault, and other prominent horticulturalists who seem to have been forgotten.”



* The complete article can be consulted on the site: bretonsdujapon.com

A Selection of *Hydrangea arborescens*

Michael Dirr

16

Tremendous native flowering shrub ranging from New York to Florida. There have been major advances in breeding and selection in recent years. The species flowers on old and new wood. Best in some shade in south. Tolerates high pH soils better than other hydrangeas (...)

Most *H. arborescens* grow 3 to 5' high. Plants develop rhizome-like structures and spread to form colonies. Easy to propagate a plant or two by simple division. Cutting propagation is easy but I found that softwood cuttings under mist root the fastest. Cuttings are treated with 1500 to 3000 ppm K-IBA. They will be well rooted in 3 to 4 weeks.

The remarkable aspect to *H. arborescens* breeding is the short time to bring plants to flower. Seeds sown in January yielded flowering plants in June through August.

At Plant Introductions, Inc. (PII), we bred and raised thousands of *H. arborescens* seedlings, hoping to develop a pink to red mop head (success) and shorter-statured.

*'Balsam' 1 (originally named 'Highland Lace')' Discovered by Bonnie and Mike Dirr in the Balsam Mountains of North Carolina at ~4,000' elevation. White mop-head, strong stems. Cut back study shows it to be a good rebloomer. Extremely vigorous.

*Bella Anna® 2 ('PIIHA-1') (pp 21,227)-Deep pink-rose mop head form bred by PII, Watkinsville, Georgia. Represented 10 years of breeding. great flower colour but stems are weak and leaf spot is an issue. Observed excellent plants in Maine and Minnesota. Requires cooler climates.

*'Bounty' 3 -White mop-head, strong stems. First observed at Hillier nursery. By some considered the same as 'Annabelle' but I see differences. In 2010, PII used this in breeding and the resultant seedlings were spectacular. In 2017, two of the original selections are extant. Strong growing but 5' high and greater.

*'Eco Pink Puff' 4 -Wispy pink lace cap. Few sepals. Primarily pink fertile flowers. Thin stems. Used in breeding 'Bella Anna®' and others. From Don Jacobs, Decatur, Georgia.

*'Emerald Lace' 5 ('Green Dragon')- Small white lace cap. Lustrous dark green foliage with fine-textured incised margins. PII used it for breeding and recovered cut-leaf seedlings with none better than the parent. I still envision possibilities to incorporate the unique foliage with improved flowers.

*'Haas' Halo' 6 (pp 24, 783) - Pretty white lace cap, with strong constitution. Will reach 5 to 6'. Beautiful planting on the Swarthmore college campus, Pennsylvania. In commerce from Plants Nouveau.

*'Hayes Starburst' 7 -True white double. Close to mop head but a full lace cap. Inflorescences so heavy they weigh down the stems. Have attempted to breed with this but unable to find viable pollen or pistils.

*'Mary Nell' 8 -Large white lace cap. Impressive flower on strong stems. Named after Mary Nell McDaniel, wife of the great University of Illinois horticulturist, Professor J. C. McDaniel, who was one of my many mentors.

*subspecies *radiata* 'Samantha' 9 -White mop head. Beautiful but difficult to grow. Tried by many southeastern nursery producers and most have given up.

A Selection of *Hydrangea arborescens*

Michael Dirr

*'Seaside Serenade®' 10 Bar Harbor ('SWHAMWM')-New white mop head with stronger stems. Only observed once in a container and it was flopping. Too soon to judge until in ground.

*'Wesser Falls' 11 -pink lace cap composed primarily of fertile flowers. Used in breeding pink 'Annabelles'. Discovered by Dr. Richard Olsen, one-time Georgia and North Carolina state student. Currently Director, U.S. National Arboretum.

*'White Dome'® 12 ('Dardom') (pp 14,168)- White lace-cap. Flowers with few sepals but stems are strong. Appears closer to subspecies *discolor* than pure *H. arborescens*. Large medium green leaves with grey undersides.



Planting hydrangeas in summer

André Dieval

18

Planting in late autumn and winter seems to me rather dangerous for plants because they stay “in their own juice” and become vulnerable to bad weather (frost, heavy rains, snow, wind). Late spring and summer seem to me more suitable for planting shrubs. Why? Because the earth, once it has warmed up, helps plants to become established so that they can grow rapidly. Their roots will grow easily and help them face the bad weather conditions of the coming winter. Of course, it is essential to monitor them during the first weeks after planting; moderate watering may be necessary. So instead of going off to foreign climes, why not spend the holidays in the garden? In case of a heat wave, improvised shade may be required for a few days. An old parasol or umbrella will do the trick; the plants will be grateful, I’m sure. A good mulching around the foot of the plant is highly recommended to save watering.

Moreover, I noticed during the heat wave of 2007 that black pots store heat more than others. Abnormal burning of the roots becomes obvious. The photographs show that on the sunny side the roots have disappeared, whereas they are still present on the shaded side.



Editors' note: At a lecture given last autumn, Didier Willery made similar recommendations, corresponding to his practices at the Vastériveral Garden. We should remember, however, that in this garden thick mulching ensures a loose soil which makes planting easy, even in times of drought. Didier also told us that he did not hesitate to cut off roots overflowing from the container; growth resumes from the cut ends of the old roots.

What to do in case of late frost

Jean-Paul Davasse

19

Here are some tips, first of all from Jean-Paul Davasse of the BOOS HORTENSIA nursery in Ste Gemmes-sur-Loire. <http://www.hortensia-hydrangea.fr/blog/26-vos-hortensias-ont-gele-que-faire>

Posted on 21/04/2017

These last 2 mornings, it has frozen in many parts of France. The weather is not very nice this year. After an early spring that has activated plant growth, morning frosts have arrived ... Many of you have been asking us for advice and expressing your concern about young shoots getting frozen on your hydrangeas.

Hydrangeas are resistant, or even very resistant, to winter frost (-12°C , and for some sometimes down to -30°C). When they are in hibernation, they are dormant and are not in much danger. But in spring, when the tender young shoots have started, they are, obviously, sensitive to frost.

“My hydrangea has frozen, what can I do?” First of all, rest assured, it is not your whole plant that has frozen, just the young shoots that had emerged.

1) The first thing to do, if you have the possibility, is to spray with Bordeaux mixture. It is a good healing agent. This helps to dry the blackened leaves and stems and to prevent the spread of bacteria (especially *Pseudomonas* that aggravate frost damage) and prevent the development of fungi. This should be done as soon as possible.

2) Then you have to have a little patience; wait and do not prune too soon. Indeed, it is better to see how the plant reacts, how it starts to produce new buds, and cut off only the necrotic parts.

ADVICE FROM SHAMROCK

The situation in the spring of 2017 was aggravated by the drought that had prevailed for weeks, at least in Normandy. It is known that after a cold winter, watering is recommended to give plants sufficient water supply to ensure a good start. We think that it is advisable to water the plants that have been affected by the frost, to allow them to make new shoots. It is also possible to add a little liquid fertilizer to the irrigation water, all this, obviously, without excess.



The upper photos show frost damage in André Dieval's garden, and the lower ones show the same plants in the summer of the same year. From left to right: *H. aspera* 'Macrophylla', *H. serrata* 'Tiara' et *H. Sargentiana*.

Shamrock Awards (Distinctions Shamrock) 2018

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H. 'Glory'

This exceptional plant has been rediscovered in a seaside resort on the Alabaster Coast near the 'Shamrock' collection. Already noticed by Jean Renault and labelled as an "Old Variety", we have been able to identify this cultivar as a plant bred by Draps-Dom in 1948 thanks to Corinne's book - 'Portraits of Hydrangeas' p.132. It behaved superbly during the drought of summer 2017, without being watered and at the foot of lime trees only 1 metre away on each side. Early, very free-flowering and a long flowering period (photo taken in late season). Not to be confused with other cultivars with similar names, such as H. 'Garden House Glory'.



H. serrata 'Murasaki Kobai'

This *H. serrata* was introduced to the collection in 2008 from the *Tous au Jardin* nursery, when it was run by Emmanuel de La Fonchais. «Murasaki» means «purple» in Japanese. There are several plants bearing this qualifier in their names, but this one is notable for its vigour and autumnal colours. Sometimes with repeat flowering, and more tolerant of direct sun than many others. The plant is also grown at Wespelaar Arboretum.

H. macrophylla IZU n° 19 'Blanc de Blanc' (provisional

name) (not illustrated) This *H. macrophylla* brought back by Corinne in 1993 from cuttings taken from the Izu peninsula (East Coast of Japan) had been smothered by other plants of the same origin. Following a severe thinning out of the flower bed, this vigorous plant appeared quite distinct from the other surrounding plants and has completely white flowers (fertile as well as sterile). It is, moreover, scented. We think that it richly deserves to be propagated.

W o r k i n t h e G a r d e n i n 2 0 1 7

The Henri Guyomard / Dominique Hébert duo, who had managed the tour de force of creating the car park in 2016, intervened again in 2017. Firstly, to dismantle the installations made by the Taiwanese team; no easy thing. Secondly, to carry out an operation which had long needed to be done: to separate with deep trenches some beds which had been invaded by the roots of neighbouring trees (sycamore, elm and hawthorn). It was also a question of digging out the stumps of birches that had been blown over in storms or simply cut down because too invasive. These stumps tend to encourage the spread of honey fungus, which is very unsightly and dangerous for neighbouring plantations.

Finally, a new bed was created at the bottom of the 'Green Dragon' wood to accommodate the many new *H. serrata* waiting in pots in various members' gardens. In addition, important logging work was carried out by André Diéval, Madeleine Alves and Daniel Kuszac: a question of removing moribund paulownias that had been planted too close together in 2001. With the birches removed (see above), the team returned to split the many accumulated logs. Much planting was done following the weeding and clearing operations carried out previously by the Tuesday team: Christiane Le Scanff, Anne Nicole, Claire Perrin, J.-Marie Rouet and J.-Pierre Péan.

Observe the following characters first:

Height, shape and habit (creeping, compact, erect, climbing)

Flowering date (early, mid-season, late or in particular months, repeat flowering, permanent)

Forms of inflorescences (globular or flat, paniculate)

Colour of fertile flowers, of styles, of sepals

Sepal shapes (serrated or entire, pointed or round, single or double, gutter-shaped)

Overlapping or separated sepals.

Proportion of fertile and sterile flowers in the inflorescence

Leaf shape, colour, edges, base, apex, matt or gloss, crinkled or not.

Other characteristics are helpful to ensure even surer identification:

Thick or thin stems

Lenticels (long-shaped pores) on the stems - abundance and colour of these

Colour of young buds in axils and colour of nodes

Colour and arrangement of peduncles (turning the inflorescence over)

Presence, nature and location of plant hairs

Scent

In addition, the way the plant behaves during the flowering season is also a good indicator:

Resistance or not to frost, resistance or not to drought (*H. quercifolia* for example)

Preference for sun or shade (*H. serrata* prefers partial shade)

Autumn colours (leaves and flowers) (plants bred by Steiniger are spectacular)

Plant multiplying naturally or not (by seeds, suckers, layering)

Persistence of foliage (deciduous, semi-evergreen, evergreen)

THE BOTANICAL SCANS OF WESPELAAR

The famous botanical park of Wespelaar gives us on its website: <http://www.arboretumwespelaar.be> access to scanned illustrations of fresh specimens of many different botanical species of different genera in their collections. In the left-hand column of the site, click on "Identification Keys and Illustrations", then on "3. Database of illustrations". Then fill in the search boxes at the top of the document.

Thank you, Wespelaar!

HORTUS N°123 Autumn 2017 Editor's desk, David Wheeler

“Pleine Vie” magazine, July 2017, article on plant collections in Seine Maritime.
Special Issue “ L’Ami des Jardins” n ° 199, files on *H. quercifolia*. Noémie Vialard interviews R. Mallet

Frankfurter Allgemeine Sonntagszeitung 16/7/17

Local newspapers: “Paris-Normandie” (May 2017), “Informations Dieppoises”

Local radio: France Bleue: Isabelle Lebrun

Announcements

Gérard Le Saux announces the opening of his garden of hydrangeas (currently nearly 300 taxa) “Le Jardin des Sittelles”, Talascorn, 29300 ARZANO, member of the APJB (Association of Parks and Gardens of Brittany) and the ‘ABS (Association Breizh Camélias) Tel: 06 80 88 68 67

Publications

* “Flora Japonica” by Martyn Rix and Masumi Yamanaka (Ulmer 2017) Series of botanical plates including one of a flat headed *Hydrangea macrophylla* (Gaku aji-sai). There is some very interesting information that we probably owe to Martyn Rix, on page 10:

“... John Gould Veitch (1839-1870) visited Japan in 1860 ... His nephew James Herbert Veitch (1868-1907) ... visited Japan in 1892 where he joined Charles Sprague Sargent (1841-1927) of the Arnold Arboretum. ...) Ernest Henry Wilson visited (him in) Japan in 1914 ...”

* “Hillier’s Manual of Trees and Shrubs” RHS, 2017

* “Toutes les Plantes pour toutes les envies & toutes les situations” (“All plants for all desires & all situations”), Didier Willery (Ulmer, 2017) Some examples of hydrangeas selected for a particular characteristic.

Hydrangea serrata ssp. *yezoensis* ‘Varengeville’

This subspecies of *H. serrata* was collected on Hokkaido in northern Japan by an American who distributed the seeds to several European friends. Among the plants grown from these seeds, some of which were collected in the ‘Shamrock’



collection, there was just one which surpassed the others for its flowers and foliage. This selection deserved an honourable name, and at the request of the Mayor of Varengeville, Patrick Boulier, the name of our village was chosen. It is a beautiful early flowering plant (June), porcelain blue colour in acidic soil, (common in Varengeville), pink in alkaline soil, with crinkled foliage, serrated and hairy, very characteristic. It spreads by producing suckers and can be propagated by dividing the root ball. Its hardiness (resistance to cold) is remarkable, which means that it is suitable for making the name of Varengeville well known all over Europe.

The life of the Association *'Shamrock' plant festival 2017*

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J.-Pierre Pean and Jean Renault



J.-Marie Rouet, Robert Mallet,
Madeleine Alvès and Daniel Kuszac



Gilbert Baudoin and Daniel Kuszac



Jean-Marie Rouet



Jean Renault



Guy Lahogue



Pierre Courquin and Madeleine Alvès



Bernard Tordeurs and Martine Merlin



Martine Merlin, Bruno Blankaert, Galia
Guillaume, Gilbert Baudoin and Daniel Kuszac



Martine Merlin, Bruno Blankaert, Co-
rinne Mallet and Bérengère de Bodinat



Fabrice Gautier



Bruno Blankaert, Bérengère de Bodinat
and Robert Mallet

P l a n t f e s t i v a l 2 0 1 7

The recipe for a successful Plant Festival is first and foremost a lot of interesting plants, rarely present in nurseries, or innovations provided by professionals to help the 'Shamrock' collection in its role of experimentation, observation and research in general. What assures the success of such a festival, from year to year, is the presence of members of the Association, themselves collectors, explorers, plant propagators and gardeners, who are able to give advice and share their experiences, guiding visitors in their choice of what to buy. The presence of renowned nursery professionals, such as Fabrice Gautier of the "Sous un Arbre Perché" nursery, André Diéval of "Hortensiarlois", and Jean Renault, founder of Renault Nurseries, adds to the interest and fame of the event.

A n n o u n c e m e n t s a n d n o t a b l e v i s i t s



Shamrock Festival 2018

Plant Festival on 21 and 22 April 2018
33 route de l'Église Varengueville sur mer
10am to 6pm

This year Shamrock's Plant Festival will benefit from many new and old plants, often not found in nurseries.

This year it gives us great pleasure to welcome the 'Pépinière des Avettes' nursery, with its collections of unusual plants and melliferous plants, so important for the preservation of our local bee population.

This 2018 edition will be the opportunity to hold the naming ceremony for an amazing hydrangea, native to northern Japan and early flowering, most often a porcelain blue colour, which will bear the name of our village "Varengueville" (see poster opposite).

As usual a lot of installation work will be necessary from the previous Friday and anybody willing to lend a hand will be most welcome.

Notable Visits in 2017

Etienne Bertrand	Ecole Nationale Supérieure de Paysage
Jean-Pierre Chomienne	(French government agricultural inspection)
Simon Demarey	Institut de Genech (nature, environment and living things)
Natalia Hamill	Bailey nurseries (Georgia)
Thierry Hay	Clères zoological park (Seine Maritime)
Michel Lumen	Podestat Arboretum (Bergerac)
Bente Siiger Lustü	President, Royal Danish Horticultural Society Haveseksjabet
Myriam & Vincet Grellier	La Preille botanical nurseries
Béatrice Chassé & Gérard Lionet	Pouyouleix Arboretum (Dordogne)
Elizabeth Murray	(USA)
W.J. van Ooi	Dogwood Nursery (2811 NZ Reeuwijk)
Philippe de Spoelberch, Diana van Strydonck	Pdt IDS International Dendrological Society With a group of IDS members
Ignacio & Benedite Valdes	Sculptor
Eric Wuillai	Jardin d'Eden on Réunion Island

'Shamrock' annual newsletter subscription

In order to have access and be able to download Shamrock's annual newsletter (24 colour pages, in English), you can use the PAYPAL link below to send our Society 15 euros, or use our website on the english page. You will promptly receive the password necessary to open the latest edition (which usually appears in April). The previous numbers can be downloaded free of charge. You can also support our Society by becoming a member.

<https://www.paypal.me/AssShamrock>

To contact the Association

Association des Amis de la Collection d'hydrangéas Shamrock

(or 'Association Shamrock')

route de l'Église, 76119, Varengueville sur Mer - France

tel : (00 33) 2-35-85-14-64, email : shamrock76@wanadoo.fr

website : www.hortensias-hydrangea.com

P i c t u r e c r e d i t s

Page 1- drawing: B. Woy, photo: Piranha / p. 4: Corinne Mallet (illustrations upper left & centre left), uncredited photos / p. 6: photographers credited / p. 9: A.H.G website (1), A.B.G website (2), Smith-Gilbert website (3 & 4), J.-P. Péan (5), Ozzie Johnson (6), J.-P. Péan (7) / p. 10: photos & illustrations George E. Mustoe / p.13: Corinne Mallet (table), photos from "Phylogeny and Evolution of the Angiosperms" by Douglas Soltis et al. / pp. 14 & 15: R. Mallet / p. 17: Robert Mallet (1, 3, 4, 7, 9), Michael Dirr (2, 5, 6, 8, 10, 11, 12) / pp. 18 & 19 : André Dieval / pp. 20 & 22: R. Mallet / p. 23 : André Dieval / p. 24 : Corinne Mallet (poster)