Plant: Art of the Botanical World celebrates the extraordinary beauty of plants and their fascinating role in our history and culture. Following in the footsteps of the international bestseller Map: Exploring the World, this visually stunning survey brings together a curated selection of over 300 botanical images reflecting the creative efforts of celebrated scientists, artists, and photographers. The diverse examples featured include rare manuscripts, watercolour paintings, Renaissance herbals, nursery catalogues, field sketches, photographs and cutting-edge microscopic and x-ray scans.

Selected by an international panel of horticulturists, botanists, art historians and curators, this book highlights some of the great names in botany and botanical illustration, including Franz Bauer, Maria Sibylla Merian, Pierre-Joseph Redouté, Ernst Haeckel, Leonardo da Vinci and Charles Darwin, alongside renowned photographers and artists such as Karl Blossfeldt, Nick Knight and Georgia O'Keeffe. Rather than following a thematic or chronological arrangement, thoughtfully-curated pairings reveal the huge variety and sometimes unexpected similarities of botanical images through time and around the world.

Comprehensive in scope, Plant: Art of the Botanical World also features useful reference information to guide the reader through the remarkable history of botany, including biographies of key botanists and artists and an illustrated timeline detailing significant discoveries, innovations and related historical events. Each image is accompanied by a concise, explanatory text written by leading international specialists to help the reader understand the historical importance of the work and its significance.
When Marie Joseph Rose de Tascher de la Pagerie, widowed Viscountess Beauharnais, generally known as Joséphine, got remarried, her husband Napoleon Bonaparte, a general six years her junior, was still on the way to the stars. On 2 December 1804 he crowned her Empress of the French in Paris. Four months later she made Pierre-Joseph Redouté ‘plant painter of her Majesty’ with a salary of 18,000 francs p.a., then a gigantic sum. At that moment the publication of the ‘Jardin de la Malmaison’, a work on Joséphine’s garden in Malmaison near Paris, was approaching its completion. It was lavishly illustrated with colour printed stipple engravings based on watercolours by Redouté and descriptions by Pierre-Étienne Ventenat. However, ‘Les roses’ became Redouté’s most popular work, again illustrated with colour printed stipple engravings based on his watercolours with descriptions by Claude Antoine Thory added. In this case the association with Joséphine was only indirect: she had died on 29 May 1814 in Malmaison and the roses documented by Redouté came from various rose species.

The plant world has long provided a rich source of inspiration for architects but the Japanese architect turned artist Macoto Muryama takes his fascination into a luminous digital world. Using 3D software he hand-drawn anatomical studies of dissected plant structures and flower organs are rendered with an almost engineered mathematical exactness, like blueprints for an unseen creator in an alien world. Extending the conventions of architectural draughting, multiple viewpoints of elevation and plan are fused within the single image, often including dimensional information and labelling. The diaphanous linear mesh describes unfolding clusters of petals wrapped around the stamens and anthers, empowering the viewer with x-ray vision. The ability to ascribe colour to individual parts and lines allows Muryama to present us with a fusion of technological analysis and romantic artistry. In Rose iii, the flower takes on an almost balletic swirl in which the tulle-like petals delicately enmesh the fragile flower organs within. Being created as a three-dimensional file, the artist is able to rotate and present.
The careful symmetry and balanced tonal palette of this 1898 arrangement of liverworts immediately signals that German zoologist Ernst Haeckel was interested in decorative as well as botanical concerns. Taken from his book *Art Forms in Nature*, the plate is intended to demonstrate the value of natural forms for ornamental design. Most of the plates in fact portrayed the marine invertebrates that were Haeckel’s main area of interest. He was a zoologist who dedicated much of his career to gathering evidence to support Charles Darwin’s theory of evolution by studying organisms within their environment—a study still known by the name he invented for it, ecology. Although Haeckel was criticized for exaggerating illustrations to support his own arguments, he was a talented botanical illustrator. Despite the decorative arrangement, this plate still conveys important information about liverworts, simple plants that can be distinguished from mosses because the leaves lack midribs and are not arranged spirally. Haeckel’s plate shows both major types of liverwort: leafy and thalloid.
Communication between botanists takes many forms. Not only letters, books, journals and reprints are exchanged but also plant specimens — either living material like cuttings, bulbs, fruits and seeds or permanently preserved material, like herbarium specimens. In addition, plant illustrations, like drawings, watercolours or prints are sent to colleagues for information or inquiry. A good example for the latter approach is a letter sent on 5 October 1792 by Nikolaus Joseph Edler von Jacquin, professor of botany and director of the botanic garden of Vienna University to Jonas Dryander, librarian to Sir Joseph Banks in London. This sheet of paper carries illustrations in watercolour documenting ten different plant species, among them three species of the blood flower, i.e., Haemanthus amaryllis, H. coccineus and H. pubescens. Although it has been stated in writing that these are by Jacquin, this is unlikely. Close analysis reveals that the three images are repeats of the exemplars now lost, which were used when preparing the copper engravings of Jacquin’s famous great flower book Descriptions.

Various flowering plants, c. 1790
Pen and ink and watercolour on paper, 24 x 9.05 cm / 9.45 x 3.54 in
The Natural History Museum, London

The South African botanical artist Vicki Thomas portrayed the rare paintbrush lily Haemanthus nortieri as a watercolour for the serial journal Flowering Plants of Africa. First described in 1937, Thomas has shown how the plant produces a single red flowering stem from a subterranean bulb and the ‘paintbrush’ of white flowers that emanate from it. She also included the independently emerging single, sticky, paddle-shaped leaf. This is shown appearing from the ground through sandy soil with grit attached to it, probably to ward off marauding foragers. She notes underneath that the plant was collected in the Nardouwberg in the western Cape of South Africa, that it was grown at Kirstenbosch National Botanical Garden and that the bulb had only flowered twice in over 20 years. The 22 species of blood or paintbrush lilies are found in South Africa. The first to be described, H. coccineus by Linnaeus in 1753 had blood red flowers hence the name Blood Lily. Most flower every year and produce attractive red, white or pink flowers followed by equally attractive berry-like fruits which can be red, pink, orange or white.

Haemanthus nortieri 2005
Watercolour on paper, 30.5 x 53.5 cm / 12 x 21 in
Shirley Sherwood Collection, Kew

Haemanthus coccineus 1753
Pen and ink and watercolour on paper, 24 x 9.05 cm / 9.45 x 3.54 in
The Natural History Museum, London
Modern technology has helped advance plant biology and has also given rise to stunning results that appear almost as abstract art forms. Here, photomicrography – images taken through a Light Microscope – displays the structure of a single stem of this small plant Creeping Fingerwort, which would otherwise be invisible to the naked human eye. Lepidozia reptans has a creeping growth type, making dense mats that spread over soil or a supporting substrate. It is often confused with and mistakenly referred to as a moss. Without magnification, plants resemble splashes of green-fuzzy-tossed-dead-He. It is commonly found growing in the acidic conditions found on peaty banks, soft rock faces, rotting logs, the bark of living Oak trees (Quercus sp.), Birch trees (Betula sp.) and conifers. In this image, using UV light excites fluorescent molecules in the sample under the lens. This combined with magnification results in Turżanska’s striking abstract image. An increase in the knowledge of plant biology furthers our understanding of the role each individual specimen plays in native ecologies.
The unknown artist who painted this delicate convolvulus—traditionally known as bindweed, hellweed or devil’s guts—in the Italian city-state of Padua in the early fifteenth century created a revolution in the illustration of herbals. Earlier herbals tended to show diagrammatic identification guides, boxed in by the accompanying words. The illustrator, however, used the whole page to display individual plants to maximum advantage, as with these downward-pointing flowers, shadowed to stand out against the vellum, and the stem twining upwards to exert its strangling hold on surrounding plants. His vines and vegetables sprout vigorously, while herbs have a fragile intensity. The Carrara Herbal was created under the patronage of Francesco Carrara, at a time when Padua was famous for its university and medical faculty. The herbal can be dated precisely, because when Carrara was deposed by the Venetians in 1403, work was abandoned with only fifty illustrations completed. Although convolvulus was dubbed a weed, its beauty meant that it was allowed to grow on garden arbours.

Convolvulus, from the Carrara Herbal, c. 1400
Watercolour on vellum, 20.4 cm × 30.7 cm / 8 × 12 in
British Library, London

The huge white flower fills nearly the whole canvas in this painting of jimson weed, Datura stramonium, one of the favourite flowers of the renowned American artist Georgia O’Keeffe. This painting—she most expensive work ever made by a female artist when it sold in 2014 for over $44 million—was one of a number she made of the same subject. As with her other flower paintings, O’Keeffe combines abstract forms with a precise observation of detail and the use of bold colours and shapes (she always denied Freudian interpretations that found coded representation of genitalia in her images of flowers). The many names of this member of the nightshade family— including Devil’s Snare, Devil’s Trumpet, Zombie Cucumber— point to its traditional use as a powerful narcotic. The name ‘Jimson’ derives from an incident at Jamestown, Virginia, in 1676, when British troops ate the leaves in salads. According to contemporary accounts, they became distracted, giggling and pawing one another, and had to be locked up to prevent them harming themselves.

Jimson Weed/White Flower No. 1, 1932
Oil on canvas, 122 × 102 cm / 48 × 40 in
The Georgia O’Keeffe Museum, Santa Fe
This illustration of opium poppies is heavily stylised. The blue colour is exaggerated: opium poppy flowers are white, pink, or mauve; but the leaves are recognisable poppy leaves. The illustration comes from the most famous Japanese encyclopedia of plants, the Honzo zufu, compiled by Iwasaki Tsunemasa (also called Iwasaki Kan’en). This work was originally published in Japan between 1828 and 1854, in 96 parts. While Japan was officially closed to foreign visitors, foreign products, including books, could enter, and some of the illustrations were copied from Weinmann’s Phytanthoza (1737-43); the idea of compiling the work in the first place may have been stimulated by studying Weinmann’s work. The original edition was uncoloured, but between 1920 and 1922 a new edition was published, which took advantage of western-based printing technology to have all the illustrations printed in colour. (It may have been the first time the entire work was printed, for some of the original edition circulated in manuscript only.) The exaggerated colouring may therefore have been made for decorative rather than descriptive reasons.

Papaver somniferum from Honzo zufu, 1920
Wood block print and manuscript on paper, 30.5 x 53.5 cm / 12 x 21 in
National Diet Library, Japan

IWASAKI TSUNEMASA

This illustration of Scabiosa crenata is hand-coloured. The original work was printed in 2013.

Scabiosa crenata, 2013
Hand-coloured micrograph, Dimensions variable
Private collection

ROB KESSELER
WILLIAM HENRY FOX TALBOT

British fashion photographer Nick Knight was not the first person to appreciate the delicate beauty of Lygodium palmatum, the only native North American species of this predominantly Asian genus. No less an authority than the writer and naturalist Henry David Thoreau called it “a most beautiful, slender, and delicate fern,” and its fronds were such a popular Christmas decoration in 19th-century America that Connecticut passed a law in 1869 to prevent it being picked. But Knight’s graphic aesthetic lends an almost wreathlike quality to this cutting from the renowned Herbarium of London’s Natural History Museum, which combines palmate sterile leaves with smaller fertile segments near the ends of the frond. Introduced to the collection while on a commission, Knight spent four years searching its 6 million items to select forty-six specimens for his book Flora (1997). Each specimen was mounted on white card and photographed against a lightbox, with increased contrast and saturation, transforming the originals into something more architectural than plantlike.

Lygodium palmatum, 1997
Colour lithograph, 64.7 × 46.4 cm / 25½ × 18 in
Private collection

NICK KNIGHT

Henry Fox Talbot’s frustration at his inability to draw using both the Camera Lucida and Camera Obscura as his aids led to his discovery of the photogram. In this photogram of white bryony, Talbot has captured some of the finer details of the plant in flower with clear imprints of the leaf venation and the curling tendrils. The specimen of this British wild cucumber relation would have been gathered from hedges near his home at Lacock Abbey in Wiltshire. In the summer of 1833 he placed a plant on a sheet of paper that had been coated with silver nitrate, a process already used in 1825 by Nicéphore Niépce to produce the first known photogenic image. Talbot observed that wherever sunlight struck the paper it darkened but wherever the plant blocked the light there was a perfect outline image of it left on the paper in negative. He then calculated that the negative outline itself could be brought back to life as a positive by printing it onto light sensitive paper. He published the first photographic book “The Pencil of Nature” in 6 parts (1844–1846).

Bryonia Dioica – The English Wild Vine, c. 1839
Photogenic drawing negative, 18.3 x 22.6 cm / 7 x 8½ in
National Media Museum, London

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A Jamaican gives an idea of the imposing size of Calliandra calothyrsus, a native of tropical Central America whose reddish-purple stamens trail in tassels above the fine pinnate leaves of the specimen in the foreground. As the hummingbirds in this imaginary scene suggest, the British artist Philip Reinagle had a reputation as an animal painter before he was commissioned by the doctor and botanist Robert John Thornton as one of the artists on the Temple of Flora. The book — more properly known as New Illustration of the Sexual System of Carolus von Linnaeus, and the Temple of Flora and the Garden of Nature — was a tribute to the Swedish botanist and plant collector Carl Linnaeus, who a few decades earlier had established the binominal system of naming plant and animal species, which is still used today. Reinagle’s setting of what was then called “Mimosa grandiflora” against a darkening romantic background is typical of the majestic plates Thornton commissioned from the leading flower painters of the time. The ambitious scheme proved a commercial failure when it was published in 1799.

Large Flowering Sensitive Plant (Calliandra calothyrsus), 1799
Hand-coloured engraving from ‘The Temple of Flora’, 44 × 35.7 cm / 17 ⅓ x 14 in
National Gallery of Victoria, Melbourne

A study of a Star of Bethlehem with starry flowers and long, thin, twisted leaves. To the left are leaves of crowfoot, and to the right, wood anemone. Behind, to the right, are greenes. Below is a tail spray of our spurge in bloom, and individual drawings of its flowers. Around 1560–70 Leonardo made several drawings of plants for the foreground of a painting of Leda and the swan, which was destroyed around 1700. His interest in the structure of individual species, however, went far beyond what was necessary for a painting; here he pays close attention to the form of the spurge’s flowers.

Temquia pores aturus statum non ex quo et quae et adi dti, totas magnihilles aut et voloremporum ima eum quia aut que coribus excestionem faceat quae simi, ut dolorum illani corent volupta non et a aperectatia pa doluptat. Otatur, te dolorem usnam aut quam videsti ab intet (150 words).

Cactus No. 59, 2011
Oil on canvas, 259.1 × 170 cm / 102 × 66 9/10 in
Johyun Gallery, Busan and Seoul