

The Philosophical Life of Plants - Sixteen views of *Fritillaria meleagris*

Our physical and digital worlds are continuing to converge with images starting to dominate our interactions. In the physical world of botanical science, images focus on species delineation and on elucidating phenomenon. Away from the physical limitations of books and journals can online images convey more tacit knowledge? How can we better illuminate the botanical world and counter our Nature disconnect?

Historically, the delineation of Nature is a process of naming and defining the diversity of life into taxonomic units. The illustrations that accompany these descriptions are highly crafted to create a representative of each taxon. Our intuitive relationship to images can then act to limit our view of the diversity contained within each taxonomic description.

Prior to defining a species, the taxonomist examines a range of herbarium specimens. At times they can assemble before them a whole selection representing its diversity. This can be a transformative experience, not just because of the range of variation that may exist but also the transcending of time and space. Specimens from numerous locations, a range of flowering times and material collected over various years can be brought together in that moment. The following three digitally created comparative images of *Fritillaria meleagris* take the viewer on a similar journey.

Noël Capperon found *Fritillaria meleagris* growing wild in water meadows by the River Loire in Western France in the 1560s. Its exotic looking chequered flowers made it very desirable among wealthy landowners. By 1596 John Gerard was growing it in his London garden and by the early 1700s it had naturalized along the River Thames. In Eastern Europe it was common in rapine woodland although these were swiftly being cleared for agriculture. Land converted to hay meadows provided a new home for these spring geophytes. When Carl Linneaus gave it a scientific name in 1753 it was probably from locally naturalised plants in Uppsala.



Species Boundaries – *Fritillaria meleagris*

Microsatellite genetic analysis shows that *F. meleagris* divides into three distinct clusters, Western European, Eastern European, and Asian. Examples in Species Boundaries are from across this extant distribution. From left to right: unimproved hay meadow, Luisings, Austria; unimproved hay meadow, Ducklington, Oxfordshire, UK; pasture, Choya, Altai Republic, Russia; rapine woodland, Lenti, Hungary.

The Ducklington form is a typical example of how *F. meleagris* is illustrated with clear tessellated red and white flower and habit showing lower leaves angled upward. The Russian form has very dark flowers which almost obscure their chequered markings. The two Eastern European forms are much smaller both in height and with narrower leaves but have relatively large flowers with prominent shoulders. This image explores *F. meleagris* across its 5,500 km distribution where it flowers from early March to late May. It also reflects a range expansion from a common ancestral population that followed at least three separate dispersals routes.

Iffley Meadows, a 33-hectare area of unimproved hay meadow, is situated between two arms of the River Thames about 2 km south of Oxford University Botanic Garden and Magdalen College. Bulbs acquired by John Tradescant the Elder from Haarlem in the Netherlands were first recorded growing in the Botanic Garden in 1648. By 1724 it had naturalised in the grounds of Magdalen College, which is situated immediately to the north. It is probable that populations of *F. meleagris* found to the south in Christ Church Meadow and Iffley Meadows have the same origin. Until the mid-20th Century the number of *Fritillaria* growing in Iffley Meadows was sufficient to supply fresh flowers to the London markets. By 1983 the population had declined to only 500 flowering individuals. Under the management of the Berks, Bucks & Oxon Wildlife Trust the population has recovered to a recent peak of 89,000.



Intraspecific Variation – *Fritillaria meleagris*

Intraspecific Variation shows four *F. meleagris* from Iffley meadows which exhibit a level of diversity that defies the population bottleneck which occurred less than 40 years earlier. The image displays variation in flower shape and size, plant height, and leaf size. The tall robust plant with a thick stem also has opposite basal leaves an aspect not reflected in the species description. A visit to Iffley Meadows will reveal five sub-populations each with a different plant community and an extended flowering season across the site which can last for up to six weeks.

The four plants in Temporal States are the same individual captured at four different times across three consecutive years. From left to right: 20 April 2016, 16 April 2015, 7 April 2017, and 22 April 2016. The plant originated from seeds collected at North Meadow, Cricklade, which hosts the largest UK population.

Aspects of time in botanical pictures normally show developmental stages or seasonal change. This image encourages the viewer to consider a different aspect of time. When is the right time to capture its likeness? How tall does it grow? What causes the flower markings to change? Why do the position of leaf node change? This series shows the interplay between inner and outer forces acting on the plant over time.



Temporal States – *Fritillaria meleagris*

Viewed together the structure of these three images create a complex view of a dynamic species across time and space. Providing opportunity for the viewer to interact with narratives contained within and between each arrangement.

Are visual impressions inferior in conveying information or can carefully crafted comparative botanical images power the imagination and foster deeper understanding?

<https://www.plantphilosophy.org.uk/plants-and-philosophy-in-the-present/>

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Abstract: A philosophical examination of the visual transfer of botanical knowledge.

Created for the UK Arts and Humanities Research Council (AHRC) Research Network exploring the ways in which plants and thinking have been interlinked, since J. W. Goethe's *Die Metamorphose der Pflanzen* (1790), within philosophy, the history of ideas, botany, the environmental humanities, the cognitive sciences and literary studies. Network partners: Royal Holloway, University of London, Royal Botanic Gardens, Kew, Goethe- und Schiller-Archiv, Weimar, King's College, London, University of the West of England