

Bluebell *Hyacinthoides* spp.

Two species of Bluebells common in Britain, our strongly scented, rich blue, native English Bluebell, *Hyacinthoides non-scripta*, and the paler, less scented, Spanish *H. hispanica*, and a hybrid of the two, *H. × massartiana*, which has intermediate characteristics. Along with nine other species of Bluebell, they fall into three genetic groups thus:

Non-scripta–hispanica group

Hyacinthoides cedretorum – Morocco to north Algeria
H. hispanica (Spanish bluebell) – Portugal to west and south Spain
H. non-scripta (Common or English bluebell) – western Europe to northern Portugal
H. paivae – north-west Spain to north-west Portugal
H. × massartiana – hybrid between *H. hispanica* and *H. non-scripta*, north-west Spain and elsewhere in Europe, including British Isles

Mauritanica group

H. flahaultiana – south-west Morocco
H. mauritanica – south-west Portugal, north Morocco
H. reverchonii – Spain (Sierra de Cazorla)

Italica group

H. aristidis – Algeria to Tunisia
H. ciliolata – north-east Tunisia
H. italica (Italian Bluebell) – south-east France to north-west Italy
H. lingulata – north-west Africa



'Bluebells' - a painting by Mary Findell

In Britain the English and Spanish bluebells easily hybridise, resulting in *Hyacinthoides × massartiana*. In Spain, the two species maintain separate populations divided by the Duero River. The Spanish Bluebell has been introduced here as a garden plant and presents a hybridisation threat to the native population wherever grown within insect pollination distance of native populations. The hybrid was first found in the wild in 1963 and there is now much concern that the native species is threatened. About half the global population of *H. non-scripta* occurs within the British Isles, the rest growing along Europe's western fringe.

The Natural History Museum is running a survey of bluebells,

<http://www.nhm.ac.uk/nature-online/british-natural-history/survey-bluebells/>

asking people to record the first flowering times of Bluebells and whether they are *H. non-scripta*, *H. hispanica* or *H. × massartiana*. Flowering time is significant in that it may become earlier with global warming but also because the two species have slightly different flowering times. That they have maintained their two separate populations in Spain may be because the different flowering times preclude hybridising whilst in the cooler British climate there is less difference and hybrids can be produced when times overlap. The hybrids grow and spread more vigorously, out-competing the native species but why only *H. non-scripta* recolonised the British Isles while *H. hispanica* remained restricted to Spain is uncertain.



“Bluebell flowers secrete large amounts of nectar, but the flower-tube is too long (9mm) for most bees to be able to reach it from the front of the flower. The main visitors are queens of the Garden Bumblebee, *Bombus hortorum*, the Common Carder Bee, *Bombus pascuorum*, and the Red-Tailed Bumblebee, *Bombus lapidarius*. Queen bumblebees have longer tongues than workers and so are able to reach the nectar at the base of the long flower-tubes. Although bumblebees are rarely seen visiting the flowers in bluebell woods, the flowers may be very important to the few queen bumblebees that are flying early in the spring and so they may influence the survival of bumblebees, particularly long-tongued species, in many areas. The flowers provide a rich supply of nectar to queen bumblebees at a critical time – when they are starting new colonies. Honeybees and short-tongued bumblebees, such as the Buff-Tailed Bumblebee, *Bombus terrestris*, are able to reach the nectar from the outside of the flower near the base. They poke their tongue through the space between the petals and obtain the nectar without pollinating. This behaviour is known as base working. The pollen is also collected occasionally by honeybees, bumblebees and solitary bees, such as the mining bees, *Andrena spp.*, and mason bees, *Osmia spp.*. The Large Bee Fly, *Bombylius major*, also visits the flowers and is easily mistaken for a brown bumblebee or flower bee.”

Text from W.D.J. Kirk and F.N.Howes, *Plants for Bees* International Bee Research Association <http://www.plantsforbees.org/>

Bluebells depend on soil fungi to transfer nutrients such as phosphorous into their rather course root-systems. Seedlings start in the upper P-rich soil but where they are at risk from winter frosts, summer drought and predators. During their first few seasons they descend to a depth of about 20 cm, down a gradient of decreasing soil phosphorus concentration; simultaneously, their roots become increasingly colonized by arbuscular mycorrhizal fungi. Because of the change in environment, they appear to become increasingly dependent on the symbiosis, suggesting that the association changes from facultative to obligate during the plant's life history.

From research by James Merryweather and Alastair Fitter, *New Phytologist* Vol. 129, April 1995



Ode - Bards of Passion and of Mirth.

Seated on Elysian lawns
 Brows'd by none but Dian's fawns;
 Underneath large blue-bells tented,
 Where the daisies are rose-scented,
 And the rose herself has got
 Perfume which on earth is not;
 Where the nightingale doth sing
 Not a senseless, tranced thing,
 But divine melodious truth;
 Philosophic numbers smooth;
 Tales and golden histories
 Of heaven and its mysteries.

John Keats.

Dian's fawns are all very well in poetry but grazing by deer, especially the non-native muntjac, has become a serious problem in some bluebell woods.

The abstract nature of the design of the BSBI's logo may not be immediately recognised as a bluebell, Britain's favourite flower, but the concept was based on the colours and form of *Hyacinthoides non-scripta*.



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