

= Hyacinthoides non @-@ scripta =

Hyacinthoides non @-@ scripta (formerly Endymion non @-@ scriptus or Scilla non @-@ scripta) is a bulbous perennial plant , found in Atlantic areas from north @-@ western Spain to the British Isles , and also frequently used as a garden plant . It is known in English as the common bluebell or simply bluebell , a name which is used in Scotland to refer to the harebell , Campanula rotundifolia . In spring , H. non @-@ scripta produces a nodding , one @-@ sided inflorescence of 5 ? 12 tubular , sweet @-@ scented violet ? blue flowers , with strongly recurved tepals , and 3 ? 6 long , linear , basal leaves .

H. non @-@ scripta is particularly associated with ancient woodland where it may dominate the understorey to produce carpets of violet ? blue flowers in " bluebell woods " , but also occurs in more open habitats in western regions . It is protected under UK law , and in some other parts of its range . A related species , H. hispanica has also been introduced to the British Isles and hybridises with H. non @-@ scripta to produce intermediates known as H. x massartiana .

= = Taxonomy = =

Hyacinthoides non @-@ scripta was first described by Carl Linnaeus in his seminal 1753 work Species Plantarum , as a species in the genus Hyacinthus . The specific epithet non @-@ scriptus means " unlettered " or " unmarked " and was intended to distinguish this plant from the classical hyacinth of Greek mythology . This mythical flower , which was almost certainly not the modern hyacinth , sprang up from the blood of the dying prince Hyacinthus . His lover , the god Apollo , shed tears that marked the new flower 's petals with the letters " AIAI " (" alas ") as a sign of his grief .

In 1803 , Johann Centurius von Hoffmannsegg and Johann Heinrich Friedrich Link transferred the species to the genus Scilla , and in 1849 Christian August Friedrich Garcke transferred it to the genus Endymion (now a synonym of Hyacinthoides) ; it is still widely known as " Scilla non @-@ scripta " or " Endymion non @-@ scriptus " . In 1934 , Pierre Chouard transferred the species to its current placement in the genus Hyacinthoides . Scilla was the original Greek name for the sea squill , Drimia maritima ; Endymion is a character from Greek mythology ; Hyacinthoides means " like a hyacinth " .

The type species of Hyacinthoides is H. hispanica , while that of Endymion is " Scilla nutans " , described by James Edward Smith in English Botany in 1797 , but now treated as a synonym of H. non @-@ scripta . Smith had argued that nutans (" nodding ") is a more fitting epithet than non @-@ scriptus , which makes no sense once separated from Hyacinthus , but the International Code of Nomenclature for algae , fungi , and plants requires the oldest name to be used , regardless of meaning .

Common names for Hyacinthoides non @-@ scripta include bluebell , common bluebell , English bluebell , British bluebell , wild hyacinth , wood bell , fairy flower and bell bottle . In Scotland , the term " bluebell " is used for the harebell , Campanula rotundifolia .

= = Related species = =

Hyacinthoides non @-@ scripta forms a clade with three other species ? H. hispanica , H. paivae and H. cedretorum ? centred on the Iberian Peninsula . H. paivae is restricted to a small area of north @-@ western Iberia (Galicia and neighbouring parts of Portugal) , while H. cedretorum is found in mountainous areas of western North Africa (Morocco and Algeria) . Within Iberia , H. non @-@ scripta and H. hispanica are geographically separated by the Duero river . The genus also contains seven further species , mostly distributed further east in the Mediterranean Basin .

= = Description = =

Hyacinthoides non @-@ scripta is a perennial plant that grows from a bulb . It produces 3 ? 6 linear leaves , all growing from the base of the plant , and each 7 ? 16 millimetres (0 @.@ 28 ? 0 @.@ 63

in) wide . An inflorescence of 5 ? 12 (exceptionally 3 ? 32) flowers is borne on a stem up to 500 mm (20 in) tall , which droops towards the tip ; the flowers are arranged in a 1 @-@ sided nodding raceme . Each flower is 14 ? 20 mm (0 @.@ 55 ? 0 @.@ 79 in) long , with two bracts at the base , and the six tepals are strongly recurved at their tips . The tepals are violet ? blue . The three stamens in the outer whorl are fused to the perianth for more than 75 % of their length , and bear cream @-@ coloured pollen . The flowers are strongly and sweetly scented . The seeds are black , and germinate on the soil surface .

The bulbs produce contractile roots ; when these roots contract , they draw the bulbs down into deeper layers of the soil where there is greater moisture , reaching depths of 10 ? 12 cm (3 @.@ 9 ? 4 @.@ 7 in) . This may explain the absence of *H. non @-@ scripta* from thin soils over chalk in South East England , since the bulbs are unable to penetrate into sufficiently deep soils .

H. non @-@ scripta differs from *H. hispanica* , which occurs as an introduced species in the British Isles , in a number of ways . *H. hispanica* has paler flowers which are borne in radially symmetrical racemes ; their tepals are less recurved , and are only faintly scented . The outer stamens are fused with the tepals for less than 75 % of their length , and the anthers are the same colour as the tepals . These two species are thought to have diverged 8000 years ago . The two species also hybridise readily to produce fertile offspring known as *Hyacinthoides* × *massartiana* ; the hybrids are intermediate between the parental species , forming a spectrum of variation which connects the two .

= = Distribution and ecology = =

Hyacinthoides non @-@ scripta is native to the western parts of Atlantic Europe , from north @-@ western Spain (occasionally even north @-@ western Portugal) to the Netherlands and the British Isles . It is found in Belgium , Great Britain , France , Ireland , the Netherlands and Spain , and also occurs as a naturalized species in Germany , Italy , and Romania . It has also been introduced to parts of North America , in both the Pacific Northwest (British Columbia , Washington and Oregon) and the north @-@ eastern United States (Virginia , Kentucky , Indiana , Ohio , Pennsylvania and New York) .

Despite the wide distribution of *H. non @-@ scripta* , it reaches its greatest densities in the British Isles , where " bluebell woods " (woodland with the understory dominated by *H. non @-@ scripta* in spring) are a familiar sight . *H. non @-@ scripta* is found throughout the British Isles , with the exception of the northern Outer Hebrides (Lewis and Harris) , Orkney and Shetland , and it is estimated that 25 % ? 50 % of all common bluebells may be found in the British Isles .

Bluebells are a species of deciduous woodland over much of their range , flowering and leafing early before the canopy closes in late spring . They may also be found growing under bracken or Japanese knotweed , perennial plants which also form stands with a dense summer canopy . They are most successful on slightly acid soils ; the same niche in alkaline conditions may be occupied by other species such as *Mercurialis perennis* . As a species adapted to woodlands , the young shoots are able to penetrate through a thick layer of leaf litter , and bluebells are often used as an indicator species to identify ancient woodland . Bluebells are also frequently found in hedgerows , and in the west of their range they can be found growing in open habitats , including coastal meadows . Bluebell flowers are rich in pollen and nectar , and are chiefly pollinated by bumblebees , although they are also visited by various other insects . They are a host species for the parasitic fungus *Uromyces muscari* , which causes bluebell rust . The ability of *H. non @-@ scripta* to take up phosphorus from the soil is greatly enhanced by the presence of arbuscular mycorrhizae in its roots .

= = Protection = =

Hyacinthoides non @-@ scripta is not protected under international law , such as CITES or the EU Habitats Directive .

In the United Kingdom , *H. non @-@ scripta* is a protected species under the Wildlife and

Countryside Act 1981 . Landowners are prohibited from removing common bluebells on their land for sale and it is a criminal offence to remove the bulbs of wild common bluebells . This legislation was strengthened in 1998 under Schedule 8 of the Act making any trade in wild common bluebell bulbs or seeds an offence , punishable by fines of up to £ 5000 per bulb . The species is not protected in the Republic of Ireland .

In France , *H. non scripta* is largely confined to the northern half of the country . It is not legally protected at the national level , but it is protected in many of the départements towards the edge of its range (Corrèze , Loiret , Gironde , Lot et Garonne , Dordogne , Cher , Eure et Loir , Indre et Loire and Loir et Cher) . In Wallonia , *H. non scripta* is protected under Annexe VII of the Loi sur la conservation de la nature .

= = Uses = =

Bluebells are widely planted as garden plants , either among trees or in herbaceous borders . They flower at the same time as hyacinths , Narcissus and some tulips . Their ability to reproduce vegetatively using runners , however , means that they can spread rapidly , and may need to be controlled as weeds .

Bluebells synthesise a wide range of chemicals with potential medicinal properties . They contain at least 15 biologically active compounds that may provide them with protection against insects and animals . Certain extracts ? water soluble alkaloids ? are similar to compounds tested for use in combating HIV and cancer . The bulbs of bluebells are used in folk medicine as a remedy for leucorrhoea , and as a diuretic or styptic , while the sap can be used as an adhesive .

The bluebell may be regarded as the United Kingdom 's " favourite flower " . When the wild plant charity Plantlife organised a survey in 2004 to find a favourite flower for each county in the United Kingdom , it decided to ban voters from choosing the bluebell because it had been by far the top choice in an earlier poll for the nation 's favourite flower . A stylised bluebell is used as the logo for the Botanical Society of Britain and Ireland .