Iris (plant)

Iris is a flowering plant genus of 310 accepted species[1] with showy flowers. As well as being the scientific name, iris is also widely used as a common name for all *Iris* species, as well as some belonging to other closely related genera. A common name for some species is flags, while the plants of the subgenus *Scorpiris* are widely known as junos, particularly in horticulture. It is a popular garden flower.

The often-segregated, monotypic genera *Belamcanda* (blackberry lily, *I. domestica*), *Hermodactylus* (snake's head iris, *I. tuberosa*), and *Pardanthopsis* (vesper iris, *I. dichotoma*) are currently included in *Iris*.

Three *Iris* varieties are used in the *Iris* flower data set outlined by Ronald Fisher in his 1936 paper *The use of multiple measurements in taxonomic problems* as an example of linear discriminant analysis.[4]

Description

Rhizomes of ornamental irises

Irises are perennial plants, growing from creeping rhizomes (rhizomatous irises) or, in drier climates, from bulbs (bulbous irises). They have long, erect flowering stems which may be simple or branched, solid or hollow, and flattened or have a circular cross-section. The rhizomatous species usually have 3–10 basal sword-shaped leaves growing in dense clumps.[5] The bulbous species also have 2–10 narrow leaves growing from the bulb.[6]

Iris

Iris sibirica

Scientific classification

Kingdom:	Plantae
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Monocots
Order:	Asparagales
Family:	Iridaceae
Subfamily:	Iridoideae
Tribe:	Irideae
Genus:	*Iris* Tourn. ex L.

Type species

Iris germanica
L.

Subgenera

Flower

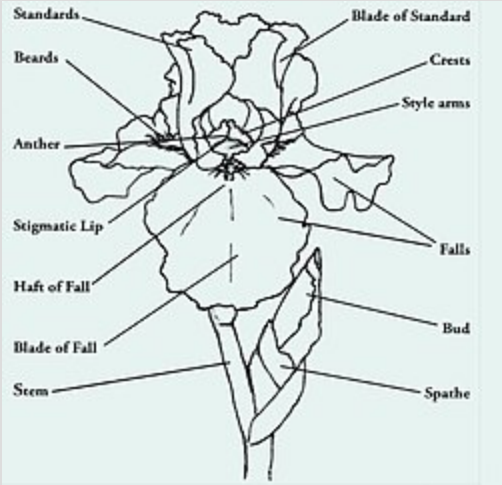

Illustration of an iris flower with highlighted parts of the flower

Hermodactyloides
Iris
Limniris
Nepalensis
Scorpiris
Xiphium

Synonyms[1][2][3]

Belamcanda
Hermodactylus
Iridodictyum
Juno
Junopsis
Pardanthopsis
×Pardancanda
Xiphion

The inflorescences are in the shape of a fan and contain one or more symmetrical six-lobed flowers. These grow on a pedicel or peduncle. The three sepals,[7] which are usually spreading or droop downwards, are referred to as "falls". They expand from their narrow base (the "claw" or "haft"[8]), into a broader expanded portion ("limb" or "blade"[9]) and can be adorned with veining, lines or dots. In the centre of the blade, some of the rhizomatous irises have a "beard", a row of fuzzy hairs at the base of each falls petal which gives pollinators a landing place and guides them to the nectar.[10]

The three,[7] sometimes reduced, petals stand upright, partly behind the sepal bases. They are called "standards". Some smaller iris species have all six lobes pointing straight outwards, but generally limb and standards differ markedly in appearance. They are united at their base into a floral tube that lies above the ovary (This flower, with the petals, and other flower parts, above the ovary is known as an epigynous flower, and it is said to have an inferior ovary, that is an ovary below the other flower parts). The three styles[7] divide towards the apex into petaloid branches; this is significant in pollination.


Iris reichenbachii fruit

The iris flower is of interest as an example of the relation between flowering plants and pollinating insects. The shape of the flower and the position of the pollen-receiving and stigmatic surfaces on the outer petals form a landing-stage for a flying insect, which in probing for nectar, will first come into contact with the perianth, then with the three[7] stigmatic stamens in one whorled surface which is borne on an ovary formed of three carpels. The shelf-like transverse projection on the inner whorled underside of the stamens is beneath the overarching style arm below the stigma, so that the insect comes in contact with its pollen-covered surface only after passing the stigma; in backing out of the flower it will come in

contact only with the non-receptive lower face of the stigma. Thus, an insect bearing pollen from one flower will, in entering a second, deposit the pollen on the stigma; in backing out of a flower, the pollen which it bears will not be rubbed off on the stigma of the same flower.[11]

The iris fruit is a capsule which opens up in three parts to reveal the numerous seeds within. In some species, the seeds bear an aril, such as *Iris stolonifera* which has light brown seeds with thick white aril.[12]

Etymology

The genus takes its name from the Greek word ἶρις *îris* "rainbow", which is also the name for the Greek goddess of the rainbow, Iris.[13] Some authors state that the name refers to the wide variety of flower colors found among the many species.[14]

Taxonomy

Iris is the largest genus of the family Iridaceae with up to 300 species – many of them natural hybrids.[15] Plants of the World Online lists 310 accepted species from this genus as of 2022.[1] Modern classifications, starting with Dykes (1913), have subdivided them. Dykes referred to the major subgroupings as sections. Subsequent authors such as Lawrence (1953) and Rodionenko (1987) have generally called them subgenera, while essentially retaining Dykes' groupings, using six subgenera further divided into twelve sections. Of these, section *Limneris* (subgenus *Limneris*) was further divided into sixteen series. Like some older sources, Rodionenko moved some of the bulbous subgenera (*Xiphium*, *Scorpiris* and *Hermodactyloides*) into separate genera (*Xiphion*, *Juno* and *Iridodictyum* respectively), but this has not been accepted by later writers such as Mathew (1989), although the latter kept *Hermodactylus* as a distinct genus, to include *Hermodactylus tuberosus*, now returned to *Hermodactyloides* as *Iris tuberosa*.[15]

Rodionenko also reduced the number of sections in subgenus Iris, from six to two, depending on the presence (*Hexapogon*) or absence (*Iris*) of arils on the seeds, referred to as *arilate* or *nonarilate*. Taylor (1976) provides arguments for not including all arilate species in *Hexapogon*.[15]

In general, modern classifications usually recognise six subgenera, of which five are restricted to the Old World; the sixth (subgenus *Limniris*) has a Holarctic distribution. The two largest subgenera are further divided into sections. The Iris subgenus has been divided into six sections; bearded irises (or pogon irises), Psammiris, Oncocyclus, Regelia, Hexapogon and Pseudoregelia.[16] Iris subg. Limniris has been divided into 2 sections; Lophiris (or 'Evansias' or crested iris) and Limniris which was further divided into 16 series.[17]

Evolution

The concept of introgressive hybridization (or "introgression") was first coined to describe the pattern of interspecific hybridization followed by backcrossing to the parentals that is common in this genus.[18]