

SNOWDROPS

This article is adapted from a short talk I gave on 22nd Feb 2020 for members of the public and the HNHS on the occasion of their 50th Anniversary. The open day was held for people to come and view the wonderful display of snowdrops in Pear Wood Orchard. We also enjoyed hot drinks and a lovely anniversary cake kindly supplied by Margaret Huitson.

If you are reading this, there is a chance that you may be a galanthophile! I haven't made this up, it is the name by which snowdrop aficionados are known and comes from their name *Galanthos nivalis*. Galanthos is from the Greek, gala meaning milk and anthos meaning flower. Nivalis means 'of the snow'. They were named by Carl Linnaeus in 1735, although they had been described before then. Snowdrops are in the family Amaryllidaceae.



Snowdrops in Pear Wood – February 2020

There are some interesting features about the biology of snowdrops that distinguishes them from other plants. The flower is a hooded shape, consisting of six petals, three outer and three inner. The green markings on the inner petals are pollen guides for bees and other early insects, bees being the main pollinators. This hooded shape keeps the temperature inside the flower warmer than the ambient temperature, helping the pollen to ripen. When the ambient temperature reaches ten degrees the flower will open allowing bees in, otherwise it remains closed to protect the pollen. Snowdrops provide a good source of early nectar and pollen. Being bulbs, i.e. with their energy stored, they can shoot up and flower very soon after emerging. By doing this, they avoid the shade that comes when the tree canopy comes into leaf. They like dappled shade and damp conditions and unlike most bulbs they are transplanted 'in the green', i.e. before the leaves are absorbed back into the bulb. Not only do they establish more quickly using this method but it avoids their natural propensity to shrivel, being so small. Commercially snowdrops are produced by taking advantage of their natural ability to produce offsets or by a process known as twin scaling.



Flower structure

Snowdrops can set seed if the conditions are warm enough but it's not common as most come from a sterile cultivated clone. Reproduction is mainly by vegetative means, they produce offsets easily, distribution of which may be aided by animals. Fortunately, deer don't like to eat them.

Another adaptation of snowdrops to their environment is their leaves, which are linear, long and thin with specially hardened tips that will push through frozen soil, snow and even ice. The French name for snowdrops is 'pierce - neige' meaning to pierce the snow.

Possibly the most interesting adaptation is that they contain a natural anti-freeze which stops the cells from freezing and splitting themselves apart, destroying the plant.

Ants have an interesting relationship with snowdrops and on warm days are often seen on them. In the case of snowdrops, they are not pollinators but aid germination and distribution. Ants may be observed removing the seed pods and carrying them off to their underground tunnels. The seeds within the pods have an appendage called an elaiosome which is sweet and rich in protein and oil. The ants feed this to their larvae but do not touch the seed itself, so the seed is left neatly planted in an underground burrow. Some species of ant will 'clean out the rubbish' and then the seed is deposited in its own little pile of fertilizer, which is just as successful.

In many species of plants the ants do act as pollinators. This is the case in at least 11,000 species that are known about and recent estimates think the number may be as high as 23,000. This evolved symbiotic relationship is known as myrmecochory, Greek for ant (myrmex) and circular dance (khorea) and is an example of convergent evolution.

The status of snowdrops is naturalised. There are about twenty wild species although some of these are micro species, occurring in very small numbers.

The natural range of snowdrops is huge, stretching from the Pyrenees in the west to Ukraine in the east.

There are over 2,500 cultivars, many of which were bred by Victorians and, just like apple trees, many bear the name of the Victorian who bred them.

Galanthophiles are just as fanatic about snowdrops as orchid collectors are about orchids and single snowdrop bulbs regularly change hands for £600. One recently (2016) sold for £1,380! This enthusiasm for snowdrops means that they are the most traded bulb in the world and are now listed by CITES (Convention for International Trade in Endangered Species). They are threatened by both climate change and from being dug up. Some of those threatened are micro-species but in other places such as Hungary and Romania, it is the common snowdrop that has disappeared from the wild. When buying snowdrops it's important to check the source.



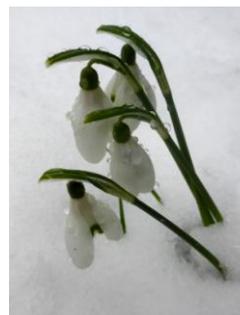
More snowdrops in Pear Wood – February 2020

The earliest records of snowdrops in Britain date from around 1597 and they are mentioned in Gerald's Herbal of that year. However, after that date there are few references and they did not make 'the leap over the garden wall' into the wild for another 180 years.

Snowdrops have been known by many different common names in the past. February Fair Maids was a popular one and many poets e.g. Tennyson, wrote about them under this name. Perhaps less poetic but rather charming is the Dingle Dangle. Another old name was the Flower of Death (those Victorians again)! They thought seeing a lone snowdrop was an omen of impending death, although they may have also known about its poisonous properties. The lectin of snowdrops is poisonous to three of the major insect families; Coleoptera (beetles) Lepidoptera (butterflies and moths) and Hemiptera (true bugs). This property has led to recent studies into its use in genetic engineering.

Another common name was the Flower of Hope and much as the poppy is associated with the First World War, the snowdrop is associated with the Crimean War. It is thought that the poor soldiers bedded in for the harsh winter, saw these tough little flowers coming through and saw them as a harbinger of spring and it gave them hope. There is a theory that some of the survivors brought plants back home with them and this may help to account for how widespread they are across Britain. However the Crimean Snowdrop (*G. plicatus*) is about twice the size of *G. nivalis*.

The best known common name before snowdrop came into use was Candlemas Bells. Candlemas Day is 2nd Feb, forty days after the birth of Christ. Forty days was the period of ritual purification after childbirth. On Candlemas Day snowdrops were cut, brought into the church and sprinkled around the altar. Churchyards were planted with snowdrops to ensure a plentiful supply for this ceremony. Candle blessing was also part of the ceremony. Interestingly Candlemas Day falls on the date of a much older festival, that of midwinter, it being exactly halfway between the shortest day and the spring equinox.



In the snow
February 2019

One more interesting thing about snowdrops is that they also contain an alkaloid named galanthamine which has many medicinal properties. For example it is known to slow down the progression of Alzheimer's. It is also used to treat traumatic injuries to the nervous system and is an emmenagogue. Recently the possibility of using the lectin for the treatment of HIV is being investigated.

Lastly, snowdrops are one of a hundred diverse plants from around the world that were selected by Kew decades ago to study things like distribution and now climate change. They have noted that since the 1950's snowdrops are now flowering up to a month earlier.

In answer to a question that followed. Many gardens now open outside their usual months to host snowdrop viewing days or weeks. Some of these incorporate tours, talks, snowdrop festivals and even a Galanthos Gala. Full lists of these events can easily be found on web sites like Great British Gardens or Gardens Illustrated. Galanthomania is catching on!

Claire Abbott.