

Sorbus leyana



Status

UK Biodiversity Action Plan Priority species.
Red Data Book Species.
IUCN threat category: Critically endangered.

Taxonomy

Magnoliopsida: Rosaceae

Scientific name:

Sorbus leyana Wilmott

Common names:

Ley's Whitebeam, Cerdin Darren Fach

Sorbus leyana is a very rare endemic tree confined to Wales (Rich *et al.* 2005). It is a hybrid resulting from a cross of Rowan *S. aucuparia* with either the Rock Whitebeam *S. rupicola* or the Grey Whitebeam *S. porrigentiformis*. It is one of about 25 species of *Sorbus* in Britain (Stace 1997, Rich *et al.* 2010), and with its relatives *S. anglica*, *S. minima* and *S. arranensis* forms a distinct group differing from all the other species in having leaves with rounded lobes cut to about half way and small, roundish, red fruits.

Biology & Distribution

It is known from only two sites in v.c. 42 Brecon just north of Merthyr Tydfil; Darren Fach (variously reported as near Cefn Coed, above Dan-y-Graig, or even near Merthyr Tydfil) and Penmoelallt (or Coed Penmailard). No other trees have been found on searches of other limestone cliffs or hedges in the area. Details of all records are held in the Threatened Plants Database. Population estimates 2000-2004 suggest there are a total of c.17 shrubs in the two sites, with six planted trees at Penmoelallt. The population sizes are currently thought to be stable, but have declined from when they were first found, possibly due to lack of regeneration following growth of the woodland.

Identification & Field survey

The most important characters for identification of *Sorbus* are leaves and fruits; the best time to identify *Sorbus* is thus in the autumn. With experience, *Sorbus* can be identified from flowering time onwards.

It is important to select the correct leaves on a plant: examine the two or three broadest leaves from the whorls on the short, lateral shoots (Figure 1) and ignore the narrower leaves. Leaves from the leading shoots, inflorescence shoots, suckers and shade leaves are much more variable. When assessing the number of pairs of veins, count the total number of veins on a leaf and divide by two, average at least five and round to nearest whole number.

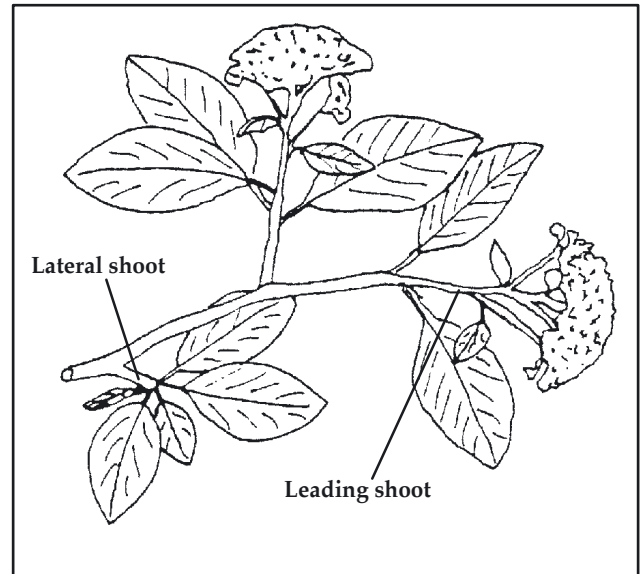


Figure 1. Branch of *Sorbus* showing short, lateral shoots which must be examined.

The shape, size and coloration of ripe fruits, and the distribution of lenticels (small, white scabs on the fruit surface) also provide important characters. When examining fruits, select the largest fruits (there are often two sizes present) and measure length and width (estimating length:width ratios by eye can be surprisingly inaccurate). Fruiting is very variable from year to year.

Key characters

Shrub or small tree to 10 m (or more in cultivation) tall. Lateral rosette leaves 6.5-10(-10.5) cm long x 4.5-7(8) cm wide, 1.2-1.65 times as long as wide, widest at about the middle, lobed with lobes cut ($\frac{1}{4}$ - $\frac{1}{3}$ - $\frac{3}{4}$) way to the midrib, leaf margin toothed, and 7-10(-11) pairs of veins. Largest fruits 7.5-10 x 8.5-10 mm, subglobose or wider than long, slightly wider below the middle, with a few small scattered lenticels, blood red at maturity.

S. leyana is easily distinguished from the other species of *Sorbus* which occur with it at its sites. *S. rupicola* and *S. porrigentiformis* have unlobed leaves. *S. aucuparia* has pinnate leaves with 6-8 pairs of separate leaflets and a similar terminal leaf. A backcross between *S. leyana* and *S. aucuparia* has 2-3 pairs of free leaflets at the base of the leaf and a large, broad and lobed terminal leaflet. This is named *S. x motleyi* (Proctor & Rich 2009).

The trees tend to occur on rocky cliffs and slopes and many are inaccessible. When surveying populations, be careful of young seedlings which are easily trampled under-foot.

Differentiation from similar species

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|---|---|
| 1. Leaves with at least one free lobe/leaflet at base | <i>S. aucuparia</i> / <i>S. domestica</i> and various hybrids |
| 1. Leaves lobed to simple, without any lobes/leaflets free at base | 2 |
| 2. Leaves not lobed (margins toothed) | <i>S. aria</i> aggregate (including <i>S. rupicola</i> , <i>S. porrigentiformis</i>) |
| 2. Leaves lobed 1/5-4/5 way to midrib | 3 |
| 3. Leaves nearly glabrous; veins 4-6 pairs; ripe fruits brown | <i>S. torminalis</i> (L.) Crantz |
| 3. Leaves hairy, at least below, veins 7-14 pairs; ripe fruits yellow, orange, red or brownish | 4 |
| 4. Leaves broad, grey-felted below, lobes usually acute, shallow; veins 7-13 pairs; ripe fruits yellow, orange or brownish | <i>S. latifolia</i> agg. |
| 4. Leaves narrow, grey tomentose beneath, lobes rounded to acute, shallow to deep; veins 7-10 pairs; ripe fruits red | 5 |
| 5. Deepest lobes extending less than 1/3 way to midrib (rarely a few leaves cut to 1/2 way) | <i>S. minima</i> , <i>S. anglica</i> , <i>S. intermedia</i> |
| 5. Deepest lobes extending more than 1/3 way to midrib (measure along direction of veins) | 6 |
| 6. Leaves 5.5-8.5(-9.5) cm, length 1.5-2.1(-2.6) times width, deepest lobes extending (1/3 -)1/2 - 3/4 way to midrib; fruits 8-10 mm, ovoid. Arran (V.c. 100) only | <i>S. arranensis</i> Hedl. |
| 6. Leaves 6.5-10 cm, length 1.2-1.65(-1.9) times width, deepest lobes extending (1/4 -)1/3- 3/4 way to midrib; fruits c. 7.5-10 mm, subglobose. Brecon (V.c. 42) only | <i>S. leyana</i> Wilmott |
| 6. Leaves 5.5-12 cm, length 1.35-1.7(-1.9) times width, lobed (1/4 -)1/3 - 1/2 way to midrib; fruits 11-15 mm, much longer than broad. Widespread, introduced | <i>S. intermedia</i> (Ehrh.) Pers. |

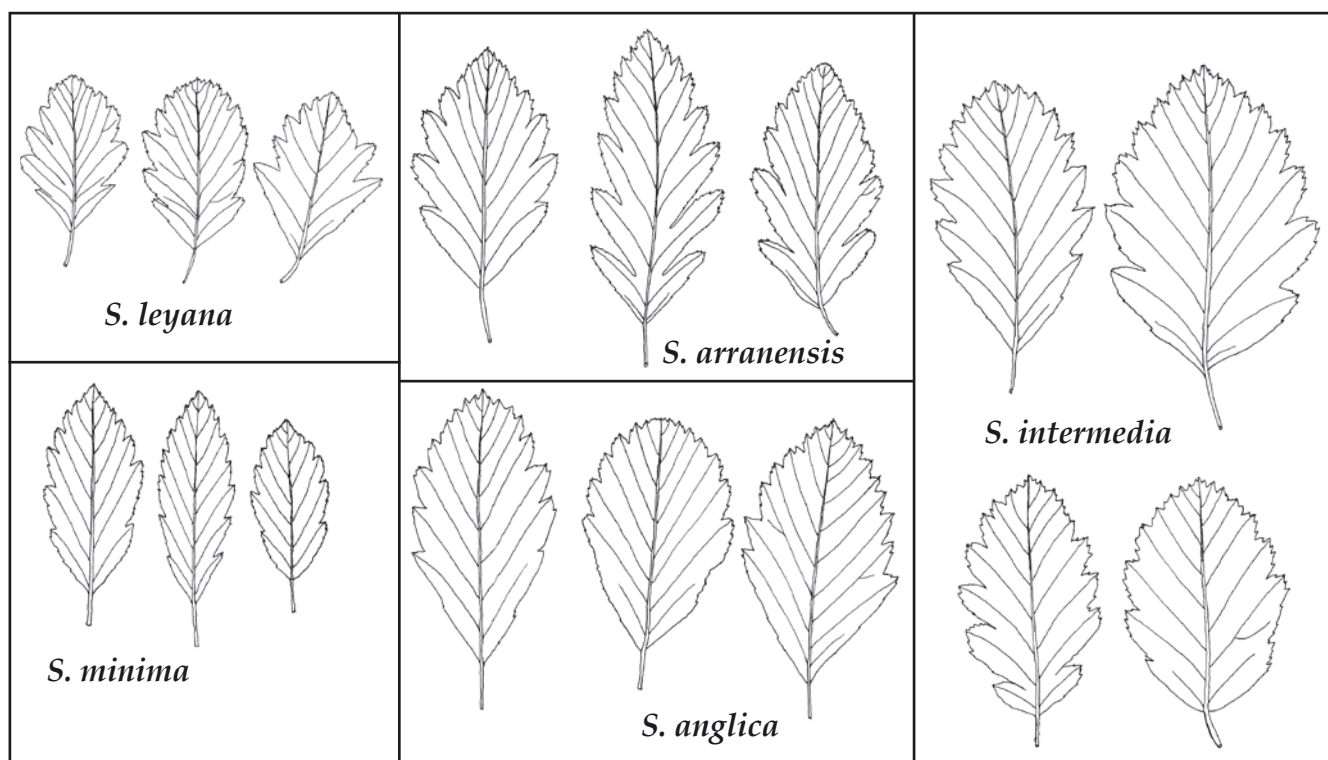


Figure 2. *Sorbus anglica/intermedia* aggregate. Not to scale.

References

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| <p>Rich, T. C. G. (1998). <i>Sorbus</i> L. pages 164-177 in Rich, T. C. G. & Jermy, A. C., eds. (1998). <i>Plant Crib 1998</i>. BSBI, London.</p> <p>Rich, T. C. G., Houston, L., Robertson, A. & Proctor, M. C. F. (2010). <i>Whitebeams, Rowans and Service Trees of Britain and Ireland. A monograph of British and Irish Sorbus L.</i> Botanical Society of the British Isles. London.</p> | <p>Rich, T. C. G., Motley, G. S. & Kay, Q. O. N. (2005). Population sizes of three rare Welsh endemic <i>Sorbus</i> species (Rosaceae). <i>Watsonia</i> 25: 381-388.</p> <p>Rich, T. C. G. & Proctor, M. C. F. (2009). Some new British and Irish <i>Sorbus</i> L. taxa (Rosaceae). <i>Watsonia</i> 27: 207-216.</p> <p>Stace, C. A. (1997). <i>New Flora of the British Isles</i>. 2nd edition. Cambridge University Press, Cambridge.</p> |
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