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New names in British *Sorbus* (Rosaceae)

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Abstract
A new triploid species ***Sorbus fayana*** L.Houston & T.C.G.Rich is named from the Mendips. A new name is given for *Sorbus aria* × *S. porrigentiformis* hybrids = ***Sorbus × pseudoporrigentiformis*** T.C.G.Rich & L.Houston. A new combination ***Sorbus wyensis*** (D.Green) T.C.G.Rich is made. *Sorbus incana* Hedl., a cultivated species recently discovered introduced in Dorset, is neotypified.

Keywords: hybrid; neotype; new species

Introduction

For the forthcoming second edition of our Whitebeams, Rowans and Service Trees *Sorbus* BSBI Handbook (Rich *et al.*, 2010), we describe a new species, a replacement name for *Sorbus aria* (L.) Crantz × *S. porrigentiformis* E.F.Warb. hybrids, make a new combination, and neotypify *Sorbus incana* Hedl.

New taxa

Sorbus fayana L.Houston & T.C.G.Rich **sp. nov.**
HOLOTYPE: Limestone rocks, top of first slab above lower car park, Burrington Combe, Somerset (v.c.6), ST4767058749, 24 July 2003, T.C.G. Rich & M. Chester (**NMW**; accession number V.2003.1.65; Fig. 1).
Vernacular name: Fay's Whitebeam

Shrub or small tree to at least 8 m tall. Bark of larger trunks greyish-brown. Leaf buds lanceoloid, acute, with white hairs on scale margins. Broad leaves of short sterile shoots with lamina (7.0–)7.5–9.5(–10) × (4.5–)5.0–7.0 cm, elliptic-obovate (1.2–)1.3–1.6(–1.8) times as long as wide and widest 55–72% of way along lamina length, apex obtuse, base cuneate (angle of base 36–52(–63)º, unlobed or weakly lobed to 11% of the way to the midrib at the centre of the lamina, with margins uniserrate to weakly biserrate, with teeth at the top curved weakly outwards, lowest *c.*1-1.5 cm near petiole nearly untoothed, veins (15–)17–19(–20) held at an angle of (24–)25–34º to midrib at centre of the lamina, upper surface glabrescent, green, lower surface greyish-white-tomentose. Petioles 10–20 mm. Inflorescences to at least 6 cm across, domed, crowded with branchlets white-tomentose. Sepals narrowly triangular, green-tomentose, eglandular. Petals 5–7 × 3–4 mm, elliptic. Anthers pink-flushed. Styles 2. Largest fruits 10–11 × 10–11 mm, 0.9–1.1 times as long as wide, usually looking globose, dark red at maturity (RHS colour chart 44B,

42A), with sparse, small lenticels scattered over the surface. Chromosome number: triploid (n=8) from flow cytometry (J. Pellicer *et al.*, unpublished).

Sorbus fayana is characterised by the small (7.5–9.5 cm), elliptic-obovate, cuneate, obtuse, uniserrate, scarcely-lobed leaves with 17–19 veins and greyish-white-tomentose underneath, and the small, mostly globose, dark red fruits.

We have puzzled over this taxon for many years, and included it as an unresolved taxon in the *S. porrigentiformis* aggregate in Rich *et al.* (2010, page 116 Burrington Combe). Following the discovery of at least 13 plants in Burrington Combe and at least two more trees in Cheddar Gorge by L. Houston in 2011 and 2012, it now requires a formal name. It is an English endemic, so far only known from the Mendips in Somerset (v.c.6) where it probably originated as a hybrid between a tetraploid *S. porrigentiformis* and diploid *S. aria*.

Sorbus fayana is named after Professor Michael F. Fay, who has been an essential collaborator on our whitebeam research for the last twenty years. His research at the Royal Botanic Gardens, Kew has focused on the application of genetic and molecular data to conservation management plans for many years and he has contributed widely to conservation policy in Britain. He has received many awards, most recently (2024) the William Aiton Medal for exceptional service to Kew.

Sorbus fayana is perhaps most similar to *S. leighensis* T.C.G.Rich from the Avon Gorge, from which it differs in having smaller, less lobed leaves and smaller fruits (Rich *et al.*, 2010). It differs from *S. porrigentiformis* and *S. × pseudoporrigentiformis* in the elliptic-obovate leaves and mostly globose fruits. It differs from *S. aria* in the mostly globose fruits and neat, small, uniserrate leaves. *Sorbus cheddarensis* L.Houston & Ashley Robertson differs in having elliptic leaves.

Figure 1. Holotype of *Sorbus fayana* (NMW).
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Sorbus × pseudoporrigentiformis T.C.G.Rich & L.Houston **nothosp. nov.** (=*S. aria* (L.) Crantz × *S. porrigentiformis* E.F.Warb.)

HOLOTYPE: Symonds Yat viewpoint by cafe [v.c.34 West Gloucestershire], SO5630315912, 12 July 2011, M. Fay, J. Pellicer Moscardó, S. Clermont & T. Rich, flow cytometry collecting number FC131, triploid; **NMW** accession number V.2011.1.782; Fig. 2).

Vernacular name: False Grey-leaved Whitebeam

Shrub or small tree to at least 6 m tall. Broad leaves of short sterile shoots with lamina 7.5–10.0 × 4.5–7.5 cm, obovate to elliptic, 1.3–1.6 times as long as wide and widest 45–65% of way along lamina length, apex obtuse, base broadly cuneate (angle 38–53°), weakly lobed 0–10% of way to midrib at centre of the lamina; margins weakly biserrate with teeth directed outwards, lowest 1–2 cm near the petiole nearly untoothed; veins 16–26 held at an angle of 27–37º to the midrib at centre of the lamina, upper surface mid to dark green, glabrous; lower surface greenish-white-tomentose. Petioles 10–23 mm. Inflorescences not seen. Largest fruits 10–14 × 10–15 mm, 0.85–1.0 times as long as wide but usually looking more or less globose, red at maturity, with a few small to large lenticels. Some seeds fully formed.

Sorbus × pseudoporrigentiformis is a triploid hybrid intermediate between the parents.

Rich *et al.* (2009; Rich, 2009) described *Sorbus* × *avonensis* to include spontaneous hybrids between *Sorbus aria* x *S. porrigentiformis* which did not form significant populations. The discovery by L. Houston that the plant on which *S.* × *avonensis* was based has a population of *c.*47 uniform trees and thus should be treated as a species (Houston *et al.*, 2022), means that a new name is required for other hybrids. This new hybrid name can be applied to spontaneous *S. aria* × *S. porrigentiformis* plants which do not form significant populations, and excludes *S. avonensis*. Such hybrids occur scattered in South-west England where the parents grow together.

Sorbus × pseudoporrigentiformis (Fig. 2) resembles *S. porrigentiformis* more than *S. aria*, with broadly obovate, uniserrate to weakly biserrate leaves and fruits globose to wider than long (length/width ratio 0·85–1·0). Given that it is derived multiple times from the variable *S. aria*, there is significant variation in leaf shape from different populations (Fig. 3). The tetraploid *S. porrigentiformis* has obovate, unlobed, weakly biserrate leaves, usually with 15–20 veins and greyish-white-tomentose undersides and fruits usually wider than long (length/width ratio 0·8–1·0). The diploid *S. aria* has ovate leaves, simple or shallowly lobed, uniserrate to biserrate leaves usually with 18–28 veins and white-tomentose undersides, and fruits usually longer than wide (length/width ratio 0.9–1.2). *Sorbus avonensis* differs in having distinctly lobed, obovate leaves.

Figure 2. Holotype of *Sorbus × pseudoporrigentiformis* (NMW). Reproduced with permission of the National Museum Wales.

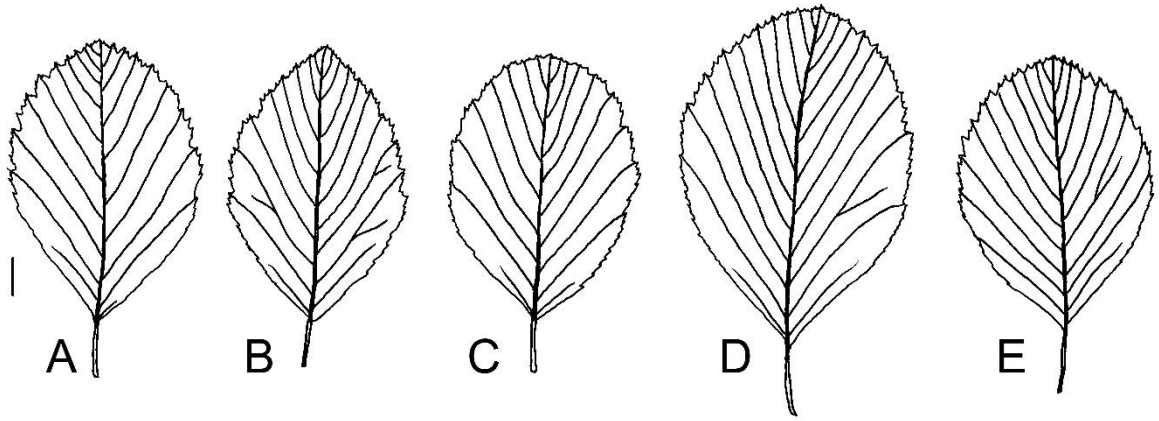

Figure 3. Variation in lateral rosette leaves of *S. × pseudoporrigentiformis* from different sites. A, Symonds Yat (v.c.34). B, Blaise Castle (v.c.34). C, Cheddar Gorge (v.c.6). D-E, Woodcroft (v.c.34). Scale bar 1 cm.

New combination

On T. Rich's advice, D. Green published his new species *Aria wyensis* following the generic split of *Sorbus* by Sennikov & Kurtto (2017); whilst its longer-term position is still likely to be in *Aria*, we require a combination under *Sorbus* to enable us to use it in the Handbook where *Sorbus sensu lato* is still being used until a comprehensive phylogeny of the Malinae is available and a consensus agreed on genera.

Sorbus wyensis (D.Green) T.C.G.Rich, **comb. nov**.
Basionym: *Aria wyensis* D.Green, *Brit. Irish Bot*. 6(1):1 (2024).

Neotype of *Sorbus incana* Hedl.

Neotype (designated here): plants cultivated in the Botanical Garden of Copenhagen. *Sorbus incana* Hedl., P1968-5911, 9 May 1990. **C** barcode no. C10025549 (Fig. 4).

Sorbus incana differs from other *Sorbus* section *Tormaria* species in having long, fine, acuminate teeth on the leaves, and red fruits.

Hedlund (1901) gave a very brief description and a half-leaf illustration of a tree introduced to the Uppsala Botanical Garden from Hamburg before 1832 "… it stands between *S. torminalis* (L.) Crantz and *S. aria*, but is noticeably closer to the latter. Regarding the leaf shape it resembles *S. latifolia* the most, but the leaves are thin on the upper side, felted, and the styles are fused at the bottom. The pollen and fruit formation are very poor … apparently a hybrid (*aria* x? *torminalis*) or a variety (descendant) of such". Hedlund's half-leaf illustration is inadequate for identification and thus is not suitable to typify the species.

There is no original herbarium material in Hedlund's herbarium (**UPS**; M. Hjertson, pers. comm. 2024) or in Hamburg (**HBG**; M. Schultz, pers. comm. 2024) and no original trees are currently cultivated in either Uppsala Botanic Gardens (the current tree was obtained from a nursery in 2006; J. Kårehed, pers. comm. 2024) or Hamburg Botanic Gardens (M. Schultz, pers. comm. 2024). A tree under this name originating from a nursery has been in cultivation in Copenhagen Botanic Gardens (**C**) since 1968 (T. Jørgensen & H. Elvery, pers. comms. 2024). Trees from a graft of

this Copenhagen tree initially planted in Alnarp, Sweden in the 1970s, are now widely available in cultivation and are planted in Sweden (J. Kårehed, pers. comm. 2024; Hedrén 2022). The neotype is therefore selected from this Copenhagen tree which represents the cultivated tree.

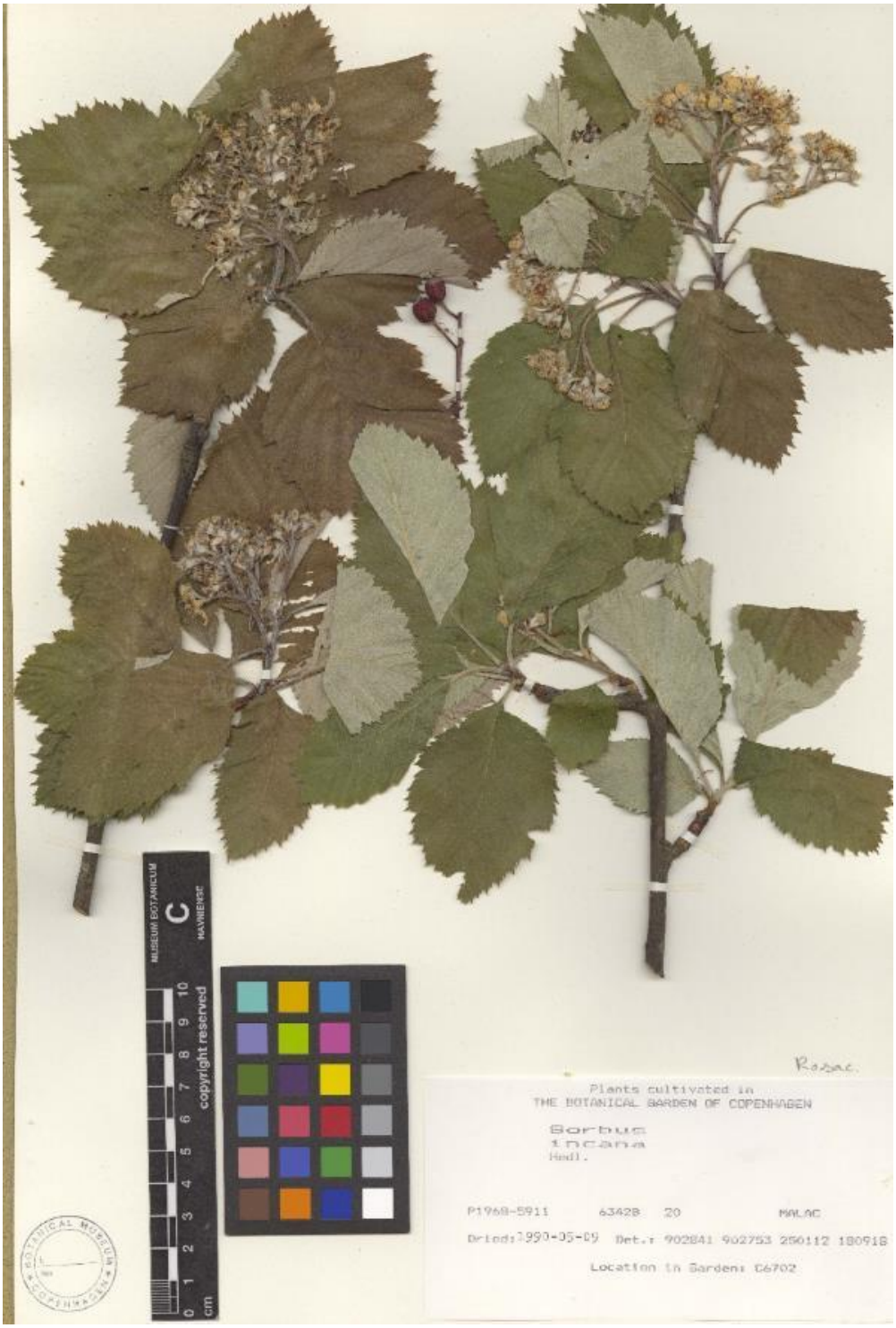

Figure 4. Neotype of *Sorbus incana* Hedl. (C).
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One *S. incana* tree has been found naturalised on Brownsea Island in Dorset (v.c.9), England by D. Leadbetter in 2024 (**NMW**).

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