photograph © Chris Sanders

Sorbus splendens, a newly named species from China, was collected in the Xiaocaoba Forest Reserve at 2,600 m and introduced into cultivation in 1995. The striking, young, red leaves emerge from large sticky leaf buds in the spring (see pages 62 to 67).

A new species of *Sorbus* from China

CHRIS SANDERS and JOHN GRIMSHAW describe *Sorbus splendens* and how this new species was introduced into cultivation.

On 18 September 1995 a party of *Rhododendron* enthusiasts set off on a plant-hunting expedition from Chengdu in Sichuan to the Wumengshan, about 130 km (80 miles) north of Kunming, Yunnan. Their route took them in a southerly direction through central-south Sichuan, across the Yangtse and into north-east Yunnan, through areas that had largely been overlooked by the major collectors earlier in the twentieth century. The group consisted of Peter Cox (Glendoick, Scotland), Ted and Romy Millais (Farnham, Surrey), David and Elizabeth Farnes and Dr Meg Weir (England) and Steve Hootman of the Rhododendron Species Foundation from Washington State, USA. They were joined in Yunnan by Sir Peter Hutchison (Scotland) as well as Sun Weiban and Dr Yang Zhenhong from the Kunming Botanical Institute, who took over as leaders for the rest of the trip.

About 100 miles south of Chengdu, having passed through the town of Ebian, the expedition entered an area of China which had rarely been botanised by Europeans. Although rhododendrons were the main objective, seeds of other notable ornamentals were collected, including several species of *Sorbus*. After spending a few days exploring the rugged country around Leibo, they crossed the Yangtse into Yunnan near Yongshan on 2 October. From Yongshan

Opposite, The glossy leaflets of *Sorbus splendens* contrast strikingly with the large panicles of fruit.

they spent a day driving south-eastwards through spectacular gorges to the town of Yiliang. The following day, 5 October, they headed north-east towards Xiaocaoba, known as a good place for rhododendrons. They found the vegetation was under great pressure, with overgrazing and hacking occurring. After lunch, the party followed a rough forest track into the Xiaocaoba Forest Reserve, where conditions were much better and it was in this location and nowhere else that a distinctive *Sorbus* was found. According to the late Ted Millais (1997) many young trees were scattered over the hillside at around 2,600 m. They were notable for their huge, flat 25 cm (10 in.) heads of small, bright-red fruits, large, sticky red buds and the distinctive leaves, composed of up to four pairs of large, glossy leaflets plus a terminal. Herbarium and seed collections were made by Peter Cox and Peter Hutchison under their number *CH* 7122 (originally as *Sorbus harrowiana*), with the herbarium material deposited at the Royal Botanic Garden Edinburgh; and seed was collected by Ted Millais under *EGM* 342. No material was collected by the Chinese botanists (Sun Weibang, pers. comm. 2019).

Back in the UK, three seedlings were subsequently planted out at Glendoick where they were seen by Chris Sanders on a visit in August 2000. Recognising that this could be something new, permission was obtained to take a small amount of budwood and this was later field budded onto *Sorbus aucuparia* rootstocks at Bridgemere Nurseries, Nantwich, Cheshire. The few maiden trees produced formed the nucleus for further propagation and it is probably from this source that this species first entered the trade in small numbers. Because the sticky, red buds immediately placed it in Section *Wilsonianae*, it was initially released as *Sorbus* aff. *wilsoniana*, but inevitably it was not long before this was corrupted to *S. wilsoniana*, by which name it is usually incorrectly known today.

Glendoick also supplied seeds from the original collection to RBG Edinburgh and Liverpool University's Ness Gardens on The Wirral. Young trees planted out at both Edinburgh and Dawyck were initially labelled *Sorbus harrowiana*, although the labels were subsequently changed to *S. wilsoniana.*

Ted Millais also successfully raised seedlings, although it is not known how many. However, he did send scions to Keith Rushforth who in due course sent a grafted plant to Hugh McAllister at Ness. There was some confusion at first, because the number supplied by Millais was *EGM* 291, but this, although applicable to a different *Sorbus* species, proved to be an error for *EGM* 342.

Seed was also collected by Steve Hootman under SEH 152. A large number of seedlings were raised and distributed in North America, under the name of *Sorbus sargentiana*. The largest plant at the Rhododendron Species Foundation is now a multistemmed 9 m (30 ft), and said to be one of the highlights of the

photograph © Chris Sanders

The flame-coloured leaflets of *Sorbus splendens* in late autumn.

collection when the foliage emerges (S. Hootman, pers. comm. 2019).

The initial confusion in the UK with *Sorbus wilsoniana* was understandable because this species is rare in cultivation and few living specimens are available for comparison. Although it was seen in flower at least twice by E. H. Wilson in Western Hubei (*W* 985, May 1901 for Veitch and *W* 553, June 1907 for the Arnold Arboretum), no seed was apparently collected. According to Dr Hugh McAllister, it was not introduced into cultivation until 1985 via the Shanghai Botanic Garden seed list, but no living material from this source has been seen by the authors. However, Tom Hudson and Edward Needham both collected it on Jinfo Shan, south-east Sichuan in 1994 under *TH* 0768 and *EN* 4011 respectively, and it is currently cultivated at Tregrehan and Tregye in Cornwall, as well as at Ashill in Devon (K. Rushforth). A young grafted tree of the former is growing at Ness Gardens and the 7(–9)-pinnate leaves closely match the herbarium specimens of Wilson's collections at Kew and Edinburgh. These are quite distinct from the usually 4-pinnate leaves of the Yunnanese species, whose glossy leaflets are much larger in all respects (see comparison of leaves images, pages 66–67). It is symptomatic of the general confusion that the account for *Sorbus wilsoniana* in *New Trees* (Grimshaw & Bayton 2009) combines information about both species.

The only other member of section *Wilsonianae, Sorbus sargentiana*, is quite common in cultivation, although in the early years of the twentieth century it appears to have been seen only by Wilson. He made three collections in Western Sichuan for the Arnold Arboretum (*W* 3011, June 1908, *W* 887, September 1908

and *W* 4207, October 1910). According to Bean (1980), it is likely that all the trees in cultivation derive from seed introduced from the last collection. Peter Cox collected a distinct form of this species with a more upright habit than the typical Wilson form from the Yizhi Pass, south of Ebian on the same expedition in 1995 (*CH* 7002). A similar tree was found in the same area by a Sichuan Expedition in 1992 (*SICH* 1233). *Sorbus sargentiana* has the same stout growth and red, sticky buds as the other two, but differs markedly from both in the usually 5-pinnate, matt-surfaced leaves whose toothed leaflets taper to an acuminate tip. The fruits are orange when ripe, compared with bright red in the other two species.

Sorbus (*sensu stricto*) has been well-studied and has been monographed by McAllister (2005), providing a solid taxonomic framework for the genus. Two subgenera are recognised, *Sorbus* (orange to orange-red fruits) and *Albocarmesinae* (white, pink or crimson fruits), each with a number of well-defined sections. With its robust branchlets, viscid buds, (minutely) papillose leaf-undersides and very large inflorescences it is clear that the taxon found in Yunnan in 1995 belongs to *Sorbus* subgenus *Sorbus* section *Wilsonianae*, but it differs in several ways from the two species recognised in the section by McAllister, *S. wilsoniana* C. K. Schneid. and *S. sargentiana* Koehne. We therefore regard it as a new species and describe it here as *Sorbus splendens* Grimshaw & C. R. Sanders to reflect the magnificence of its large glossy leaves and large showy infructescences of red berries.

Sorbus splendens **Grimshaw & C. R. Sanders**

Small tree to 10 m, with robust, sparse branches. Branchlets stout, to 8 mm diameter below inflorescence, glabrous, with conspicuous leaf scars and abundant lenticels. Buds 25–30 × 8–12 mm, with 3 bud scales, elongate, acute, bright red, very viscid. Leaves 4-5 per flowering shoot, the upper two subtending the inflorescence, the next lowest being the largest; on a flowering shoot the terminal bud forms in its axil. Leaves imparipinnate, with four pairs of leaflets, in outline to 30 × 20 cm, dark glossy green above, dull and paler green below; rachis red. Leaflets sessile or with a very short petiolule, increasing in size from base, uppermost pair to 117–126 × 34–45 mm, lowermost pair 74–81 × 27–33 mm, terminal leaflet 97–119 × 36–42 mm, unequal in the pairs (one side of the leaf having slightly smaller leaflets), narrowly obovate to obovate to obovate-lanceolate, with a short acute apex, base unequal, the apical side being offset by *ca.* 5 (-10) mm (equal on terminal leaflet), margins entire in lower ⅓–½, serrate above. Petiole clasping stem; stipules persistent, the largest subtending inflorescence branches, to 18 × 23 mm, rounded to wedge-shaped, with impressed parallel veins terminating in small teeth, margin retaining sparse hairs at maturity; rachis rounded below, canaliculate for entire length above, with pale sericeous hairs persisting in canal at maturity. Inflorescence terminal, very large, 15 × 20 cm, corymbose with many branches, the lowest

branches subtended by leaves with large stipules that do not form axillary buds; inflorescence branches pale green, becoming brownish, strongly lenticellate, covered with pale hairs when young; branchlets terminated by clusters of 5–10 small white flowers, resulting in hundreds of flowers per inflorescence. Carpels 3–4, the styles exserted by *ca.* 1 mm from the inward-curved calyx lobes. Fruits dark red-orange, more or less spherical, 5 × 4 mm. Seeds light brown, 2 × 1 mm, 1–2 per fruit.

Distribution Known only from open, disturbed woodland at 2,600 m, Xiaocaoba Forest Reserve, Yiliang County, Yunnan, China.

Sorbus wilsoniana
TH 768

Holotype

Cox, P. & Hutchinson, P. 7122, E (http://data.rbge.org.uk/herb/E00073202)

Sorbus splendens is easily distinguished from its relatives *S. sargentiana* and *S. wilsoniana* by its much larger winter buds, the fewer, larger leaflets with unequal bases, its very large inflorescences and the dark red-orange coloration of its fruits.

Key to *Sorbus* section Wilsonianae

1a Winter buds elongate, acute, leaflets in 3-4 pairs, glabrous below, unequal at base; fruits small, 5 × 4 mm, dark red-orange . . . . . *S. splendens*

1b Winter buds ovoid, leaflets in 4-8 pairs, equal at base; fruits larger 2

2a Leaflets in 4–7 pairs, with pale hairs below; fruit to 8 × 9 mm, orange . . . . . *S. sargentiana*

2b Leaflets in 7–9 pairs, glabrous but pale in colour below; fruit 8 × 8 mm, red . . . . . *S. wilsoniana*

It seems that *Sorbus splendens* is a narrow endemic in northern Yunnan, and probably of conservation corncern but no current information on its status is available. It is a sexual diploid and thus unlikely to come true from seed when grown in a mixed collection including other *Sorbus*.

So far, trees of *S. splendens* in cultivation have proved to be rather slow-

Sorbus splendens
CH 7122

Sorbus sargentiana
LANC. 470A

growing, at least when worked on *S. aucuparia*, though they produce large panicles of fruit 20 cm across from an early age. The tallest seen at around 6 m (20 ft) is in Keith Rushforth's arboretum in Devon. It is fully hardy in Britain, with thriving specimens growing from the original CH 7122 collection at Dawyck Botanic Garden, Scottish Borders (D. Knott, pers. comm. 2019). The large, glossy green leaflets attract attention at all times during the growing season, and take on splendid red and orange tints in autumn. Another ornamental feature in the best clones is the rich chocolate-brown young growth in spring, breaking from bright red, sticky buds. This combination of moderate stature and year-round interest makes *Sorbus splendens* suitable for even quite small gardens and it deserves to be widely planted.

Acknowledgements
We gratefully acknowledge the help provided during the research and writing of this article by Peter Cox, Sun Weibang, Keith Rushforth, Hugh McAllister, Tom Hudson and David Millais. Steve Hootman and David Knott. Dr John David kindly read through the draft and made valuable comments for its improvement.

References

Bean, W. J. (1980). *Trees & Shrubs Hardy in the British Isles*, Vol. 4, John Murray.
Cox, P. & Hutchison, P. (2008). *Seeds of Adventure* Garden Art Press.
McAllister, H. (2005). *The Genus Sorbus*, Royal Botanic Gardens Kew.
Millais, E. G. (1997). The 1995 expedition to southern Sichuan and north-east Yunnan in *Rhododendrons with Camellias and Magnolias*, 1997, pp. 9–16. Royal Horticultural Society.
Sargent, C. P. (1931/1988). *Sorbus* in *Plantae Wilsonianae*, Vol. 1. Dioscorides Press.