THREE NEW SPECIES OF *BERBERIS* FROM YUNNAN

Julian Harber

**Summary.** Three new species of *Berberis* from Yunnan are described and illustrated: *B. dokerlaica* Harber, *B. yiliangensis* Harber and *B. brevipedicillata* Harber. The remarkable diversity of this genus in the Hengduan Mountains of south central China is discussed.

*Berberis* is the largest genus within the family Berberidaceae with two main centres of diversity – Eurasia (mainly the Himalayas and China) and Latin America; two species are found in North America, four in Africa, none in Australasia. In my previous article for *Curtis’s Botanical Magazine* (Harber, 2012), I noted that the most recent account of the whole genus (Ahrendt, 1961) recognised 467 species, but subsequent studies (e.g. Landrum, 1999) suggested a lower number. Landrum’s suggestions (based on his revision of the *Berberis* of Chile and adjacent Argentina, where he reduced the number of species from Ahrendt’s 60 to 20) appeared to have been confirmed by Adhikari *et al.* (2012) who recognised only 19 of Ahrendt’s 27 species from Nepal.

However I now wish to record a cautionary note, based on my study of *Berberis* in China. This study will be published by the Missouri Botanical Garden and will recognise some 62 new species in addition to the three published here, taking the number of species in China to 267 as against the 192 recognised by Ahrendt. Moreover I do not regard this total as in any way definitive in that from my own collections and from those of others, I have identified a significant number of further potential species, though there is, as yet, insufficient evidence to be able to give watertight descriptions of them. The prospect of the number of *Berberis* species recorded for China alone approaching 300 might seem to be unlikely, but it should be noted that almost all my new and potential species are from the ‘Hengduan Mountains of South Central China hotspot’ as defined by Boufford & van Dijk (2000). This rich species diversity might usefully be compared to the diversity of *Rhododendron* in the same hotspot as recorded by the various publications from the Royal Botanic Garden, Edinburgh between 1980 and 1995.
822. BERBERIS DOKERLAICA
A new Berberis with marbled, glaucous leaves and red fruit
Berberidaceae

Julian Harber

I came across this species on a visit to Dawyck Botanic Garden in the autumn of 2012. Its dark purple mature stems and glaucous leaves make it a very distinctive and attractive species. Peter Cox (pers. comm.) tells me he had a plant of this in his own collection but unfortunately it died in 2013.

The Dawyck plants (Fig. 2) were first identified as Berberis franchetiana var glabripes Ahrendt whose type T. T. Yu 7864 (holotype, E E00217996, isotypes, A 00038751, BM BM001015563, PE 0103852, KUN 0754714) is also from Doker La (Fig. 1). These type specimens are all poor or very poor, but importantly the collector’s notes record the taxon as having two yellow seeds, this being confirmed by my dissection of fruits of the specimen at KUN. The fruits of the plant from which the type of B. dokerlaica was taken however have three to five reddish brown seeds.

Berberis dokerlaica probably has affinities with B. yunnanensis Franch. which has the same shape and size leaves and a somewhat similar colour of mature stems. However the colour of the leaves of B. dokerlaica is very different and the inflorescence of B. yunnanensis is fascicled or sub-fascicled whereas that of B. dokerlaica is sub-racemose. The fruit of B. dokerlaica is stylose whereas that of B. yunnanensis is not.

The colour of the leaves of Berberis dokerlaica is highly unusual. The only other Chinese species with leaves of a somewhat similar colour are B. calcipratorium, Ahrendt, B. temolaica Ahrendt and some forms of B. dictyophylla Franch., only the last two being in cultivation in the UK. All these three however have abaxially pruinose leaves, whereas those of B. dokerlaica are densely papillose. The collection details on the sheet of the type do not record that the seeds were collected in mixed forest, (Peter Cox pers comm).
Berberis dokerlaica is only known from the type and from G. M. Feng 5877 and 5869 both collected on Doker La (details below: Fig. 1). Fruit from Feng 5877 had two to four seeds of the same reddish brown colour as the seeds of the type.

Cultivation. The plants of Berberis dokerlaica are flourishing at Dawyck (Fig. 2) and given the often harsh winters there, it would seem safe to say that it is hardy plant for British conditions. It is also likely to be intolerant of summer drought.

Berberis dokerlaica Harber sp. nov. TYPE: cultivated in Dawyck Botanic Garden, Strobo, Scotland, May 30, 2013, P. Brownless 431 from P. A. Cox 6110, China, NW Yunnan, Déqên (Deqin) Xian, W of Mekong River, above Camp 6 on path to Doker La, 3600 m, September 24, 1992; (holotype E, E00668752!).

Berberis dokerlaica is somewhat similar to Berberis yunnanensis, but has glaucous leaves, a sub-racemose inflorescence and stylose berries.

Description. Deciduous shrubs to 3 m tall; mature stems dark purple turning reddish brown, sulcate; young shoots pinkish-purple, pruinose; spines pale yellow, 0.6–2 cm, abaxially sulcate, solitary or absent towards apex of stems. Pétiole almost absent; leaf blade abaxially and adaxially glaucous, obovate or oblong-obovate, 2–4.3 × 1–1.8 cm, papery, abaxially densely papillose, midvein raised abaxially, flat adaxially, lateral veins and reticulation inconspicuous abaxially (though conspicuous when dry), conspicuous adaxially, base attenuate, margin entire, apex obtuse or rounded, sometimes sub-acute, sometimes mucronate. Inflorescence a sub-raceme sometimes fascicled at base or a fascicle towards the apex of stems, (2–) 4 to 10-flowered, 3–4 cm overall including peduncle 1–1.8 cm; pedicel 6–8 mm but to 15 mm when from base. Sepals in 3 whorls; outer sepals oblong-ovate 5–6 × 2.5–3.5 mm; median sepals oblong elliptic 7–8 × 4–5 mm, inner sepals broadly elliptic 7–8 × 4–5 mm; petals obovate 4.5 × 3 mm, base slightly clawed, glands widely separate, c. 1 mm, apex emarginate; pistil c. 3 mm; stamens c. 3.5 mm, anther connective distinctly produced, truncate or rounded; ovules 3–5. Berry bright red, ovoid or oblong, 12–13 mm × 5–7 mm; style persistent; seeds reddish brown (Fig. 3).

Distribution. Berberis dokerlaica is only known from Dokerla in Déqên (Deqin) Xian in northwest Yunnan.

Habitat. The seeds of Cox 6110 were collected from the side of a path in mixed forest at 3600 m. G. M. Feng 5869 and 5877 (see below) from mixed forest at ca 3000–34 000 m.

Phenology. Berberis dokerlaica has been collected in fruit in August and September. Its flowering period in the wild is unknown. It flowers in May in southern Scotland.

Plate 822  Berberis dokerlaica

GÜLNUR EKSI
Selected Specimens. NW Yunnan, Dêqên (Deqin) Xian: Lancanjiang-Nujiang divide, Doker la, 3000–3400 m, August 3, 1940, G. M. Feng 5869 (KUN 0176201-3); same details, but 3100–3400, G. M. Feng 5877 (KUN 0176184, 0176204-5). Dawyck Botanic Garden, Strobo, Scotland, September 27, 1999, D. G. Knott. s.n. from P. A. Cox 6110, (E E00269076 (cultivated); Dawyck Botanic Garden, accession nos. 19924428A-C (living plants).

REFERENCES


Fig. 3. **Berberis dokerlaica**. A, leaf, ×1.5; B, node with spines, ×5; C, flower, face view, ×6; D, E, outer sepals (2 different shapes) ×6; F, median sepal (1 of 3 similar), ×6; G, inner sepal (1 of 3 similar), ×6; H, exterior petal (1 of 3 similar), ×6; I, interior petal (1 of 3 similar), ×8; J, stamen, (side and face views) ×10; K, pistil, ×10; L, pistil, longitudinal section, ×0; M, seed, ×5. Drawn by Gülşür Eksi from specimens of the type plant at Dawyck.