

Sorbus erythrosepala Kainul., Sjöman, Aldén, sp. nov.,
a new rowan from Yunnan, China

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Sorbus erythrosepala Kainul., Sjöman, Aldén, sp. nov. (Rosaceae), a new rowan from Yunnan, China

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Rosaceae,
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rowan,
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new species.

ABSTRACT

Sorbus erythrosepala sp. nov. from Napa Hai in north-western Yunnan is here described and illustrated. It belongs to the white to crimson fruited *Sorbus* subgenus *Albocarmesinae* and is superficially similar to the sympatric *Sorbus filipes* Hand.-Mazz., but it can be distinguished from that species by the stouter shoots, the larger leaves with pubescent, dull and more numerous leaflets, and in the coloration of the fruits.

RÉSUMÉ

Sorbus erythrosepala Kainul., Sjöman, Aldén, sp. nov. (Rosaceae), un sorbier nouveau du Yunnan, Chine. *Sorbus erythrosepala* sp. nov. de Napa Hai dans le nord-ouest du Yunnan est décrit et illustré ici. Cette espèce appartient au sous-genre *Sorbus* (*Albocarmesinae*) à fruits blancs à cramoisis et est superficiellement similaire au sympatrique *Sorbus filipes* Hand.-Mazz., mais il peut être distingué de cette espèce par des pousses plus robustes, des feuilles plus grandes avec des folioles pubescentes, ternes et plus nombreuses, et par la coloration des fruits.

MOTS CLÉS

Rosaceae,
Sorbus,
sorbier,
Chine,
Yunnan,
espèce nouvelle.

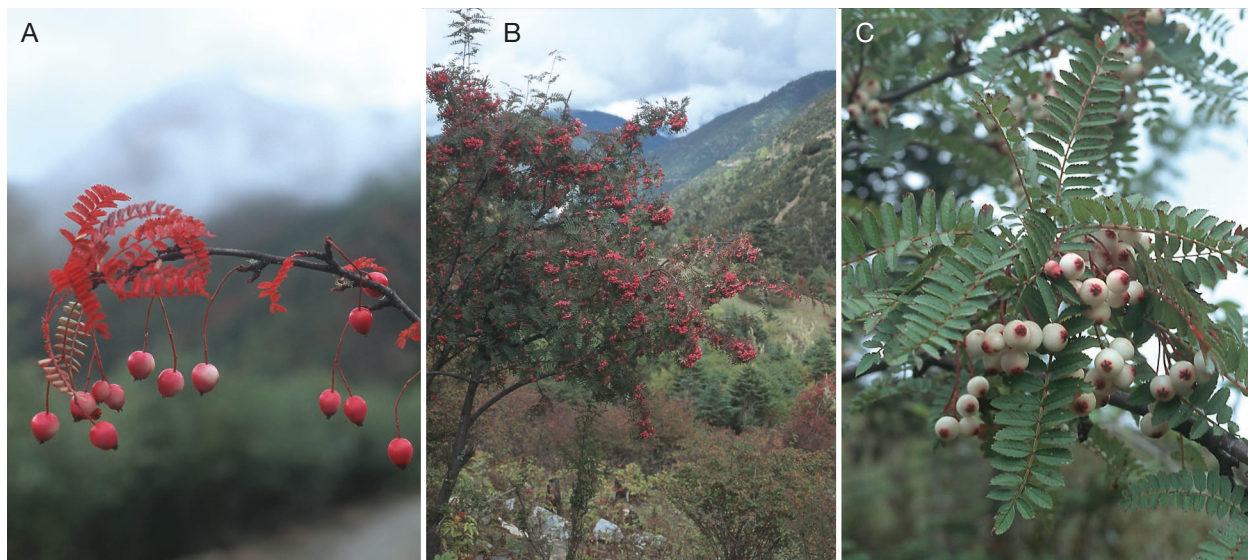


FIG. 1. — *Sorbus* species collected during the KGB-expedition to Yunnan: **A**, *Sorbus filipes* Hand.-Mazz. (KGB 555, 1993-10-02, Bei Ma Shan); **B**, *S. macrantha* Merr. (KGB 552, 1993-10-02, Bei Ma Shan); **C**, *S. erythrosepala* sp. nov. (KGB 71, 1993-09-15, Napa Hai). Photographs: B. Aldén.

INTRODUCTION

In 1993, a joint botanical expedition to north-western Yunnan was conducted by Kunming Institute of Botany and Gothenburg Botanical Garden. During the Kunming-Gothenburg Botanical (KGB) expedition seeds of many species of rowans (*Sorbus* L., Rosaceae) were collected and subsequently brought into cultivation at Gothenburg Botanical Garden. Several of these were previously not known in cultivation: *Sorbus filipes* Hand.-Mazz., *S. macrantha* Merr., and a third species, described below, whose identification has remained unresolved (Fig. 1). Using the species determination key in the *Sorbus*-monograph by McAllister (2005a) the newly described species keys out to *Sorbus* aff. *filipes* in subgenus *Albocarmesinae* McAll. The plant is superficially similar to the sympatric *Sorbus filipes* but differs in several morphological characters. We conclude that it represents an undescribed species, which we name *Sorbus erythrosepala* sp. nov.

TAXONOMIC TREATMENT

Family ROSACEAE Juss.
Genus *Sorbus* L.

Sorbus erythrosepala Kainul., Sjöman, Aldén, sp. nov.
(Figs 1C; 2; 3)

Sorbus erythrosepala sp. nov. is morphologically similar to *S. filipes* Hand.-Mazz. in having lax inflorescences with pink flowers; long-pedunculate and $\pm$ pendulous infructescences and white to pink fruits, but it differs from the latter in having leaves that are sparsely pubescent and dull (vs glabrous and glossy), and leaflets that are longer (to c. 35 mm vs c. 20 mm) and more numerous (up to 15 vs 8-13). Furthermore, its mature fruits are usually white (sometimes

with pink blotches and usually with pink to crimson calyx lobes) whereas fruits of *Sorbus filipes* are usually pinkish.

TYPE SPECIMEN. — **China**. Yunnan, Diqing Prefecture, mountain above Napa Hai, 27°55'N, 99°34'E, 3600 m alt., degraded *Pinus densata* forest with bamboo, 15.IX.1993 (fr.), B. Aldén, M. Lidén, L. R. Fu, S. Z. Yun, and H. Zetterlund KGB 71 (holo-, GB[GB-0209594]!).

ETYMOLOGY. — The specific epithet refers to the red sepals, which are distinctly contrasting on the otherwise white fruits.

DESCRIPTION

Shrub, to 2.5 m tall. Branchlets pubescent when young, glabrous when old. Bark brown to dark grey with pale yellow lenticels. Buds ovoid, brownish red, $\pm$ glossy, yellowish brown pubescent. Leaves pinnately compound, together with rachis 12-22 $\times$ 4.5-7 cm; petiole 1.5-2.5 cm long; stipules persistent, ovate, furcate, c. 5 $\times$ 3 mm; rachis slightly winged, sulcate, sparsely pubescent; leaflets 8-15 pairs, opposite, oblong to oblong-ovate, 1.5-3.5 $\times$ 0.7-1.5 cm, surfaces sparsely pubescent, dull green adaxially, pale greyish-green abaxially; lateral veins 8-10 pairs, margins serrate; base $\pm$ oblique, cuneate to rounded, apex acute to rounded. Inflorescences corymbose, 3-30 flowered, pedicels sparsely pubescent. Flowers 10-15 mm in diam.; hypanthium campanulate, reddish pink, glabrous; sepals brownish pink (apex greenish), fleshy, broadly triangular, 2-3 $\times$ 3-4 mm, margins entire, abaxially glabrous, adaxially rufous pubescent towards apex; petals pink with reddish venation, $\pm$ glabrous, orbiculate to obovate, 5-6 $\times$ 5-6 mm, incurved at anthesis; stamens 12-20; carpels entirely adnate to hypanthium, styles 3-5, c. as long as stamens, puberulous basally. Fruits subglobose, 12-16 mm in diam., glabrous, soft, white (sometimes with pink blotches and usually with pink to crimson sepals), sepals persistent and incurved on fruits. Mesocarp white. Seeds brown, striate, flattened, $\pm$ obovate, the tapering (hilar) end being curved, 4-5 $\times$ 2-3 mm.



FIG. 2. — Holotype of *Sorbus erythrosepala* sp. nov. (GB-0209594), reproduced with permission from Herbarium GB.



FIG. 3. — *Sorbus erythrosepala* sp. nov., photos of cultivated material (KGB 71) at Gothenburg Botanical Garden: **A**, flower buds; **B**, open flowers; **C**, branch with immature fruits; **D**, ripe fruits; **E**, buds; **F**, shrub in autumn colours with pendulous infructescences. Photographs: K. Kainulainen.



FIG. 4. — *Sorbus filipes* Hand.-Mazz., photos of cultivated material (KGB 72) at Gothenburg Botanical Garden: **A**, flower buds and open flowers; **B**, **C**, immature fruits; **D**, **E**, pendulous infructescences with ripe fruits. Photographs: K. Kainulainen.

DISCUSSION

Sorbus erythrosepala sp. nov. differs from *S. filipes* in its larger and more numerous leaflets which are pubescent and not glossy. Fruits of *Sorbus erythrosepala* sp. nov. also tend to have sepals that are more incurved compared to the $\pm$ erect sepals of *S. filipes*, and except for the sepals the fruits are usually white rather than pink although they frequently have pink blotches (Figs 1; 3; 4). The young shoots are also stouter in *Sorbus erythrosepala* sp. nov. than in *S. filipes* (3–4 mm vs 1.5–3 mm in diam.). *Sorbus filipes* is a species with a distribution in south-eastern Tibet, north-western Yunnan, and northern Burma (Lu & Spongberg 2003), and it is apparently sympatric with *S. erythrosepala* sp. nov. because it was collected at the same locality by the KGB-expedition (collection number KGB 72; a plant derived from seeds of this collection is illustrated in Fig. 4). Both species are part of *Sorbus* subg. *Albocarmesinae*, described by McAllister

(2005a), and characterized as having white to crimson fruits with white fruit flesh. In a molecular phylogenetic study, Li *et al.* (2017) found strong support for a lineage largely congruent with *Albocarmesinae sensu* McAllister (but which also included *Sorbus tianshanica* Rupr.).

According to McAllister (2005a, b), there is within subgenus *Albocarmesinae* a species complex of pink-flowered tetraploid apomictic microspecies in Yunnan and adjacent areas, some of which may have hybrid origin. Besides the typical *Sorbus filipes* he also mentioned and illustrated several deviating specimens as *S. aff. filipes*. One of these collections, SICH 1009 (E [E00617823, E00617824, E00617825, E00617932, E00621326]; collected at 3600 m elevation in Muli County, Sichuan), is similar to and perhaps conspecific with *Sorbus erythrosepala* sp. nov. However, more detailed studies will be required to clarify its species identity and the taxonomy of the filipes-complex as a whole.

Sorbus erythrosepala sp. nov. is so far only known from the type collection. However, plants were raised from seeds from the type collection and the species is still in cultivation in Gothenburg Botanical Garden (accession number 1994-0071/2). Efforts are underway to propagate more plants and to distribute seeds in order to ensure that material from the original collection can remain in cultivation. In contrast, *Sorbus filipes* and *S. macrantha* – the other two rowans that the KGB expedition introduced into cultivation – are by now fairly well-established in Swedish gardens. But seemingly, when cultivated, plants of *Sorbus filipes* can sometimes become leggy and suffer from die-back. We suspect this is particularly expressed when grown in clay soils. As with most rowans a well-drained, but humus-rich soil would be the best. To produce flowers, it should be planted in a sunny to semi-shaded spot. Regarding *Sorbus macrantha* (not treated and obviously overlooked by McAllister 2005a), it is another attractive species often with masses of glossy, bright pink fruits (Fig. 1B). This species has worked excellently in cultivation both in the Botanic Garden in Gothenburg and in several private gardens in southern Sweden.

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