



## Valid publication of the name *Eriobotrya* × *daduheensis* (Malinae, Rosaceae)

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### Abstract

“*Eriobotrya prinoides* Rehd. et Wils. var. *daduheensis* H. Z. Zhang” was not validly published by Zhang *et al.* because there was no Latin diagnosis or description and no specimen was indicated as type. Recent studies showed that it was a hybrid between *Eriobotrya japonica* and *E. prinoides*. “*Eriobotrya* × *daduheensis* (H. Z. Zhang) B. Tang” was proposed, but it was a *nomen nudum*. *Eriobotrya* × *daduheensis* H. Z. Zhang ex W. B. Liao, Q. Fan et M. Y. Ding is validated by giving a full description and designating the type specimens in this paper.

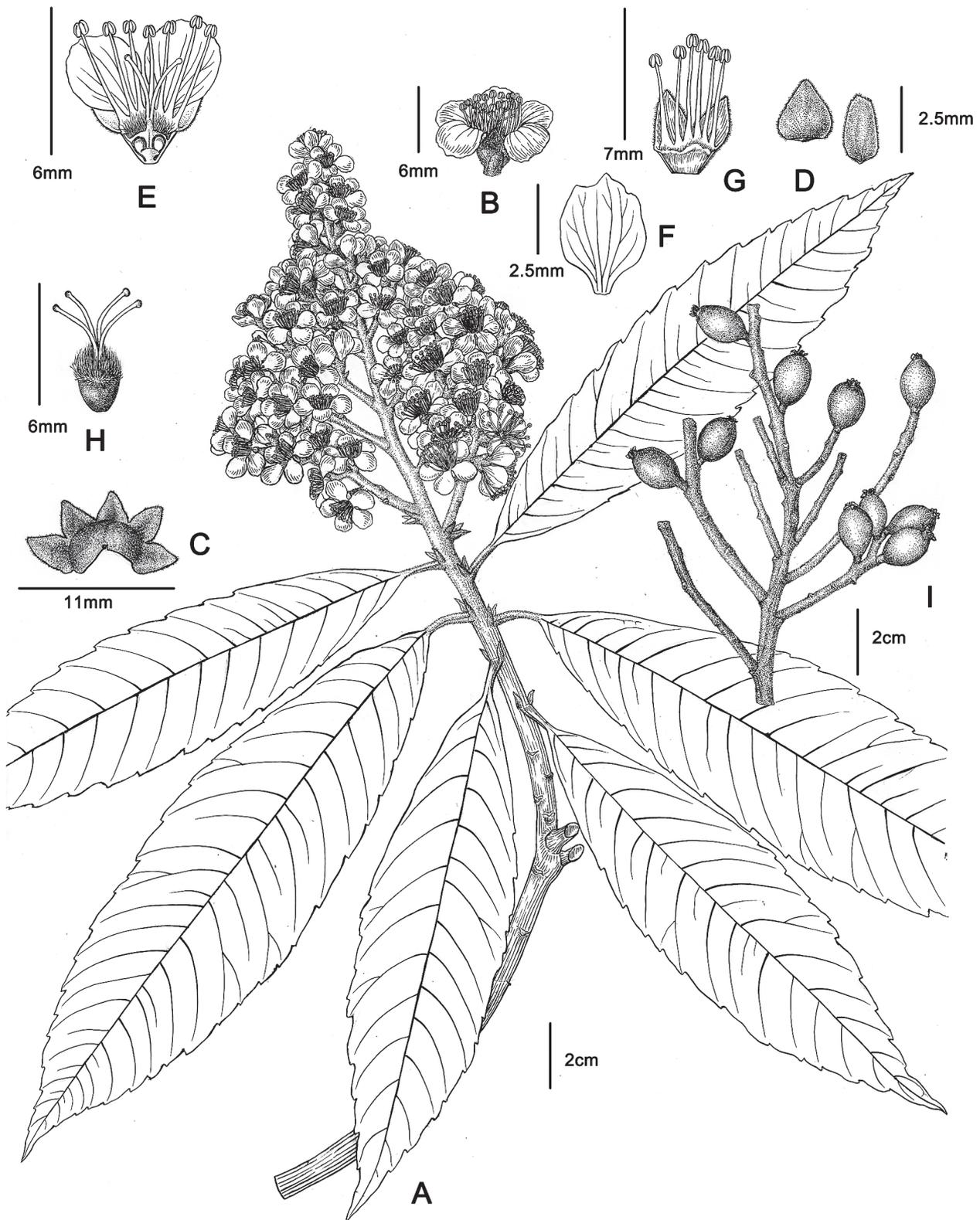
**Key words:** *Eriobotrya* × *daduheensis*, Rosaceae, valid publication

The genus *Eriobotrya* Lindley (1822: 96, 102), a small genus of subtribe Malinae (formerly the Pyrinae or Maloideae, Rosaceae) consisting of 15–20 species, is distributed in Himalaya, eastern Asia and western Malesia (Vidal 1965; Mabberley 2008). Currently, the genus includes approximately 14 species in China. Among these species, *Eriobotrya japonica* (Thunberg) Lindley (1822: 102), commonly known as loquat, is an important fruit tree cultivated throughout southeastern Asia and south Europe (Gu & Spongberg 2003, Vilanova *et al.* 2001).

*E. prinoides* Rehd. et Wils. var. *daduheensis* H. Z. Zhang was published by Zhang *et al.* (Zhang *et al.* 1990), accompanied only by a Chinese diagnosis, without any Latin diagnosis or description, which was in violation of Article 39.1 of the ICBN (McNeill *et al.* 2012). Five collections were simultaneously listed in the original reference: *Anonymous* 85018, 85019, 85020, 85022, and 85023, but none of them was indicated as the type, in conflict with Article 40.1 of the ICBN. The herbarium in which the specimens conserved was not specified. Therefore, the name was invalid.

There are only five *Eriobotrya* taxa flowering in autumn and winter (from October to February) in China, including *E. japonica*, *E. prinoides* Rehder et E. H. Wilson (1912: 194), *E. prinoides* var. *daduheensis*, *E. malipoensis* K. C. Kuan (1963: 231) and *E. serrata* J. E. Vidal (1965: 558). *E. japonica* is widely distributed in Hubei and Sichuan (Liao *et al.* 1997). *E. prinoides* occurs naturally in Sichuan and Yunnan, *E. prinoides* var. *daduheensis* is distributed in Hanyuan county and Shimian county of Sichuan. *E. malipoensis* occurs only in Malipo, Yunnan. *E. serrata* is distributed in Guangxi and Yunnan (Zhang *et al.* 1990). *E. prinoides* var. *daduheensis* is currently known only from the overlapping regions of *E. japonica* and *E. prinoides* which has many intermediate morphological characteristics of *E. japonica* and *E. prinoides* (Zhang *et al.* 1990, Yan *et al.* 2011). Based on the sequence data of four low-copy nuclear genes and two chloroplast regions, Fan *et al.* (2014) provided convincing evidence for a hybrid status for *E. prinoides* var. *daduheensis*. Most hybrid individuals are later-generation hybrids, and both *E. japonica* and *E. prinoides* can serve as female parents. This result was consistent with the previous conclusions drawn from morphological traits (Yan *et al.* 2011), karyotype and peroxidase isozyme data (Tang 1997), RARD, AFLP and ISSR data (Yang *et al.* 2007, Wang *et al.*, 2012).

Considering its hybrid status, the name *Eriobotrya* × *daduheensis* (H. Z. Zhang) B. Tang (1997: 22) was proposed but with no Latin description and no type was designated, so it was a *nomen nudum*. In this paper, *Eriobotrya* × *daduheensis* H. Z. Zhang ex W. B. Liao, Q. Fan et M. Y. Ding is validated by giving a full description and designating the type specimens. Because there was no information about the herbarium in which the specimens mentioned in the protologue were conserved, we designated *Q. Fan* 9292 as the holotype of the name *Eriobotrya* × *daduheensis*.



**FIGURE 1.** *Eriobotrya* × *daduheensis* H. Z. Zhang ex W. B. Liao, Q. Fan et M. Y. Ding. A. Flowering branch. B. Flower with calyx and bracts. C. Calyx lobes, abaxial view. D. Bracts, adaxial view. E. Flower, in longitudinal section. F. Petal. G. Stamens. H. Style. I. Fruit branch. A–H from *Q. Fan 9292* (holotype, SYS); I from *Q. Fan 9607* (paratype, SYS). Drawn by Yunxiao Liu.

*Eriobotrya* × *daduheensis* H. Z. Zhang ex W. B. Liao, Q. Fan et M. Y. Ding, *hybr. nov.* (Fig. 1)

Species *E. japonicae* similis, sed lamina supra non rugosis, inflorescentiis brevioribus, 8–12 cm longis (non 10–20 cm), stigmatibus 3 vel 4, raro 5 (non 5), fructibus minoribus, 1.5–3 cm diam. (non 2–5 cm) differt; *E. prinoides* similis, sed lamina majoribus, stipulis subulatis (non ovatis), inflorescentiis longioribus, fructibus majoribus differt.

**TYPE:**—CHINA. Sichuan: Hanyuan County, Dashu Town, Xinmin Village, Mt. Shizishan, in the forest edge at the foot of the mountain, 970 m, 29°17'48.18"N, 102°39'44.94"E, 19 December 2007, *Q. Fan* 9292 (fl., holotype SYS! barcoding number 190936; isotypes SYS! IBSC!).

Trees 3–8 m tall. Branchlets brownish, tomentose when young, glabrescent. Stipules subulate, 5–12 mm long; petiole 0.5–2.5 cm, brown tomentose; leaf blade elliptic, 10.0–24.0 × 4.5–9.0 cm, leathery, midvein prominent abaxially, lateral veins 9–16 pairs, abaxially densely tomentose, grey or brown, adaxially glabrous, base attenuate, margin serrate, apex acuminate. Inflorescences in terminal panicles, 8.0–12.0 cm long; peduncle and pedicel densely rusty tomentose; bracts subulate, 3–6 mm long, densely rusty tomentose. Flowers fragrant, 1–1.5 cm in diam. Hypanthium cupular, abaxially rusty tomentose. Sepals triangular, 2.5–3 mm long, abaxially rusty tomentose. Petals white, elliptic, 5–7 × 3.5–4.5 mm, apex emarginate. Stamens 20, filaments 3.5–4 mm long, anthers ca. 1 mm long. Ovary densely pubescent, 3–5-loculed, with 2 ovules per locule; styles 3 or 4, rarely 5, 2.5–4 mm, free. Pome yellowish red, globose or nearly globose, 1.5–3.0 cm in diam., gray tomentose, glabrescent; fruiting pedicel 2–6 mm, rusty tomentose. Seeds 1–3.

**Phenology:**—The hybrid species was found flowering between October and January and fruiting between April to May.

**Distribution and Habitat:**—*Eriobotrya* × *daduheensis* is currently known only from the overlapping regions of *E. japonica* and *E. prinoides*, that is, the Daduhe River Basin in Hanyuan County and Shimian County of Sichuan Province, China. This hybrid species usually grows in open forests or forest edges.

**Etymology:**—The specific epithet refers to the Daduhe River Basin, the locality of the type collection.

**Paratypes:**—CHINA. Sichuan: Hanyuan county, Dashu town, Xinmin village, Shizishan, 926m, 29°17'48.18"N, 102°39'44.94"E, 19 December 2007, *Q. Fan* 9287 (fl., SYS); Shimian county, Xinmian town, Dongqu village, 955 m, 29°14'27.00"N, 102°24'40.40"E, 21 December 2007, *Q. Fan* 9388 (fl., SYS); Shimian county, Xieluo township, Tianping village, 1135 m, 29°14'57.12"N, 102°14'39.54"E, 22 December 2007, *Q. Fan* 9396 (fl., SYS); Shimian county, Chengbei township, Xiaping villiage, 1095 m, 29°14'36.06"N, 102°19'53.64"E, 22 December 2007, *Q. Fan* 9417 (fl., SYS); the same locality, 22 December 2007, *Q. Fan* 9421 (fl., SYS); Shimian county, Xinmian town, Dongqu village, 955 m, 29°14'27.00"N, 102°24'40.40"E, 20 April, 2008, *Q. Fan* 9600 (fr., SYS); the same locality, 20 April 2008, *Q. Fan* 9603 (fr., SYS); the same locality, 20 April 2008, *Q. Fan* 9604 (fr., SYS); Hanyuan county, Dashu town, Xinmin village, Shizishan, 926m, 29°17'48.18"N, 102°39'44.94"E, 21 April 2008, *Q. Fan* 9607 (fr., SYS).

**Key:**—To distinguish these species of *Eriobotrya* flowering in autumn and winter (from October to February) in China, an identification key is provided (based on Zhang *et al.* 1990, Gu & Spongberg 2003).

### Key to *Eriobotrya* species flowering in autumn and winter in China

1. Leaves abaxially brown or brownish yellow tomentose when young, glabrescent ..... *E. serrata*
- Leaves abaxially rusty or gray persistent tomentose ..... 2
2. Leaves abaxially rusty tomentose; leaf blade 30–40 cm long; lateral veins 22–25 pairs ..... *E. malipoensis*
- Leaves abaxially gray tomentose; leaf blade 7–30 cm long; lateral veins 9–16 pairs ..... 3
3. Leaf blade adaxially rugose; styles 5 ..... *E. japonica*
- Leaf blade adaxially not rugose; styles 2–4, rarely 5 ..... 4
4. Stipule subulate; inflorescences 8.0–12.0 cm long; pome 1.5–3.0 cm in diam ..... *E.* × *daduheensis*
- Stipule ovate; inflorescences 6–10 cm long; pome 6–7 mm in diam ..... *E. prinoides*

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