

Clarifying the nomenclature of *Crateva trifoliata* (Capparaceae)

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ABSTRACT. *Capparis trifoliata* Roxb., the supposed basionym of '*Crateva adansonii* subsp. *trifoliata* (Roxb.) Jacobs' and '*Crateva trifoliata* (Roxb.) B.S.Sun', is shown to represent an illegitimate renaming of *Crateva religiosa* G.Forst. However, Jacobs effectively excluded the nomenclatural type of *Capparis trifoliata*, thus avoiding creating a superfluous name, and instead described *Crateva adansonii* subsp. *trifoliata* Jacobs validated by the citation of the Latin description of *Crateva erythrocarpa* Gagnep. Sun also excluded the type of *Crateva religiosa*, but his effective transfer of *C. adansonii* subsp. *trifoliata* to specific rank does not have priority over *Crateva erythrocarpa* Gagnep., which is therefore the correct name for this taxon when it is considered a distinct species. The name *Crateva nurvula* Buch.-Ham. is formally lectotypified.

Keywords. *Capparis*, China, *Crateva*, India, nomenclature, Roxburgh, typification

Introduction

William Roxburgh named an Indian species *Capparis trifoliata*. The name was included in Roxburgh's *Hortus Bengalensis* (Roxburgh, 1814: 41) but as no description was included the name remained invalid. A brief description was eventually published in the second edition of *Flora Indica* (Roxburgh, 1832: vol. 2, p. 571), 17 years after Roxburgh had died. Jacobs (1964), in a revision of the genus *Crateva*, included *Capparis trifoliata* within the wide-ranging (seasonally dry tropical Africa and Asia) and variable *Crateva adansonii* DC. In order to categorise the variation within the species, Jacobs recognised a series of five subspecies separable on leaf characters. These consisted of *Crateva adansonii* subsp. *adansonii* in Africa, *C. adansonii* subsp. *odora* (Buch.-Ham.) Jacobs in India, *C. adansonii* subsp. *trifoliata* (Roxb.) Jacobs in Indochina, *C. adansonii* subsp. *formosensis* Jacobs in China and Taiwan and *C. adansonii* subsp. *axillaris* (C.Presl) Jacobs in the Philippines and Java. While some recent works have favoured splitting up *Crateva adansonii*, others have maintained Jacobs's system (Chayamarit, 1991; Liu & Liao, 1996; Philcox, 1996). However, there is a nomenclatural problem with *Capparis trifoliata* Roxb., upon which Jacobs evidently based *C. adansonii* subsp. *trifoliata*. In the original validation in *Flora Indica*, Roxburgh cited '*Crateva religiosa* Willd. 2. 853' in synonymy. This is a reference to Willdenow's *Species Plantarum*. In turn, Willdenow referred to Vahl (1794: 62) and Forster (1786: 203). The latter element (also referred to by Vahl) relates to the original

publication of *Crateva religiosa* G.Forst. Roxburgh, Willdenow and Vahl, in their somewhat confused view, also all referred to the *Hortus Malabaricus* element 'niirvala' (Van Rheede tot Draakestein, 1682: 49–50, t. 42) – now considered to represent a separate species. Roxburgh stated that his species was native to India and certainly included what Jacobs later referred to as *Crateva adansonii* subsp. *odora* as shown by a Roxburgh specimen from William Hooker's herbarium now at Kew and Roxburgh's Icones no. 157 also at Kew. Jacobs (1964: 199) referred to a Roxburgh specimen in the Herbarium of the East India Company as the holotype of *Capparis trifoliata*. This does seem to be a specimen of *Crateva adansonii* subsp. *trifoliata*. It is mounted with another Roxburgh specimen but Jacobs made it clear that he was referring to the specimen annotated '1' on the sheet. The origins of the specimen are unknown. Nomenclaturally, *Capparis trifoliata* Roxb. represents a superfluous renaming of *Crateva religiosa* and, as no type was indicated by Roxburgh, it is typified by the type of *C. religiosa* (McNeill et al., 2012: Art. 7.5). Therefore Jacob's subspecies' name also appears to be based on *Crateva religiosa*. Similarly so does '*Crateva trifoliata* (Roxb.) B.S.Sun' which has been used in recent Chinese floras (Sun, 1999; Zhang & Tucker, 2008).

However, apparently unwittingly, Jacobs (1964) effectively excluded the type of *Crateva religiosa* from *C. adansonii* subsp. *trifoliata* by recognising *Crateva religiosa* as a taxon distinct from *C. adansonii* subsp. *trifoliata* in the same paper. Such exclusion by implication is permitted under the code (McNeill et al., 2012: Art. 52.2; cf. Ex. 7). While Jacobs provided a description in English of *Crateva adansonii* subsp. *trifoliata* this is not sufficient to validate a new taxon at this date. However Jacobs also cited *Crateva erythrocarpa* Gagnep. in synonymy. This was published by Gagnepain with a Latin description. Therefore *Crateva adansonii* subsp. *trifoliata* is validated by the Latin description of *C. erythrocarpa*.

Sun (1999) also seemed to base *Crateva trifoliata* on *Capparis trifoliata* Roxb. However, Sun excluded *Crateva religiosa* G.Forst. from the flora of China, noting that the application of the name to the species used to make fish lures in Taiwan and the Ryukyus was erroneous. Therefore, like Jacobs, Sun excluded Roxburgh's nomenclatural type and effectively created a new combination at species rank based on Jacobs's subspecies. But this combination only has priority at species rank from the date of Sun's publication. Therefore the correct name at species rank is *Crateva erythrocarpa* Gagnep.

Crateva adansonii* subsp. *trifoliata Jacobs, Blumea 12: 199 (1964). – *Crateva trifoliata* (Jacobs) B.S.Sun, Fl. Reipubl. Popularis Sin. 32: 489 (1999). – TYPE: *W. Roxburgh* s.n. (EIC 6972C, specimen annot. 1) (holotype K-W [barcode no. K001126439]).

Crateva erythrocarpa Gagnep., Bull. Soc. Bot. France 55: 322 (1908). – TYPE: Vietnam, montagne de Chaudoc, July 1876, *F.-J. Harmand* 608 (lectotype P [barcode no. P05427398], designated by Jacobs (1964: 199)).

Crateva religiosa G.Forst., Diss. Pl. Esc. 45–46 (1786). – *Capparis trifoliata* Roxb., Fl. Ind. 2: 571 (1832), *nom. illeg., superfl.* – TYPE: ?India, *G. Forster* s.n. (lectotype K [barcode no. K000651081], designated by Jacobs (1964: 191)).

Roxburgh, Willdenow and Vahl all cited the Van Rhee element ‘niirvala’ in synonymy. This has also been considered to be a separate species, *Crateva nurvala* Buch.-Ham. Jacobs (1964: 194) effectively lectotypified the name with a Buchanan-Hamilton specimen in the Wallich Herbarium (K-W). However, as Nicolson et al. (1988) have noted, Buchanan-Hamilton did not consider his own specimens to be the true *Crateva nurvala* but a variety of it. Therefore Jacobs’s typification is incorrect. Nicolson et al. (1988) stated ‘However it appears that Van Rhee’s illustration should be taken as the type.’ It is questionable whether this is a valid typification – the opening of the sentence casts doubt making it unclear that the authors are accepting their typification. I therefore formally typify the name here. Note that after the type of a Loureiro name was refound *Crateva nurvala* was included in synonymy of *Crateva magna* (Lour.) DC. (Jacobs, 1976).

Crateva magna (Lour.) DC., Prodr. 1: 243 (1824). – *Capparis magna* Lour., Fl. Cochinch. 1: 331 (1790). – TYPE: Cochinchina, *J. Loureiro* s.n. (lectotype BM [barcode no. BM000629693], designated by Jacobs (1976: 822)).
Crateva nurvala Buch.-Ham., Trans. Linn. Soc. London 15: 121 (1827), as ‘nürvala’. – TYPE: Van Rhee, Hort. Malab. 3: t. 42 (1682) (lectotype, designated here).

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