

**Acknowledgements**

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## (1753) Proposal to conserve the name *Ziziphus jujuba* against *Z. zizyphus* (*Rhamnaceae*)

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(1753) *Ziziphus jujuba* Mill., Gard. Dict., ed. 8: *Ziziphus* No. 1. 16 Apr 1768 (*Rhamnus zizyphus* L., Sp. Pl.: 194. 1 Mai 1753) [*Dicot.*: *Rhamn.*], *nom. cons. prop.*

Lectotypus (hic designatus): Herb. Burser XXIII: 50 (UPS).

(≡) *Ziziphus zizyphus* (L.) H. Karst., Deut. Fl.: 870. Sep 1882 (*'Zizyphus zizyphus'*), *nom. rej. prop.*

The common or Chinese jujube, a species long-cultivated in the Mediterranean region and southern and eastern Asia for its edible fruits, was first described by Linnaeus as *Rhamnus zizyphus* L. It is most commonly treated in current literature as *Ziziphus jujuba* Mill., which is not the correct name according to the rules of nomenclature. *Ziziphus jujuba* is a nomen novum based on *R. zizyphus*. Miller's reference to the Linnaean name is indirect, but effective according to Art. 32.5 and 32.6 of the *ICBN* (McNeill & al. in *Regnum Veg.* 146. 2006). As illustrated by Art. 32 Ex. 10, when Miller referred to a Linnaean genus under his own generic heading, and if Miller's and Linnaeus's protologues shared synonyms, one can conclude, when appropriate, that Miller created a nomen novum for Linnaeus's species and that the two names are homotypic. Miller referred to *Rhamnus* L. under his generic heading of *Ziziphus* Mill., and the protologues of *R. zizyphus* and *Z. jujuba* included the same synonym "*Ziziphus*" (Dodoens, *Stirp. Hist. Pempt.*, ed. 2: 807. 1616). Moreover, Miller's nomen specificum legitimum is "*Ziziphus (Jujuba) aculeis geminatis rectis, foliis oblongo ovatis serratis*", which corresponds closely with Linnaeus's "*Rhamnus aculeis geminatis rectis, floribus digynis, foliis ovato-oblongis*". Since both names have the same type, *Z. jujuba* was nomenclaturally superfluous when published and is illegitimate (Art. 52.1).

Nearly 30 years ago Meikle adopted the correct combination for this species, as "*Ziziphus zizyphus* (L.) Meikle" (*Fl. Cyprus* 1: 358. 1977), but this combination had been published nearly a century earlier by Karsten (*Deut. Fl.*: 870. 1882). Though publishing the apparent tautonym

"*Zizyphus zizyphus*" by citing "*Z. Rhamnus L. Zizyphus Krst.*" in a paragraph beginning with the generic name "*Zizyphus Tourn.*", Karsten committed a correctable error (Art. 61.4) by altering the original generic spelling of *Ziziphus* Mill. An exactly parallel situation exists with the name *Lycopersicon lycopersicum* (L.) H. Karst. (l.c.: 966, "*Lycopersicum lycopersicum*"), which is cited in this way in App. IV of the *ICBN* (p. 453) as a nomen specificum rejiciendum in favour of *L. esculentum* Mill., supporting the conclusions of Nicolson (in *Taxon* 24: 390. 1975) and Terrell & al. (in *Taxon* 32: 311. 1983). Previous proposals to amend Art. 23.4, regarding tautonyms, by Little (in *Taxon* 23: 878. 1974) and Terrell (in *Taxon* 26: 131. 1977) were not accepted by the Leningrad and Sydney Congresses, making it clear that such "paratautonyms" are not to be rejected as names not validly published.

Nevertheless, earlier usage of the orthographically variant generic spelling "*Zizyphus*" (as in *Index Kewensis*, until *Supplementum VII.* 1929), which would have created a tautonym, and later unwillingness to accept the paratautonym *Ziziphus zizyphus* have contributed to continued acceptance of *Z. jujuba*. The following is a selection of authors who have accepted this name since the mid-20<sup>th</sup> Century: Grubov (in *Komarov, Fl. URSS* 14: 637. 1949), Davis (*Fl. Turkey* 2: 524. 1967), Tutin (in *Tutin & al., Fl. Eur.* 2: 243. 1968), Bailey & al. (*Hortus Third*: 1185. 1976), Chen & Chou (in *Chen, Fl. Reipubl. Popularis Sin.* 48(1): 133. 1982), Huxley & al. (*RHS Dict. Gard.* 4: 741. 1992), Mabblerley (*Plant-Book*, ed. 2: 768. 1997, citing *Z. zizyphus* in synonymy), Noshiro (in *Iwatsuki & al., Fl. Japan IIc*: 115. 1999, citing *Z. zizyphus* in synonymy), Wiersema & Leon (*World Econ. Pl.*: 535. 1999, citing *Z. zizyphus* in synonymy), and Erhardt & al. (in *Zander, Handw.-Buch Bot. Pfl.-Namen*, ed. 17: 862. 2002).

As far as we can determine, only the following late 20<sup>th</sup> Century authors have accepted the name *Ziziphus zizyphus*: Zohary & al. (*Consp. Fl. Orient.* 2: 48. 1983), Nicolson & al. (in *Regnum Veg.* 119: 214. 1988), Greuter & al. (*Med-Checklist* 4: 458. 1989), Turland & al. (*Fl. Cretan Area*:

134. 1993), Kartesz (Synon. Checklist Vasc. Fl. U.S., Can., Greenland 1: 513. 1994), Viney (Ill. Fl. N. Cyprus: 144. 1994), Jahn & Schönfelder (Exkursionsfl. Kreta: 187. 1995), McKean (in Cullen & al., Eur. Gard. Fl. 5: 190. 1997, as “*Ziziphus ziziphus*”), and Tsintides & al. (Trees Shrubs Cyprus: 274. 2002, as “*Ziziphus ziziphus*”). A Google search (<http://www.google.com>) performed on 31 October 2006 returned about 540 results for the phrase “*Ziziphus ziziphus*” and about 56,300 results for “*Ziziphus jujuba*”.

A proposal (No. 1399) by Paclt (in Taxon 48: 173–174. 1999) to conserve the generic name with the spelling “*Ziziphus*” would have solved the problem under discussion, had it been approved, since it would have rendered Karsten’s name a true tautonym and thus not validly published. However, this proposal was not recommended by the Committee for Spermatophyta (Brummitt in Taxon 49: 806. 2000), which, although declining to consider the conservation of *Z. jujuba* at that time, suggested that “a new proposal on the specific name may be appropriate.”

Linnaeus (l.c.: 193–195) organized his 11 species of *Rhamnus* into three groups: Spinosi, Inermes, and Aculeati, and placed *R. ziziphus* in the Aculeati, a spiny group. Within *R. ziziphus*, he recognized two varieties, a wild variety with spines and an un-named, spineless, domesticated variety “β”. He included four elements in the protologue: (1) his nomen specific legitimum “*Rhamnus aculeis geminatis rectis, floribus digynis, foliis ovato-oblongis*” citing Linnaeus (Hort. Cliff.: 69. 1738; Mat. Med.: 74. 1749), Royen (Fl. Leyd. Prodr.: 224. 1740), and Sauvages (Meth. Fol.: 59. 1751); (2) the synonym “*Jujuba sylvestris*” citing Bauhin (Pinax: 446. 1623); (3) the synonym “*Ziziphus*” citing Dodoens (Stirp. Hist. Pempt., ed. 2: 807. 1616); and (4) the synonym (under an un-named variety “β”) “*Jujubae majores oblongae*” citing Bauhin (l.c.). In Hortus cliffortianus, Linnaeus presented the polynomial “*Rhamnus floribus digynis, aculeis geminatis rectis, foliis ovato-oblongis*”, which was repeated in the Species plantarum with a minor rearrangement of the word order. In the Clifford herbarium at BM, there is a specimen of this species (page 69, *Rhamnus* No. 2, BM-558093) that is a sterile, leafy branch without spines. This specimen was studied by Linnaeus and is original material for *R. ziziphus*. Linnaeus’s *Materia medica*, Royen’s *Florae leydensis prodromus*, and Sauvages’s *Methodus foliorum* all repeat the polynomial of Hortus cliffortianus, which they cite as the source. Although Linnaeus studied the Royen herbarium in Leyden (L), no original material could be traced there.

Linnaeus consulted Burser’s herbarium at the University of Uppsala while he was working on the Species plantarum. The collection is named and arranged according to Caspar Bauhin’s Pinax, and Linnaeus regarded it as an authoritative source for interpretation of Bauhin’s names (Stearn, *Introd. Sp. Pl.*: 116–118. 1957). Volume 23, page 50 is annotated with “*Iuiuba sylvestris* Bauh.”, Linnaeus’s second element. It has two branches with single or paired spines, one with two mature fruits, and is part of Linnaeus’s spiny, “typical” concept. Page 49 is annotated as “*Iuiuba majoris oblonga* Bauh.”, Linnaeus’s fourth element. It has

two spineless branches, one with flowers and the other with a fruit, and is the basis of Linnaeus’s un-named variety “β”. Both specimens are original material for *R. ziziphus*.

The third element is the illustration of Dodoens (l.c.). It is an adequate depiction of two spineless branches of *Ziziphus jujuba*, one fruiting and the other flowering.

In the Linnaean Herbarium at LINN, there is a specimen (No. 262.35) in the genus *Rhamnus* labelled as “10 *Ziziphus*”, indicating that the specimen was almost certainly in the Linnaean Herbarium before 1753 and corresponds to *Rhamnus* species No. 10 in the Species plantarum, i.e. *R. ziziphus*. It is therefore original material for that name. It consists of four branches, two with flowers, one with a fruit, and one sterile. All are spineless, and appear to be from three or four gatherings. The upper right-hand flowering branch on the sheet is *Z. spina-christi* (L.) Desf. as currently understood, and the other three are *Z. jujuba*.

Since a specimen is preferable to an illustration as type, the Dodoens illustration was rejected by us as a potential lectotype. The Clifford specimen is sterile, so it was rejected too. The Linnaean sheet has three or four gatherings, comprising two species, mounted together, and so it was rejected because of the potential for future confusion over which branch was the lectotype (although a type designation could be restricted to one branch only). This leaves the two Burser specimens. We reject the one on page 49, as it is part of Linnaeus’s spineless, un-named var. “β”, whereas the specimen on page 50 is part of Linnaeus’s spiny, “typical” concept of *R. ziziphus*. We therefore designate here the specimen on page 50, volume 23 of the Burser Herbarium (UPS) as the lectotype of *Rhamnus ziziphus* L.

The combination *Ziziphus ziziphus* (L.) H. Karst. contains the final epithet of the earliest legitimate name for this taxon, *Rhamnus ziziphus* L., which would therefore remain the correct name for this species if our proposal fails. Although not a tautonym, in most cases its pronunciation will be indistinguishable from one. Since nearly all authors have overlooked Karsten’s combination, the correct author citation has rarely been used where the name has been accepted. Despite previous confusion with the later homonym *Z. jujuba* (L.) Lam. [= *Z. mauritiana* Lam.], the name *Z. jujuba* Mill. has remained in general use for this economically important species for much of the 20<sup>th</sup> Century. Adoption of this proposal will preserve this usage. This name has the added advantage of closely resembling the widely used common name of this species. Rejection of the combination *Z. ziziphus* (L.) H. Karst. instead of its basionym *R. ziziphus* L. preserves the latter name for this species in the unlikely event of *Rhamnus* and *Ziziphus* being united.

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