

George, *Fl. Austral.* 29: 1–208. 1982) or New Zealand (Webb & al., *Fl. New Zealand* 4: 1253. 1988; Parsons & al., *Curr. Names Wild Pl. New Zealand*: 103. 1995), nor has it been used in the horticultural literature associated with the kangaroo apples outside their native range (Bailey & al., *Hortus Third* 1054. 1976; Huxley, *RHS Dict. Gard.* 4: 316–320. 1992; Shaw in Cullen & al., *Europ. Gard. Fl.* 6: 235. 2000). White-flowered variants are common in normally purple-flowered solanums, especially in the *Archaesolanum* group; indeed Baylis (in *Proc. Roy. Soc. New Zealand* 82: 639. 1954) indicated that without notes as to flower colour, specimens of Cheeseman's var. *albiflorum* were “not distinctive when dried” and (Baylis, l.c., 1963: 168–177) that this feature results from mutation of a single recessive gene.

As a further indication of current usage of both names, a GOOGLE search using the terms “*Lycopersicon cheesmanii*” and “*Lycopersicon cheesmaniae*” on 20 Mar 2006 returned 422 and 61 references respectively (578 and 11 when the first term was shortened to “L.”), with an additional 58 for “*Solanum cheesmaniae*” (58 when the first term was shortened to “S.”), all referring to the Galapagos tomato. On the other hand, a search using the terms “*Solanum cheesmanii*” and “*S. cheesmanii*” returned only 11 and 6 hits for the New Zealand species named in honour of T. F. Cheeseman, all of which either treated the name as a synonym or listed it uncritically with no other information. The existence of 16 references to the Galapagos tomato having the erroneous spelling “*Lycopersicon cheesmanii*” underscores the potential for confusion if both spe-

cific epithets were permitted in *Solanum*.

Regardless of whether tomato species remain in *Solanum* or revert back to *Lycopersicon*, if the large, monophyletic *Solanum* is split into smaller groups, stability will be improved if the epithet currently used for the Galapagos tomato is conserved in *Solanum* against *Solanum cheesmanii* Geras. *Solanum cheesmanii* Geras. is likely to remain forever in synonymy with *S. aviculare*, and could even be considered as a name more appropriately published under the International Code of Nomenclature for Cultivated Plants (Brickell & al., 2004). Should *Solanum cheesmaniae* (L. Riley) Fosberg not be conserved, a new name will be required in *Solanum* for this important Galapagos tomato, as no specific epithets are available from synonyms (Darwin & al., l.c.) nor is the synonym varietal epithet “*parviflorum*” used by Hooker (in *Trans. Linn. Soc. London* 20: 202. 1851), under *L. peruvianum* (L.) Mill., available for use in *Solanum*. Such a new name would cause confusion not only in the plant-breeding community, where species epithets are common currency for communication, but also among conservationists working on the endangered flora of the Galapagos Islands.

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(1737) Proposal to conserve the name *Heliosperma* against *Ixoca* (*Caryophyllaceae*, *Sileneae*)

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(1737) *Heliosperma* (Rchb.) Rchb., Deut. Bot. Herb.-Buch 206. 1841 (*Silene* [unranked] *Heliosperma* Rchb., Fl. Germ. Excurs. 817. 1832), nom. cons. prop.

Typus: *Silene quadrifida* (L.) L. (*Cucubalus quadrifidus* L., *H. quadrifidum* (L.) Griseb.).

(≡) *Ixoca* Raf., Autik. Bot. 25. 1840, nom. rej. prop.

Typus: *I. tenella* Raf., nom. illeg. (*Cucubalus quadrifidus* L.).

Heliosperma consists of perennial herbs that are found in the mountains of central and southeastern Europe. Most of the taxa are endemic to relatively small areas of the Balkan peninsula, *H. pusillum* (W. & K.) Rchb. being more widespread. They are easily recognised by their seeds, which have a dorsal crest of long papillae. Although the

number of species is highly variable (depending on the author, between three and 18), the circumscription of *Heliosperma* itself has never been brought into question.

Virtually all authors in the 19th and early 20th century (e.g., Braun in *Flora* 26: 349–388. 1843; Rohrbach in *Linnaea* 36: 191–196. 1869; Nyman in *Consop. Fl. Eur.* I: 87. 1878; Pax in Engler & Prantl, *Nat. Pflanzenfam.* III (1b): 73. 1889; Williams in *J. Bot.* 31: 167–171. 1893; Beck in *Wiss. Mitt. Bosnien & Herzegovina* 9: 467–470. 1904; Maly in *Wiss. Mitt. Bosnien & Herzegovina* 10: 628–634. 1907; Hegi, *Ill. Fl. Mitt.-Eur.* 3: 304–306. 1910; Ascherson & Graebner, *Syn. Mitteleur. Fl.* 5(2): 17. 1920; Pax & Hoffmann, in Engler & Prantl, *Nat. Pflanzenfam.* ed. 2. 16c: 340. 1934) recognised *Heliosperma* as an independent genus.

It was Neumayer (in *Österr. Bot. Z.* 72: 276–287. 1923

and in Hayek in *Repert. Spec. Nov. Regni. Veg. Beih.* 30(1): 264–267. 1924), in his extensive studies of different *Heliosperma* species from the Balkan peninsula, who moved it to the rank of a section within *Silene*. This was followed by Chowdhuri (in *Notes Roy. Bot. Gard. Edinburgh* 22: 226, 244. 1957), who also assigned a lectotype, *S. quadrifida* L., to *Silene* sect. *Heliosperma* (Rchb.) Ledeb. (*Fl. Ross.* 1: 317. 1842), and by many authors since then (e.g., Chater & al., in Tutin & al., *Fl. Eur.* 1, ed. 1: 173–174. 1964 and ed. 2: 210–211. 1993; Hess & al., *Fl. Schweiz.* 785–786. 1967; Meusel & Mühlberg, in Hegi, *Ill. Fl. Mitt.-Eur.* 3 (2): 1109–1115. 1979; Jalas & Suominen, *Atlas Fl. Eur.* 7: 85–88. 1986; Melzheimer & Polatschek in *Phyton (Horn)* 31: 281–306. 1992; Bittrich, in Kubitzki & al., *Fam. Gen. Vasc. Pl.* 2: 233. 1993; Greuter in *Taxon* 44: 568–569. 1995; Vreš, in Martincic, *Mala Fl. Slovenije.* 155–156. 1999; Marhold & Hindak (eds.), *Checkl. Non-vasc. Vasc. Pl. Slovakia.* 1999; CD).

However, most botanists in 1950s and many from the 1960s into the 1990s continued to accept *Heliosperma* at generic rank (e.g., Piskernik, *Kljuc Dol. Cvet. Prap.*: 77. 1951; Mayer, *Seznam Prap. Cvet. Slov. Ozemlja.* 60–61. 1952; Kotov (ed.), *Fl. URSS.* 578–580. 1952; Guşuleac in Săvulescu & al. (eds.), *Fl. Republ. Popul. Romane* 2: 184–186. 1953; Janchen, *Cat. Fl. Austr.* 1: 168–169. 1956; Pawlowski, *Fl. Tatr.* 255–256. 1956; Dostál, *Klic Uplne Kvet. CSR.* 213. 1958; Meusel & al., *Vergl. Chorol. Zentraleur. Fl.*: 474. 1965; Domac, *Ekskurzijaska Fl. Hrvatske.* 101–102. 1967; Mayer, in Martincic & Sušnik (eds.), *Mala Fl. Slovenije.* 247–248. 1969). The genus *Heliosperma* was also recognised by Trinajstić (*Fl. Anal. Jugoslavie* 1(5): 627–636. 1979), whose revision included almost all known *Heliosperma* species, and later by Domac (*Mala Fl. Hrvatske.* 101–102. 1979; *Fl. Hrvatske.* 89. 1994), Prokudin (ed., *Opređelitel Vyssh. Rast. Ukrainy.* 78. 1987 & 1999, ed. 2) as well as Trpin & Vreš (*Register Fl. Slovenia.* 50. 1995), Krytska & al. (in *Ukrayins'k Bot. Zhurn.* 56: 402–410. 1999), Mirek & al. (*Fl. Pl. Pterid. Poland-Checkl.*: 87–88. 2002), Fischer & al. (*Exkursionsfl. Österr. Liechtenst. Südtirol.*: 339. 2005) and Niketic & Stevanovic (in *Bot. J. Linn. Soc.*: in press). Also Oxelman & al. (in *Taxon* 44: 525–542. 1995 and in *Pl. Syst. Evol.* 206: 393–410. 1997) used the generic name *Heliosperma* in their molecular studies.

On the basis of these molecular studies, Oxelman & al. (l.c. 1995, l.c. 1997, & in *Nordic. J. Bot.* 20: 743–748. 2001) argued in favour of the recognition of diagnosable, well supported monophyletic entities within the tribe *Sileneae*. Recent molecular studies (Frajman & Oxelman, *Pl. Evol. Mediter. Climate Zones.* 66. 2004) that included several *Heliosperma* taxa show that their position outside the core of *Silene* is well supported and generic rank for the group therefore seems appropriate. However, *Heliosperma* is not the earliest generic name applicable to the genus.

Rafinesque (l. c.) described *Ixoca* in 1840, distinguishing it from *Silene* and listing only one species, “*IXOCA tenella* Raf. *Silene* 4dentata L.”, by which he appears to have been citing *S. quadridentata* Pers. (*Syn. Pl.*: 500. 1805) based on *Lychnis quadridentata* L. (*Syst. veg. ed.* 13:

362. 1774, ed. Murray). Even although both these names are illegitimate being based on *Silene quadrifida* (L.) L. (*Syst. Nat. ed.* 10: 1032. 1759) (? *Cucubalus quadrifidus* L., *Sp. Pl.* 1: 415. 1753) (Rauschert in *Feddes Repert.* 79: 416–417. 1969), *I. tenella* is also a superfluous illegitimate name because the epithet *quadrifida* ought to have been adopted.

Like many Rafinesque names *Ixoca* was ignored until noted by Pennell (in *Bull. Torrey Bot. Club* 48: 92. 1921) and then in *Index Kewensis Suppl.* 7: 129. (1929) as well as by Pax & Hoffmann (in Engler & Prantl, *Nat. Pflanzenfam. ed.* 2. 16c: 340. 1934) who treated it as a synonym of the recognised genus *Heliosperma*. Later, in separate nomenclatural notes, Soják (in *Cas. Nár. Mus. (Praha), Odd. Přír.* 140: 127–128. 1972), Ikonnikov (in *Novosti Sist. Vyssh. Rast.* 21: 61–66. 1984) and Holub (in *Preslia* 58: 289–306. 1986) all noted that *Ixoca* has priority over *Heliosperma* and each published some combinations; consequently most taxa of *Heliosperma* now have combinations in *Ixoca*. The only other recent usage of *Ixoca* appears in Dostál (in *Seznam Cesn. Rost. Kvet. CSR* 1: 206. 1982 and *Nova Kvet. CSSR* 1: 175. 1989), Czerepanov (*Vasc. Pl. Russia Adj. States.* 168. 1995), Fedoronchuk in Mosyakin (*Vasc. Pl. Ukraine, Nomencl. Checklist.* 174. 1999) Tzvelev (in *Novosti Sist. Vyssh. Rast.* 33: 90–113. 2001) and Oxelman & al. (l.c., 2001). Prokudin (l.c., 1987; 1999) included *Ixoca* combinations as synonyms of the *Heliosperma* taxa he accepted.

Although not widely cultivated, these species are treated as members of either *Heliosperma* or *Silene* in the horticultural trade (Staff of the L. H. Bailey Hortorium, Hortus Third, 1976) and several on-line horticultural stores (e.g. <http://www.seedquest.com/>, <http://www.gartenmax.de/>) use only the name *Heliosperma*. The name *Heliosperma* is also used in phytocoenology as a name of plant community *Heliospermetum pusilli* Piskernik and some climocoenoses (Piskernik, in *Zb. Gozd. Les.* 11: 37–48; 1973).

The little known *Ixoca*, rarely used in the botanical literature, is the correct name for this group when treated at generic rank, although the names of some taxa would still have to be transferred from *Heliosperma*. The name *Ixoca* is nowadays only used in a few east European countries (in Russia and Czech Republic, where *Heliosperma* does not occur—see Smejkal & Šourkova, in Hejny & Slavik (eds.), *Kvet. Ceske Rep.* 2: 92–213. 1990, and Hrouda, in Kubat (ed.), *Klic Kvet. Ceske Rep.*: 150–172. 2002—and sometimes in Ukraine, where only one species is common), while in all other countries, where several taxa are widespread, the name *Heliosperma* is much better known or is the only known name.

For those who considered these plants to form *Silene* sect. *Heliosperma*, there was no nomenclatural problem, but now that research has shown the desirability of restoration of generic rank, this proposal becomes necessary to make possible the continued use at generic level of the very much better known name *Heliosperma* for this group.