

A NEW NOMENCLATURAL COMBINATION IN *MALVA* L. (*MALVACEAE*)

Ana JUAN & Manuel B. CRESPO

CIBIO, Instituto de la Biodiversidad. Universidad de Alicante. Apartado 99.
E-03080 Alicante. E-mail: ana.juan@ua.es, crespob@ua.es

SUMMARY: The name *Lavatera* × *columbretensis*, recently proposed for a hybrid growing in the Columbretes Archipelago (Castellón, E of Spain), is transferred to *Malva*. Additional data on nomenclature of other related taxa of '*L. sect. Anthema*' and '*L. sect. Axolopha*', are also reported. **Key words:** *Lavatera*, *Malva*, hybrids, Mediterranean islands, Spain.

RESUMEN: Se transfiere al género *Malva* el nombre *Lavatera* × *columbretensis*, recientemente descrito para un híbrido encontrado en el archipiélago de las Columbretes (Castellón). Además, se presentan datos complementarios sobre la nomenclatura de otros táxones de '*L. sect. Anthema*' y '*L. sect. Axolopha*', con él relacionados. **Palabras clave:** *Lavatera*, *Malva*, híbridos, islas mediterráneas, España.

INTRODUCTION

Molecular work developed within the last decades on Malvales (cf. ALVERSON & al., 1998, 1999; BAYER & al., 1999) showed that some of the families in that order were not monophyletic as traditionally defined. Consequently, a new wider circumscription of Malvaceae was proposed to include other groups usually treated as independent families, such as *Berryaceae* Doweld, *Bombacaceae* Kunth, *Byttneriaceae* R. Br., *Dombeyaceae* Desf., *Helicteraceae* J. Agardh, *Sparmanniaceae* J. Agardh, *Sterculiaceae* Salisb. or *Tiliaceae* Juss. All these are currently accepted at subfamily rank under diverse names (cf. BAYER & KUBITZKI, 2003; STEVENS, 2008).

Similarly, further molecular studies (cf. RAY, 1995, FUERTES & al., 2003, TATE & SIMPSON, 2003; ESCOBAR & al., 2009; among others) demonstrated

that some genera in *Malvoideae* (= *Malvaceae* sensu stricto) were not monophyletic as usually treated, and a recircumscription was therefore needed. *Malva* L. and *Lavatera* L. are some of these genera.

In the present contribution, the position of *Lavatera* × *columbretensis*, a hybrid between *L. arborea* L. and *L. mauritanica* Durieu described from the Columbretes Archipelago (JUAN & CRESPO, 2009), is revised according to recent molecular findings (cf. ESCOBAR & al., 2009), and consequently it is transferred to *Malva*.

RESULTS AND DISCUSSION

RAY (1995) showed that species of *Malva* and *Lavatera* fall intermingled in two different clades, the so-called 'Lavateroid clade' and 'Malvoid clade'. Both can be consistently defined by fruit features better than by epicalyx connation.

The former clade includes the true *Lavatera* species (the type being *L. trimestis* L.), plus taxa of *Malva* sect. *Bismalva* (Medik.) Dumort. The latter clade groups the true *Malva* species (the type being *M. sylvestris* L.), plus other taxa formerly referred to *Lavatera*, namely *L. sect. Anthema* (Salisb.) DC. and *L. sect. Axolopha* DC. In a similar way, ESCOBAR & al. (2009) found congruent relationships between both groups, and also obtained that '*Lavatera mauritanica* Durieu' is a member of the Malvoid clade, sister to '*L. arborea* L.', among other results.

A first consequence of results of RAY (1995) was transference of taxa of *Lavatera* in the Malvoid clade to *Malva*, under different names and combinations (RAY, 1998; BANFI & al., 2006, MOLERO & MONTSERRAT, 2005; IAMONICO, 2010). Similarly, results of ESCOBAR & al. (2009) could lead to recover neglected genera names, such as *Bismalva* Medik. or *Dinacrusa* (Alef.) G. Krebs, to accommodate those *Malva* species that are not nested in the Malvoid clade.

According to the above data, both parents of *Lavatera* × *columbretensis* are members of the Malvoid clade and are better placed in *Malva*. Therefore, we propose the following new nomenclatural combination:

Malva* × *columbretensis (Juan & M.B. Crespo) Juan & M.B. Crespo, *comb. nov.*

≡ *Lavatera* × *columbretensis* Juan & M.B. Crespo in *Flora Montiberica*. 41: 5 (2009) [basion.] (*M. arborea* × *M. durieui*)

Holotypus: ESP, CASTELLÓN: Islas Columbretes, Isla Grossa, Casernas, 31SCE0219, 40 m, 18-III-1996, A. Juan (ABH 42556).

Remarks: This taxon has been considered a true-breeding hexaploid (2n=126), to which the × could be dropped (cf. <http://lavateraguy.blogspot.com/>). It is obviously a highly speculative comment that requires further checking. We are currently working on that direction (JU-

AN & al., in prep.).

Nomenclatural data and synonymy

As a complement to data reported by MOLERO & MONTSERRAT (2005), the nomenclature and synonymy of the Valencian species of *Lavatera* sect. *Anthema* and *L. sect. Axolopha* DC., when transferred to *Malva* is as follows:

1. ***Malva arborea*** (L.) Webb & Berthel., *Hist. Nat. Iles Canaries* 3(2) [Phytogr. Canar. 1]: 30 (1836)

≡ *Lavatera arborea* L., *Sp. Pl.*: 690 (1753) [basion.] ≡ *Anthema arborea* (L.) Medik., *Malvenfam.*: 42 (1787) ≡ *Althaea arborea* (L.) Alef. in *Oesterr. Bot. Z.* 12: 260 (1862) ≡ *Malva fastuosa* Salisb., *Prodr. Stirp. Chap. Allerton*: 381 (1796) [syn. subst.] ≡ *M. dendromorpha* M.F. Ray in *Novon* 8: 292 (1998) [syn. subst.], nom. superfl.
= *Lavatera eriocalyx* Steudel in *Flora* 39: 438 (1856) ≡ *M. eriocalyx* (Steudel) Molero & J.M. Monts. in *Fontqueria* 55: 289 (2005)

Remarks: According to MOLERO & MONTSERRAT (2005), the combination by WEBB & BERTHELOT (1836) was illegitimate, since supposedly an earlier homonym existed: *Malva arborea* A. St.-Hil., *Fl. Bras. Merid.* 1(5): 215, t. 134, f. 4 (1827). Nonetheless, as correctly indicated in the IPNI (2010), that name does not appear in any of the three volumes of Saint Hilaire's *Flora Brasiliae meridionalis* (1824-1833). It seems therefore reasonable to accept Webb & Berthelot's combination as valid.

2. ***Malva durieui*** Spach in *Linnaea* 24: 233 (1851)

≡ *Lavatera mauritanica* Durieu in *Rev. Bot. Recueil Mens.* 2: 436 (1847) [syn. subst.], non *M. mauritanica* Spreng., *Syst. Veg.* (ed. 16) 3: 90 (1826)

= *Lavatera davaei* Cout. in *Bol. Soc. Brot.* 11: 122 (1893) = *L. mauritanica* subsp. *davaei* (Cout.) Cout., *Fl. Portugal*: 402 (1913)

3. ***Malva multiflora*** (Cav.) Soldano, Banfi & Galasso in *Atti Soc. Ital. Sci.*

- Nat. Mus. Civico Storia Nat. Milano 146(2): 230 (2005, publ. 2006)
 ≡ *Malope multiflora* Cav., Diss. 2, Secunda Diss. Bot.: 85 (1786) [basion.]
 = *Lavatera cretica* L., Sp. Pl.: 691 (1753) ≡ *Anthema cretica* (L.) Medik., Malvenfam.: 42 (1787) ≡ *Althaea cretica* (L.) Alef. in Oesterr. Bot. Z. 12: 260 (1862), nom. illeg., non Weinm., Syll. Ratisb. 2: 171 (1828) ≡ *Malva cretica* (L.) Pau, Not. Bot. Fl. Españ. 3: 29 (1889), nom. illeg., non Cav., Diss. 5, Quinta Diss. Bot.: 280 (1788) ≡ *Malva pseudolavatera* Webb & Berthel., Hist. Nat. Iles Canaries 3(2) [Phytogr. Canar. 1]: 29-30 (1836) [syn. subst.] ≡ *Malva linnaei* M.F. Ray in Novon 8: 292 (1998) [syn. subst.], nom. superfl.
 = *Lavatera empedoclis* Ucria in Arch. Bot. [Leipzig] 1(1): 69 (1796)
 = *Lavatera neapolitana* Ten., Fl. Napol. Prodr. 1: LXII (1811-15) & 2: 113, Tav. LXV (1820)
 = *Malva willkommiana* Scheele in Linnaea 21: 570 (1848)
- 4. *Malva subovata* (DC.) Molero & J.M. Monts.** in Fontqueria 55: 288 (2005)
 ≡ *Lavatera subovata* DC., Prodr. 1: 439 (1824) [basion.]
 = *L. maritima* Gouan, Obs. Bot.: 46 (1773) ≡ *Axolopha maritima* (Gouan) Alef. in Oesterr. Bot. Z. 12: 259 (1862) ≡ *Malva maritima* (Gouan) Pau, Not. Bot. Fl. Españ. 3: 29 (1889), nom. illeg., non Lam., Fl. Franç. 3: 140 (1779), nom. illeg., nec Salisb., Prodr. Stirp. Chap. Allerton: 381 (1796), nom. illeg.
 = *L. africana* Cav., Diss. 5, Quinta Diss. Bot.: 282 (1788), non Mill., Gard. Dict. ed. 8: n° 2 (1768)
 = *Axolopha wigandii* Alef. in Oesterr. Bot. Z. 12: 259 (1862) = *M. wigandii* (Alef.) M.F. Ray in Novon 8: 293 (1998)

REFERENCES

- ALVERSON, W. S., K. G. KAROL, D. A. BAUM, M. W. CHASE, S. M. SWENSEN, R. McCOURT & K. J. SYSTMA (1998) Circumscription of the Malvales and relationships to other Rosidae: Evidence from *rbcL* sequence data. *Amer. J. Bot.* 85: 876-887.

- ALVERSON, W. S., B. A. WHITLOCK, R. NYFFELER, C. BAYER & D. A. BAUM (1999) Phylogeny of core Malvales: evidence from *ndhF* sequence data. *Amer. J. Bot.* 86: 1474-1486.
 BANFI, E., G. GALASSO & A. SOLDANO (2006) Notes on systematics and taxonomy for the Italian vascular flora, I. *Atti Soc. Ital. Sci. Nat. Mus. Civico Storia Nat. Milano* 146(2): 219-244 [2005 on cover].
 BAYER, C., M. F. FAY, A. Y. DE BRUIJN, V. SAVOLAINEN, C. M. MORTON, K. KUBITZKI, W. S. ALVERSON & M. W. CHASE (1999) Support for an expanded family concept of Malvaceae within a circumscribed order Malvales: a combined analysis of plastid *atpB* and *rbcL* DNA sequences. *Bot. J. Linn. Soc.* 129: 267-303.
 BAYER, C. & K. KUBITZKI (2003) *Malvaceae*. In: KUBITZKI, K. & C. BAYER (eds.), *The families and genera of vascular plants. Flowering plants, dicotyledons: Malvales, Capparales, and non-betalain Caryophyllales* 5: 225-311. Springer. Berlin.
 ESCOBAR, P., P. SCHÖNSWETTER, J. FUERTES, G. NIETO & G. M. SCHNE-EWEISS (2009). Five molecular markers reveal extensive morphological homoplasy and reticulate evolution in the *Malva* alliance (Malvaceae). *Mol. Phylogenet. Evol.* 50: 226-239.
 FUERTES, J., P. A. FRYXELL & R. K. JANSEN (2003) Phylogenetic relationships and classification of the *Sida* generic alliance based on nrDNA ITS evidence. *Syst. Bot.* 28: 352-364.
 IAMONICO, D. (2010) *Malva subovata* subsp. *bicolor*, *comb. & stat. nov.* (Malvaceae). *Ann. Bot. Fenn.* 47: 312-314.
 IPNI (2011). *The International Plant Names Index*. Published on the Internet <http://www.ipni.org> [accessed: January 2011].
 JUAN, A. & M.B. CRESPO (2009). A new wild hybrid in *Lavatera* (Malvaceae). *Flora Montiber.* 41: 3-9.
 MOLERO, J. & J. M^a. MONTSERRAT (2005) Nomenclatura de algunas especies del género *Malva* Linnaeus (Malvaceae). *Fontqueria* 55: 285-292.
 RAY, M. F. (1995) Systematics of *Lavatera* and *Malva* (Malvaceae, Malveae), a new perspective. *Plant Syst. Evol.* 198: 29-53.

- RAY, M. F. (1998) New combinations in *Malva* (Malvaceae: Malveae). *Novon* 8: 288-295.
- STEVENS, P. F. (2008) *Angiosperm Phylogeny Website*. Version 9 (June, more or less continuously updated): <http://www.mobot.org/MOBOT/research/APweb/> [accessed: January-2011].
- TATE, J. A. & B. B. SIMPSON (2003) Paraphyly of *Tarasa* (Malvaceae) and diverse origins of the polyploid species. *Syst. Bot.* 28: 723-737.
- WEBB, P. B. & S. BERTHELOT (1836) *Histoire naturelle des Îles Canaries*, 3(2) [Phytographia Canariensis 1]. Éd. Béthune. Paris.

(Received, 10-I-2011)