

INDEX BALEARICUM (II). AN ANNOTATED CHECK-LIST OF THE VASCULAR PLANTS DESCRIBED FROM THE BALEARIC ISLANDS. ADDITIONS (2002-2007) AND CORRECTIONS

Josep A. ROSSELLÓ* & Llorenç SÁEZ**

*Jardí Botànic, Universitat de València, C/Quart 80, E-46008, València. E-mail: rosselló@uv.es

**Unitat de Botànica, Universitat Autònoma de Barcelona, E-08193, Bellaterra, Barcelona. E-mail: llorens.saez@uab.es

SUMMARY: Additions and corrections to the check-list of vascular plants described from the Balearic Islands are presented. A nomenclatural change is proposed: *Sonchus willkommii* (Burnat & Barbey) comb. nov. **Key words:** Vascular plants, Flora, Balearic Islands.

RESUMEN: Se presentan adiciones y correcciones al listado de plantas vasculares cuyo tipo nomenclatural es originario de las islas Baleares. Se propone una nueva combinación nomenclatural: *Sonchus willkommii* (Burnat & Barbey) comb. nov. **Palabras clave:** Plantas vasculares, Flora, Islas Baleares.

INTRODUCTION

ROSSELLÓ & SÁEZ (2001) presented a comprehensive annotated compilation of the plant vascular taxa whose nomenclatural types are based on specimens collected in the Balearic Islands. The scope of this research is inevitably prone to omissions and involuntary mistakes due to the handling of thousands of references. Further, regular actualizations of this check list are imperative in one of the most studied European territories from a floristic point of view, and a hot spot of taxonomic diversity. We think that regular improvements of the Balearic check list will be useful to most colleagues engaged

in taxonomic revisions world wide, but it should be of mandatory consult to those who wish to work on the Flora of the Balearic archipelago.

In this work, we include the new taxa of plant vascular taxa described from the Balearic Islands between 2002 and 2007, the new nomenclatural changes that are based on the Balearic names, and those nomenclatural or taxonomic updates that are relevant for the improvement of the ROSSELLÓ & SÁEZ (2001) work.

We would be particularly grateful to receive any kind of amendments and forthcoming additions to improve future updates of this check-list.

MATERIAL AND METHODS

We have included all validly published names available to us whose type material are, or presumed to be, from the Balearic Islands. Valid names directly linked to a type (i.e. the basynonym) are denoted by a bold printing. The names of the authors have been abbreviated according to BRUMMIT & POWELL (1992), and the journals are cited, with some exceptions, according to the suggestions of LAWRENCE & al. (1968). The work of STAFLEU & COWAN (1976-1988) has been followed for the citation of autonomous works.

CHECK LIST

Alliaceae

Allium ebusitanum Font Quer in Butll. Inst. Catalana Hist. Nat. 24: 145 (1924)

Remarks: On morphological grounds, *A. durandoi* (Batt. & Trab.) Wilde-Duyfjes, described from North Africa, is considered to be conspecific with *A. ebusitanum* (AEDO, 2006).

Apiaceae

Bulbocastanum balearicum Sennen in Bol. Soc. Ibér. Ci. Nat. 27: 138 (1928) ≡ *Bunium bulbocastanum* subsp. *balearicum* (Sennen) O. Bolòs, Vigo, Massalles & Ninot, Fl. Manual Països Catalans 3 ed.: 1223 (2005)

Ligusticum balearicum L., Mant. Pl.: 218 (1771)

Type material: According to JARVIS (*The Linnaean Plant Name Typification Project*: <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>) the lectotype designated (LINN 353.8) by ROSSELLÓ & SÁEZ (2001) is in fact a neotype.

Pastinaca lucida L., Syst. Nat., ed. 12, 2: 216 (1767); Mant. Pl.: 58 (1767)

Remarks: According to JARVIS (*The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>), ROSSELLÓ & SÁEZ (2001) selected a lectotype for this taxon (Herb. Linn. No. 369.1, LINN)). However, no explicit and intentional choice of a lectotype was made in that work.

Thapsia gymnesica Rosselló & Pujadas in Candollea 46: 66 (1991) ≡ *T. garganica* subsp. *gymnesica* (Rosselló & Pujadas) O. Bolòs, Vigo, Massalles & Ninot, Fl. Manual Països Catalans 3 ed.: 1223 (2005), comb. superfl.

Asteraceae

Aetheorrhiza montana Willk. in Oesterr. Bot. Z. 25: 110 (1875) ≡ *Sonchus montanus* (Willk.) Rosselló, Fl. Montiber. 37: 76 (2007), nom. illeg. ≡ *Sonchus bulbosus* subsp. *willkommii* (Burnat & Barbey) N. Kilian & Greuter in Willdenowia 33: 237 (2003) ≡ *Sonchus willkommii* (Burnat & Barbey) Rosselló & L. Sáez **comb. nov.** ≡ *Crepis willkommii* Burnat & Barbey, Notes Voy. Bot.: 56 (1882) (basyonym)

Remarks: The epithet *montanus* can not be used at specific rank in the genus *Sonchus* because there is a predating *S. montanus* Lam., Encycl. 3(2): 401 (1792), which is probably a taxonomic synonym of *Lactuca alpina* (L.) A. Gray, Syn. Fl. N. Amer. 1(2): 444 (1884). Therefore, we provide a new combination, *Sonchus willkommii*, for *S. montanus* Rosselló (2007) [non *S. montanus* Lam. (1792)]. See ROSSELLÓ (2007) for its recognition as a separate species from the widespread *Sonchus bulbosus* (L.) N. Kilian & Greuter.

Bellium artrutxensis P. Fraga & Rosselló in Bot. J. Linn. Soc. 154: 67 (2007)

Ind. loc.: “Minorca. In calcareis loco dicto Es Berrecks de santa Anna, ad 40 m, 31SEE8021, ubi *P. Fraga* 31.iii.1996 legit (*Holotypus:* VAL 162744; *Isotype:* herbarium *P. Fraga*)”

Remarks: Name in current use (FRAGA & al. 2007). The species is restricted to the south coast of Minorca.

Carduus bourgeanus subsp. *ibizensis* Devesa & Talavera in Lagasalia 10: 61 (1981) ≡ *Carduus ibizensis* (Devesa & Talavera) Rosselló & N. Torres in Fl. Montiber. 31: 48 (2005)

Remarks: *Carduus ibizensis* shows a divergent chromosome number ($2n=24$) from *C. bourgeanus* ($2n=18$). Both species differ by a significant number of mutations at the nuclear ribosomal spacers (ITS region) (ROSSELLÓ, unpublished data).

Centaurea balearica J.J. Rodr. in Bull. Soc. Bot. France 16: 237 (1869) ≡ *Carthamus balearicus* (J.J. Rodr.) Greuter in Willdenowia 33: 53 (2003)

Gnaphalium ambiguum Pers., Syn. Pl. 2: 417 (1807)

Type material: Lectotype designated by GALBANY-CASALS & al. (2006b), *G. crassifolium* Lam. ex Horto regiae Parisiensis legit (P-LA, specimen c).

Remarks: According to GALBANY-CASALS & al. (2006a,b) the type of the species is a hybrid between *Helichrysum crassifolium* (L.) D. Don and *H. stoechas* (L.) Moench.

Helichrysum fontanesii Cambess. in Mém. Mus. Hist. Nat. 14: 270 (1827) ≡ *H. rupestre* var. *fontanesii* (Cambess.) Magallon, Fl. Veg. Alicante: 356 (1972)

Type material: Isolectotype at P (GALBANY-CASALS & al., 2006 b).

Remarks: According to GALBANY-CASALS & al. (2006 a) this is a taxonomic synonym of *Helichrysum rupestre* DC., although GREUTER in Euro+Med Plantbase (<http://www.em-plantbase.org/home.html>) indicates that the correct name for this plant is *H. pendulum* (C. Presl) C. Presl, Fl. Sicul.: 29 (1826). On the other hand, Euro+Med Plantbase restricted the use of the name *H. pendulum* for Italian plants, whereas Balearic plants should be referred to *H. fontanesii* (also present in NW Africa and southern Iberian Peninsula). Therefore, contradictory interpretations about the identity of *H. fontanesii* are available. In our opinion, no clear morphological discontinuities exist between *H. fontanesii* and *H. pendulum* to justify their discrimination at the specific level.

Helichrysum rupestre var. *cambessedesii* DC., Prodr. 6: 182 (1838)

Type material: Lectotype designated by GALBANY-CASALS & al. (2006 b) from Crete (G-DC; isolectotypes: BM, K, NAP, P, W). According to this typification *H. rupestre* var. *cambessedesii* is a taxonomic synonym of *Helichrysum stoechas* (L.) Moench (GALBANY-CASALS & al., 2006 b).

Brassicaceae

Bunias balearica L., Syst. Nat. ed. 12, 2: 446 (1767)

Type material: Lectotype designated by ROSSELLÓ in CAFFERTY & JARVIS (2002), *Gouan s.n.*, Herb. Linn. No. 847.13 (LINN).

Caprifoliaceae

Lonicera implexa Aiton, Hortus Kew. 1: 231 (1789) ≡ *Caprifolium implexum* (Aiton) Dum. Cours., Bot. Cult. ed. 2 7: 209 (1814)

Ind. loc.: “Nat. of Minorca”

Type material: Not traced. To be searched at K.

Remarks: Name in current use. The species was described from Balearic material but it is widespread in the Mediterranean basin.

Caryophyllaceae

Arenaria balearica L., Syst. Nat. ed. 12, 3: 230 (1768) ≡ *Alsianthus balearicus* (L.) Desv. in J. Bot. (Desvaux) 3(5): 221 (1806)

Ind. loc.: “Habitat in insul. Balearibus. Gerard. Zoega”

Type material: According to JARVIS (*The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>) the lectotype designated by DIANA-CORRIAS (1981), Herb. Linn. No. 585.12 (LINN), is in fact a neotype.

Fabaceae

Anthyllis fulgurans Porta in Nuovo Giorn. Bot. Ital. 19: 303 (1887) ≡ *Lotus fulgurans* (Porta) D.D. Sokoloff in Byull. Moskovsk. Obshch. Isp. Prir. Otd. Biol. 108(3): 43 (2003)

Lotus × *minoricensis* Conesa, Mus & Rosselló in Fl. Montiber. 34: 25 (2006)

Ind. loc.: “Holotype: Minorca: Na Macaret, coastal scrub, 14-06-2004, M.À. Conesa, P. Fraga & M. Mus (VAB 179606)”

Remarks: Name in current use (CONESA & al., 2006). Available morphological and molecular evidence suggest that this hybrid has been originated from a cross between *L. fulgurans* and *L. dorycnium*.

Lotus tetraphyllus L., Syst. Veg. ed. 13: 575 (1774)

Ind. loc.: “Habitat [in Majorca.] L. f.,

Suppl. Pl.: 340 (1782)”

Remarks: The protologue and provenance given above should correct those indicated by ROSSELLÓ & SÁEZ (2001).

Medicago arborea var. *citrina* Font Quer in Mem. Mus. Ci. Nat. Barcelona, Sèr. Bot 1(2): 7 (1924)

Type material: The lectotypification made by JUAN & al. (2003) is superfluous (cf. ROSSELLÓ & SÁEZ, 2001).

Lamiaceae

Phlomis italica L., Syst. Nat. ed. 10, 2: 1102 (1759)

Remarks: This protologue should correct that indicated by ROSSELLÓ & SÁEZ (2001).

Rosmarinus officinalis var. *palaui* O. Bolòs & Molinier in Collect. Bot. (Barcelona) 5: 757 (1958) ≡ *Rosmarinus palaui* (O. Bolòs & Molin.) Rivas Mart. & M. Costa in Itinera Geobot. 15: 707 (2002)

Satureja rouyana Briq., Lab. Alp. Mar.: 442 (1895) ≡ *Clinopodium rouyanum* (Briq.) Rosselló in Fl. Montiber. 33: 18 (2006)

Teucrium asiaticum L., Syst. Naturae, ed. 12, 2: 388 (1767); Mant. Pl.: 80 (1767)

Type material: Lectotype selected by NAVARRO in JARVIS & al. (2001). Herb. Linn. No. 722.17 (LINN). According to JARVIS (*The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>) this herbarium specimen could not be designated as a syntype, as stated by ROSSELLÓ & SÁEZ (2001).

Thymus herba-barona subsp. *bivalens* Mayol, L. Sáez & Rosselló in Fl. Montiber. 8: 61-62 (1998) ≡ *T. bivalens* (Ma-

yol, L. Sáez & Rosselló) Camarda in *Parlatorea* 6: 87 (2003)

Lobeliaceae

Lobelia minima Sims in Curtis Bot. Mag. 46: t. 2077 (1819)

Type material: CRESPO & al. (2007) reject the interpretation of ALDASORO & al. (2001) concerning the identity and origin of *L. minima*. An epitype was chosen by CRESPO & al. (2007) to stabilize the name at the specific rank (Spain, Mallorca: Sóller, torrents, 200–900 m., July/August-1910, Bianor MA 122545).

Laurentia minuta f. *balearica* F.E. Wimmer in Ann. Naturhist. Mus. Wien 56: 334 (1948) ≡ *Solenopsis balearica* (F.E. Wimmer) Aldasoro, Castrov., Sales & Hedge in Anales Jard. Bot. Madrid 59: 173 (2001) ≡ *Solenopsis laurentia* subsp. *balearica* (F.E. Wimmer) O. Bolòs, Vigo, Massalles & Ninot, Fl. Manual Països Catalans 3 ed.: 1224 (2005)

Remarks: ALDASORO & al. (2001) argued that *Lobelia minima* Sims in Curtis does not correspond to the Balearic plant and that it may not be a *Solenopsis* at all. Accordingly, they proposed the new combination *Solenopsis balearica* (based on *Laurentia minuta* f. *balearica*) to name the Balearic plant.

Orchidaceae

Anacamptis × *albuferensis* R.M. Bateman in Taxon 53: 53 (2004)

Ind. loc.: “Holotypus: Calcareous marsh-dune ecotone by road north-east margin of S’Albufera Reserve, immediately south of Alcudia, Mallorca, Spain; 16 Apr 1998; R. M. Bateman s.n. (BM, 04001)”

Remarks: Name in current use (BATEMAN & HOLLINGSWORTH, 2004). Available morphological and molecular evidence suggest that this hybrid has been

originated from a cross between *Anacamptis robusta* (T. Stephenson) R.M. Bateman (pollen donor) and *A. fragrans* (Pollini) R.M. Bateman (seed parent).

Ophrys fabrella Paulus & Ayasse ex Delforge in Nat. Belges 85: 119 (2004) ≡ *O. fusca* subsp. *fabrella* (Paulus & Ayasse ex Delforge) Kreutz, Komp. Eur. Orchid. 94 (2004)

Ind. loc.: “Hispania, Baleares, Majorica, proper Son Réal [sic] (UTM: 31SED 1499), alt. s.m. 20 m, 2.IV.1985. In herb. P. Delforge sub n° 850402A1”

Remarks: The *Ophrys fusca* group, to which the plant belongs, is in need of a thorough taxonomic revision. In our opinion, this species could be hardy supported as a new entity, and includes the Balearic orchids previously referred to *O. funerea* Viv. and *O. fusca* subsp. *bilunulata* (Risso) Aldasoro & L. Sáez.

Oxalidaceae

Oxalis ferae L. Llorens, Gil & Cardona in Bot. J. Linn. Soc. 148: 489 (2005)

Ind. loc.: “*Type*: Mallorca: Balearic Islands, Es Rafal d’Ariant, 11.ix.2003, altitude 90 m. Legit. Cardona, Franquesa, Gil et Llorens (Holotype: herb. Llorens-Gil; isotype: BC 862019 s.n.)”

Remarks: *Oxalis ferae* was described from Majorcan material (LLORENS & al., 2005), but it is also present in Minorca (P. FRAGA, pers. com.). There are concerns about the autochthony of this plant in the Balearic Islands, and it could not be discarded that it is a casual alien from South America. According to the treatment of the genus *Oxalis* for “Flora iberica” (cf. Ó. Sánchez Pedraja, http://www.rjb.csic.es/floraiberica/floraiberica/exto/borradores/vol_IX/09_124_00_Oxalidaceae.pdf), *Oxalis ferae* is a taxonomic synonym of *O. aureoflava* Steud.

Poaceae

Agrostis barceloi L. Sáez & Rosselló in Bot. J. Linn. Soc. 133: 361 (2000) ≡ *A. alpina* subsp. *barceloi* (L. Sáez & Rosselló) O. Bolòs, Vigo, Massalles & Ninot, Fl. Manual Països Catalans 3 ed.: 1223 (2005)

Rubiaceae

Galium firmum f. *balearicum* Knoche, Fl. Balear. 2: 420 (1922) ≡ *G. friedrichii* N. Torres, L. Sáez, Mus & Rosselló in Bot. J. Linn. Soc. 136: 316 (2001) ≡ *G. crespianum* subsp. *balearicum* (Knoche) O. Bolòs, Vigo, Massalles & Ninot, Fl. Manual Països Catalans 3 ed.: 1223 (2005)

Rubia angustifolia var. *caespitosa* Font Quer & Marcos in Cavanillesia 8: 46 (1936) ≡ *Rubia caespitosa* (Font Quer & Marcos) Rosselló in Fl. Montiber. 34: 6 (2006)

Remarks: Plants from the type locality show a tetraploid cytotype (2n=44) instead of the hexaploid cytotype (2n= 66) found in Mallorca (CASTRO & al., 2007).

Rubia lucida L., Syst. Nat., ed. 12, 2: 732 (1767)

Ind. loc.: "Habitat in Majorca. D. Richard."

Type material: Lectotype designated by NATALI & JEANMONOD (2000), Herb. Linn. No. 131.5 (LINN).

Remarks: This is a taxonomic synonym of *Rubia peregrina* L. subsp. *longifolia* (Poir.) O. Bolòs (NATALI & JEANMONOD, 2000).

Scrophulariaceae

Sibthorpia africana L., Sp. Pl. 2: 631 (1753)

Type material: The sheet indicated by HEDBERG (1955) as the holotype "Shaw's afric. 149" ex herb, Goodenough (K) is erroneous, since this material was never seen by Linnaeus and is not original material for the name (cf. JARVIS in *The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>). The following epitype has been selected for the Balearic plant by JARVIS (*The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>): Spain. Mallorca, Puig den Galileu 31SDE8807, 1020 m, en matorral y roquedos calizos, 4-VI-1998, R. Morales & al., 1810 RM (MA 618226).

Urticaceae

Urtica balearica L., Amoen. Acad. 3: 46 (1756)

Ind. loc.: "Habitat [in India.] Sp. Pl., ed. 2, 2: 1395 (1763)"

Type material: According to JARVIS (*The Linnaean Plant Name Typification Project*; <http://www.nhm.ac.uk/research-curation/projects/linnaean-typification>), ROSSELLÓ & SÁEZ (2001) selected a lectotype for this taxon (Herb. Linn. No. 1111.9, LINN). However, no explicit and intentional choice of a lectotype was made in that work.

Remarks: The protologue given above should correct that indicated by ROSSELLÓ & SÁEZ (2001).

REFERENCES

- AEDO, C. (2006) Is *Allium ebusitanum* (Alliaceae) an endemic species from Ibiza? *Anales Jard. Bot. Madrid* 63: 121-130.
- ALDASORO, J.J.; S. CASTROVIEJO; F. SALES & I.C. HEDGE (2001) ¿Qué es *Lobelia minima* Sims? *Anales Jard. Bot. Madrid* 59: 173.

- BATEMAN, R.M. & P.M. HOLLINGSWORTH (2004) Morphological and molecular investigation of the parentage and maternity of *Anacamptis* × *albuferensis* (*A. fragrans* × *A. robusta*), a new hybrid orchid from Mallorca, Spain. *Taxon* 53: 43-54
- BRUMMIT, R.K. & C. E. POWELL (1992) *Authors of plant names*. Kew: Royal Botanic Gardens.
- CAFFERTY, S. & C.E. JARVIS (2002) Typification of Linnaean plant names in *Brassicaceae* (*Cruciferae*). *Taxon* 51: 529-537.
- CAMARDA, I. (2003) *Thymus catharinae* (Lamiaceae), *Dianthus stellaris* (Caryophyllaceae) e *Rubus limbarae* (Rosaceae) species novae di Sardegna. *Parlatorea* 6: 83-93.
- CASTRO, M.; P. FRAGA; N. TORRES & J. A. ROSSELLÓ (2007) Cytotaxonomical observations on flowering plants from the Balearic Islands. *Ann. Bot. Fennici* 44: 409-415.
- CRESPO, M.B.; L. SERRA & A. JUAN (2007) Notes on *Lobelia minima* Sims (Campanulaceae-Lobelioideae): what it is and is not. *Taxon* 56: 243-246.
- DIANA-CORRIAS, S. (1981). Le piante endemiche della Sardegna: 94-95. *Boll. Soc. Sarde Sci. Nat.* 20: 287-300.
- FRAGA P, CASTRO M, ROSSELLÓ JA (2007) A new annual species of *Bellium* (Asteraceae) from the Balearic Islands. *Bot. J. Linn. Soc.* 154: 65-77.
- GALBANY-CASALS, M.; L. SÁEZ & C. BENEDÍ (2006a) A taxonomic revision of *Helichrysum* sect. *Stoechadina* (Asteraceae, Gnaphalialae). *Can. J. Bot.* 84: 1203-1232.
- GALBANY-CASALS, M.; L. SÁEZ; C. BENEDÍ & C.E. JARVIS (2006b) Typification of names in *Gnaphalium* L. and *Helichrysum* Mill. (Asteraceae), and some taxonomic notes. *Taxon* 55: 489-501.
- JARVIS, C.E.; S. CAFFERTY & L.L. FORREST (2001) Typification of Linnaean Plant Names in Lamiaceae (Labiatae). *Taxon* 50: 507-523.
- JUAN, A.; M.B. CRESPO & S. RÍOS (2003) Remarks on *Medicago citrina* (sect. *Dendrotelis*, Leguminosae). *Fl. Medit.* 13: 303-316.
- NATALI, A. & D. JEANMONOD (2000) Rubiaceae. In: D. JEANMONOD (edit.), *Compléments au Prodrome de la Flore Corse*. Genève: Conservatoire et Jardin Botanique.
- HEDBERG, O. (1955) A taxonomic revision of the genus *Sibthorpia* L. *Bot. Not.* 108: 161-183.
- LAWRENCE, G.M.H.; A.F. GÜNTHER; G.S. DANIELS & H. DOLEZAL (1968) *Botanico-Periodico-Huntianum*. Pittsburgh: Hunt Botanical Library.
- LLORENS, L.; L. GIL; C. CARDONA; M. FRANQUESA & M. BOI (2005) A new species of *Oxalis* section *Corniculatae* (Oxalidaceae) from the Balearic Islands. *Bot. J. Linn. Soc.* 148: 489-493.
- ROSELLÓ, J.A. (2006) A new combination in *Clinopodium* (Lamiaceae). *Fl. Montiber.* 33: 18-19.
- ROSELLÓ, J.A. (2006) A new combination in Balearic *Rubia* (Rubiaceae). *Fl. Montiber.* 34: 5-6.
- ROSELLÓ, J.A. & L. SAEZ. (2001) Index balearicum: an annotated check-list of the vascular plants described from the Balearic Islands. *Collect. Bot (Barcelona)* 25: 1-192.
- ROSELLÓ, J.A.; N. TORRES & M. CASTRO (2005) *Carduus ibicensis*, a neglected species endemic to the western Balearic Islands. *Fl. Montiber.* 31: 47-50.
- STAFLEU, F.A. & R. S. COWAN (1976-1988) *Taxonomic literature* ed. 2. *Regnum Veg.* Vols. 94, 98, 105, 110, 112, 116. The Hague/Boston.
- TORRES, N.; L. SÁEZ; M. MUS & J.A. ROSSELLÓ (2001) The taxonomy of *Galium crespianum* J.J. Rodr. (Rubiaceae), a Balearic Islands endemic revisited. *Bot. J. Linn. Soc.* 136: 313-322.

(Recibido el 23-III-2008)