

Conspectus of *Helichrysum* Mill. sect. *Stoechadina* (DC.) Gren. & Godr. (Asteraceae, Gnaphalieae)

Mercè Galbany-Casals

Departament de Biologia Vegetal, Unitat de Botànica, Facultat de Biologia, Universitat de Barcelona, Avda. Diagonal 645, E-08028 Barcelona, Spain.

Llorenç Sáez

Unitat de Botànica, Departament de Biologia Animal, Biologia Vegetal i Ecologia, Facultat de Biociències, Universitat Autònoma de Barcelona, E-08193 Bellaterra, Barcelona, Spain.

Carles Benedí

Departament de Productes Naturals, Biologia Vegetal i Edafologia, Unitat de Botànica, Facultat de Farmàcia, Universitat de Barcelona, Avda. Joan XXIII s/n, E-08028 Barcelona, Spain.

Manuscript received in October 2005

Abstract

A conspectus of *Helichrysum* sect. *Stoechadina* (DC.) Gren. & Godr. is provided. Eight species and five subspecies are recognized. For each accepted taxa all synonyms found in the literature are listed, based on the study of the protologues, the type material, and numerous herbarium specimens comprising the whole distribution area and the variability of each species. Notes on the distribution area are provided. Four names are lectotypified, and references to previous lectotypifications are also presented.

Key words: Gnaphalieae, *Helichrysum*, Mediterranean region, nomenclature.

Resum. *Conspectus de Helichrysum* Mill. sect. *Stoechadina* (DC.) Gren. & Godr. (Asteraceae, Gnaphalieae)

Es presenta un conspectus de *Helichrysum* sect. *Stoechadina* (DC.) Gren. & Godr. Es reconeixen vuit espècies i cinc subespècies. Per cada taxó acceptat es relacionen tots els sinònims trobats a la bibliografia, a partir de l'estudi dels protòlegs, el material tipus i els nombrosos exemplars d'herbari que comprenen tota l'àrea de distribució i la variabilitat de cada espècie. S'aporten notes sobre l'àrea de distribució. Quatre noms han estat lectotipificats y es presenten també referències sobre lectotipificacions prèvies.

Paraules clau: Gnaphalieae, *Helichrysum*, regió mediterrània, nomenclatura.

Introduction

This paper is part of a wider research on taxonomy and systematics of the genus *Helichrysum* in the Mediterranean basin, Western Asia to Central Asia. The genus *Helichrysum* Mill. (Gnaphalieae) comprises c. 500 (Hilliard, 1983) to c. 600 (Anderberg, 1991) species. The Mediterranean, Western Asiatic and Central Asiatic *Helichrysum* species are c. 40 and are morphologically characterized as having homogamous or heterogamous capitula, with hermaphrodite flowers outnumbering the female ones; involucre bracts with a fenestrated stereome; smooth or alveolate receptacle; cypselae glabrous or with duplex hairs; monomorphic uniseriate pappus, consisting of several free scabrid setae, with patent cilia at the base. These species have basically been classified into two main groups, which in the latest treatment (Clapham, 1976) the European ones are recognised on a section level: *Helichrysum* sect. *Helichrysum*—mainly equivalent to De Candolle's (1838) unranked group *Stoechadina*—and *H.* sect. *Virginea* (DC.) Gren. & Godr. Drawing upon our research we split *Helichrysum* sect. *Helichrysum* in two different sections based on morphological, karyological and molecular phylogenetic data: *H.* sect. *Helichrysum* and *H.* sect. *Stoechadina* (Galbany-Casals et al., 2006b). The species included in *H.* sect. *Stoechadina* generally have a W-C Mediterranean distribution and consist of shrubs or subshrubs. They never have conspicuous resting buds, nor stolons or rhizomes, and only *H. crassifolium* has basal leaf rosettes. All exhibit heterogamous capitula. Concerning chromosome number, all species have $2n=28$. The distinguishing of this section based on morphology, particularly with regard to habit, seems to reside in the congruence of trends suggested in our ITS phylogenetic study (Galbany-Casals et al., 2004). In a previous paper a taxonomic revision of the species forming *Helichrysum* sect. *Stoechadina* was provided (Galbany-Casals et al., 2006b). During our research on the species of this section we found that a great number of taxa had been described at various taxonomic ranks, and most of these then also combined at other taxonomic ranks. Thus we dealt with a great number of names, studied a significant percentage of the corresponding type specimens, and designated, when necessary and possible, a lectotype or neotype for them (Galbany-Casals et al., 2006a, Galbany-Casals et al., 2006b). A conspectus of *H.* sect. *Stoechadina* is here provided with the aim of showing the complete nomenclatural work comprised in our taxonomic revision. For each accepted taxa all synonyms found in the literature are listed, based on the study of the protologues, the type material, and numerous herbarium specimens comprising the whole distribution area and the variability of each species. Notes on the distribution area are provided, as well as reference citation of previously published typifications. Further type specimens are also designated in the present revision as well, when needed.

Materials and Methods

We compiled all names of *Helichrysum* and *Gnaphalium* as pertaining to *Helichrysum* sect. *Stoechadina* that appear in the literature and in herbarium specimens'

labels. Nearly all protologues were checked, otherwise is indicated with a question mark (?) preceding the taxon name and *n. v.* after the taxon name. Type materials of 58 taxa have been studied so far.

The accepted names, in bold, are listed in taxonomic order, and synonyms, in *italics*, are listed under the accepted name in chronological order of publication.

Each entry follows the same scheme: name of the taxon, author(s), place of publication, homotypic synonyms ordered chronologically, and type locality.

The names of the authors are abbreviated according to Brummitt & Powell (1992), the journals according to Lawrence et al. (1968), and autonomous works according to Stafleu & Cowan (1976-1988) and Stafleu & Mennega (1992-2000). The type locality (“*Ind. Loc.*”) is the exact transcription of the relevant portions of the protologue where the type or the original materials were cited. The transcription of the label and the herbarium acronym are indicated when type specimens were studied. Bibliographic references of previous typifications have also been included. Four more type specimens are designated in the present paper; for details on designation of types methodology see Galbany-Casals et al. (2006a).

Finally, for each accepted name we provide the general distribution. The distribution is based on studied specimens: our taxonomic revision *Helichrysum* sect. *Stoechadina* (Galbany-Casals et al., 2006b) is based on 3520 herbarium specimens, including type specimens, from the following herbaria: ARAN, B-W, BC, BCN, BM, C, COA, COI, COI-WILLK., E, FI, G, G-DC, G-BOIS, HJBS, Herb. Universitat Illes Balears, JACA, JAEN, K, LINN, LISU, LY, MA, MGC, MPU, NAP, P, PAL, PH, PO, SANT, SASSA, SEV, TO, UPS-BURSER, VAL, W and WU. In addition, specimens of several species were observed and collected in the wild.

Results

Taxonomic treatment

Helichrysum sect. **Stoechadina** (DC.) Gren. & Godr., Fl. Fr. 2: 183 (1850) ≡ *H.* [unranked] *Stoechadina* DC., Prodr. 6: 181 (1838).

Type (Art. 22.6): *H. stoechas* (L.) Moench

1. Helichrysum crassifolium (L.) D. Don in Loudon, Hort. Brit.: 341 (1830).

≡ *Gnaphalium crassifolium* L., Mant. Pl.: 112 (1767).

Ind. loc.: “Habitat ad Cap. b. Spei”.

Lectotype (Hilliard and Burt 1973: 345): Cult. in horto upsaliensi (LINN 989: 27!).

– *H. ambiguum* auct., non (Pers.) C. Presl, Fl. Sicul. 1: 29 (1826).

– *H. lamarckii* auct., non Cambess. in Mém. Mus. Hist. Nat. 14: 269, t. 7 (1827).

Distribution.– Endemic to the Balearic islands Majorca and Minorca.

HYBRIDS:**H. crassifolium × H. stoechas**

Distribution.- It is found sparingly in one locality in W Majorca (Cap des Llamp) and in one locality in Minorca (Monte Toro).

H. crassifolium × H. rupestre

Distribution.- It is found sparingly in one locality in W Majorca (Cap des Llamp).

2. Helichrysum stoechas (L.) Moench, Methodus: 575 (1794).

≡ *Gnaphalium stoechas* L., Sp. Pl.: 853 (1753). ≡ *Gn. citrinum* Lam., Fl. Franç. 2: 62 (1778), *nom. illeg.* ≡ *H. stoechas* DC., Fl. Franç. 4: 132 (1805), *comb. superfl.* ≡ *H. stoechas* (L.) D. Don in Loudon, Hort. Brit.: 341 (1830), *comb. superfl.* ≡ *H. citrinum* Ces. in Ces., Pass. & Gibelli, Comp. Fl. Ital. 2: 527 (1879).
– *H. stoechas* var. *typicum* Fiori in Fiori & Paol., Fl. Italia 3: 282 (1904), *nom. inval.*

– *H. stoechas* subsp. *eu-stoechas* Maire in Jahand. & Maire, Cat. Pl. Maroc: 751 (1934), *nom. inval.*

Ind. loc.: “Habitat in Germania, Gallia, Hispania”.

Lectotype (Galbany-Casals et al., 2006a: 492): [Southern France], Iles de Hyères, “In insulis stoechadibus” (UPS, Herb. Burser XV(1): 22!).

≡ *Gnaphalium rupestre* Pourr. in Hist. & Mém. Acad. Roy. Sci. Toulouse 3: 320 (1788).

Ind. loc.: “A Narbonne, sur les rochers voisins de la mer, à Ste. Lucie”.

≡ *Gnaphalium decumbens* Lag., Gen. Sp. Pl. 28 n. 357 (1816), *nom. illeg., non* Thunb., Prodr. Fl. Cap.: 148 (1800) [= *Ifloga decumbens* (Thunb.) Schltr in Bot. Jahrb. Syst. Pflanzengesch. Pflanzengeogr. 27: 204. 1899]. ≡ *Helichrysum decumbens* Cambess. in Mém. Mus. Hist. Nat. 14: 27 (1827). ≡ *H. stoechas* subvar. *decumbens* (Cambess.) Font Quer in Bol. Soc. Esp. Hist. Nat. 20 (5-6): 148 (1920). ≡ *H. stoechas* f. *decumbens* (Cambess.) Knoche, Fl. Balear. 2: 460 (1922). ≡ ?*H. stoechas* var. *decumbens* (Cambess.) Bonnier, Compl. Fl. Fr. 6: 15 (1923), *n. v.*

Ind. loc.: [Spain] “Occurrit rarius locis arenosis ad radicem montis *Urcbillo*, non procul ab Orcei: ét prope Sanctuarium de la Fuensanta in Murciae Regno. *D. Felix Haenseler* ad maris litora legit circa Malacam”.

≡ *Gnaphalium caespitosum* C. Presl in J. & C. Presl, Delic. Prag.: 98 (1822), *nom. illeg., non G. caespitosum* Lam., Encycl. 2 (2): 742 (1788). ≡ *G. siculum* Spreng. in L., Syst. Veg. ed. 16, 3: 476 (1826). ≡ *Helichrysum caespitosum* (C. Presl) DC., Prodr. 6: 182 (1838), *nom. illeg., non H. caespitosum* (Lam.) DC.,

- Prodr. 6: 173 (1838). ≡ *H. siculum* (Spreng.) Boiss., Fl. Orient. 3: 229 (1875), *nom. illeg.*, non *H. siculum* Jord. & Fourr., Brev. Pl. Nov. 2: 67 (1868). ≡ *H. rupestre* var. *siculum* (Spreng.) Fiori, Nuov. Fl. Italia 2: 672 (1927).
- *H. inodorum* var. *siculum* (Spreng.) Fiori in Fiori & Paol., Fl. Italia 3: 281 (1904), *nom. inval.*
- Ind. loc.*: [Italy, Sicily] “Hab. in apricis montium ad S. Martinum prope Panormum siculum. fl. Jun.”.
- = *Gnaphalium conglobatum* Viv., Fl. Libyc. Spec.: 54, t.3, f. 5 (1824), *nom. illeg.*, non Lam., Fl. Franç., ed. 2: 64 (1778). ≡ *Helichrysum conglobatum* Steud., Nomencl. Bot., ed. 2, 2: 738 (1840).
- Ind. loc.*: [Libya] “H. in Magna Syrteos ageribus arenosis”.
- Lectotype (Georgiadou, 1985: 887): [icon.] “*Gnaphalium conglobatum*” in Viviani, Fl. Libyc. Spec.: t. 3, fig. 5. 1824!.
- ≡ *Helichrysum elegans* C. Presl, Fl. Sicul.: 29 (1826), *nom. Illeg.*, non D. Don, Prodr. Fl. Nep. 176 (1825). ≡ *Gnaphalium pulchrum* Steud., Nomencl. Bot., ed. 2, 1: 695 (1840), *nom. illeg.*
- Ind. loc.*: Not indicated.
- = *Gnaphalium barrelieri* Ten., Fl. Napol. 5 : 220 (1835-1838). ≡ *Helichrysum stoechas* subsp. *barrelieri* (Ten.) Nyman, Consp. Fl. Eur. 1: 381 (1879). ≡ *H. barrelieri* (Ten.) Greuter in Greuter & Rech. f. in Boissiera 13: 138 (1967).
- Ind. loc.*: [Italy] “L’ho ricevuto dalla provincia di Lecce e fiorisce in giugno”.
- = *Helichrysum rupestre* var. *cambessedesii* DC., Prodr. 6: 182 (1838).
- Ind. loc.*: [Spain (Majorca), Greece (and Crete)] “In fissuris rupium ins. Balearicae Majoris, ins. Cretae et propè Athenas (Parol.!)”.
- Lectotype (Galbany-Casals et al., 2006a: 498): [Greece, Crete] *G. scandens* Sieber, Chalepa, 1826, *Sieber s. n.* [Sieber herb. cret.] (G-DC!; isolectotypes: BM!, K!, NAP photo!, P!, W!).
- = *Helichrysum caespitosum* var. *compactum* Guss., Fl. Sicul. Syn. 2: 468 (1844). ≡ *H. decumbens* var. *compactum* (Guss.) Lange, Pug. Pl. Hispan. 1: 73 (1860). ≡ *H. siculum* var. *compactum* (Guss.) Lojac., Fl. Sicul. 2 (1): 102 (1903). ≡ *H. decumbens* var. *compactum* (Guss.) Ceballos & C. Vicioso, Estud. Veg. Fl. Forest. Málaga: 273 (1933), *comb. superfl.*
- Ind. loc.*: [Italy, Sicily] “Marsala, Mazzara, Sciacca”.
- = *Helichrysum caespitosum* var. *longifolium* Guss., Fl. Sicul. Syn. 2: 468 (1844). ≡ *H. siculum* var. *longifolium* (Guss.) Lojac., Fl. Sicul. 2 (1): 102 (1903).
- Ind. loc.*: [Italy, Sicily] “Palagonia”.
- = *Helichrysum scandens* Guss., Fl. Sicul. Syn. 2: 465 (1844). ≡ *H. rupestre* var. *scandens* Fiori, Nuov. Fl. Italia 2: 672 (1927). ≡ *H. siculum* var. *scandens* (Fiori)

- Hayek, Prodr. Fl. Penins. Balcan. 2: 599 (1931). ≡ *H. stoechas* subsp. *scandens* (Fiori) Quézel & Santa, Nouv. Fl. Algérie 2: 939 (1963).
- *H. inodorum* var. *scandens* (Guss.) Fiori in Fiori & Paol., Fl. Italia 3: 281 (1904), *nom. inval.*
- Ind. loc.*: [Italy, Sicily] “Cassaro, e Ferla”.
- = *Helichrysum stoechas* var. *maritimum* Lange, Pug. Pl. Hispan. 1: 73 (1860).
- Ind. loc.*: [Spain, France] “Lge. exs. Nr. 250. In arenosis maritimis prope Santander (Oct. c. fl.!) Eandem formam legi ad littora Galliae occidentalis prope Biarritz!”.
- Lectotype (Galbany-Casals et al., 2006a: 499): [Spain] Ad littora arenosa Oceani, pr. Santander, Oct. 1852, *Lange 250* (Plantae europ. austral. 1851-1852) (C photo!).
- = *Helichrysum stoechas* var. *caespitosum* Willk. in Willk. & Lange, Prodr. Fl. Hispan. 2 (1): 59 (1865).
- Ind. loc.*: [Spain] “in regno Murc. ad littora maris pr. Alicante, (BOURG.!) atque ad radic. Sierrae de Carrascoy (GUIR.!)”.
- Lectotype (Galbany-Casals et al., 2006a: 499): Bords de la mer à Alicante, 7-V-1852, *E. Bourgeau s. n.* [Plantes d’Espagne 1852, n° 1598] (COI-WILLK. photo!).
- = *Helichrysum stoechas* var. *incanum* Willk. in Willk. & Lange, Prodr. Fl. Hispan. 2 (1): 59 (1865).
- Ind. loc.*: [Spain] “In Navarra in margaceis int. Yesa et Lièdena, WK.”.
- Holotype: In Navarra australis int. Liedena et Yesa, 19-VI-1850, *Willkomm s. n.* (COI-WILLK. photo!).
- = *Helichrysum lanuginosum* Dulac, Fl. Hautes-Pyrénées: 514 (1867).
- Ind. loc.*: “Coteaux secs: Madiran, Lourdes (Corb.), Agos (Dev.)”.
- = *Helichrysum algarbiense* Jord. & Fourr., Brev. Pl. Nov. 2: 65 (1868).
- Ind. loc.*: [Portugal] “Hab. in virgultis Lusitaniae: prope *Monchique*, Algarbiis. (E. Bourgeau, Pl. d’Esp. et de Port., 1853, n° 1916)”.
- Lectotype (**designated here**): Broussailles près de Monchique, Algarve, 27-VI-1853, *E. Bourgeau 1916* (K!).
- Notes*: We did not find any original of this taxon neither in LY nor in MPU.
- = *Helichrysum brachycladum* Jord. & Fourr., Brev. Pl. Nov. 2: 62 (1868). ≡ *H. stoechas* var. *brachycladum* (Jord. & Fourr.) Rouy, Fl. France 8: 193 (1903).
- Ind. loc.*: [France] “Hab. in arenosis Galliae australis: Rognac (Bouches-du-Rhône)”.
- Lectotype (Galbany-Casals et al., 2006a: 494): Rognac (B. du Rhone), 1864, *Jordan s. n.* (LY photo!; isolectotype: MPU 2461!).

- = *Helichrysum collinum* Jord. & Fourr., Brev. Pl. Nov. 2: 62 (1868), *nom. illeg., non* DC., Prodr. 6: 190 (1838). ≡ *H. stoechas* var. *collinum* Gaut., Cat. Fl. Pyrénées-orientales: 235 (1898). ≡ *H. stoechas* var. *collinum* Rouy, Fl. France 8: 192 (1903), *comb. superfl.*
Ind. loc.: [France] “Hab. in sabulosis Galliae orientalis: Décines (Isère), etc.”.
Lectotype (Galbany-Casals et al., 2006a: 494): Décines (Isère), au Molard, 1843, *Jordan s. n.* (LY photo!; isolectotypes: Décines (Isère), 1860, *Jordan s. n.*, MPU 2459!, 2460!).
- = *Helichrysum flexiramum* Jord. & Fourr., Brev. Pl. Nov. 2: 63 (1868). ≡ *H. stoechas* var. *flexiramum* (Jord. & Fourr.) Gaut., Cat. Fl. Pyrénées-orientales: 235 (1898). ≡ *H. stoechas* var. *flexiramum* (Jord. et Fourr.) Rouy, Fl. France 8: 191 (1903), *comb. superfl.*
Ind. loc.: [France] “Hab. in collibus apricis Galliae australis: Granne (Drôme)”.
Lectotype (Galbany-Casals et al., 2006a: 494): Granne (Drôme), 1860, *Jordan s. n.* (LY photo!; isolectotypes: MPU 2456!, 2458!; Décines (Isère), 1860, *Jordan s. n.*, MPU 2457!).
- = *Helichrysum lutescens* Jord. & Fourr., Brev. Pl. Nov. 2: 66 (1868). ≡ *H. stoechas* var. *lutescens* (Jord. & Fourr.) Gaut., Cat. Fl. Pyrénées-orientales: 235 (1898). ≡ *H. stoechas* var. *lutescens* (Jord. & Fourr.) Rouy, Fl. France 8: 193 (1903), *comb. superfl.*
Ind. loc.: [France] “Hab. in collibus Galliae australioris: Saint-Tropez (Var), etc.”.
Lectotype (Galbany-Casals et al., 2006a: 495): Saint-Tropez (Var), *s. d.*, *Jordan s. n.* (LY photo!; isolectotypes: Saint-Tropez (Var), VI-1867, *Jordan s. n.*, MPU 2462!, 2463!).
- = *Helichrysum maritimum* Jord. & Fourr., Brev. Pl. Nov. 2: 62 (1868), *nom. illeg., non* (L.) Less., Syn. Gen. Compos.: 304 (1832). ≡ *H. stoechas* var. *maritimum* Rouy, Fl. France 8: 192 (1903), *nom. illeg., non* Lange, Pug. Pl. Hispan. 1: 73 (1860).
Ind. loc.: [France] “Hab. in collibus Galliae mediterraneae: La Ciotat (Bouches-du-Rhône)”.
Lectotype (Galbany-Casals et al., 2006a: 496): La Ciotat (Bouches-du-Rhône), 1864, *Jordan s. n.* (LY photo!; isolectotype: MPU 2464!).
- = *Helichrysum monspeliense* Jord. & Fourr., Brev. Pl. Nov. 2: 64 (1868). ≡ *H. stoechas* var. *monspeliense* (Jord. & Fourr.) Rouy, Fl. France 8: 192 (1903).
Ind. loc.: [France] “Hab. in aridis Galliae australis: circa Monspelium”.
Lectotype (Galbany-Casals et al., 2006a: 496): Envir. de Montpellier, *s. d.*, *Jordan s. n.* (LY photo!).
- = *Helichrysum olonnense* Jord. & Fourr., Brev. Pl. Nov. 2: 65 (1868). ≡ *H. stoechas* var. *olonnense* (Jord. & Fourr.) Rouy, Fl. France 8: 193 (1903).
Ind. loc.: [France] “Hab. in arenosis maritimis Galliae occidentalis: les Sables-d’Olonne (Vendée)”.

- = *Helichrysum parvulum* Jord. & Fourr., Brev. Pl. Nov. 2: 65 (1868). ≡ *H. stoechas* var. *parvulum* (Jord. & Fourr.) Rouy, Fl. France 8: 193 (1903).
Ind. loc.: [France] “Hab. in collibus Galliae australioris: Saint-Tropez (Var)”.
 Lectotype (**designated here**): *H. parvulum*, s. d., *Jordan s. n.* (LY photo!).
Nomenclatural notes: This is the only original material found of *H. parvulum*. The label does not indicate any locality neither the date of collection in the wild. The date of collection after cultivation in the garden is indicated in the label as June 1869.
- = *Helichrysum rigens* Jord. & Fourr., Brev. Pl. Nov. 2: 63 (1868). ≡ *H. stoechas* var. *rigens* (Jord. & Fourr.) Rouy, Fl. France 8: 192 (1903).
Ind. loc.: [France] “Hab. in rupibus graniticis Galliae australis: Tournon (Ardèche), etc.”.
 Lectotype (Galbany-Casals et al., 2006a: 498): Tournon (Ardèche), 1864, *Jordan s. n.* (LY photo!).
- = *Helichrysum sabulosum* Jord. & Fourr., Brev. Pl. Nov. 2: 64 (1868). ≡ *H. stoechas* var. *sabulosum* (Jord. & Fourr.) Rouy, Fl. France 8: 192 (1903).
Ind. loc.: [France] “Hab. in arenosis Galliae occidentalis: La Teste-de-Buch (Gironde)”.
 Lectotype (Galbany-Casals et al., 2006a: 498): La Teste-de-Buch (Gironde), pr. Bordeaux, VIII-1859, *Ozanon s. n.* (LY photo!).
- = *Helichrysum syncladum* Jord. & Fourr., Brev. Pl. Nov. 2: 62 (1868). ≡ *H. stoechas* var. *syncladum* (Jord. & Fourr.) Gaut., Cat. Fl. Pyrénées-orientales: 235 (1898). ≡ *H. stoechas* var. *syncladum* (Jord. & Fourr.) Rouy, Fl. France 8: 192 (1903), *comb. superfl.*
Ind. loc.: [France] “Hab. in collibus aridis Galliae australis: Aix (Bouches-du-Rhône), etc.”.
 Lectotype (Galbany-Casals et al., 2006a: 499): Aix (Bouches-du-Rhône), VI-1864, *Jordan s. n.* (MPU 2455; isolectotype: MPU 2454!).
- = *Helichrysum rupicolum* Pomel, in Bull. Soc. Sci. Phys. Algérie 11: 47 (1874), *nom. illeg., non H. rupicola* DC., Prodr.: 190 (1838). ≡ *H. stoechas* subsp. *rupicolum* Maire in Jahand. & Maire, Cat. Pl. Maroc 3: 752 (1934). ≡ *H. pomelianum* Greuter in Willdenowia 33: 242 (2003).
Ind. loc.: [Algeria] “Montagnes de la région des Ksours: Djebel-Amour”.
 Holotype: O. Djebel Amour, El-Ghicha, 10-VI-1860, *Pomel s. n.* (P 84147; isotype: MPU!).
- = *Helichrysum siculum* var. *brachyphyllum* Boiss., Fl. Orient. 3: 230 (1875). ≡ *H. scandens* subsp. *brachyphyllum* (Boiss.) Murb., Contr. Fl. Nord-ouest Afrique 1: 94 (1897). ≡ *H. rupicola* subsp. *brachyphyllum* (Boiss.) Holmboe, Stud. Veg. Cyprus: 179 (1914). ≡ *H. siculum* subsp. *brachyphyllum* (Boiss.) H. Lindb. in Acta Soc. Sci. Fenn., Ser. B, Opera Biol. 2, 7: 35 (1946).

Ind. loc.: [Greece, Lebanon, Egypt] “Hab. in saxosis maritimis, Creta in prov. Sitia (Heldr!), Syria in rupibus maritimis ad Berythum (Bl! Gaili!), Aegyptus ad Alexandriam (Samar!)”.

Lectotype (Galbany-Casals et al., 2006a: 498): Creta pr. Sitia, in saxosis maritimis, IV-1846, *Heldreich s. n.* (G-BOIS!; isolectotypes: BM!, E!, P!).

= *Helichrysum biterrense* H. J. Coste & Mouret in Bull. Soc. Bot. France 40: 142 (1893). ≡ *H. stoechas* var. *biterrense* (H. J. Coste & Mouret) Rouy, Fl. France 8: 193 (1903). ≡ *H. stoechas* f. *biterrense* (H. J. Coste & Mouret) Knoche, Fl. Balear. 2: 460 (1922).

Ind. loc.: [France] “Hérault: Lespignan près Béziers, collines arides. – Juin-juillet”.

Holotype: Collines arides Lespignan, Hérault, 14-VI-1893, *Mouret s. n.* (MPU 2476!; isotypes: BC-SENNEN!, E!, MPU 2477!).

= *Helichrysum siculum* var. *laureticum* Hausskn. in Mitt. Thüring. Bot. Vereins 7: 29 (1895). ≡ *H. siculum* f. *laureoticum* (Hausskn.) Hayek, Prodr. Fl. Peninsul. Balcanic. 2: 599 (1931).

Ind. loc.: “in saxosis distr. Laurion pr. Kamariza”.

= *Helichrysum siculum* f. *lutescens* Hausskn. in Mitt. Thüring. Bot. Vereins 7: 29 (1895). ≡ *H. siculum* subf. *lutescens* (Hausskn.) Hayek, Prodr. Fl. Peninsul. Balcanic. 2: 599 (1931).

Ind. loc.: “Hab. cum typo ad Phalerum, in m. Pentelico, in distr. Laurion”.

= *Helichrysum siculum* f. *ramosa* Hausskn. in Mitt. Thüring. Bot. Vereins 7: 29 (1895). ≡ *H. siculum* subf. *ramosum* (Hausskn.) Hayek, Prodr. Fl. Peninsul. Balcanic. 2: 599 (1931).

Ind. loc.: “Hab. in saxosis Phaleri”.

= *Helichrysum sulfureum* Candargy., Bull. Soc. Bot. France 44: 144 (1897).

Ind. loc.: “in insulis parvis Tokmakia dictis Lesbi orientalis”.

= *Helichrysum stoechas* var. *lanceolatum* Rouy, Fl. France 8: 192 (1903) ≡ ?*H. flexiramum* Març., Magn. Fl. sel. 583, n. v., nom. illeg., non Jord. & Fourr., Brev. Pl. Nov. 2: 63 (1868).

Ind. loc.: “Drôme”.

= *Helichrysum stoechas* var. *psammiticum* Fiori in Fiori & Paol., Fl. Italia 3: 282 (1904).

Ind. loc.: [Italy] “Dune mar. in Tosc. a Follonica (ADR. FIORI) e nell’Istmo di Feniglia (SOMM. in hb. flor.!)”.

Lectotype (Baldini, 1995: 151): In Promontorio Argentario. Istmo di Feniglia, in arenis maritimis, 25-VI-1886, *Levier & Sommer s. n.* (FI!).

- = *Helichrysum siculum* var. *albidum* Chiov. in Ann. Bot. (Rome) 11: 186 (1913), n. v.
- = *Helichrysum stoechas* f. *helianthemifolium* Pau in Butl. Inst. Catalana Hist. Nat. 14: 140 (1914).
Ind. loc.: [Spain, Balearic Islands, Minorca] “Monte Toro (leg. Hernández Ponseti) ex hb. Pons Quer. Monte Toro”.
 Lectotype (Rosselló & Sáez, 2001: 33): Monte Toro, 13-VI-1913, *Hernández Ponseti s. n.* (BC 30877!).
- = *Helichrysum rupestre* var. *latifolium* Caball. in Bol. Soc. Esp. Hist. Nat. 30: 446 (1930).
Ind. loc.: [Morocco] “In fissuris rupium littoralium, prope Larache in loco dicto El Faro, legit I-VII”.
 Holotype: Larache, El Faro, 1-VII-1923, *A. Caballero s. n.* (MA 125257!).
- = *Helichrysum scandens* var. *kabylicum* Maire in Bull. Soc. Hist. Nat. Afrique N. 22: 295 (1931).
Ind. loc.: [Algeria] “Hab. in lapidosis calcareis Montis Ferrati (Djurdjura), junio florens, Mont Tigounatin, dans le peuplement de *Pinus nigra*, sur le calcaire compact à l'exposition S, 1550-1600 m”.
 Holotype: Djurdjura, mont Tigounatin, rocaïlles calcaïres du versant sud dans le bosquet de *Pinus nigra* var. *mauritanica*, 1550-1600 m, 8-VI-1930, *Maire s. n.* (P 84146; isotypes: BC 824995!, BCN 29597!, BM!, MPU 2645!, 2646!, 2647!).
- = *Helichrysum rupestre* var. *jorroi* Sennen & Mauricio in Sennen, Diagn. Pl. Espagne Maroc: 126 (1936).
Ind. loc.: [Morocco] “Hab. Maroc: Melilla, Hidum, coteaux sablonneux. Leg. Sennen et Mauricio”.
 Holotype: Maroc, Hidum, coteaux sablonneux, 10-V-1931, *Sennen & Mauricio* [Plantes d'Espagne - E. Sennen n° 7885] (BC-SENNEN 824994!; isotypes: BC-SENNEN 824992!, BC-SENNEN 824993!, G!).
- = *Helichrysum stoechas* var. *argentatum* P. Palau in Anales Inst. Bot. Cavanilles 11 (2): 516 (1952), in Treb. Inst. Catalana Hist. Nat. 7: 91 (1976). ≡ *H. stoechas* subsp. *argentatum* (P. Palau) Colom, Biogeografía Baleares ed. 2, 1: 198 (1978), *comb. inval.*
Ind. loc.: [Spain, Balearic Islands, Cabrera] “A Caló del Forn usque ad Pinar, valde abundans, ubi d. 2 junii 1948 legi.”.
 Lectotype (Rosselló & Sáez, 2001: 33): desde el Caló d'es Forn hasta el comienzo del Pinar (camino de Cap Ventós), muy abundante, localizada, 2-VI-1948, *Palau Ferrer s. n.* (BC 112729!; isolectotypes: BC 104295!, BCN 29671!, COI!, MA 125041, SANT 1003).

- *Helichrysum decumbens* var. *spathulata* Raulin, Description Physique de l’Ile de Crète: 480 (1869), *nom. inval.* ≡ *H. siculum* var. *spathulatum* (Raulin) Hayek, Prodr. Fl. Peninsulæ Balcanicæ 2: 599 (1931), *comb. inval.* ≡ *H. barrelieri* var. *spathulatum* (Raulin) Greuter in Zaffran, Contr. Fl. Vég. Crète 1: 173 (1976), *comb. inval.*
- *Helichrysum stoechas* var. *libycum* Trotter in Boll. Soc. Bot. Ital. 7: 200 (1912), *nom. nud.*
- *Helichrysum capitatum* Cavara, La Tripolitania Sett. 1: 108 (1913), *nom. nud.*
- *Helichrysum complanatum* Cavara, La Tripolitania Sett. 1: 108 (1913), *nom. nud.*
- *Helichrysum stoechas* f. *macrocephala* C. Vicioso in Bol. Soc. Esp. Hist. Nat. 16: 144 (1916), *nom. nud.*
- *Helichrysum stoechas* var. *linearifolium* Font Quer in Bol. Soc. Esp. Hist. Nat. 20 (5-6): 149 (1920), *nom. nud.* ≡ *H. stoechas* f. *linearifolium* (Font Quer) Knoche, Fl. Balear. 2: 460 (1922), *nom. inval.*
- *Helichrysum stoechas* subvar. *decumbens latiorifolium* Font Quer in Bol. Soc. Esp. Hist. Nat. 20 (5-6): 149 (1920), *nom. nud.*
- *Helichrysum stoechas* f. *congestum* Knoche, Fl. Balear. 2: 460 (1922), *nom. nud.*
- *Helichrysum stoechas* f. *latiorifolium* Garcias Font in Butl. Inst. Catalana Hist. Nat. 23: 93 (1923), *nom. nud.*
- *Helichrysum stoechas* subsp. *eu-stoechas* Maire in Jahand. & Maire, Cat. Pl. Maroc 3: 751 (1934), *nom. inval.*
- *Helichrysum conglobatum* var. *maritima latifolia* Heldr., *nom. nud.*, in sched.
- *Helichrysum decumbens* var. *hifacensis* Pau, *nom. nud.*, in sched.
- *Helichrysum stoechas* var. *foliosum* Sennen & Elías, *nom. nud.*, in sched.

Distribution.– Widespread throughout the entire Mediterranean area.

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

- ≡ *Gnaphalium rupestre* Raf., Précis Découv. Somiol.: 41 (1814), *nom. illeg.*, non Pourr. in Hist. & Mém. Acad. Roy. Sci. Toulouse 3: 320 (1788). ≡ *H. stoechas* subsp. *rupestre* (Raf.) Maire in Jahand. & Maire, Cat. Pl. Maroc 3: 751 (1934).

- *H. inodorum* var. *rupestre* (Raf.) Fiori in Fiori & Paol., Fl. Italia 3: 281 (1904), *nom. inval.*
- *H. rupestre* var. *typicum* Fiori Nuov. Fl. Ital. 2: 671 (1927), *nom. inval.*
Ind. loc.: [Italy, Sicily] “En Sicile sur les rochers près de la mer”.
- Neotype (Galbany-Casals et al., 2006a: 492): Palermo, in rupibus calcareis, V, *Todaro 551* (PAL 8720!; isoneotypes: FI!, K!, P!, PH 1029697 photo!).
- = *Gnaphalium pendulum* C. Presl in J. Presl & C. Presl, Delic. Prag.: 97 (1822).
 ≡ *Helichrysum pendulum* (C. Presl) C. Presl, Fl. Sicul. 1: 29 (1826). ≡ *H. rupestre* var. *pendulum* (C. Presl) Arcang., Comp. Fl. Ital.: 376 (1882). ≡ *H. rupestre* var. *pendulum* (C. Presl) Fiori, Nuov. Fl. Italia 2: 890 (1928), *comb. superfl.*
- *H. inodorum* var. *pendulum* (C. Presl) Fiori in Fiori & Paol., Fl. Italia 3: 281 (1904), *nom. inval.*
Ind. loc.: [Italy, Sicily] “Hab. in rupibus: munti Scaluni Nebrodum Siciliae”.
- = *Helichrysum fontanesii* Cambess. in Mém. Mus. Hist. Nat. 14: 270 (1827). ≡ *H. rupestre* var. *fontanesii* (Cambess.) DC., Prodr. 6: 182 (1838). ≡ *H. stoechas* f. *fontanesii* (Cambess.) Knoche, Fl. Balear. 2: 459 (1922). ≡ *H. rupestre* var. *fontanesii* (Cambess.) Magallon, Fl. Veg. Alicante: 356 (1972), *comb. superfl.*
Ind. loc.: [Spain, Majorca] “In fissuris rupium montis Puig-de-Torrella in insulâ Majore”.
- Lectotype (Rosselló & Sáez, 2001: 32): Lluch, 20-IV-1825, *Cambessèdes s. n.* (MPU-KNOCHE!; isolectotype: P!).
- = *Helichrysum saxatile* Moris, Fl. Sardoia 2: 387, t. 82 (1840-1843). ≡ *Gnaphalium saxatile* (Moris) Bertol., Fl. Ital. 9: 136 (1853), *nom. illeg.*, non L., Sp. Pl.: 857 (1753).
- *H. saxatile* Moris var. *typicum* Fiori in Fiori & Paol., Fl. Italia 3: 282 (1904), *nom. inval.*
Ind. loc.: [Italy, Sardinia] “Inter fissuras rupium calcareum Baunei, Orosei, Dorgali, Oliena. Fl. junio, julio”.
- Lectotype (Arrigoni et al., 1980: 245): Baunei ad rupes, *s. d.*, *Moris s. n.* (SASSA photo!).
- = *Helichrysum panormitanum* Tineo ex Guss., Fl. Sicul. Syn. 2: 467 (1844). ≡ *H. panormitanum* var. *angustifolium* Tineo ex Guss., Fl. Sicul. Syn. 2: 467 (1844), *nom. illeg.* ≡ *Gnaphalium panormitanum* (Tineo ex Guss.) Bertol., Fl. Ital. 9: 135 (1853). ≡ *H. rupestre* var. *panormitanum* (Tineo ex Guss.) Arcang., Comp. Fl. Ital.: 375 (1882).
- Ind. loc.*: [Italy, Sicily] “Palermo alla scala di Maseddu (Tineo)”.
- Holotype: In rupibus calcareis prope Panormum, Scala di Maseddu, *s. d.*, *Tineo s. n.* (NAP photo!; isotype: FI!).

= *Helichrysum panormitanum* var. *latifolium* Guss., Fl. Sicul. Syn. 2: 467 (1844).
Ind. loc.: [Italy, Sicily] “Sferracavallo, Bagheria”.

Lectotype (Galbany-Casals et al., 2006a: 497): Bagheria a Capo Zafferano, 1916,
Grande s. n. (NAP photo!).

= *Helichrysum pendulum* var. *compactum* Guss., Fl. Sicul. Syn. 2: 467 (1844).
Ind. loc.: [Italy, Sicily] “Madonie a Monte Scalone”.

= *Helichrysum pendulum* var. *laxiusculum* Guss., Fl. Sicul. Syn. 2: 467 (1844).
Ind. loc.: “Busambra (Tin.), Monte de Cani, Caltavuturo, Vicari, Pizzuta = et in
 Marettimo”.

= *Helichrysum stramineum* Guss., Fl. Sicul. Syn. 2: 467 (1844). ≡ *H. rupestre* var.
stramineum (Guss.) Fiori, Nuov. Fl. Italia 2: 672 (1927).

– *H. inodorum* var. *stramineum* (Guss.) Fiori in Fiori & Paol., Fl. Italia 3: 281
 (1904), *nom. inval.*

Ind. loc.: [Italy, Sicily] “In rupibus calcareis demissis, vel montosis; Sferracava-
 llo, Madonie a Monte Scalone. Majo, Junio”.

Lectotype (Galbany-Casals et al., 2006a: 499): Sferracavallo, *s. d.*, *Gussone s. n.*
 (NAP photo!; isolectotype: FI!).

= *Helichrysum nebrodense* Heldr. in Ann. Accad. Aspir. Naturalisti 1: 286 (1843).

≡ *H. rupestre* var. *nebrodense* (Heldr.) Arcang., Comp. Fl. Ital.: 376 (1882).

≡ *H. rupestre* var. *nebrodense* (Heldr.) Fiori, Nuov. Fl. Italia 2: 672 (1927),
comb. superfl.

Ind. loc.: [Italy, Sicily] “Ich fand diese Species in Kalkfelsen am Abhang der Ma-
 donie-Gebirge bei dem Dorfe Isnello, blühend im Juni”.

Neotype (Galbany-Casals et al., 2006a: 496): In rupibus calcareis, Isnello, VII,
 Todaro *s. n.* (FI!; isoneotypes: BC 651449!, BP!, K!, MA 125260!, MA
 125261!, P!, TO!).

= *Helichrysum boissieri* Nyman, Consp. Fl. Eur. 1: 381 (1879). ≡ *H. rupestre* var.
boissieri (Nyman) Willk., Suppl. Prodr. Fl. Hispan.: 79 (1893). ≡ *H. stoechas*
 subsp. *boissieri* (Nyman) Maire in Jahand. & Maire, Cat. Pl. Maroc. 3: 751
 (1934).

– *H. rupestre* f. *boissieri* (Nyman) Font Quer, Iter Marocc. 1930, n.º 665 (IV-1932),
nom. nud. in sched.

Ind. loc.: [Spain] “Baetic. (Gibraltar)” (Nyman, 1879). “In fissuris rupium mari-
 timarum regioniscalidae, Gibraltar in declivitate orientale” (Boissier, 1839).

Lectotype (Galbany-Casals et al., 2006a: 494): Gibraltar, in rupibus, V-1837, *Bois-
 sier s. n.* (G!; isolectotypes: K!, P!, W!).

= *Helichrysum fontanesii* var. *latifolium* Font Quer in Bol. Soc. Esp. Hist. Nat.
 20: 148 (1920). ≡ *H. rupestre* f. *latifolium* (Font Quer) O. Bolòs & Vigo in
 Collect. Bot. (Barcelona) 14: 103 (1983).

Ind. loc.: [Spain, Ibiza] “Cala de les Terretes [sic], Gros, 29-V-18; Punta de Creu, c. San Miquel, Font Quer, 19-V-19”.

Lectotype (Rosselló & Sáez, 2001: 32): Eivissa, Cala de les Torretes, pr. Sta. Agnès, 29-V-1918, *Gros s. n.* (BC 30830!).

= *Helichrysum rupestre* var. *melitense* Pignatti in Giorn. Bot. Ital. 113 (5-6): 363 (1980). ≡ *H. melitense* (Pignatti) Brullo, Lanfranco, Pavone & Ronsisvalle in Giorn. Bot. Ital. 122, suppl. 1: 9. (1988).

Ind. loc.: [Malta, Gozo] “Gozo a Cala Dueira”.

Holotype: Insula Gaulos, Cala Dueira, in rupibus maritimus, 22-IV-1874, *Duthie s. n.* (FI!).

= *Helichrysum rupestre* var. *messerii* Pignatti in Giorn. Bot. Ital., 113 (5-6): 363 (1980).

Ind. loc.: [Italy, Sicily] “Marettimo”.

Holotype: Marettimo, in rupibus calcareis maritimis, VI-VIII-1900, *R. Coll s. n.* (Ross Herb. Sic. 243, Sub. *Helichrysum rupestre* var. *pendulum*) (FI!; isotypes: G!, K!, P!).

= *Helichrysum hyblaeum* Brullo in Colloq. Phytosociol. 21: 630 (1995).

Ind. loc.: [Italy, Sicily] “Valle del Irminio, fra Modica e Ragusa, 4-V-1983, *Brullo s. n.*”.

Holotype: Valle del f. Irminio, fra Modica e Ragusa, 4-V-1983, *Brullo s. n.* (CAT; isotypes: FI!).

– *Gnaphalium angustifolium* Moris, Stirp. Sard. Elench. 2: 6 (1827), *nom. inval.*

– *Helichrysum fontanesii* f. *angustifolium* Font Quer, *nom. nud.*, in sched.

– *Helichrysum inodorum* Desf. ex Fiori in Fiori & Paol., Fl. Italia 3: 280 (1904), *nom. inval.*

– *Helichrysum rafinesquii* Guss., *nom. nud.*, in sched.

– *Helichrysum rupestre* f. *virens* Font Quer, *nom. nud.*, in sched.

– *Helichrysum wickstromii* Tineo, *nom. nud.* in sched.

Distribution.– Distributed in the WC Mediterranean area: S Spain and Balearic Islands (Majorca and Ibiza), Morocco, Algeria, and Sardinia, Sicily and Malta islands.

HYBRIDS:

Helichrysum rupestre × **H. stoechas**

Helichrysum valentinum Rouy in Bull. Soc. Bot. France 35: 117 (1888). ≡ *H. rupestre* subsp. *valentinum* G. Mateo in Flora Montibér. 29: 93 (2005).

Ind. loc.: [Spain] “Denia (...) Le Mongo (...) Cueva del agua (...) Les rocs élevés qui dominant la fontaine...”. [Rouy in Bull. Soc. Bot. France 31: 35 (1884)].

Neotype (Galbany-Casals et al., 2006a: 499): Denia, Le Mongo ça et là sur les parois des hauts rochers, 1-VI-1889, *Rouy s. n.* (LY photo!).

Distribution.- It is found sparingly in some localities in Algeria, SE of the Iberian Peninsula, the Balearic islands Majorca and Ibiza, and in Sicily.

4. Helichrysum errerae Tineo, Pl. Rar. Sicil. 2: 27 (1846).

≡ *H. saxatile* subsp. *errerae* (Tineo) Nyman, Consp. Fl. Eur.: 381 (1879). ≡ *H. saxatile* var. *errerae* (Tineo) Fiori in Fiori & Paol., Fl. Italia 3: 282 (1904). ≡ *H. saxatile* var. *errerae* (Tineo) Zangh., Flora Italica 1: 695 (1976), *comb. superfl.* ≡ *H. rupestre* var. *errerae* (Tineo) Pignatti in Giorn. Bot. Ital. 113 (5-6): 363 (1980).

Ind. loc.: [Italy] “In rupibus vulcanicis. Pantelleria a Zinedi dietro l’isola, nelle rupi presso il mare. Errera. Majo, Junio”.

Neotype (Galbany-Casals et al., 2006a: 494): Pantelleria, IV-1863, *Errera s. n.* (FI!).

Distribution.- Endemic to Pantelleria Island (SW Sicily).

5. Helichrysum heldreichii Boiss., Fl. Orient. 3: 229 (1875).

Ind. loc.: [Greece] “Hab. in rupibus faucis Hagio Rumeli Cretae (Heldr!) Julio jam defloratum”.

Holotype: In rupibus Gorque de Hagio Rumeli, 8-VII-1846, *Heldreich s. n.* (G-BOIS!; isotypes: BC 31004!, BM 45958!, G!, W!).

– *H. panormitanum* Boiss. var. *angustifolia* Raulin, Description physique de l’Ile de Crète 480 (1869), *nom. nud.*

Distribution.- Endemic to a very restricted area in SW Crete Island.

6. Helichrysum angustifolium (Lam.) DC. in Lam., Fl. Franç. ed. 3, 6: 467 (1815).

≡ *Gnaphalium angustifolium* Lam., Encycl. 2: 746 (1788). ≡ *H. angustifolium* (Lam.) Sweet in Loudon, Hort. Brit.: 341 (1830), *comb. superfl.* ≡ *H. litoreum* Guss., Fl. Sicul. Syn. 2: 468 (1844), *nom. illeg.* ≡ *Gnaphalium litoreum* (Guss.) Bertol., Fl. Ital. 9: 133 (1853). ≡ *H. saxatile* var. *litoreum* (Guss.) Fiori

in Fiori & Paol., Fl. Italia 3: 282 (1904). \equiv *H. italicum* subsp. *angustifolium* (DC.) P. Fourn., Quatre Fl. France: 952 (1939). \equiv *H. saxatile* subsp. *litoreum* (Guss.) Zangh., Fl. Ital. 1: 695 (1976), *comb. inval.*

Ind. loc.: [Italy] “Cette plante croît dans l’Espagne et dans les environs de Naples” [excl. loc. Hispan.].

Lectotype (Hilliard & Burt, 1981: 238): ex agro Neap. Chev., herb. Jussieu n° 8536 (P!).

\equiv *Helichrysum italicum* var. *ginzbergeri* Ronniger in Feddes Repert. 24: 201 (1927).

Ind. loc.: [Croatia] “Dalmatien: Felseninseln “Pettini di Ragusa”, Nordhang les mittleren, höchsten “Scoglio” (Blätter und überwinterte Blütentände leg. A Ginzberger und K. Ronniger 6-IV-1926; Blüten leg. E. Korb. VI-1926). “Ragusa” (leg. Heider, V-1890, Herb. des Bot. Inst. d. Univers. Wien)”.

Lectotype (Galbany-Casals et al., 2006a: 495): Dalmatien, Ragusa, auf du Pettini, 6-VI-1926, *E. Korb s. n.* (W!).

– *Helichrysum litoreum* var. *denudatum* Béguinot, *nom. nud.*, in *sched.*

Distribution.– Endemic to CW Italy, to some islands in the Tyrrhenian sea (Capri, Ischia, the Archipelago Ponziante, the Archipelago Lipari and the Archipelago Toscano) and to the Croatian Istra Peninsula.

HYBRIDS:

***H. angustifolium* × *H. italicum*:**

Gnaphalium glutinosum Ten., Syll. Pl. Fl. Neapol.: 424 (1831).

Ind. loc.: [Italy] “In arenosis maritimis Apuliae: Viesti, Peschici”.

Neotype (**designated here**): in arenosis Apulie Gargano – marina..., V-1844, *Tenore s. n.* (FI!).

Helichrysum italicum var. *pseudolitoreum* Fiori in Fiori & Paol., Fl. Italia 3: 283 (1904). \equiv *H. pseudolitoreum* [sic] (Fiori) Brullo in Brullo & De Marco in Arch. Bot. Ital. 65(1-2): 116 (1989). \equiv *H. italicum* subsp. *pseudolitoreum* (Fiori) Bacchetta, Brullo & Mossa in Inf. Bot. Ital. 35: 222 (2003).

Ind. loc.: “M. Argentario a Torre Maddalena (SOMM.!) e Gargano a Campo (MARTELLI!). Magg. Giu.”.

Lectotype (Baldini, 1995: 151): Tuscany, Mt. Argentario a Torre Maddalena, 3-VI-1892, *Sommier s. n.* (FI!).

Helichrysum italicum f. *intermedium* Pamp., Piante San Marino 2: 118 (1920).

Ind. loc.: [Rep. San Marino] “M. Titano, vers. or., 15 ottobre 1916”

Holotype: M. Titano, vers. or., 15-X-1916, *Pampanini s. n.* (FI!).

Distribution.– It is found sparingly in some localities in Italy and San Marino.

7. *Helichrysum italicum* (Roth) G. Don in Loudon, Hort. Brit. 342 (1830).

≡ *Gnaphalium italicum* Roth in Bot. Mag. (Römer & Usteri) 4 (10): 19 (1790). ≡ *H. italicum* (Roth) Guss., Fl. Sicul. Syn. 2: 469 (1844), *comb. superfl.* ≡ *H. angustifolium* var. *typicum* Rouy, Fl. France 8: 193 (1903), *nom. inval.* ≡ *H. italicum* var. *typicum* Fiori in Fiori & Paol., Fl. Italia 3: 283 (1904), *nom. inval.* ≡ *H. angustifolium* subsp. *italicum* (Roth) Briq. & Cavill. in Burnat, Fl. Alpes Marit. 6 (2): 265 (1917).

Ind. loc.: Not indicated.

Neotype (Georgiadou, 1985: 888): “*Gnaphalium italicum*” (B-W n° 15445!).

Distribution.- Central Mediterranean area, from certain isolated localities in Morocco in the W to Cyprus in the E.

7a. *Helichrysum italicum* subsp. *italicum*

= *Gnaphalium rosmarinifolium* Salzm. in Flora Allg. Bot. Ztg. 4: 111 (1821), *n. v.*

= *Helichrysum serotinum* var. *orientale* Boiss., Voy. Bot. Espagne 2: 328 (1839).

Ind. loc.: [Italy, France, Croatia, Greece and Cyprus] “Hab. in Italiâ omni, Sardinia (Mor.), Corsicâ, Dalmatiâ (herb. meum), Graeciae insulis (Parolini), Cypro (Aucher *forma involucris tomentellis*)”.

Notes: In G and G-BOIS there is not any original material of this variety.

= *Helichrysum numidicum* Pomel, Nouv. Mat. Fl. Atl. 2: 288 (1875). ≡ *H. angustifolium* var. *numidicum* (Pomel) Maire in Emb. & Maire in Mém. Soc. Sci. Nat. Maroc 22 (1): 37 n.° 61 (1930).

Ind. loc.: [Algeria] “Lieux rocheux des montagnes; Khenchela”.

Holotype: C. Khenchela, VI-1874, *Pomel s. n.* (MPU!).

= *Helichrysum angustifolium* var. *brevifolium* Rouy, Fl. France 8: 193 (1903).

Ind. loc.: [France, Corsica] “Corse: Ajaccio (Kralik in h. R.)”.

= *Helichrysum angustifolium* var. *longifolium* Rouy, Fl. France 8: 193 (1903).

Ind. loc.: [France, Corsica] “Corse: env. de Bastia (Kralik in h. R.)”.

= *H. italicum* var. *ericoideum* Fiori in Fiori & Paol., Fl. Italia 3: 283 (1904).

Ind. loc.: [Italy] “Cal., Sic., Lipari (TOD. in hb. flor., sub H. littor.) ed in forme volgenti al tipo anche in T. d’Otranto. Giu. Lugl.”.

Lectotype (Galbany-Casals et al., 2006b: 1224): Calabria, Fossiateda, Longobucco, Ponte di Cecita, granitico, 1100 m, 29-VII-1918, *A. Fiori s. n.* (FI!; isolecototypes: Calabria, Sila, in ditone Longobucco, loco Ponte di Cecita dicto, 1100 m, solo granitico, 3-VIII-1918, *A. Fiori s. n.* (Flora Italica exsiccata ser. III, n° 2570), BC 30991!, BM!, G!, K!, WU!).

- *Gnaphalium angustifolium* auct., non *G. angustifolium* Lam., *Encycl.* 2: 746 (1788).
- *Gnaphalium stoechas* sensu Sibth. & Sm., *Fl. graec.* 9: 44, t. 857 (1839), non *G. stoechas* L., *Sp. pl.*: 853 (1753).
- *Helichrysum italicum* subsp. *angustifolium* sensu P. Fourn., *Quatre Fl. France*: 952 (1939).
- *Helichrysum litoreum* var. *apulium* Trotter, *nom. nud.*, in *sched.*

Distribution.– Widespread in Italy and Croatia, it lives also in the E Mediterranean coast of France and in Corsica, in some isolated localities in Bosnia-Herzegovina, Serbia and Montenegro and Slovenia, in several Greek islands, in Cyprus as well as in some isolated localities in Algeria, Morocco and Tunisia. Davis and Kupicha (1975) cited it as doubtfully present in Turkey, and in fact we have not found any herbarium specimen collected in this country.

7b. *Helichrysum italicum* subsp. *siculum* (Jord. & Fourn.) Galbany, L. Sáez & Benedí, in *Can. J. Bot.* 84(8): 1225 (2006b).

≡ *H. siculum* Jord. & Fourn., *Brev. Pl. Nov.* 2: 67 (1868) [basionym].

Ind. loc.: [Italy, Sicily] “Hab. in torrentium alveis Siciliae: circa Panormum, etc.”. Lectotype (Galbany-Casals et al., 2006b: 1225): Sicile, 1849, *Gussone s. n.* [ex herb. Al. Jordan 187] (LY photo!; isolectotype: MPU!).

Distribution.– Endemic to Sicily.

7c. *Helichrysum italicum* subsp. *microphyllum* (Willd.) Nyman, *Consp. Fl. Eur.* 1: 382 (1879).

≡ *Gnaphalium microphyllum* Willd., *Sp. Pl.* 3: 1863 (1803). ≡ *H. microphyllum* (Willd.) Cambess. in *Mém. Mus. Hist. Nat.* 14: 272 (1827). ≡ *H. serotinum* var. *microphyllum* (Willd.) Boiss., *Voy. Bot. Espagne* 2: 328 (1839). ≡ *H. angustifolium* var. *minus* Moris, *Fl. Sardoia* 2: 385 (1840-43). ≡ *H. italicum* var. *microphyllum* (Willd.) Boiss., *Fl. Orient.* 3: 234 (1875). ≡ *H. angustifolium* subsp. *microphyllum* (Willd.) Rouy, *Fl. France* 8: 195 (1903). ≡ *H. italicum* var. *microphyllum* (Cambess.) Fiori in Fiori & Paol., *Fl. Italia* 3: 283 (1904), *comb. superfl.* ≡ *H. stoechas* f. *microphyllum* Knoche, *Flora Balear.* 2: 459 (1922).

Ind. loc.: [Greece, Crete] “Hab. in Creta”.

Lectotype (Galbany-Casals et al., 2006a: 492): B-W n° 15448-01 photo!.

≡ *Helichrysum argyreum* Jord. & Fourn., *Brev. Pl. Nov.* 2: 68 (1868). ≡ *H. angustifolium* [subsp. *microphyllum*] var. *argyreum* (Jord. & Fourn.) Rouy, *Fl. France* 8: 195 (1903).

Ind. loc.: “Hab. in siccis et incultis Corsicae: prope Bonifacio”.

= *Helichrysum chloroticum* Jord. & Fourr., Brev. Pl. Nov. 2: 68 (1868). ≡ *H. angustifolium* [subsp. *microphyllum*] var. *chloroticum* (Jord. & Fourr.) Rouy, Fl. France 8: 195 (1903).

Ind. loc.: “Hab. in siccis et incultis Corsicae: prope Bonifacio”.

= *Helichrysum italicum* var. *canum* Holmboe, Stud. Veg. Cyprus: 179 (1914).

Ind. loc.: “Frequent on dry slopes of the Troodos-mountains from Mazoto (UK 577!) and Pharmakas (JH 1133) to Kykko (SR 797! JH 1028)”.

Distribution.- It has a disjunct distribution area comprising some Mediterranean islands: Majorca, Corsica, Sardinia, Crete and Cyprus.

HYBRIDS:

H. italicum subsp. **italicum** × **H. stoechas**

Distribution.- It is found sparingly in W Italian coast.

H. italicum subsp. **siculum** × **H. stoechas**

Distribution.- It is found sparingly in Sicily.

H. italicum subsp. **microphyllum** × **H. stoechas**

Distribution.- It is found sparingly in some localities in W Majorca.

H. italicum subsp. **microphyllum** × **H. rupestre**

Distribution.- It is found sparingly in some localities in Sardinia.

8. Helichrysum serotinum (DC.) Boiss., Voy. Bot. Espagne 2: 327 (1839).

≡ *Helichrysum stoechas* var. *serotinum* DC., Prodr. 7: 299 (1838). ≡ *H. serotinum* var. *occidentale* Boiss., Voy. Bot. Espagne 2: 327 (1839), *nom. illeg.* ≡ *Gnaphalium serotinum* Rchb. fil. in Rchb., Icon. Fl. Germ. Helv. 16: 30, t. 952 fig. 3 [sub *H. serotinum*] (1853). ≡ *H. angustifolium* var. *serotinum* Loret & Barrandon, Fl. Montpellier: 354 (1876). ≡ *H. angustifolium* f. *serotinum* (Boiss.) Rouy, Fl. France 8: 194 (1903). ≡ *H. angustifolium* subsp. *serotinum* (Boiss.) Briq. & Cavill. in Burnat, Fl. Alpes marit. 6 (2): 266 (1917). ≡ *H. stoechas* f. *serotinum* Knoche, Flora Balear. 2: 458 (1922). ≡ *H. italicum* var. *serotinum* (Boiss.) Pau in Brotéria, Sér. Bot. 25: 142 (1931). ≡ *H. italicum* subsp. *serotinum* (Boiss.) P. Fourn., Quatre fl. France: 952 (1939). ≡ *H. italicum* “raç.” [race] *serotinum* Samp., Fl. port., ed. 2: 591 (1947). ≡ *H. italicum* var. *sero-*

tinum (Boiss.) O. Bolòs & Vigo in Collect. Bot. (Barcelona) 14: 103 (1983), *comb. superfl.*

Ind. loc.: [Spain] “In regni Granatensis partibus interioribus alt. 2000-4500 ped. legit cl. E. Boissier”.

Holotype: In regni di Granada partibus interioribus alt. 2000-4500', 1838, *Boissier s. n.* (G-DC photo!; isotype: Regnum granatense, sur les p.es de montagn, floret en aout et fins de juillet, partibus meridionales Sa Nevada, VIII-1837, *Boissier s. n.*, G!).

Distribution.- W Mediterranean, it is found in the Iberian Peninsula, Balearic Islands (Ibiza), S France, N Algeria and N Morocco.

8a. *Helichrysum serotinum* subsp. *serotinum*

= *Helichrysum leptophyllum* Jord. & Fourn., Brev. Pl. Nov. 2: 68 (1868). ≡ *H. serotinum* var. *leptophyllum* (Jord. & Fourn.) Gaut., Cat. Fl. Pyrénées-orientales: 236 (1898). ≡ *H. angustifolium* var. *leptophyllum* (Jord. & Fourn.) Rouy, Fl. France 8: 194 (1903).

Ind. loc.: “Hab. in rupibus schistosis Galliae australis: Valleraugues (Gard), etc.”.

Notes: Any original material of this taxon can be found in LY.

= *Helichrysum libanotis* Jord. & Fourn., Brev. Pl. Nov. 2: 66 (1868). ≡ *H. serotinum* var. *libanotis* (Jord. & Fourn.) Gaut., Cat. Fl. Pyrénées-orientales: 235 (1898). ≡ *H. angustifolium* var. *libanotis* (Jord. & Fourn.) Rouy, Fl. France 8: 194 (1903). ≡ *H. italicum* var. *libanotis* (Jord. & Fourn.) O. Bolòs & Vigo in Collect. Bot. (Barcelona) 14: 103 (1983).

Ind. loc.: [France] “Hab. in collibus apricis Galliae australis: Prades (Pyrénées-Orientales), etc.”.

Lectotype (Galbany-Casals et al., 2006a: 495): Prades (Pyr. Or.), VIII-1838, *Jordan s. n.* (LY photo!; isolectotype: Prades (Pyr. Or.), VIII-1869, *Mich. Nou s. n.*, LY photo!).

– *Gnaphalium angustifolium sensu* Loisel., Fl. Gall., ed. 2, 2: 224 (1828), p.p.

– *Helichrysum serotinum* var. *genuinum* Lázaro Ibiza, *nom. nud.*, in sched.

– *Helichrysum serotinum* var. *lepidiforme* Porta & Rigo, *nom. nud.*, in sched.

– *Helichrysum serotinum* var. *leptocephala* Pau, *nom. nud.*, in sched.

– *Helichrysum serotinum* var. *tomentosum* Font Quer, *nom. nud.*, in sched.

Distribution.- Iberian Peninsula, Balearic Islands (Ibiza), S France and a single locality in Algeria.

8b. *Helichrysum serotinum* subsp. *picardii* (Boiss. & Reut.) Galbany, L. Sáez & Benedí, in Can. J. Bot. 84(8): 1229 (2006b).

≡ *Helichrysum picardii* Boiss. & Reut. in Boiss., Diagn. Pl. Orient. ser. 2, 3 (6): 103 (1859) [basionym]. ≡ *H. hispanicum* Jord. & Fourr., Brev. Pl. Nov. 2: 67 (1868), *nom. illeg.* ≡ *H. stoechas* var. *hispanicum* (Jord. & Fourr.) Rouy in Rev. Sci. Nat. Montpellier, sér. 3, 2 (2): 241 (1882). ≡ *H. serotinum* var. *hispanicum* (Jord. & Fourr.) Rouy ex Cadevall, Fl. Catalunya 3: 307 (1923). ≡ *H. italicum* var. *picardii* (Boiss. & Reut.) Pau in Brotéria, Sér. Bot. 25: 142 (1931). ≡ *H. italicum* subsp. *picardii* (Boiss. & Reut.) Franco, Nova Fl. Portugal 2: 371, 569 (1984), *comb. inval.*

Ind. loc.: [Spain] “Hab. in pinetis propè Puerto de Santa Maria prov. Gaditanae. (Picard 1831! Reuter! Bourgeau, pl. exs. 1849, n.º 317), in arenosis maritimis *Extramadurae Lusitanae* (Welwitsch pl. exs. Lusit. anno 1839 sub. *H. serotino*). Fl. Julio, Augusto”.

Lectotype (Galbany-Casals et al., 2006a: 497): Sables maritimes au Coto près Puerto Santa María, 20-VII-1849, *E. Bourgeau 317* (G!; isolectotypes: BM!, E!).

≡ *Helichrysum serotinum* var. *intermedium* Lange in Willk. & Lange, Prodr. Fl. Hispan. 2: 60 (1865). ≡ *H. italicum* var. *intermedium* (Willk.) Pau in Brotéria, Sér. Bot. 25: 142 (1931).

Ind. loc.: [Spain] “In Gallec (en los arenales de la Lanzada y de Cangas, PLAN., in arenos. marit. ad Vigo et Cobas, LGE.!), alibi hinc inde cum forma primaria (ad rupes pr. Hoyoqueseros in vet. Castilla, BOURG.! pr. Guejar-Sierra in S. Nevada, CAMPO! in pinetis ad Puerto de Sta. Maria, PICARD, REUT., BOURG.)”.

Lectotype (**designated here**): In arenosis maritimis ad oppid. Vigo Galleciae, 28-VIII-1851-52, *Lange 251* (Plantae europ. austral. 1851-1852) (COI-WILLK!; isolectotypes: C!, K!).

≡ *Helichrysum picardii* var. *virescens* Valdés Berm. in Anales Jard. Bot. Madrid 36: 226 (1980). ≡ *H. picardii* subsp. *virescens* (Valdés Berm.) Rivas Mart. in Lagasalia 15 (Extra): 117 (1988).

Ind. loc.: [Spain] “Huelva, Reserva Biológica de Doñana, *prope loco dicto* “El Control”, die 21-VI-1977 a S. Castroviejo, M. Costa, S. Rivas-Martínez & E. Valdés-Bermejo (nº 2190EV) lectus”.

Holotype: Huelva, Almonte, Reserva Biológica de Doñana, *prope loco dicto* “El Control” in arenosis (*Halimio-Stauracanthetum genistoidis*), 21-VI-1977, S. Castroviejo, M. Costa, S. Rivas-Martínez & E. Valdés-Bermejo 2190 (MA 211983; Isotypes: MA 216980, MA 216980/2).

– *Helichrysum angustifolium sensu* Planellas, Ensayo Fl. Gallega: 270 (1852).

Distribution.– W coast of the Iberian Peninsula and N Morocco.

HYBRIDS

H. serotinum subsp. **serotinum** × **H. stoechas**

Helichrysum × *mixtum* Font Quer in Mem. Mus. Ci. Nat. Barcelona, Ser. Bot. 1 (2): 14 (1924), *nom. illeg., non* O. Hoffm. in Kuntze, Revis. Gen. Pl. 3 (2): 152 (1898).

Ind. loc.: [Spain] “Hab. prope Vinaixa, in Catalaunia occidentali, inter parentes, ubi d. 19 junii 1920, legi”.

Holotype: In Catalaunia occidentale, pr Vinaixa ad agrorum margines, inter parentes, 500 m, 19-VI-1920, *Font Quer s. n.* (BC 30959!; isotype: FI!).

Distribution.- It is sparingly found in some localities in the Iberian Peninsula.

H. serotinum subsp. **picardii** × **H. stoechas**

Distribution.- It is sparingly found in some localities in S Iberian Peninsula.

Acknowledgements

The authors give many thanks to the curators of all the herbaria visited and consulted, to A. Herrero and A. Méndez for kindly helping in some literature searches, and to F. Muñoz Garmendia, A. Herrero again, and J. McNeill for nomenclatural advice. This work has been partly financed by the *Dirección General de Investigación, Ministerio de Ciencia y Tecnología* (BOS2001-3041-C02-02 and REN2002-04634-C05-01), and by the Generalitat de Catalunya (FI grant to M. Galbany and *Ajuts a Grups de Recerca Consolidats* 2001SGR00125).

References

- Anderberg, A. A. 1991. Taxonomy and phylogeny of the tribe Gnaphalieae (Asteraceae). *Opera Bot.* 104: 1-195.
- Arrigoni, P. A.; Camarda, I.; Corrias, B.; Diana-Corrias, S.; Raffaelli, M.; Valsecchi, F. 1980. Le piante endemiche della Sardegna. *Boll. Soc. Sarda. Sci. Nat.* 19: 217-254.
- Baldini, R. M. 1995. Flora vascolare del Monte Argentario (Arcipelago Toscano). *Webbia*, 50: 67-191.
- Brummitt, R. K.; Powell, C. E. 1992. *Authors of Plant Names*. Royal Botanic Gardens. Kew.
- Candolle, A. P. de. 1838. *Prodromus systematis naturalis regni vegetabilis* 6. Paris.
- Clapham, A. R. 1976. *Helichrysum* Mill. In: T. G. Tutin; V. H. Heywood; N. A. Burges; D. M. Moore; D. H. Valentine; S. M. Walters; D. A. Webb *Flora Europaea*. Vol. 4. Cambridge University Press. Cambridge. P. 128-131.
- Davis, P. H.; Kupicha, F. K. 1975. *Helichrysum*. In: P. H. Davis *Flora of Turkey*. Vol. 5. Edinburgh University Press. Edinburgh. p. 80-97.
- Galbany-Casals, M.; Garcia-Jacas, N.; Susanna, S.; Sáez, L.; Benedí, C. 2004. Phylogenetic relationships in the Mediterranean *Helichrysum* (Asteraceae, Gnaphalieae) based on nuclear rDNA ITS sequence data. *Aust. Syst. Bot.* 17: 241-253.

- Galbany-Casals, M.; Sáez, L.; Benedí, C.; Jarvis, C. E. 2006a. Typification of names in *Gnaphalium* L. and *Helichrysum* Mill. (Asteraceae), and some taxonomic notes. *Taxon* 55: 489-501.
- Galbany-Casals, M.; Sáez, L.; Benedí, C. 2006b. A taxonomic revision of *Helichrysum* Mill. sect. *Stoeadina* (DC.) Gren. & Godr. (Asteraceae, Gnaphalieae). *Can. J. Bot.*: 84: 1203-1232.
- Georgiadou, E. 1985. *Helichrysum* Mill. In: R. D. Meikle Flora of Cyprus. Vol. 2. Royal Botanic Gardens. Kew. p. 886-889.
- Hilliard, O. M. 1983. *Helichrysum* Mill. In: O. A. Leistner Flora of Southern Africa. Vol. 33 (7, 2). Department of Agriculture, Pretoria. p. 61-310.
- Hilliard, O. M.; Burt, B.L. 1973. Notes on some plants of Southern Africa chiefly from Natal: III. *Notes Roy. Bot. Gard. Edinburgh* 32: 303-387.
- Hilliard, O. M.; Burt, B.L. 1981. Names in *Gnaphalium*, *Xeranthemum* and *Helichrysum* published between 1753 and 1800. *Bot. J. Linn. Soc.* 82: 233-265.
- Lawrence, G. H. M.; Günther Buchheim, A. F.; Daniels, G. S.; Dolezal, H. 1968. *Botanico-Periodicum-Huntianum*. Hunt Botanical Library. Pittsburgh, Pa.
- Rosselló, J. A.; Sáez, L. 2001. Index Balearicum: An annotated check-list of the vascular plants described from the Balearic Islands. *Collect. Bot. (Barcelona)* 25: 3-203.
- Stafleu, F. A.; Cowan, R. S. 1976-1988. *Taxonomic Literature*. Vol. 1-7. Regnum Veg. 94, 98, 105, 110, 112, 115, 116.
- Stafleu, F. A.; Mennega, E. A. 1992-2000. *Taxonomic literature*. Supplement I-VI. Regnum Veg. 125, 130, 132, 134, 135, 137.