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The Euro+Med treatment of *Gnaphalieae* and *Inuleae* (*Compositae*) – generic concepts and required new names

Abstract

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A synonymic survey of genera of *Gnaphalieae* and *Inuleae* accepted for the purpose of the Euro+Med Project is presented. Names and combinations that are required in the genera *Aliella*, *Allagopappus*, *Chiliadenus*, *Ditrichia*, *Filago*, *Gnomophalium* (gen. nov.), *Helichrysum*, *Laphangium*, *Leontopodium*, *Limbarda*, *Pallenis* and *Pulicaria*, but do not so far exist, are validated. *Conyza candida*, the basionym of *Inula candida*, is typified.

Introduction

A concise characterisation of the Euro+Med PlantBase Project, its main purposes and planned “products”, and of the rationale and prospects of the present Notulae series, can be found in the first instalment of the Notulae (Willdenowia 33: 37. 2003). Further information on the setup and structures of Euro+Med is displayed on the Internet (<http://www.euromed.org.uk/>).

When I undertook to edit the *Compositae* for the Euro+Med Checklist I sought the advice of renowned specialists for the various tribes, principally but not exclusively on questions of generic delimitation. In particular, G. Wagenitz, Göttingen, offered his valuable opinion on *Gnaphalieae* genera and *Filago* species; H. W. Lack, Berlin, helped with specific questions concerning *Phagnalon*, F. Jacquemoud, Genève, contributed label information on *Leontopodium nivale*, and I. Breitwieser, Christchurch, advised on *Xerochrysum*. For the *Inuleae*, I received assistance from A. Anderberg, Stockholm, who sent me a draft copy of his and P. Eldenäs’ generic review of the tribe for Kubitzki’s Families and Genera of Vascular Plants. I thank them all for their skilled and helpful input.

As *Gnaphalieae* and *Inuleae* have often been treated as subtribes of a single tribe, *Inuleae* s.l., I found it appropriate to deal with them in a single paper of this Notulae series. While discussing generic content separately for each, I shall present the validation entries in a single, alphabetical series.

The accepted Euro+Med genera of *Gnaphalieae* and *Inuleae*, with their relevant synonyms, are listed in Table 1 and 2, respectively. No complete synonymy is given, but generic names that were adopted in recent floristic literature for the area are included. The (provisional) assignment of *Gymnarrhena* to *Inuleae* (rather than *Cichorioideae*, in which it has sometimes been placed) follows a suggestion by H. W. Lack.

A generic survey of Euro+Med *Gnaphalieae* (Table 1)

The generic concept in Anderberg's revision of the tribe (in *Opera Bot.* 104, 1991) has been followed with three minor exceptions: The New World aliens he treats in *Gamochaeta* have been left in *Gnaphalium*; *Logfia* (including *Oglifa*) is again included in *Filago*; and, in accordance with Cvelev (in *Bjull. Moskovsk. Obšč. Isp. Prir., Otd. Biol.* 98(6): 99-108, 1994), the "*Gnaphalium luteoalbum*" group has been separated, as *Laphangium*, from *Pseudognaphalium*. Furthermore,

Table 1. The Euro+Med genera of *Gnaphalieae*. Accepted names appear in bold-face type, their synonyms in regular italics. Bracketed names are of xenophytic (non-native) genera, quotation marks denote names applied in a sense that excludes their type.

Aliella	= <i>Logfia</i>	Laphangium
[Ammobium]	= <i>Oglifa</i>	= " <i>Pseudognaphalium</i> "
[Anaphalis]	Gnaphalium	Lasiopogon
Antennaria	= <i>Filaginella</i>	Leontopodium
Bombycilaena	= <i>Omalotheca</i>	Leysera
Cymbolaena	[= <i>Gamochaeta</i>]	= <i>Asteropterus</i>
= " <i>Stylocline</i> "	Gnomophalium	Micropus
Evacidium	= " <i>Homognaphalium</i> "	Phagnalon
Filago	Helichrysum	[Plecostachys]
= <i>Evax</i>	Ifloga	[Xerochrysum]
= <i>Gifola</i>		[= <i>Bracteantha</i>]

Table 2. The Euro+Med genera of *Inuleae*. Accepted names appear in bold-face type, their synonyms in normal italics. Quotation marks denote names applied in a sense that excludes their presently accepted type.

Allagopappus	Geigeria	Pentanema
Anvillea	Gymnarrhena	= <i>Vicoa</i>
= <i>Anvilleina</i>	Inula	Perralderia
Asteriscus	= <i>Codonocephalum</i>	= <i>Fontquera</i>
= <i>Bubonium</i>	Iphiona	Pulicaria
= <i>Ighermia</i>	= <i>Perralderiopsis</i>	= <i>Francoeuria</i>
= <i>Nauplius</i>	Jasonia	Rhanteriopsis
= <i>Odontospermum</i>	Lifago	= <i>Postia</i>
Bupthalmum	= <i>Niclouxia</i>	= <i>Takhtajanianthus</i>
Carpesium	Limbarda	Rhanterium
Chiliadenus	Pallenis	Schizogyne
= " <i>Varthemia</i> "	= " <i>Asteriscus</i> "	Telekia
Chrysophthalmum	= <i>Saulcya</i>	Vieria
Dittrichia	Pegolettia	Xerolekia
= <i>Capularia</i>		

two generic names have changed while the genera remained: “*Homognaphalium*” to *Gnomophalium* (see below) and *Bracteantha* to *Xerochrysum* (Bayer in Kew Bull. 56: 1013-1015. 2001).

Flora Europaea in 1976 had adopted what was then perceived as a splitting approach for this tribe, a trend that is now partly reversed. Euro+Med *Filago* includes *Evax* in addition to *Logfia*, and our *Gnaphalium* corresponds to *Filaginella*, *Omalotheca* and *Gamochaeta* combined – whereas the “*Gnaphalium*” of Flora Europaea is now *Laphangium*. The reverse happened with two xenophytic everlastings: the former *Helichrysum bracteatum* from Australia is now placed in *Xerochrysum*, and the S African *H. orbiculare* of Hansen & Sunding’s Macaronesian checklist (in Sommerfeltia 17: 48. 1993), not mentioned in Flora Europaea, ended up as *Plecostachys serpyllifolia*.

A generic survey of Euro+Med *Inuleae* (Table 2)

For the *Inuleae*, the adopted generic treatment draws heavily on the one published by Anderberg (in Pl. Syst. Evol. 176: 75-123. 1991). The few differences are almost all nomenclatural, with *Nauplius* reverting to its traditional name *Asteriscus*, and “*Asteriscus*” as used by Anderberg to the equally traditional *Pallenis* (see Greuter in Fl. Medit. 7: 41-48. 1998); also, the original, uncorrectable spelling *Vieria* is accepted in preference to *Vierea* (others wrote *Vieraea*, or *Viraea*). The single taxonomic difference is reintegration of the monotypic *Ighermia* in *Asteriscus* from which it had been segregated, as suggested by the recent analysis of molecular data by Goertzen & al. (in Syst. Bot. 27: 815-823. 2002).

Most of the Euro+Med genera of *Inuleae* occur outside of Europe and are not mentioned in Flora Europaea. For the European ones, three discrepancies between the respective treatments are of note: Euro+Med *Limbarda* was formerly included in *Inula*, *Chiliadenus* in *Jasonia*, and *Xerolekia* in *Telekia*. One change concerns tribal position but leaves name and circumscription unchanged: *Karelinia*, previously in the *Inuleae*, is now accepted among the *Plucheeae*.

Aliella

Aliella ballii (Klatt) Greuter, **comb. nova** ≡ *Gnaphalium helichrysoides* Ball in J. Bot. 11: 364. 1873 (non Wedd. 1856) ≡ *Helichrysum ballii* Klatt in Bull. Herb. Boissier 4: 836. 1896 ≡ *Phagnalon helichrysoides* Maire in Bull. Soc. Hist. Nat. Afrique N. 19: 51. 1928, nom. illeg. ≡ *Aliella embergeri* Qaiser & Lack in Bot. Jahrb. Syst. 106: 492. 1986, nom. illeg. – [*Aliella bracteata* Anderb. in Opera Bot. 104: 54. 1991, nom. inval.].

Aliella ballii subsp. *nitida* (Emb.) Greuter, **comb. nova** ≡ *Phagnalon helichrysoides* var. *nitidum* Emb. in Bull. Soc. Sci. Nat. Maroc 15: 224. 1935 ≡ *Aliella helichrysoides* subsp. *nitida* (Emb.) Qaiser & Lack in Bot. Jahrb. Syst. 106: 493. 1986.

Allagopappus

Allagopappus canariensis (Willd.) Greuter, **comb. nova** ≡ *Conyza canariensis* Willd., Sp. Pl. 3: 1937. 1803. – [= *Chrysocoma dichotoma* L. f., Suppl. Pl.: 359. 1782 ≡ *Conyza inuloides* Aiton, Hort. Kew. 3: 182. 1789, nom. illeg. ≡ *Conyza dichotoma* (L. f.) Pers., Syn. Pl. 2: 428. 1807; ≡ *Allagopappus dichotomus* Cass. in Cuvier, Dict. Sci. Nat. 56: 22. 1828]. – Note: The familiar name for this species is *Allagopappus dichotomus*, but Cassini’s name is not based on *Chrysocoma dichotoma* L. f., which is typified by a *Masson* specimen from the Canary Islands. Cassini does not refer to either *Masson* or the younger *Linnaeus*, but described a new species (and genus) explicitly based on a single element, a poor, unnamed specimen in Mérat’s herbarium that Cassini mistakenly believed to have been collected on Mauritius. Priority of *A. dichotomus* dates from 1828 not 1782, and the epithet of Willdenows *Conyza canariensis*, based on a specimen in B-W, takes precedence.

Chiliadenus

Chiliadenus sericeus subsp. *virescens* (Maire) Greuter, **comb. nova** ≡ *Varthemia sericea* subsp. *virescens* Maire in Bull. Soc. Hist. Nat. Afrique N. 32: 211. 1941.

Dittrichia

Dittrichia viscosa subsp. *angustifolia* (Bég.) Greuter, **comb. & stat. novi** ≡ *Inula viscosa* var. *angustifolia* Bég. in Boll. Soc. Bot. Ital. 1912: 222. 1912. – [= *Dittrichia orientalis* Brullo & De Marco in Portugaliae Acta Biol. 19: 345. 2000].

Dittrichia viscosa subsp. *maritima* (Brullo & De Marco) Greuter, **comb. & stat. novi** ≡ *Dittrichia maritima* Brullo & De Marco in Portugaliae Acta Biol. 19: 346. 2000.

Filago

Filago libyaca (Alavi) Greuter & Wagenitz, **comb. nova** ≡ *Evax libyaca* Alavi in Jafri & El-Gadi, Fl. Libya 107: 51. 1986 (“1983”).

Filago lojacanoi (Brullo) Greuter, **comb. nova** ≡ *Filago cossyrensis* Lojac., Fl. Sicul. 2(1): 110. 1903 (non Lojac. 1885) ≡ *Oglifa lojacanoi* Brullo in Doc. Phytosoc., ser. 2, 9: 8. 1985.

Filago longilanata (Maire & Wilczek) Greuter, **comb. nova** ≡ *Evax longilanata* Maire & Wilczek in Bull. Soc. Hist. Nat. Afrique N. 25: 303. 1934.

Filago nevadensis (Boiss.) Wagenitz & Greuter, **comb. nova** ≡ *Evax nevadensis* Boiss., Fl. Orient. 3: 245. 1875 ≡ *Evax discolor* subsp. *nevadensis* (Boiss.) Nyman, Consp. Fl. Eur.: 395. 1879. – [= *Evax discolor* var. *micropodioides* Willk. in Bot. Zeitung (Berlin) 5: 857. 1847 ≡ *Evax micropodioides* (Willk.) Willk. in Willkomm & Lange, Prodr. Fl. Hispan. 2: 65. 1865 (non *Filago micropodioides* Lange 1862) ≡ *Filago iberica* Chrtek & Holub in Preslia 35: 3. 1963].

Gnomophalium

Gnomophalium Greuter, **gen. nov.** – [“*Homognaphalium*” sensu Kirp., excl. typo]. – Typus: *Gnomophalium pulvinatum* (Delile) Greuter (*Gnaphalium pulvinatum* Delile). – Descr. lat.: Kirpičnikov in Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, Fl. Sist. Vysš. Rast. 9: 32. 1950, sub voce “*Homognaphalium*”. – Note: Kirpičnikov (l.c.), when establishing *Homognaphalium*, described plants of *G. pulvinatum* which he misnamed *H. crispatum*. The latter name, which provides the type of the generic name, is however a true *Gnaphalium*, *G. crispatum* Delile. *Homognaphalium* is not available for the genus Kirpičnikov had in mind, which was still unnamed.

Gnomophalium pulvinatum (Delile) Greuter, **comb. nova** ≡ *Gnaphalium pulvinatum* Delile in anon., Descr. Egypte, Hist. Nat.: 266. 1813 ≡ *Homognaphalium pulvinatum* (Delile) Fayed & Zareh in Willdenowia 18: 451. 1989.

Helichrysum

Helichrysum pomelianum Greuter, **nom. nov.** ≡ *Helichrysum rupicola* Pomel in Bull. Soc. Sci. Phys. Algérie 11: 47. 1874 (non DC. 1838) ≡ *Helichrysum stoechas* subsp. *rupicola* Maire in Jahandiez & Maire, Cat. Pl. Maroc: 752. 1934. – [*Helichrysum stoechas* subsp. *scandens* Quézel & Santa, Nouv. Fl. Algérie: 939. 1963, nom. inval.]

Inula

Inula candida (L.) Cass. in Cuvier, Dict. Sci. Nat. 23: 554. 1822 ≡ *Conyza candida* L., Sp. Pl.: 862. 1753. – Lectotype (proposed here): [icon] “*Jacobaea cretica incana integro limonii fol.*” in

Barrelier, Pl. Gall. Hisp. Ital. Obs.: t. 217. 1714. – Epitype (proposed here): “In insula ‘Gramvousa’ (Creta, distr. ‘Kissamos’), in latere austro-orientali arcis veterae”, 50-100 m s.m., 25.7.1973, *Stamatiadou 17335* in Soc. Ech. Pl. Vasc. Eur. Occid. Bassin Médit. No. 7061 (G; isoeotypes widely distributed). – Barrelier’s figure appears to be the only available original material that is suited as lectotype. Barrelier (l.c.: 95, sub “*Aster Verbasci folio*”) noted that the plant originated “e scopulis promontorii Capo spada”, i.e., from Cape Spatha at the tip of the Rodhopou Peninsula, where Rechinger (in Akad. Wiss. Wien, Math- Naturwiss. Kl., Denkschr. 105(2,1): 140. 1944, as *Inula limoniifolia*) still observed the species in 1942. The specimens in the Linnaean herbarium (LINN), one of which bears the Species Plantarum number, all belong to other species. At a time when descriptions were still eligible, I designated as lectotype a phrase name from Tournefort’s Corollarium, but this choice (in Boissiera 13: 140. 1967) has no standing under the present Code. Tan & al. (in Taxon 52: 358. 2003) “amplified” my designation to include the corresponding Tournefort specimen (P-TRF 4122), which was not however seen by Linnaeus and is not original material. The Linnaean Plant Name Typification Project, in their database (<http://www.nhm.ac.uk/botany/linnaean/>), considered a specimen in the Clifford Herbarium at BM to be the type, inexplicably attributing the choice to me (l.c.). Fortunately this lectotype designation was never effectively published so has no standing. To judge from the image placed on the Web (<http://www.nhm.ac.uk/botany/clifford/>), the Clifford specimen does not belong to the Cretan endemic to which the name *Inula candida* is now applied, but to a species related to *I. verbascifolia* (Willd.) Hausskn., perhaps *I. parnassica* Boiss. & Heldr.

Laphangium

Laphangium teydeum Wildpret & Greuter, **sp. nova** – Typus: “Tenerife: Las Cañadas del Teide. Fumarolas de la Rambleta”, 22.6.1989, *Wildpret* (TFC 31002). – Descr. lat.: Knapp in Oberhess. Naturwiss. Z. 42: 87. 1976, sub nomine “*Gnaphalium teydeum*”.

When Knapp (l.c.) described *Gnaphalium teydeum* as new he did not mention a specimen or designate a type, so that the name was not validly published, nor has it been validated since. The species is extremely rare. It is mentioned (under its previous, invalid designation) in papers or lists devoted to the threatened flora of the Canary Islands. Canarian botanists have exercised restraint in collecting it, in order not to deplete its tiny natural population, and the holotype (a single individual) is indeed the only specimen present in the herbarium at La Laguna (TFC). In spite of its extreme rarity, the species was used to characterise and designate a plant association, *Vulpio myuri-Gnaphalietum teydei* (now to be changed to *Vulpio myuri-Laphangietum teydei*) by Wildpret & Rodríguez (in Itin. Geobot. 7: 247-248. 1993) and Wildpret & al. (Estud. Canarias 41: 9-14. 1997), an association that is found exclusively on the borders of the fumaroles of the La Rambleta crater, close to the summit of the Pico del Teide, at c. 3500 m of altitude.

Knapp (l.c.) did not mention the affinity of his intended new species, but when reading carefully his description one immediately suspects that it is closely related with what used to be known as *Gnaphalium luteoalbum* L. The study of the plant itself fully confirms this assumption. It is in fact a diminutive edition of *G. luteoalbum*, a widespread and weedy plant that is found throughout the Macaronesian islands, including the lower zones of Tenerife. At first sight it differs strikingly from *G. luteoalbum* by its dwarf habit, the small dimension of all its parts (including flower heads and flowers) and its tendency to perennate. However it fully coincides with *G. luteoalbum* in structural details, including those of the bracts and flowers. There can be no doubt that both species are closely related, the endemic high-mountain plant being a specialised, recent derivative of the lowland species.

It is now generally admitted that *Gnaphalium luteoalbum* is not closely related to genuine *Gnaphalium* representatives such as the generitype, *G. uliginosum* L. Being much closer to the large and polymorphic genus *Helichrysum*, it is presently placed, either in *Pseudognaphalium* subg. *Laphangium*, as by Hilliard & Burtt (in Bot. J. Linn. Soc. 82: 202-206. 1981) or in a separate genus *Laphangium*, as by Cvelev (in Bjull. Moskovsk. Obšč. Isp. Prir., Otd. Biol. 98(6). 105.

1994). Euro+Med adopts the latter course, and by consequence we describe the previously unnamed, new species in the genus *Laphangium*.

Leontopodium

Leontopodium nivale subsp. *alpinum* (Cass.) Greuter, **comb. & stat. novi** \equiv *Gnaphalium leontopodium* L., Sp. Pl.: 855. 1753 \equiv *Leontopodium alpinum* Cass. in Cuvier, Dict. Sci. Nat. 25: 474. 1822. – Note: As the monographer Handel-Mazzetti (in Beih. Bot. Centralbl. 44(2): 140. 1927) noted, his choice to maintain *Leontopodium nivale* (Ten.) Hand.-Mazz. as a separate species was heavily influenced by his reluctance to change the name of the edelweiss for reasons of priority. Whether Tutin had a similar motive when he proposed the incorrect combination *L. alpinum* subsp. *nivale* (Ten.) Tutin (in Bot. J. Linn. Soc. 67: 283. 1973) I do not know, but he was certainly right in treating the widespread genuine edelweiss and the aberrant populations of the Central Apennines and Central Balkans as subspecies of a single species. I have considered proposing conservation of the name *Leontopodium alpinum* against *Gnaphalium nivale* Ten. (Fl. Napol. 1: xlviii. 1811), but abandoned the idea for two main reasons: first, granting that the species is important and widely known, its familiar designation in many languages, the vernacular edelweiss, is much more popular than its scientific binomial (you will find a 40 : 1 ratio in favour of the former when searching the Web); and second, I like the epithet *nivale*, which characterises admirably well both the plant and its habitat, and hesitate to suggest its being rejected in favour of the rather trivial appellation *alpinum*.

Limbarda

Limbarda crithmoides subsp. *longifolia* (Arcang.) Greuter, **comb. nova** \equiv *Inula acutifolia* Pasq. in Ann. Accad. Aspir. Naturalisti, ser. 3, 1: 19. 1861 \equiv *Inula crithmoides* subsp. *longifolia* Arcang., Comp. Fl. Ital.: 371. 1882. – [= *Inula crithmoides* subsp. *mediterranea* Kerguelen in Lejeunia, ser. 2, 138: 5. 1992].

Pallenis

Pallenis teknensis (Dobignard & Jacquemoud) Greuter & Jury, **comb. nova** \equiv *Asteriscus teknensis* Dobignard & Jacquemoud in Candollea 52: 145. 1997.

Pulicaria

Pulicaria decumbens (Litard. & Maire) Greuter, **comb. & stat. novi** \equiv *Pulicaria vulgaris* var. *decumbens* Litard. & Maire in Duffour, Soc. Cénomane: [in sched.] No. 1900. 1927 [n.v.]; & in Mém. Soc. Sci. Nat. Maroc 26: 19. 1930.

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