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Notulae ad floram euro-mediterraneam pertinentes No. 6

WERNER GREUTER

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

Abstract

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A synonymic survey of *Cichorieae* genera accepted for the purpose of the Euro+Med Project is presented. Combinations that are required in the genera *Andryala, Crepis, Helminthotheca, Lactuca, Leontodon, Scorzonera, Sonchus* and *Tragopogon,* but do not so far exist, are validated. Nomenclatural considerations are offered with regard to four taxa, the correct names of which are *Crepis pontana, Leontodon saxatilis* subsp. *rothii, Picris rhagadioloides* and *Reichardia dichotoma.*

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 competent advice of specialists of the various tribes, principally but not exclusively on questions of generic delimitation. For the *Cichorieae* Lam. & DC. (also known as *Lactuceae* Cass.), I obtained it from my co-workers N. Kilian, especially for genera related to *Lactuca* and *Sonchus,* and H. W. Lack, based on his generic review of the tribe for Kubitzki's Families and Genera of Vascular Plants and with particular emphasis on the *Leontodon-Picris* relationship. Thanks are due to them both for their valuable advice and readiness to help. To P. Perret and F. Maiullari, Genève, I am indebted for checking a critical reference.

The Euro+Med Checklist account of *Taraxacum* is being prepared by J. Kirschner and J. Stepánek, Prague, and by consequence *Taraxacum* is not covered in the present paper; nor are *Hieracium* and *Pilosella,* the inventorying of which, undertaken by Irina Will, Berlin, is still in progress.

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A generic survey of Euro+Med *Cichorieae*

The accepted Euro+Med genera of *Cichorieae,* with their relevant synonyms, are listed in Table 1. No complete synonymy is given, but generic names that were adopted in recent floristic literature for the area are included.

Whereas sutribal limits in the *Cichorieae* are weakly traced and still in a state of flux, generic circumscriptions have not changed dramatically since 1976 when vol. 5 of Flora Europaea was published. Many of the genera of this tribe, especially among the smaller ones, are visibly natural and clearly defined by obvious and systematically significant features. There are, of course, exceptions to this general rule, cases of poorly or controversially defined genera, where in-depth study of morphology combined with DNA sequence analysis may lead, or be expected to lead, to new and perhaps surprising conclusions. The trouble is that the application of molecular systematics to the study of this tribe, while rapidly progressing, has not yet achieved the degree of coverage that is desirable for firm conclusions to be drawn. In such a situation, exemplified by the

Table 1. The Euro+Med genera of *Cichorieae.* Accepted names appear in bold-face type, their synonyms in regular italics.

Andryala
= *Pietrosia*
Aposeris
Arnoseris
Catananche
= *Piptocephalum*
Chlorocrepis
Chondrilla
Cichorium
Crepis
= *Barkhausia*
= *Cymboseris*
= *Derouetia*
= *Lagoseris*
= *Melitella*
= *Nemauchenes*
= *Omalocline*
= *Paleya*
= *Phalacroderis*
= *Psammoseris*
= *Pterotheca*
= *Rodigia*
= *Soyeria*
= *Zacintha*
Epilasia
Garhadiolus
Geropogon
Hedypnois
Helminthotheca
= *Deckera*
= *Helminthia*
Heteracia
Heteroderis
Hieracium
Hispidella
Hymenonema
Hyoseris
Hypochaeris
= *Robertia*
= *Seriola*
= *Trommsdorffia*
Koelpinia
Lactuca
= *Cephalorrhynchus*
= *Cicerbita*
= *Lactucella*
= *Lagedium*
= *Mulgedium*
= *Mycelis*
= *Phaenixopus*
= *Scariola*
= *Steptorhamphus*
= *Zollikoferiastrum*
Lapsana
Launaea
= *Microrhynchus*
= *Rhabdotheca*
= *Zollikoferia*
Leontodon
= *Apargia*
= *Colobium*
= *Kalbfussia*
= *Scorzoneroides*
= *Thrincia*
Phitosia
Picris
= *Hagioseris*
= *Spitzelia*
Pilosella
Prenanthes
Reichardia
= *Picridium*
Rhagadiolus
Rothmaleria
= *Haenselera*
Scolymus
Scorzonera
= *Avellara*
= *Gelasia*
= *Podospermum*
= *Takhtajaniantha*
Sonchus
= *Aetheorhiza*
= *Atalanthus*
= *Babcockia*
= *Lactucosonchus*
= *Sventenia*
= *Taeckholmia*
= *Wildpretia*
Taraxacum
Tolpis
Tourneuxia
Tragopogon
= *Daumailia*
Urospermum
Willemetia
= *Calycocorsus*

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Leontodon-Picris case outlined below, I prefer to stick with the admittedly shaky traditional classification rather than trying to predict which among morphologically plausible rearrangements will be best supported by molecular data.

A survey of the main changes that are being accepted for Euro+Med purposes when compared to Flora Europaea – and for extra-European genera, to Heller & Heyn (Consp. Fl. Orient. 8. 1993) and Hansen & Sunding (in Sommerfeltia 17, 1993) – follows. For convenience, it uses the subtribes redefined by Bremer (*Asteraceae* Clad. & Class.: 171-174.1994), seven of which (plus two unassigned genera) occur in the Euro+Med area: *Catananchinae, Crepidinae, Lactucinae, Sonchinae, Hieraciinae, Hypochaeridinae* and *Scorzonerinae*.

Nothing needs to be modified with regard to *Catananchinae* and the unassigned genera *Cichorium* and *Scolymus,* and changes are minimal in *Crepidinae:* one purely nomenclatural, with *Calycocorsus* reverting to its former name *Willemetia* (Kirschnerova & Kirschner in Taxon 45: 627-630. 1996), and one concerning the single species *Crepis crocifolia* transferred to a new genus, *Phitosia* (Kamari & Greuter in Bot. Chron. 13: 11-36. 2000; see also under *Chlorocrepis* in the *Hieraciinae,* below).

Major restructuring affects the *Lactucinae,* where molecular data (Koopman & al. in Amer. J. Bot. 85: 1517-1530. 1998, and 88: 1881-1887. 2001; Kilian, unpublished) do not bear out the traditional, narrowly defined generic concepts. As a result, apart from *Prenanthes* s.str. (ill at home in the subtribe anyway: Kilian, in prep.), all Euro-Mediterranean *Lactucinae* genera are merged with *Lactuca.* This concerns *Cephalorrhynchus, Cicerbita, Mycelis* and *Steptorhamphus,* all recognised as distinct in Flora Europaea, plus *Mulgedium, Scariola* and three SW Asian *Prenanthes* species, accepted in the Conspectus Florae Orientalis.

A similar situation is found with *Sonchus* in the *Sonchinae* (see Kim & al. in Pl. Syst. Evol. 215: 85-99, 101-108. 1999; and Kilian, unpublished data), in which the Mediterranean genus *Aetheorhiza* (correctly expelled from *Crepis* by Babcock) as well as several splits endemic to the Macaronesian islands and accepted in Hansen & Sunding's Checklist *(Atalanthus* [= *Taeckholmia*], *Babcockia, Lactucosonchus* and *Sventenia)* have been included. The other two Euro-Mediterranean *Sonchinae* genera, *Launaea* and *Reichardia,* stay unaffected.

In the *Hieraciinae, Andryala* remains as before (I am unconvinced by Sennikov's recent plea for splitting off *Pietrosia:* see Komarovia 1: 77-78. 1999), as do *Arnoseris* and *Hispidella. Tolpis* loses one species, *T. staticifolia,* to the restored *Chlorocrepis*. Park & al. (in Pl. Syst. Evol. 226: 23-33. 2001) also remove it from *Tolpis* but relate it to *Crepis* in the *Crepidinae*. The recently described *Phitosia (Crepis crocifolia)*, judging from morphology, might be closely related to *Chlorocrepis*. Finally, after some pondering I decided to separate *Hieracium* and *Pilosella,* less on grounds of obvious morphological criteria (that do exist) than in consideration of their different reproductive and evolutionary strategies, failure to hybridise, and also (a practical, admittedly unscientific argument) their size.

Surprising as it may be, I adopt no change of note in the generic outfit of the *Hypochaeridinae*. The problem, there, is that molecular data are so far inadequate to decide which changes, if any, are needed. The lack of sound criteria to keep apart the Linnaean genera *Leontodon* and *Picris* have long been noted (see Lack in Diss. Univ. Wien 116: 61-63. 1975; Sell in Bot. J. Linn. Soc. 71: 239. 1975). Neither habit nor hair morphology, nor even chromosome number, are reliable criteria for separation, as exemplified by *Crepis hispanica,* which combines a *Leontodon* habit, the basic chromosome number (5) of *Picris* (*Leontodon* has 4-8, but only exceptionally 5), and a mixture of hair types of both – some forked and some anchor-tipped. With hesitation, I follow Pittoni (in Phyton (Horn) 16: 165-188. 1974) rather than Sell (l.c.: 248) by treating this species under *Leontodon,* but its closest relative may well turn out to be the curious North African *Picris sinuata* (Lack in Willdenowia 8: 49-65. 1977). All this appears to support merging *Picris* and *Leontodon* – but is this really the answer? Sell (l.c.) suggests that *L.* subg. *Leontodon* may be closer to *Picris* than to *L.* subg. *Oporinia* (subg. *Apargia*), and if one should re-draw the generic limits accordingly, one might then sensibly choose to re-typify *Leontodon* by an *Oporinia* element by conservation so as to minimise nomenclatural disruption – but firmer data are needed

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before such action can be proposed. A recent molecular analysis (Samuel & al. in Amer. J. Bot. 90: 496-507. 2003), devoted primarily to the study of *Hypochaeris,* underpins this option: the nuclear DNA (ITS) sequences would remove *H. robertia* from the otherwise monophyletic *Hypochaeris* and group it together with *L.* subg. *Oporinia,* while *L.* subg. *Leontodon, Picris* and *Helmintotheca* are mutually entangled. As both the sampling outside of *Hypochaeris* and the correlation of the ITS tree with trees resulting from chloroplast DNA sequences are poor, it is as yet unwise to draw formal taxonomic conclusions. In conformity with advice from H. W. Lack I will therefore stick to the traditional generic classification, but keep the clearly monophyletic *Helminthoteca* as a genus separate from *Picris*.

Last, the only change in the *Scorzonerinae* with respect to Flora Europaea that I accept is the generic separation of *Geropogon* from *Scorzonera,* in line with the treatment in the Conspectus Florae Orientalis (see Díaz & Blanca in Lagascalia 15, Extra: 361-367 1988; and in Lazaroa 9: 31-44. 1988).

Andryala

Andryala glandulosa subsp. ***cheiranthifolia*** (L'Hér.) Greuter, **comb. nova** ≡ *Andryala cheiranthifolia* L'Hér., Stirp. Nov.: 35. 1785-1786 ≡ *Andryala varia* DC., Prodr. 7: 245. 1838, nom. illeg. ≡ *Andryala cheiranthifolia* L'Hér. subsp. *cheiranthifolia* [per Bornm. in Bot. Jahrb. Syst. 33: 489. 1903] ≡ *Andryala glandulosa* subsp. *varia* R. Fern. in Anuário Soc. Brot. 25: 28. 1959, nom. illeg. – [*Andryala cheiranthifolia* subsp. *varia* Bornm. in Bot. Jahrb. Syst. 33: 489. 1903, nom. inval. (Art. 26.1 + 32.1(b))].

Andryala laevitomentosa (Sennikov) [P. D. Sell in Bot. J. Linn. Soc. 71: 256. 1976, nom. inval. (Art. 37.1), ex] Greuter, **comb. nova** ≡ *Pietrosia laevitomentosa* [Nyár. in Rev. Biol. (Bucureşti) 8: 250. 1963, nom. inval. (Art. 37.1), ex] Sennikov in Komarovia 1: 78. 1999.

Andryala pinnatifida subsp. ***ducellieri*** (Batt.) Greuter, **comb. nova** ≡ *Andryala ducellieri* Batt. in Bull. Soc. Hist. Nat. Afrique N. 9: 120. 1918 ≡ *Andryala canariensis* subsp. *ducellieri* (Batt.) Maire in Jahandiez & Maire, Cat. Pl. Maroc: 840. 1934.

Andryala pinnatifida subsp. ***jahandiezii*** (Maire) Greuter, **comb. nova** ≡ *Andryala jahandiezii* Maire in Mém. Soc. Sci. Nat. Maroc 15: 46. 1926 ≡ *Andryala canariensis* subsp. *jahandiezii* (Maire) Maire in Jahandiez & Maire, Cat. Pl. Maroc: 840. 1934.

Andryala pinnatifida subsp. ***maroccana*** (Maire) Greuter, **comb. nova** ≡ *Andryala canariensis* subsp. *maroccana* Maire in Bull. Soc. Hist. Nat. Afrique N. 19: 58. 1928.

Andryala pinnatifida subsp. ***mogadorensis*** (Hook. f.) Greuter, **comb. nova** ≡ *Andryala mogadorensis* Hook. f. in Bot. Mag.: ad t. 6010. 1873 ≡ *Andryala canariensis* subsp. *mogadorensis* (Hook. f.) Maire in Bull. Soc. Hist. Nat. Afrique N. 19: 59. 1928.

Crepis

Crepis arenaria subsp. ***suberostris*** (Batt.) Greuter, **comb. & stat. novi** ≡ *Crepis suberostris* Batt. in Battandier & Trabut, Fl. Algérie, Dicot.: 561. 1889.

Crepis gussonei Greuter, **nom. nov.** ≡ *Crepis spathulata* Guss., Cat. Pl. Hort. Boccadifalco: 73. 1821 (non Lam. 1876).

Crepis pontana (L.) Dalla Torre in Sonklar & al., Anleit. Wiss. Beob. Alpenreisen 2: 259. 1882 ≡ *Hypochaeris pontana* L., Sp. Pl.: 810. 1753 ≡ *Hieracium montanum* Jacq., Fl. Austriac. 2: 54. 1774, nom. illeg. (non Scop. 1772) ≡ *Andryala pontana* (L.) Vill., Prosp. Hist. Pl. Dauphiné: 37. 1779 ≡ *Hieracium pontanum* (L.) J. F. Gmel., Syst. Nat.: 1177. 1791 ≡ *Crepis montana* Tausch in

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Flora 11, Ergänzungsbl. 1: 79. 1828, nom. illeg. (non Bernh. 1800). – [= *Crepis bocconei* P. D. Sell in Bot. J. Linn. Soc. 71: 250. 1976, nom. illeg. (Art. 52.1 + 7.5)].

This is a sad example of how disregard for basic nomenclatural principles combined with inaccuracy can impair the stability of nomenclature. Sell (in Bot. J. Linn. Soc. 71: 250-252. 1976) rejected the universally used and unambiguous name *Crepis pontana* (L.) Dalla Torre and substituted a new name of his own for it, *Crepis bocconei* (with the epithet misspelled *"bocconi"*). He did so because he regarded the Linnaean epithet in *Hypochaeris pontana* as a correctable misspelling of *"montana"*. The reasons he gave were (a) that *pontana* is not a Latin word, and (b) that Linnaeus misquoted the phrase name of Barrelier from which he took the epithet, writing *pontana* when the original had *montana*. Sell also wondered why Linnaeus, having published *Hypochaeris pontana* in the second edition of Species Plantarum, failed to mention it in the Mantissa (or, we are left to understand, in his subsequent works). Whereas the two first statements, (a) and (b), are perfectly true, the remainder is not. Linnaeus first published *Hypochaeris pontana* in 1753 and kept using that name without any change in spelling or circumscription throughout his works (notably: Sp. Pl., ed. 2: 1140. 1763; Syst. Nat., ed. 10: 1197. 1759, and ed. 12, 2: 526. 1767 – but of course it is not found in the Mantissa*,* a work devoted to new additions), and so did botanists thereafter, with few exceptions.

What, then, does the Code provide? Art. 23.2, defining specific epithets, states that they "may be taken from any source whatever, and may even be composed arbitrarily". True, Art. 60.1 permits the correction of orthographical errors, but Art. 60.3 specifies that "The liberty of correcting a name is to be used with reserve, especially if the change affects the first syllable and, above all, the first letter of the name". Consistent use of the spelling *pontana* throughout Linnaeus's own work and that of many others, also upon transfer to other genera, precludes its being treated as a correctable error.

One might argue that *pontana* and *montana,* when used in homotypic names, are variants as defined in Art. 60.1 rather than different words. The result of so doing would, however, be awkward. It would mean to ascribe the combination *Hieracium pontanum* to Jacquin (contrary to his clear intent) rather than J. F. Gmelin, and *Crepis pontana* to Tausch (who cited Jacquin but not Linnaeus) rather than Dalla Torre. There is no support in botanical tradition for such a way of handling the matter.

As to *Crepis bocconei,* it was published as the name of a new species, with a modern type, so it is not homotypic with *Crepis pontana.* It is nevertheless an illegitimate name under Art. 52 of the Code, because *Hypochaeris pontana* was included in the "new" species. The type of the latter name (so designated here) and, as it seems, the only extant original element is the plate cited in the protologue (Boccone, Mus. Piante Rare Sicilia: t. 113. 1697.

Unfortunately the use of *Crepis bocconei* keeps spreading. On the authority of Flora Europaea, it has invaded many of our recent floras and databases. A "Google" search of the Internet, which is a quick and informative way of assessing current usage, gave the following result: of 138 hits, 60 % pertain to *Crepis pontana* and 40 % to either *Crepis bocconei* (12 %) or *Crepis "bocconi"* (24 %) or *Crepis "bocconii"* (4 %). It is high time to stop this trend and revert to using the correct, familiar if meaningless name, *Crepis pontana.*

Helminthotheca

Helminthotheca aculeata subsp. ***maroccana*** (Sauvage) Greuter, **comb. nova** ≡ *Picris aculeata* subsp. *maroccana* Sauvage in Trav. Inst. Sci. Chérifien, Sér. Bot. 22: 202. 1961. – Note: Sauvage (l.c.) does not cite a type, but includes a single specimen ("Forêt des Bni-Âbid", *Sauvage 14689,* MPU), which I accept to be the holotype (Code, Art. 37.3).

Helminthotheca glomerata (Pomel) Greuter, **comb. nova** ≡ *Deckera glomerata* Pomel in Bull. Soc. Sci. Phys. Algérie 11: 13. 1874 (non *Picris glomerata* K. Koch 1850) ≡ *Picris duriaei* Emb. & Maire in Jahandiez & Maire, Cat. Pl. Maroc: 1166. 1941.

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Lactuca

Lactuca cyprica (Rech. f.) N. Kilian & Greuter, **comb. nova** ≡ *Cicerbita cyprica* Beauverd in Bull. Soc. Bot. Genève 26: 156. 1936, nom. inval. (Art. 36.1) ≡ *Cephalorrhynchus cypricus* Rech. f. in Ark. Bot., ser. 2, 1: 435. 1951.

Lactuca czerepanovii (Kirp.) N. Kilian & Greuter, **comb. nova** ≡ *Steptorhamphus czerepanovii* Kirp. in Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 22: 322. 1961.

Lactuca fenzlii N. Kilian & Greuter, **nom. nov.** ≡ *Lactucopsis brevirostris* Vis. & Pančić in Mem. Reale Ist. Veneto Sci. 15: 5. 1870 ≡ *Lactuca brevirostris* (Vis. & Pančić) Boiss., Fl. Orient. 3: 817. 1875 (non Benth. 1852) ≡ *Cicerbita brevirostris* (Vis. & Pančić) C. Jeffrey in Notes Roy. Bot. Gard. Edinburgh 33: 429. 1975. – [*Lactuca brevirostris* Fenzl in Kotschy, Reise Cilic. Taurus: 384. 1858, nom. nud.].

Lactuca kirpicznikovii (Grossh.) N. Kilian & Greuter, **comb. nova** ≡ *Cephalorrhynchus kirpicznikovii* Grossh. in Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 13: 30. 1950.

Lactuca macrophylla subsp. ***uralensis*** (Rouy) N. Kilian & Greuter, **comb. nova** ≡ *Mulgedium uralense* Rouy, Ill. Pl. Eur.: 128, t. 390. 1901 ≡ *Cicerbita uralensis* (Rouy) Beauverd in Bull. Soc. Bot. Genève 2: 123. 1910 ≡ *Cicerbita macrophylla* subsp. *uralensis* (Rouy) P. D. Sell in Bot. J. Linn. Soc. 71: 249. 1976.

Lactuca pancicii (Vis.) N. Kilian & Greuter, **comb. nova** ≡ *Mulgedium pancicii* Vis. in Mem. Reale Ist. Veneto Sci. 9: 173. 1860 ≡ *Cicerbita pancicii* (Vis.) Beauverd in Bull. Soc. Bot. Genève 2: 121. 1910.

Leontodon

Leontodon hispidus subsp. ***montanus*** (Ball) Greuter, **comb. nova** ≡ *Leontodon hastilis* subsp. *montanus* Ball in Ann. Mag. Nat. Hist., ser. 2, 6: 9. 1850. – [= *Leontodon alpinus* Jacq., Fl. Austriac. 1: 58. 1773 ≡ *Leontodon hastilis* subsp. *alpinus* (Jacq.) Nyman, Consp. Fl. Eur.: 468. 1879 ≡ *Leontodon hispidus* subsp. *alpinus* (Jacq.) Finch & P. D. Sell in Bot. J. Linn. Soc. 71: 244. 1976].

Leontodon hyoseroides subsp. ***pseudocrispus*** (Bisch.) Greuter, **comb. nova** ≡ *Leontodon hispidus* var. *pseudocrispus* Bisch., Beitr. Fl. Deutschl.: 60. 1851 ≡ *Leontodon hispidus* subsp. *pseudocrispus* (Bisch.) Murr, Neue Übers. Bl.-Pfl. Vorarlb.: 337. 1924.

Leontodon montanus subsp. ***breviscapus*** (DC.) Cavara & Grande in Bull. Orto Bot. Napoli 4: 307. 1914 ≡ *Leontodon croceus* var. *breviscapus* DC., Prodr. 7: 102. 1838. – Cavara & Grande's combination has been usually, but erroneously, cited as being of varietal rank.

Leontodon muelleri subsp. ***reboudianus*** (Pomel) Greuter, **comb. nova** ≡ *Fidelia reboudiana* Pomel, Nouv. Mat. Fl. Atl.: 269. 1875 ≡ *Leontodon reboudianus* Pomel, Nouv. Mat. Fl. Atl.: 269. 1875, nom. inval. (Art. 34.1(b)) ≡ *Leontodon hispidulus* subsp. *reboudianus* (Pomel) Hirèche in Bull. Soc. Hist. Nat. Afrique N. 28: 270. 1937. – [*Leontodon trivialis* Ball in J. Bot. 11: 372. 1873 ≡ *Leontodon muelleri* subsp. *trivialis* (Ball) Izuzq. in Nordic J. Bot. 11: 37. 1991].

Leontodon saxatilis subsp. ***rothii*** Maire in Jahandiez & Maire, Cat. Pl. Maroc 3: 833. 1934 ≡ *Colobium hispidum* Roth in Arch. Bot. (Leipzig) 1: 38. 1796 (non *Leontodon hispidus* L. 1753) ≡ *Thrincia hispida* (Roth) Roth, Catal. Bot. 1: 99. 1797 ≡ *Thrincia saxatilis* subsp. *hispida* (Roth) Holub & Moravec in Preslia 24: 81. 1952 ≡ *Leontodon saxatilis* subsp. *hispidus* (Roth) Castrov. & Laínz in Laínz, Contr. Conoc. Fl. Asturias: 71. 1982 ≡ *Leontodon taraxacoides* subsp. *hispidus* (Roth) Kerguélen in Lejeunia, ser. 2, 120: 119. 1987. – [= *Leontodon taraxacoides* subsp.

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longirostris Finch & P. D. Sell in Bot. J. Linn. Soc. 71: 247. 1976 ≡ *Leontodon longirostris* (Finch & P. D. Sell) Talavera in Valdés & al., Herb. Univ. Hispal. 1: 37. 1982].

Apart from the taxonomic problems it poses, the genus *Leontodon* offers some of the trickiest puzzles of Old World nomenclature. The species here called *L. saxatilis* comprises several subspecies. Two of them are widespread, a "southwestern" and a "northeastern" one. Problems arise both at the rank of species and subspecies. At species level the main competing names are *Crepis nudicaulis* L. 1753, *L. saxatilis* Lam. 1779 and *Hyoseris taraxacoides* Vill. 1779. The first, as has been demonstrated by Fuchs (in Feddes Repert. 90: 646-649. 1980), does not belong here. Its original elements, a Bauhin illustration and a correlated specimen in the Burser Herbarium, both belong to *L. crispus* Vill. 1779. The name *L. nudicaulis* (L.) Schinz & Thell. has priority over *L. crispus* but, having long been misapplied to the present species, cannot now be used under Art. 57 of the Code. The two other competing names were published almost simultaneously, and it has long been uncertain which had claim to priority. The careful research and convincing arguments of Fuchs (l.c.) tilt the balance, by less than a month, in favour of Lamarck. Alleged evidence to the contrary (Gutermann in Regnum Veg. 98: 731. 1979) is inconclusive.

At subspecies level, three epithets have been proposed for the "southwestern" taxon. Of these, *longirostris,* dating from 1976, is by far the youngest and is now generally dismissed. The next older, *hispidus,* has been used in several different combinations. The epithet *hispidus* is troublesome. Sidestepping a maze of synonymy, homonymy and misuse involving several taxa and half a dozen generic names, centred on *L. hispidus* L. (a different species), its origin can be traced back to an arguably legitimate basionym, *Colobium hispidum* Roth (with equally strong arguments one might also consider it to be an illegitimate replacement for *Hyoseris taraxacoides* Vill., but this issue does not affect the present solution).

There is a third, yet older subspecific epithet, *rothii,* which has been generally dismissed as having first been used in an illegitimate name: *Leontodon rothii* Ball (in J. Linn. Soc., Bot. 16: 543. 1878). Ball proposed it as a substitute name for *Thrincia hispida* (Roth) Roth (non *L. hispidus* L. 1753), but he cited *L. saxatilis* Lam. in synonymy, a name that he should have adopted. Therefore, contrary to Ball's intent, the name *L. rothii* is automatically typified by the type of *L. saxatilis,* which belongs to the "northeastern" subspecies. Similary, *L. nudicaulis* subsp. *rothii* Schinz & Thell. (in Bull. Herb. Boissier, ser. 2, 7: 389. 1907), while intended to designate the "southwestern" subspecies, did not explicitly exclude the type of *L. saxatilis* and therefore technically belongs to the "northeastern" taxon.

The matter is different for *Leontodon saxatilis* subsp. *rothii* Maire 1934. Maire treated this subspecies as distinct from subsp. *saxatilis,* which he mentions as foreign to the Moroccan flora, and he therefore created the name of a new subspecies (Code, Art. 48.1), validated by reference to [the description of] Roth's *Thrincia hirta* (Ball gives no description of his *L. rothii*) and, being legitimate, takes priority from 1934 at subspecies rank. Better still, it was originally proposed in the appropriate combination. The long nomenclatural odyssey that since 1934 led our taxon through half a dozen different new combinations was, after all, in vain.

Picris

Picris rhagadioloides (L.) Desf., Tabl. Ecole Bot.: 89. 1804 ≡ *Crepis rhagadioloides* L., Syst. Nat., ed. 12, 2: 524. 1767; & Mant. Pl.: 108. 1767. – [= *Picris altissima* Delile in anon., Descr. Égypte, Hist. Nat. 2: 260. 1813].

This species was generally known under the designation *Picris sprengeriana,* until Lack (in Diss. Univ. Wien 116: 164. 1975) rejected that name and (l.c.: 182a) took up *P. altissima* in its stead. As he correctly pointed out, the basionym of *P. sprengeriana* (L.) Chaix, *Hieracium sprengerianum* L. (Sp. Pl.: 804. 1753), pertains to a *Hieracium* species. The name has subsequently been typified by the specimen Herb. Linn. 954.44 (LINN) by Alavi (in Jafri & El-Gadi, Fl. Libya 107: 359. 1983). Schultz Bipontinus has annotated that sheet as *H. virosum* Pall. If, as I suspect, a closer scrutiny will confirm his identification, the name *H. sprengerianum,* unless it is

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formally rejected, threatens to displace the well known present name of a widespread Asian and SE European species.

Two names that have priority over *Picris altissima* have sometimes been cited in the synonymy of *"P. sprengeriana"* auct. One of them, *Hieracium ciliatum* Willd. (Sp. Pl.: 1585. 1803), was so interpreted by Boissier (Fl. Orient. 3: 738. 1875). Its holotype (B-W 14699), allegedly collected by Gundelsheimer in Crete, indeed bears Boissier's corresponding determination slip – but upon inspection turns out to be a juvenile *Crepis* plant of uncertain identity. Whatever the species to which it may belong, Willdenow's epithet is unavailable for transfer to *Crepis* because of the existence of *C. ciliata* K. Koch 1843.

The second potential synonym, *Crepis rhagadioloides* L., has been dismissed from consideration by Lack (in Taxon 24: 115. 1975) on two grounds. First, the original description includes the words "pappus pilosus", which does not fit *Picris* with its plumose pappus hairs; and second, there is no fitting material named *rhagadioloides* by Linnaeus in any of his herbaria. Linnaeus described *C. rhagadioloides* on plants of unstated origin cultivated in his garden at Uppsala. His description matches an annual *Picris* species in every respect except for the non-plumose pappus, and does not fit any species with capillary pappus known to me. Like the plant described by Linnaeus, *"Picris sprengeriana"* auct. is an upright, branched, scabrid annual with single heads borne on long peduncles; the involucral bracts are biseriate, the outer half as long as the inner, which become bulging and navicular at maturity, and are hispid with glochidiate bristles; even the purplish tinge of the outside of the florets, noted by Linnaeus, fits our species. I am therefore convinced that Linnaeus's qualification of the pappus as "pilosus" is a slip of the pen for "plumosus". Interestingly, the reverse error happened in the original generic description of *Crepis,* which has "pappo plumoso" (Linnaeus rectified this to "pappus pilosus" in the subsequent, sixth edition of Genera Plantarum, 1764).

The missing original specimen of *Crepis rhagadioloides* most likely exists, although this is difficult to prove conclusively because Linnaeus left it unannotated. It is Herb. Linn. 955.26 (LINN), which I hereby designate as the type (a lectotype in my opinion – but those who are unconvinced that it is original material may call it a neotype). The sheet was annotated by Schultz Bipontinus as representing *Picris rhagadioloides,* a combination that many authors erroneously ascribe to Persoon (Syn. Pl. 2: 370. 1807), who in fact published the illegitimate *Picris rhagadiolus*.

Reichardia

Reichardia dichotoma (DC.) Freyn in Österr. Bot. Z. 42: 267. 1892 ≡ *Picridium dichotomum* DC., Prodr. 7: 183. 1838 ≡ *Reichardia glauca* V. A. Matthews in Notes Roy. Bot. Gard. Edinburgh 34: 125. 1975, nom. illeg.

Matthews (l.c.) noted – correctly – that both *Scorzonera dichotoma* Vahl (Symb. Bot. 2: 89. 1791) and *Sonchus dichotomus* Willd. (Sp. Pl. 3: 1517. 1803) based on it are illegitimate names, automatically typified by the type of *Lactuca flava* Forssk. (Fl. Aegypt.-Arab.: 143. 1775) cited in synonymy. She erred, however, in rejecting Candolle's *Picridium dichotomum* and Freyn's *Reichardia dichotoma* as being similarly illegitimate. The latter two names are based on *Sonchus dichotomus* [sensu] M. Bieb. (Fl. Taur.-Caucas. 2: 240. 1808), which is not a new name but the misapplication of Willdenow's *S. dichotomus* to a Caucasian plant. The crucial point is that Candolle definitely excluded *Lactuca flava,* and thus the automatic type of *Scorzonera dichotoma* and *Sonchus dichotomus,* from his *Picridium dichotomum* by citing Forsskål's name in the synonymy of *Microrhynchus nudicaulis* var. *divaricatus* DC. (Prodr. 7: 181. 1838). Technically, therefore, *P. dichotomum* is the legitimate name of a new species, and *R. dichotoma* (DC.) Freyn, a legitimate new combination implicitly based on it.

Scorzonera

Scorzonera hispanica subsp. ***neapolitana*** (Grande) Greuter, **comb. & stat. novi** ≡ *Scorzonera trachysperma* Guss., Pl. Rar.: 319. Jun.-Dec. 1826 (non Spreng., Jan.-Mar. 1826, nom. illeg.) ≡ *Scorzonera neapolitana* Grande in Nuovo Giorn. Bot. Ital., ser. 2, 27: 239. 1920.

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Scorzonera laciniata subsp. ***decumbens*** (Guss.) Greuter, **comb. nova** ≡ *Scorzonera calcitrapifolia* var. *decumbens* Guss., Pl. Rar.: 323. 1826 ≡ *Podospermum decumbens* (Guss.) Gren. & Godr. subsp. *decumbens* [per Arcang., Comp. Fl. Ital.: 423. 1882] ≡ *Scorzonera decumbens* (Guss.) Guss., Fl. Sicul. Syn. 2: 386. 1843 ≡ *Podospermum decumbens* (Guss.) Gren. & Godr., Fl. France 2: 310. 1850. – [= *Scorzonera resedifolia* L., Sp. Pl.: 1198. 1753; = *Scorzonera calcitrapifolia* Vahl, Symb. Bot. 2: 87. 1791 ≡ *Scorzonera laciniata* subsp. *calcitrapifolia* (Vahl) Maire in Bull. Soc. Hist. Nat. Afrique N. 22: 302. 1931].

Scorzonera longifolia (Emb. & Maire) Greuter, **comb. & stat. novi** ≡ *Scorzonera pygmaea* subsp. *longifolia* Emb. & Maire in Bull. Soc. Hist. Nat. Afrique N. 28: 366. 1937.

Scorzonera rosea subsp. ***peristerica*** (Formánek) Greuter, **comb. nova** ≡ *Scorzonera purpurea* subsp. *peristerica* Formánek in Verh. Naturf. Vereins Brünn 37: 159. 1899. – [= *Scorzonera rhodantha* Hausskn. in Mitt. Geogr. Ges. (Thüringen) Jena 5, Bot. Verein: 86. 1887].

Sonchus

Sonchus beltraniae (U. Reifenb. & A. Reifenb.) N. Kilian & Greuter, **comb. nova** ≡ *Wildpretia beltraniae* U. Reifenb. & A. Reifenb. in Vieraea 25: 204. 1997 ≡ *Lactucosonchus beltraniae* (U. Reifenb. & A. Reifenb.) Bramwell in Bot. Macronés. 24: 181. 2003.

Sonchus bulbosus (L.) N. Kilian & Greuter, **comb. nova** ≡ *Leontodon bulbosus* L., Sp. Pl.: 798. 1753 ≡ *Aetheorhiza bulbosa* (L.) Cass. in Cuvier, Dict. Sci. Nat. 48: 426. 1827 ≡ *Crepis bulbosa* (L.) Tausch in Flora 11, Ergänzungsbl. 1: 78. 1828.

Sonchus bulbosus subsp. ***microcephalus*** (Rech. f.) N. Kilian & Greuter, **comb. nova** ≡ *Aetheorhiza bulbosa* subsp. *microcephala* Rech. f. in Phyton (Horn) 16: 217. 1974.

Sonchus bulbosus subsp. ***willkommii*** (Burnat & Barbey) N. Kilian & Greuter, **comb. nova** ≡ *Aetheorhiza montana* Willk. in Österr. Bot. Z. 25: 110. 1875 ≡ *Crepis montana* (Willk.) Marès & Vigin., Cat. Pl. Vasc. Baléares: 176. 1880 (non Bernh. 1800) ≡ *Crepis willkommii* Burnat & Barbey, Notes Voy. Bot. Iles Baléares: 56. 1882 ≡ *Aetheorhiza bulbosa* subsp. *willkommii* (Burnat & Barbey) Rech. f. in Phyton (Horn) 16: 219. 1974.

Sonchus bupleuroides (Font Quer) N. Kilian & Greuter, **comb. nova** ≡ *Sventenia bupleuroides* Font Quer in Collect. Bot. (Barcelona) 2: 201. 1949.

Sonchus filifolius [Svent., Add. Fl. Canar. 1: 83. 1960, nom. inval. (Art. 37.1) ex] N. Kilian & Greuter, **nom. nov.** ≡ *Taeckholmia canariensis* Boulos in Bot. Not. 120: 100. 1967 (non *Sonchus canariensis* (Sch. Bip.) Boulos 1967) ≡ *Taeckholmia filifolia* G. Kunkel in Cuad. Bot. Canaria 22: 28. 1974, nom. illeg. ≡ *Atalanthus canariensis* (Boulos) A. Hansen & Sunding in Sommerfeltia 17: 6. 1993.

Sonchus pendulus subsp. ***flaccidus*** (Svent.) N. Kilian & Greuter, **comb. nova** ≡ *Prenanthes pendula* subsp. *flaccida* Svent. in Cabezón & al., Index Sem. Hort. Acclim. Pl. Arautapae 1968: 55. 1969.

Tragopogon

Tragopogon porrifolius subsp. ***longirostris*** (Sch. Bip.) Greuter, **comb. & stat. novi** ≡ *Tragopogon longirostris* Sch. Bip. in Webb & Berthelot, Hist. Nat. Iles Canaries 3(2,2): 469. 1850. – [= *Tragopogon coelesyriacus* Boiss., Diagn. Pl. Orient. 11: 47. 1849].

Tragopogon pratensis subsp. ***leiocarpus*** (Trnka) Greuter, **comb. nova** ≡ *Tragopogon grandiflorus* Saut. in Österr. Bot. Wochenbl. 6: 107. 1856 ≡ *Tragopogon leiocarpos* Saut. in Flora 40:

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178. 1857, nom. illeg. ≡ *Tragopogon orientalis* subsp. *leiocarpus* Trnka in Folia Geobot. Phytotax. 13: 307. 1978 ≡ *Tragopogon pratensis* subsp. *grandiflorus* (Saut.) H. P. Fuchs in Feddes Repert. 90: 652. 1980 (non Döll 1843).

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