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Abstract

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The distinctness of the two subgenera recognised by Widder within *Leontodon* on morphological grounds gains strong support from recent molecular systematic studies. The new results make it mandatory to recognise these two taxa as separate genera, because *Leontodon* as traditionally defined, comprising them both but excluding *Picris*, *Hypochaeris* and related smaller genera, would be diphyletic. By consequence, a fair number of former *Leontodon* taxa must now be placed in the genus *Scorzoneroideae*. In order to draw the attention of practising botanists to this need and to enable them to use the names believed to be correct, a preliminary nomenclatural synopsis is given here, limited to the species and subspecies known to occur in the Euro-Mediterranean area. Required combinations that do not yet exist are validated.

Key words: *Asteraceae*, *Leontodon*, taxonomy, nomenclature, Europe, Mediterranean.

The genus *Leontodon* L. had undergone a bewildering history until Bentham (1873) gave it a fairly wide definition by including in it *Kalbfussia* Sch. Bip., *Oporinia* D. Don, *Thrincia* Roth and other groups formerly separated generically. Widder (1931) accepted that circumscription for his *Leontodon* studies but demonstrated that the species fall into two morphologically sharply differentiated groups, defined i.a. by trichome morphology. While members of his “*L.* subg. *Euleontodon*” possess exclusively simple hairs on leaves and involucral bracts, those of “*L.* subg. *Apargia*” are characterised by apically furcate or 3- to many-fid hairs like those that occur in the related genera *Picris* L. and *Helminthotheca* Vaill. Widder noted that the latter subgenus might be transitional (“vermittelt ... in mancher Hinsicht den Übergang”) to *Picris*, and that the two subgenera could also be treated as separate genera (“könnten ohne weiteres als eigene Gattungen

betrachtet werden"). He thought, however, that they are most akin to each other and continued to treat them within one genus up to his last survey (Widder 1975), while adapting infrageneric nomenclature to the provisions of the Seattle Code (Stafleu & al. 1972): "*L. subg. Euleontodon*" was named *L. subg. Oporinia* (D. Don) Claph., and "*L. subg. Apargia*" now became *L. subg. Leontodon* (of which *L. hispidus* L. had been accepted as the conserved type).

Recent molecular investigations by a research group in Vienna (Samuel & al. 2006) have confirmed the monophyly of each of Widder's subgenera. However, their phylogenetic analysis bear out the evident need to separate generically *L. subg. Oporinia* and subg. *Leontodon*. The latter, in all phylogenetic trees based on DNA sequences of both nuclear and plastid markers (ITS, *matK*, *trnL/F*), groups with *Picris* and *Helminthotheca*; whereas *L. subg. Oporinia* forms a highly supported clade that is sister to a clade consisting of the former group plus *Hypochaeris* L. In other words, *Leontodon* as traditionally defined, comprising both of Widder's subgenera but excluding *Picris*, *Hypochaeris* and related smaller genera, would be diphylectic.

The correct generic name for *Leontodon* subg. *Oporinia* is *Scorzoneroide*s Vaill., with *S. autumnalis* (L.) Moench as type (Greuter & al. 2005). Therefore, all taxa belonging here need names under *Scorzoneroide*s. For nearly all species of Widder's *L. sect. Oporinia* (D. Don) W. D. J. Koch, Holub (1977a, b) has already validated the necessary combinations, but he refrained to do so for *L. sect. Kalbfussia* (Sch. Bip.) Benth. & Hook. f., which he (Holub 1977a) considered a candidate for a further generic split. However, "*Kalbfussia*" species turn out to be closely related to *S. autumnalis* and should definitely be treated under *Scorzoneroide*s. For those species the required combinations do not yet exist.

If, as we expect, practising botanists will wish to adapt their classifications to the firm, new molecular evidence, they need to know which names they are supposed to use. To fulfil this need, we here provide a synopsis of the names we believe to be correct, limited to the species and subspecies known to occur in the Euro-Mediterranean area. As our taxonomic knowledge of some critical groups, especially the *Scorzoneroide*s *autumnalis* complex, is still inadequate, we consider this list as preliminary. Even if not all of the new combinations here proposed will stand the test of time, we still feel that they are presently needed, be it only to serve as a key to potentially valuable information that is attached to their basionyms.

For brevity, the list that follows is limited to accepted names and their basionyms. Full synonymies and distribution data are available for online consultation under Euro+Med PlantBase (<http://ww2.bgbm.org/EuroPlusMed/query.asp>).

*Scorzoneroide*s *atlantica* (Ball) Holub in Folia Geobot. Phytotax. 12: 429. 1977 ≡ *Leontodon autumnalis* var. *atlanticus* Ball in J. Linn. Soc., Bot. 16: 543. 1878.

*Scorzoneroide*s *autumnalis* (L.) Moench, Methodus: 549. 1794 ≡ *Leontodon autumnalis* L., Sp. Pl.: 798. 1753.

*Scorzoneroide*s *autumnalis* subsp. *borealis* (Ball) Greuter, **comb. nov.** ≡ *Leontodon autumnalis* subsp. *borealis* Ball in Ann. Mag. Nat. Hist., ser. 2, 6: 6. 1850.

*Scorzoneroide*s *cantabrica* (Widder) Holub in Folia Geobot. Phytotax. 12: 306. 1977 ≡ *Leontodon cantabricus* Widder in Phytom. (Horn) 12: 204. 1967.

*Scorzoneroide*s *carpetana* (Lange) Greuter, **comb. nov.** ≡ *Leontodon carpetanus* Lange in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn, ser. 2, 3: 96. 1861.

*Scorzoneroide*s *cichoriacea* (Ten.) Greuter, **comb. nov.** ≡ *Apargia cichoriacea* Ten., Prodr. Fl. Napol. 1: xlvii. 1811.

*Scorzoneroide*s *crocea* (Haenke) Holub in Folia Geobot. Phytotax. 12: 306. 1977 ≡ *Leontodon croceus* Haenke in Collect. Bot. Spectantia (Wien) 2: 16. 1789.

*Scorzoneroide*s *duboisii* (Sennen) Greuter, **comb. nov.** ≡ *Leontodon duboisii* Sennen, Diagn. Nouv.: 19. 1936.

*Scorzoneroide*s *garnironii* (Emb. & Maire) Greuter & Talavera, **comb. nov.** ≡ *Leontodon garnironii* Emb. & Maire in Bull. Soc. Hist. Nat. Afrique N. 27: 66. 1936.

Scorzoneroideis helvetica (Mérat) Holub in Folia Geobot. Phytotax. 12: 306. 1977 = *Leontodon helveticus* Mérat in Ann. Sci. Nat. (Paris) 22: 108. 1831.

Scorzoneroideis hispidula (Delile) Greuter & Talavera, **comb. nov.** = *Crepis hispidula* Delile in anon., Descr. Egypte, Hist. Nat. 2: 261. 1813.

Scorzoneroideis keretina (F. Nyl.) Greuter, **comb. nov.** = *Leontodon keretinus* F. Nyl., Spic. Pl. Fenn., Cent. 1: 24. 1843.

Scorzoneroideis kralikii (Pomel) Greuter & Talavera, **comb. nov.** = *Kalbfussia kralikii* Pomel in Bull. Soc. Sci. Phys. Algérie 11: 11. 1874.

Scorzoneroideis laciniata (Bertol.) Greuter, **comb. nov.** = *Oporinia laciniata* Bertol. in Novi Comment. Acad. Sci. Inst. Bononiensis 6: 235. 1843.

Scorzoneroideis microcephala (DC.) Holub in Folia Geobot. Phytotax. 12: 429. 1977 = *Oporinia microcephala* DC., Prodr. 7: 109. 1838.

Scorzoneroideis montana (Lam.) Holub in Folia Geobot. Phytotax. 12: 307. 1977 = *Leontodon montanus* Lam., Fl. Franç. 3: 640. 1779.

Scorzoneroideis montana subsp. *breviscapa* (DC.) Greuter, **comb. nov.** = *Leontodon croceus* var. *breviscapus* DC., Prodr. 7: 102. 1838.

Scorzoneroideis montaniformis (Widder) Gutermann in Phytom (Horn) 46: 65. 2006 = *Leontodon montaniformis* Widder in Phytom (Horn) 2: 226. 1950.

Scorzoneroideis muelleri (Sch. Bip.) Greuter & Talavera, **comb. nov.** = *Kalbfussia muelleri* Sch. Bip. in Flora 16: 725. 1833.

Scorzoneroideis muelleri subsp. *austromaroccana* (Maire) Greuter, **comb. nov.** = *Leontodon hispidulus* var. *austromaroccanus* Maire in Bull. Soc. Hist. Nat. Afrique N. 30: 353. 1939.

Scorzoneroideis muelleri subsp. *reboudiana* (Pomel) Greuter, **comb. nov.** = *Fidelia reboudiana* Pomel, Nouv. Mat. Fl. Atl.: 269. 1875.

Scorzoneroideis nevadensis (Lange) Greuter, **comb. nov.** = *Leontodon nevadensis* Lange in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn, ser. 3, 9-10: 230. 1878.

Scorzoneroideis oraria (Maire) Greuter & Talavera, **comb. nov.** = *Leontodon orarius* Maire in Bull. Soc. Hist. Nat. Afrique N. 23: 197. 1932.

Scorzoneroideis palisiae (Izuzq.) Greuter & Talavera, **comb. nov.** = *Leontodon palisiae* Izuzq. in Nordic J. Bot. 11: 35. 1991.

Scorzoneroideis pseudotaraxaci (Schur) Holub in Folia Geobot. Phytotax. 12: 307. 1977 = *Leontodon pseudotaraxaci* Schur, Enum. Pl. Transsilv.: 357. 1866.

Scorzoneroideis pyrenaica (Gouan) Holub in Folia Geobot. Phytotax. 12: 307. 1977 = *Leontodon pyrenaicus* Gouan, Ill. Observ. Bot.: 55. 1773.

Scorzoneroideis rilaensis (Hayek) Holub in Folia Geobot. Phytotax. 12: 307. 1977 = *Leontodon rilaensis* Hayek in Kaiserl. Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 94: 198. 1918.

Scorzoneroideis salzmännii (Sch. Bip.) Greuter & Talavera, **comb. nov.** = *Kalbfussia salzmännii* Sch. Bip. in Flora 16: 724. 1833.

Scorzoneroideis simplex (Viv.) Greuter & Talavera, **comb. nov.** = *Hieracium simplex* Viv., Fl. Libyc. Spec.: 50. 1824.

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