THE GENUS *HIERACIUM* (ASTERACEAE) IN CATALONIA (NORTHEASTERN IBERIAN PENINSULA, SPAIN)

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**ABSTRACT**: An account of the *Hieracium* species of Catalonia (northeastern Spain) is presented. Comments on the distribution and the taxonomic relationships are provided for a total of 141 accepted species. **Key words**: *Hieracium*, *Asteraceae*, taxonomy, northeastern Iberian Peninsula, Catalonia, Spain.

**RESUMEN**: El género *Hieracium* (Asteraceae) en Cataluña. Se presenta un listado comentado de las especies actualmente conocidas en Cataluña, con referencias a su distribución y relaciones taxonómicas, afectando a un total de 141 unidades. **Palabras clave**: *Hieracium*, *Asteraceae*, taxonomía, Cataluña, España.

**INTRODUCTION**

The genus *Hieracium* L. in the narrow sense (*Hieracium* subgen. *Hieracium*) belongs to one of the taxonomically most intricate groups of vascular plants (CHRTEK & al. 2004; GREUTER, 2007). Hybridization, apomixis, and polyploidy are putatively key factors in the radiation of *Hieracium*. Apomixis is common in this genus, whereas sexual species are infrequent. Apomictic reproduction often results in perpetuation of morphologic variants at populational and regional levels. As a consequence, a large number of species or subspecies were described -around 10,000 species names have been published in this genus (SELL & MURRELL 2006; STRO-THER, 2006)- making difficult attempts to clarify the taxonomy of the genus. BOLÓS & VIGO (1996) in their account of Catalanian hawkweeds (French and other Spanish taxa and localities are not included) recognized 279 taxa at species and subspecies level (of which only 69 are species). Later new taxonomic concepts were proposed mainly by G. Mateo (MATEO, 2004, 2005, 2006a, 2006b, 2007a, 2007b, 2008, 2012, 2013, 2016a, 2016b. MATEO & ALEJANDRE, 2006, MATEO & EGIDO, 2014, 2015, MATEO & al., 2016, MATEO & SÁEZ 2016).

The state of knowledge of particular groups of hawkweeds in north-eastern Iberian Peninsula is not equal. Some groups (Sect. *Cerinthoidea*) were recently studied and some of them were the object of more or less analytical taxonomic treatments. In contrast, other groups have not been studied in detail. Progress towards a sound taxonomic treatment of hawkweeds in northeastern Iberian Peninsula involves a huge work in several areas of study: field, laboratory and typification. In this paper we update and organize information on the genus *Hieracium* in Catalonia, in order to make it more readily available and
interpretable to botanists, managers and researchers.

MATERIAL AND METHODS

Herbarium and literature research carried out in recent years are surveyed here. We included all validly published names on the genus Hieracium L. (excluding Pilosella Vaill., but including Schlagintweitia Griseb.) at species level listed for Catalonia (Spain, northeastern Iberian Peninsula) by BOLÒS & VIGO (1996), GREUTER (2008), MATEO, 2004, 2005, 2006a, 2006b, 2007a, 2007b, 2008, 2012, 2013, 2016a, 2016b, MATEO & ALEJANDRE (2006), MATEO & del EGIDO (2014, 2015), MATEO & al. (2016) and MATEO & SÁEZ (2016). Taxa that in our opinion deserve recognition at specific rank are also included. For each taxon entry, when possible, comments concerning the taxonomic status, relationships, chromosome numbers, ecology and distribution have been provided. An entry does not imply that the taxon deserves taxonomic recognition nor that exists in the studied area. Taxa are alphabetically arranged.

RESULTS AND DISCUSSION


This Pyrenean endemic was regarded as morphologically intermediate between H. candidum and H. cerinthoides (MATEO & ALEJANDRE, 2006). It was reported from Boumort massif (Central Pre-Pyrenees) and Navarra province (MATEO & ALEJANDRE, 2006; LORDA, 2013). However, if this taxon is interpreted as intermediate between H. lanatoaragonense and H. ramondii it is likely to be endemic to central Pyrenees. It usually grows in rocky places between 960 and 1130 m a.s.l. See also comments under H. serracadiense.


≡ H. sonchoides subsp. acalephoides (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 173 (1921)

Morphologically, it occupies an intermediate position between H. murorum and H. recoderi (MATEO, 2008, 2016b). However, H. acalephoides can be interpreted as murorum/nobile. The latter author and GREUTER (2008) accepted it at specific level, whereas from ZAHN (1921-23) to BOLÒS & VIGO (1996) is treated as a subspecies within H. sonchoides.

H. acalephoides is endemic to northeastern Iberian Peninsula (mainly Pyrenees) and Southern France. In our area it was reported from eastern Pyrenees (Bellver de Cerdanya), Olositanic territory and Catalanic Mountains (Montserrat, Montseny, Alt Camp), where it grows in forests and rocky places between 400 and 1700 m a.s.l.

Hieracium adenodontum Arv.-Touv. & Gaut., Hieracioth. 1: Gall. nº 32- 34 (1897), in sched.

≡ H. subsericeum subsp. adenodontum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 158 (1921); H. cryptanthum subsp. adenodontum (Arv.-Touv. & Gaut.) Greuter in Willdenowia 37: 150 (2007)

This Pyrenean endemic was treated as subspecies of H. subsericeum (cf. ZAHN, 1921-23; BOLÒS & VIGO, 1996, etc.) although it was accepted at species level by GREUTER (2008) and MATEO (2016b). The latter author regarded it as an intermediate between H. erosulum and H. cerinthoides. Hieracium adenodontum was reported from central and eastern Pyrenees and Baix Ebre (BOLÒS & VIGO, 1996). However, its presence in southern Catalonia (Baix Ebre) is questionable.

Hieracium adraenicum Mateo in Fl. Montiber. 54: 85 (2013)

Known only from the type locality (Cadi Range, eastern Pre-pyrenees: “pr. umbria de Adraén ... 1395 m”). It shows a close resemblance to H. argyreum from which
differs by the following characters: broader and less attenuate leaves, floccose capitula and peduncles, besides the almost dichotomous branching system (which might suggest influence of *H. bifidum*).

**Hieracium aemulum** Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 331 (1894)


≡ *H. briziflorum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 143 (1913)

MATEO (2016b) accepted *H. aemulum* at species level, and regarded it as morphologically intermediate between *H. erosulum* and *H. lawsonii*. Since *H. briziflorum* Arv.-Touv. was also regarded as intermediate between *H. erosulum* and *H. lawsonii* (MATEO, 2008), in our treatment is included within the synonymy of *H. aemulum*.

*H. aemulum* is endemic to Pyrenees. In our area it is known for Alt Urgell, Cerdanya and Ripollès, where it usually grows in rocky places in the montane belt; its presence in southern Catalanidic Mountains (Baix Ebre and Montsianès) (BOLÒS & VIGO, 1996) is unclear. The concrete localities known of this species are scanty. In our opinion its distribution is probably overestimated due to taxonomic confusion, mainly with the closely *H. flocciferum* (see comments under this species).


This species, which was described on the basis of specimens collected in northern Castellón province, is found in southern Catalanidic Mountains (massis del Port). It is regarded as intermediate between *H. laniferum* and *H. murorum*.

*H. aguilari* is related to *H. aragonense*, from which is separated by its larger size, more membranous leaves covered by soft hairs, and the common presence of glandular hairs on the peduncles and phyllaries (simple hairs are usually absent and stellate hairs are scanty).

This is a triploid species (*2n = 27*) (SÁEZ & al., unpublished data) endemic to massis del Port (Castellón, Teruel and Tarragona provinces). It usually occurs in stony slopes, at elevations of 900 to 1400 m.

**Hieracium alatum** Lapeyr., Hist. Pl. Pyrénées: 478 (1813)

This is a species well characterized morphologically, which shows close affinities with *H. gymnocerinthe* and *H. murorum* (MATEO, 2005). *Hieracium alatum* is endemic to western Europe (GREUTER, 2008). In our area it is found scattered in central and eastern Pyrenees and northern Catalanidic Mountains, where it usually grows in forests and rocky places between 500 and 1700 m. Ancient reports from Catalanidic Mountains (Montserrat massif) are in all probability erroneous.

BOLÒS & VIGO (1996) and GREUTER (2008) recognize several subspecies in our area, some of them of uncertain taxonomic value. See comments under *H. olivateum* and SÁEZ & al. (2010) for information about alleged endemic taxa.

**Hieracium altaneuense** Mateo & Egido in Fl. Montiber. 60: 116 (2015)

It was described on the basis of plants collected in Alòs d’Isil (Central Pyrenees) by MATEO & EGIDO (2015). The population was found close to a stream, at 1410 m a.s.l. This species shows morphological affinities with *H. lachenalii* and *H. ramondi* or *H. cerinthoides* (MATEO & EGIDO, 2015). According to these authors *H. altaneuense* is close to *H. pyreneaejurrassicum* (see comments under this species), from which can be distinguished by its narrower and consistent basal leaves, some upper leaves are more or less peciolate, but never subpanduriform. *H. altaneuense* is also close to *H. villamaniniense* (*lamprophyllum/saxifragum*) although the former is higher, more foliose and glabrescent, without simple rigid hairs. Relationships
Hieracium amplexicaule L., Sp. Pl.: 803 (1753)

Widespread in mountains areas, from central Pyrenees to massís del Port, where it usually grows in rocky places. It is remarkable that this species does not exist (or is very rare) in wet and siliceous northern Catalanic Mountains.

Triploid plants (2n=27) was reported from plants (referred to subsp. amplexicaule) collected in central Pyrenees (Vall d’Aran) (SCHUHWEWRK & LIPPERT, 1998) and eastern Pyrenees (Queralbs) (CHRTEK & al., 2007). However some chromosome counts could correspond to intermediate species which usually are triploids. The diploid level (2n = 18) was detected in Pre-Pyrenean (Josa del Cadí, towards Gossol) accessions of this species (CASTRO & al., 2007). See ZAHN (1921-23), BOLÒS & VIGO (1996) and GREUTER (2008) for information about its subspecies (or alleged subspecies). Some of these subspecies or microspecies require further study, and in some cases are probably referable to Hieracium pulmonarioides (see comments on this species).

Hieracium andurense Arv.-Touv. in Bull. Herb. Boiss. 5: 720 (1897)

≡ H. phlomoides subsp. andurense (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 147 (1921)

This species shows taxonomic Relationships with H. phlomoides and H. hastile (MATEO, 2016b). From ZAHN (1921-23) to BOLÒS & VIGO (1996) it was recognized as a subspecies within H. phlomoides. The main character that allows to separate H. andurense and H. phlomoides is the presence of stellate hairs on the peduncles of the latter species.

Hieracium andurense is known from central Pyrenees (it was described on the basis of specimens collected by Marcailhou in Andorra) where it grows in rocky places. Its presence in Pre-Pyrenees (Alt Urgell) (cf. BOLÒS & VIGO, 1996) requires verification. See MATEO (2008) for its distribution.

Hieracium aragonense Scheele in Linnaea 32: 667 (1864)

The morphological relationships of H. aragonense were subject to several interpretacions (see MATEO, 2013). H. aragonense subsp. tesoroense Zahn is included by MATEO (2008) under the synonymy of H. aragonense.

H. aragonense is endemic to eastern Iberian Peninsula and northern Majorca (Balearic Islands). In our area it is restricted to several locations in southern Catalonia and reaches the absolute northeastern limit of its range at the northern end of the Prades range and Montagut mountain (see FONT, 2016). This species usually grows in rocky places, mainly in limestone substrates, between 300 and 1400 m a.s.l.


Morphologically, it occupies an intermediate position between H. glaucinum and H. sabaudum (MATEO, 2006b). H. arevacorum is distributed throughout northern Iberian Peninsula (between Lugo and Girona provinces) (MATEO, 2006). In our area only one collection site for this species is known (Camprodó, Castell de Rocabrava, 1000 m, 10-VIII-1987, X. Viñas, HGI 14732).

Hieracium argyreum Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 333 (1894)

This taxon was usually regarded as intermediate between H. candidum and H. phlomoides. Nevertheless, in our opinion H. argyreum corresponds to what has been called for years as H. cordifolium. H. argyreum was reported from central Pre-Pyrenees (“Sierra de Bou-Mort, rochers calc., entre 1700 et 1900 m (Soulié)”) as well as several localities from French and Aragonese Pyrenees (ARVET-TOUVET, 1913).


See comments under H. planchonianum.

It was interpreted as a subspecies within H. mougeotii (= H. vogesiacum) (ZAHN, 1921-23, BOLÒS & VIGO, 1996), but in our opinion it is morphologically intermediate between H. gymnocerinthe and H. lachenalii (MATEO, 2016b), although it was also considered as intermediate between H. cerdanum and H. murorum (MATEO, 2005). H. attractum is apparently endemic to Pyrenees. In our area this species (in strict sense) is distributed throughout eastern Pyrenees and eastern Pre-Pyrenees, where it usually grows in montane rocky habitats.


This Pyrenean endemic is morphologically intermediate between H. gymnocerinthe and H. schimdtii, although it was also considered as intermediate between H. olivaceum and H. schimdtii (BOLÒS & VIGO, 1996). H. aymericianum is also somewhat related to H. bicolor, in the synonymy of which was included by TISON & al. (2014). Some populations were referred to subsp. rayanum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflazenr. 76: 210 (1921) by BOLÒS & VIGO (1996). Nevertheless, the type material of H. rayanum falls within the variation of H. olivaceum. Hieracium aymericianum in the studied area is found in eastern Pre-Pyrenees (Cadi range), where it grows in scree and rocky places in the montane belt.


Intermediate specimens between H. candidum and H. amplexicaule can be found in central Pre-Pyrenees where these species constituted mixed populations or were very close geographically. H. baenitzianum is endemic to Pyrenees and was described from Gèdre (central French Pyrenees). MATEO (2006a) reported this species from central Pre-Pyrenees (Huesca and Lleida provinces), where it grows in rocky places between 350 and 1390 m a.s.l.


Intermediate specimens between H. bifidum and H. humile, particularly with regards to leaves shape and size were collected in central Pyrenees (MATEO, 2012): “Llés de Cerdanya, pr. Estany de la Pera, 2135 m, 31TCG8600, 15-VI-2005, Mateo, Fabado & Torres (VAL 164567)”. These specimens were referred to H. kernerii Zahn in Koch, Syn. Duet. Schweiz. Fl., ed. 3: 1837 (1901) by MATEO (2012). The latter taxon was recognized at subspecies level within H. balbisianum by GREUTER (2008).

Hieracium barbulatum Arv.Touv. & Gaut., Hieracioth. 2: No. 90 (1897), in sched. See comments under H. olivaceum.


Hieracium bicolor Scheele in Linnaea 31: 654 (1863)

It is endemic to Pyrenees and nearby mountain areas (SÁEZ & al., 2010) showing taxonomic relationships with H. neocerinthe and H. schimdtii. GREUTER (2008) recognized eight subspecies within H. bicolor, some of which were treated at subspecific rank within H. bourgaei from ZAHN (1921-23) to BOLÒS & VIGO (1996). In absence of a detailed study on the variability of H. bicolor we have adopted a broad species concept for this taxon. It was reported from central and eastern Pyrenees (Pre-Pyrenees included) and northern Catalanic Mountains, where it occurs in rocky places, at elevations of 500 to 1900 m.

Hieracium bifidum Hornem., Hort. Bot. Hafn.: 761 (1815)
This species, which belongs to sect. *Hieracium*, is morphologically characterized by its phyllaries uniformly covered by stellate hairs, with scattered simple eglan- dular hairs, usually without glandular hairs (SELL & WEST, 1976). *H. bifidum* (in broad sense) is widely distributed throughout Europe and northern Africa (cf. GREUTER, 2008). In our area its detailed distribution is still poorly known. It is known from eastern Pre-Pyrenees and southern Catalanic Mountains: Lleida province: La Vansa i Fòrners (Alt Urgell), Serra del Cadi, ombria d’Adrèn, 31TCG77148126, 1550, 29-VI-2004, Riera, Torres & Fabado (VAL 196644); Tuixent, hacia Gósol, 31TCG87, 1800, calizas, 23-VII-2006, Mateo & Rosselló (VAL 196677); Tarragona province: Collado dels Caragols, 31TBF7822, 1050, calizas, 1-VI-2007, Mateo, Rosselló & Sáez (VAL 196706); Tortosa, pr. fuente Cova Avellanes, 31TBF72, 1000, calizas, 1-VI-2007, Mateo, Rosselló & Sáez (VAL 196677).


Endemic to Iberian Peninsula and France (GREUTER, 2008). According to ZAHN (1921-23), BOLÒS & VIGO (1996), etc., *H. bourgaei* is widespread in the Pyrenees and the Catalanic Mountains. However, in the studied area *H. bourgaei* seems to be restricted to southern Catalonia (Tarragona province). This species shows very close affinities with *H. elisaeanum* and *H. glaucinum* (MATEO, 2008, 2012), although it was also considered as intermediate between *H. schmidtii* and *H. solidagineum* (BOLÒS & VIGO, 1996). Several subspecies recognized by BOLÒS & VIGO (1996) are treated as a subspecies within *H. bicolor* by ZAHN (1921-23) and GREUTER (2008). See also SÁEZ & al. (2010) for information about alleged endemic taxa.
Hieracium candidum Scheele in Linnaea 32: 673 (1864) ≡ H. candidum var. psilotrichum Cadevall, Fl. Catalunya 33: 487 (1923); H. psilotrichum (Cadevall) A.W. Hill, Index Kew. Suppl. 9: 138 (1938)

This is a well-defined plant from a morphological point of view, which is somewhat related to H. erosulum from which can be distinguished by its densely hairy leaves in both surfaces, among other characters. Hieracium candidum is endemic to Pyrenees and Eastern Iberian Peninsula. It was regarded subendemic by SÁEZ & al. (2010). However most of its distribution area is outside the geographical coverage considered in this study (see www.atlasflorapyrenaea.org). It is one of the most abundant species included within sect. Cerintheoidea in central and eastern Pyrenees, where it grows in rocky places between 500 and 2200 m a.s.l. Reports from Catalanidic Mountains (cf. BOLÒS & VIGO, 1996) are probably due to confusion with other related species.

Hieracium cantalicum Lamotte in Mém. Acad. Sci. Clermont-Ferrand 21: 168 (1879)

This species is intermediate between H. jurassicum and H. ramondii. As circumscribed here, H. cantalicum includes H. exaltatum Arv.-Touv., H. neochlorum Arv.-Touv. & Gaut. and H. turritifolium Arv.-Touv.

H. cantalicum is close to H. drazetorum (which is interpretable as intermediate between H. ramondii and H. prenanthoides) from which differs in having relatively wide dentate leaves. It is endemic to northern Iberian Peninsula and central-southern France (BOLÒS & VIGO, 1996). In the studied area H. cantalicum is restricted to Pyrenees (Vall d’Aran, Alta Ribagorça, Pallars Jussà, Alt Urgell and Ripollès) where it usually grows in deciduous montane or subalpine forests, at elevations c. 1000 to 2000 m.


This is a plant remotely related to H. amplexicaule an other species present in the Ports massif (as H. neocerinthe and H. aragonense), whose overall morphology suggests an origin through a cross between H. aragonense and H. cordatum. H. boixarense Pau in Bol. Soc. Esp. Hist. Nat. 21: 149 (1921) is probably conspecific with H. carolipauanum, but the type lacks inflorescence. Both taxa were described from northern Castellon province, near the border with southern Tarragona province, where some populations of this species are found.

Hieracium cavanillesianum Arv.-Touv. & Gaut., Hieractioth. 15: Hisp. n° 234 (1903), in sched.

Morphologically, it occupies an intermediate position between H. amplexicaule and H. gymnocerinthe (MATEO, 2016b). This species is somewhat close to H. pseudocerinthe, from which can be distinguished by its longer stems, longer phylary leaves and leaves (more or less denticulate, with scattered glandular hairs, vs. subentire and densely covered by short glandular hairs in H. pseudocerinthe).

H. cavanillesianum is endemic to Pyrenees and Cantabrian range: Andorra and the provinces of Girona, Huesca, Lleida, Zaragoza and León (MATEO, 2006a). It was regarded subendemic by SÁEZ & al. (2010). However most of its distribution area is outside the geographical coverage considered in this study. Its presence in Montseny massif (BOLÒS & al., 1986) is unclear (SÁEZ & al., 2010). We have tried to find material of this species from Montseny massif in several herbaria (BC, BCN and VAL) without success.

Hieracium cercsianum Mateo, Egido & Gómiz in Fl. Montiber. 63: 36 (2016)

Known only from the type locality: “Barcelona, Cercs, sobre Sant Corneli, 31TDG 0572, 1220 m” (central Pre-pyrenees). This taxon has an intermediate position between H. murorum and H. protoconquense (MATEO & al., 2016).

Hieracium cerdanum Arv.-Touv., Spicil. Rar. Hierac.: 40 (1886)

See comments under H. gouanii.

Hieracium cerinthoides L., Sp. Pl.: 803 (1753)

This species has (regarding the indumentum of the phyllaries) an intermediate position between H. gymnocerinthe and H. ramondii (CHRTEK & al., 2007; MATEO, 2008). For information about its typification see FERRER & al. (2015). BOLÒS & VIGO (1996) and GREUTER (2008) provided information about its subspecies, some of them are not recognized by MATEO (2008) or treated at specific rank.

Hieracium cerinthoides subsp. rhomboidale (Lapeyr.) Zahn in Engler, Pflanzenr. 75: 163 (1921) was regarded as intermediate between H. andurense and H. gymnocerinthe (MATEO & EGIDO, 2014), although perhaps it is a mere variant of H. cerinthoides.

A diploid chromosome number (2n = 18) was reported by CHRTEK & al. (2007) from plants collected in central Pyrenees (Os de Civis). Hieracium cerinthoides is endemic to Cantabrian range and Pyrenees. In our area it occurs in central and eastern Pyrenees where it usually grows in rocky habitats (scree and rock crevices) on siliceous or limestone substrates, between 1300 and 2200 m a.s.l.

Hieracium cezycola Arv.-Touv. & Gaut., Hieracioth. 20: [in sched.] Gall. n° 1603 (1897)


This Pyrenean endemic was reported from few scattered localities (VIGO, 1983; BOLÒS & VIGO, 1996), but, although rare is perhaps overlooked. It is closely related to H. violettianum and usually is regarded as intermediate between the latter and H. amplexicaule.


This Pyrenean endemic was reported from few scattered localities (VIGO, 1983; BOLÒS & VIGO, 1996), but, although rare is perhaps overlooked. It is closely related to H. violettianum and usually is regarded as intermediate between the latter and H. amplexicaule.


≡ H. solidagineum subsp. coderianum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 177 (1921)

≡ H. tremolsianum Arv.-Touv. & Gaut., Hieracioth. 2: Hisp. n° 32. (1897), in sched.

This taxon is closely related to H. solidagineum (in past Century it was treated as one of its subspecies) and shows intermediate characters between H. murorum and H. solidagineum (murorum > neocerinthe) (MATEO, 2016b). The detailed distribution of this taxon is little known: northeastern Iberian Peninsula and eastern-southern France (Dauphiné, Corbieres, central and western Pyrenees, etc.). H. coderianum is distributed throughout Pyrenees (and northeastern Iberian Peninsula); its presence in western Alps requires verification. In our area it is known from eastern Pyrenees and Catalanidic mountains, where it usually grows in forests and rocky places between 800 and 1500 m a.s.l.
Hieracium coleoides Arv.-Touv. & Gaut., Hieracioth. 20: Gall. n° 1582, Hisp. n° 364 (1908), in sched. 
≡ H. lamprophyllum subsp. coleoides (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 195 (1921)

This Pyrenean endemic was regarded as morphologically intermediate between H. hastile and H. ramondii by MATEO (2016b). In our area it was reported from northern, central Pyrenees (Alta Ribagorça and Pallars Jussà) (BOLÒS & VIGO, 1996) where it grows in scree and rocky places between 1700 and 1900 m a.s.l.


It shows intermediate characters between H. lawsonii and H. cryptanthum. BOLÒS & VIGO (1996) and MATEO (2016b) treated it as a separate species, whereas GREUTER (2008) recognized it at subspecies level within H. lanifolium.

H. colmeiroanum is endemic to Pyrenees and the Cantabrian range (BOLÒS & VIGO, 1996). Its distribution in Catalonia is poorly known and no sound information concerning the ecology of this taxon is available. It was reported from central Pyrenees (Alta Ribagorça and Pallars Sobirà) (BOLÒS & VIGO, 1996; NINOT et al., 2010) and Central Catalanidic Mountains (Muntanyes de Prades) (BOLÒS & VIGO, 1996, sub H. coleoidiforme Zahn). H. coleoidiforme Zahn in Engler, Pflanzenr. 75: 160 (1921) was reported from "Muntanyes de Prades 1100 m" (BOLÒS & VIGO, 1996). However this species shows intermediate characters between H. lawsonii and H. cryptanthum, and is included within the synonymy of H. colmeiroanum (MATEO, 2016b).


This species shows intermediate morphology between H. gouanii and H. racecemosum s.l. (MATEO, 2007b, 2008). H. compositum (in broad sense) is endemic to northern and eastern Iberian Peninsula and southern France. In our area it occurs mainly in northeastern Catalonia; scattered localities are known from Pre-Pyrenees, central and southern Catalonia.

The alleged discriminant features for some subspecies recognized by BOLÒS & VIGO (1996) and GREUTER (2008) are probably not reliable, and even some of these subspecies would be synonyms for other species. This is the case of H. compositum subsp. catalaunicum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 79: 991(1922) [= H. catalaunicum Arv.-Touv. & Gaut., Hieracioth. 2: Hisp. n° 30-31 (1897), in sched]. Which was accepted by BOLÒS & VIGO (1996) and GREUTER (2008). However, MATEO (2016b) included it within the synonymy of H. nobile.

Hieracium cordatum Schee. ex Costa, Fl. Catal.: 158 (1864)

This species, which is regarded as intermediate between H. amplexicaule and H. neoerinethe (MATEO, 1996, 2006a), is very variable in stem height, ramification, robustness and hairyness. It is endemic to Pyrenees and nearby mountain areas. In our area it is widespread from Pyrenees to northern and central Catalanidic Mountains; scattered localities are known from southern Catalanidic Mountains.

Several authors have recognized several subspecies within H. cordatum (ZAHN, 1921-23; BOLÒS & VIGO, 1996; GREUTER, 2008). However, the taxonomic status of some of these subspecies (or microspecies), is uncertain, since transitional forms between them are common (BOLÒS & VIGO, 1996) and they are not or only partially geographically separated. Some subspecies recognized by BOLÒS & VIGO (1996) are treated at specific level by GREUTER (2008) and MATEO (2008).

According to BOLÒS & VIGO (1996) H. rupicola Jord. is represented in the studied area by subsp. sonchifolium (Zahn)
O. Bolòs & Vigo, Fl. Països Catalans 3: 1118 (1996) [= H. sonchifolium Scheele in Linnaea 32: 658 (1863), nom. illeg, non M. Bieb. (1808)]. Nevertheless, the type material of H. sonchifolium seems to fall within the variation of H. cordatum.


See comments under H. umbellatum and H. brevifolium.

Hieracium cotteti Godet ex Christener in Gremli, Beitr. Fl. Schweiz: 94 (1870) – H. prinzii auct., non (Käser ex Zahn) Zahn in Engler, Pflanzenr. 76: 522 (1921)

It is endemic to western and central Europe (GREUTER, 2008) and occupies an intermediate position between H. humile and H. murorum (MATEO, 2005). It was reported from Llés de Cerdana by MATEO (2005, sub H. prinzii).

Hieracium crocatum Fr., Summa Veg. Scand.: 6 (1845)
≡ H. aestivum subsp. crocatum (Fr.) Zahn in Engler, Pflanzenr. 79: 922 (1922)

This eurosiberian species reaches the absolute southwestern limit of its range in the Pyrenees. Plants morphologically intermediate between H. prenanthoides and H. umbellatum were usually referred to H. crocatum (BOLÒS & VIGO, 1996; MATEO, 2007b, 2016b). Within H. crocatum several subspecies were recognized (cf. BOLÒS & VIGO, 1996; GREUTER, 2008). According to these authors, in the studied area H. crocatum is represented by the following taxa, whose taxonomic status is unclear, although they could be included within the synonymy of H. crocatum: H. c. subsp. brachybrachion (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1129 (1996) [= H. aestivum subsp. brachybrachion Zahn in in Engler, Pflanzer. 79: 924 (1922)]; H. c. subsp. glareivagum (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1129 (1996) [= H. aestivum subsp. glareivagum Zahn in Engler, Pflanzenr. 79: 919 (1922)]; H. c. subsp. phrissoides (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1129 (1996) [= H. phrissoides Arv.-Touv., Hier. Gall. Hisp. Cat.: 428 (1913); H. aestivum subsp. phrissoides Zahn in Engler, Pflanzenr. 82: 1651 (1923)]

Hieracium cryptanthum Arv.-Touv. 

As circumscribed here, H. cryptanthum includes H. subsericeum (Rouy) Zahn in Engler, Pflanzenr. 75: 157 (1921) [= H. lapeyrousii subsp. subsericeum Rouy, Fl. France 9: 296 (1905)], which was recognized as a subspecies [H. cryptanthum subsp. subsericeum (Rouy) Greuter, Med-Checkl. 2: 295 (2008)] by GREUTER (2008). This species is close to H. argyreum, H. hastile and H. raman- dii. Plants called H.inuliflorum Arv.-Touv. & Gaut. are also morphologically close to our broad concept of H. cryptanthum.

H. rupicaprinum Arv.-Touv. & Gaut. was included within the synonymy of H. cryptanthum by MATEO (2016b). SCHUHWERK & LIPPERT (1998)  reported 2n = 18 for H. rupicaprinum from plants collected in eastern Pre-Pyrenees (el Mont).

H. cryptanthum (in broad sense) in our area is found in central Pyrenees, and eastern/central Pre-Pyrenees, where it usually grows in scree and open rocky places, between 350 and 2300 m a.s.l. The occurrence of this species in northern and central Catalanidic Mountains (Montseny and Alt Camp) is unclear. Further research on the H. cryptanthum group is needed in order to clarify the status and relationships of taxa included within it.

Hieracium cynanchoides Arv.-Touv. & Gaut., Hieracioth. 8: Hisp. nº 133 (1899) [in sched.]

This taxon was described on the basis of specimens collected in Vall d’ Aran (between Salardú and Banyes de Tredós). It was treated as a subspecies within H. prenanthoides (cf. ZAHN, 1921-23, BOLÒS & VIGO, 1996), etc.; but in our opinion it has an intermediate position between H. bifidum and H. prenanthoides (MATEO, 2012, sub H. juraniforme). It is
probably endemic to central and southwestern Europe. A concrete site collection was provided by MATEO (2012, sub H. juraniforme): “Valle de Arán pr. Baños de Tredós, 31TCH 33022, 2000 m, 25-VII-2006, Mateo & Rosselló (VAL 178366)”.


This taxon was described on the basis of specimens collected in massís del Port. It is considered morphologically intermediate between H. cordatum and H. planchonianum. Data about its detailed distribution are scarce.


This species is close to H. lachenalii and H. murorum (MATEO, 2007a). It is an eurosiberian species, which was listed for Lleida province without precise locality (MATEO, 2007a). It is probably overlooked and more widespread than previously known.


≡ H. cantalicum Lamotte subsp. drazeticum (Arv.-Touv. & Marcaillou) Zahn in Engler, Pflanzenr. 77: 777 (1921)

This plant, with narrow entire leaves (apparently without influence of H. murorum), is morphologically intermediate between H. prenanthoides and H. ramondii or H. cerinthoides. Localities of H. drazeticum provided by ARVET-TOUVET (1913) and ZAHN (1921) correspond to central and eastern French Pyrenees. Only BOLÒS & VIGO (1996) reported this species from our area (Vall d’Aran, 1800 m).


This species, endemic to eastern Iberian Peninsula and the Balearic Islands, is morphologically intermediate between H. candidum and H. laniferum (ZAHN, 1921; BOLÒS & VIGO, 1996). It was reported from Montsec (ROMO, 1989a, BOLÒS & VIGO, 1996), where its presence is unclear, and Massís del Port (southern Catalanidic Mountains). See also comments under H. aragonense.

Hieracium erosulum Arv.-Touv. & Gaut., Hier. Gall. Hisp. (Exsicc.) 12: n° 168 (1901)

≡ H. candidum subsp. erosulum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 146 (1921)

This conspicuous principal species was unfortunately regarded as a subspecies within H. candidum. The inclusion of H. erosulum at subspecific level within H. candidum does not adequately reflect the degree of morphological differentiation observed between the two taxa. Most of its distribution area corresponds to the Pyrenees (type locality: Serra de Cadi pr. Bellver de Cerdanya), although there are more or less isolated populations in the Catalanidic Mountains (BOLÒS & VIGO, 1996; MATEO, 2008). It occurs in rocky places, at elevations of 800 to 1500 m a.s.l.

Hieracium exaltatum Arv.-Touv., Spicil. Rar. Hierac.: 41 (1886)

See comments under H. cantalicum.


This species occupies intermediate position between H. compositum and H. sa baudum (MATEO, 2006b). It is a regional endemic of northeastern Iberian Peninsula (MATEO, 2006b), growing mainly on oak and holm oak forests on siliceous or limestone substrate. In our area H. fabregatii is known from northern and central Catalanidic Mountains (Gavarres, Montseny, Muntanyes de Prades and Montsant range) (MATEO, 2006b).


It is morphologically close to H. aemulum, from which can be distinguished by its densely hairy leaves in both surfa-
**Hieracium floccinargonense** Mateo in Fl. Montiber. 61: 154 (2015)

Known from central and eastern Pre-Pyrenees: Boumort massif (Montanisell and Serra de Carreu) and El Tossal (Montant de Tost), where it grows in limestone rocky places between 1230 and 1540 m a.s.l. (MATEO, 2015, 2016a). The taxonomic relationships of this species are unclear. It is morphologically related to *H. candidum*, *H. erosulum* and *H. nargonense* (MATEO, 2015).

**Hieracium glanduliferum** Hoppe in Sturm, Deutschl. Fl.: Ad t. 623 (1815)
≡ *H. piliferum* subsp. *glanduliferum* (Hoppe) Zahn in Ascherson & Graebner, Syn. Mitteleur. Fl. 12, Register: 73 (1939)

This species is closely related to *H. piliferum* Hoppe, from which differs by its stems densely covered by glandular hairs and linear to linear-lanceolate glabrescent leaves, among other characters. *H. glanduliferum*, an orophyte species endemic to central and southern Europe, was reported from central and eastern Pyrenees by BOLÒS & VIGO (1996) and MATEO (2007b). This species grows in alpine meadows on siliceous substrate, sometimes together with *H. piliferum* (see comments under this species).

**Hieracium geniceranum** Mateo & Egido in Fl. Montiber. 58: 46 (2014)

This species is morphologically intermediate between *H. albomurorum* (*bifidum/murorum*) and *H. gymnocerinthe* (MATEO & EGIDO, 2014).

It is known from Cantabrian range and central Pyrenees (León and Lleida provinces). In our area it was reported from Alòs d’Isil (Central Pyrenees) by MATEO & EGIDO (2014). The population was found close to a stream, at 1410 m a.s.l.

**Hieracium glaucinum** Jord., Cat. Graines Jard. Dijon 1848: 22 (1848)

It is a variable species, as would be expected from its wide distribution and the diverse habitats where it grows. From ZAHN (1921-23) to the present is presented as intermediate arising from the pair *murorum/schmditii*. Several subspecies have been recognized (BOLÒS & VIGO, 1996; GREUTER, 2008), most of them are probably not worthy of taxonomic recognition. See also comments under *H. hypochoeroides*.  

*H. flocciferum* is considered from ZAHN (1921-23) to the present as intermediate between *H. candidum* and *H. lawsonii* (MATEO, 2016b). It is endemic to Pyrenees and mountain areas in eastern Iberian Peninsula. In our area it is found throughout Pyrenees and Central Catalanian Mountains (BOLÒS & VIGO, 1996) where it usually grows in rocky places.

*H. subflocciferum* (Zahn) Mateo 
≡ *H. flocciferum* subsp. *subflocciferum* Zahn in Engler, Pflanzenr. 75: 156 (1921); *H. briziflorum* subsp. *subflocciliferum* (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1082 (1996) was regarded as diploid (2n = 18) (SCHUHWERK & LIPPERT, 1998). This species was considered as very close to *H. aemulum* and *H. flocculiferum*. However no clear morphological discontinuities exist within the latter species and *H. subflocciferum*, and these two taxa are probably conspecific.

**Hieracium fontanesianum** Arv.-Touv. & Gaut., Hieracioth. 20: Gall. nº 1590-1597 (1908) [in sched.]

It is a poorly known species, morphologically related to *H. cryptanthum* (MATEO, 2008, sub *H. subsericeum*). *H. fonnatancesianum* was subject to several taxonomic interpretations: as intermediate *eriopogon/ramondii* (MATEO, 2016b); *alatum/colmeiromanum* (BOLÒS & VIGO, 1996) or *mougeoitii/colmeiromanum* (ZAHN, 1921). It is endemic to Pyrenees. In our area it was reported for Alt Urgell (cf. BOLÒS & VIGO, 1996), where it grows in montane rocky habitats.
The genus *Hieracium* in Catalonia

*Hieracium glaucinum* is the most widely distributed species of the genus in northeastern Iberian Peninsula. This submediterranean-subatlantic species usually occurs in clearings of forests on the mountains areas, but also in scrubs and stony slopes, between 50 and 1850 m a.s.l.

**Hieracium glaucophyllum** Scheele in Linn. 32: 659 (1864)

We have found original material of this plant (collected by A.C. Costa), and we conclude that the specimen has intermediate characteristics between *H. compositum* and *H. cordatum*. The latter species occur side by side within the Montseny massif and the neighboring mountains. Moreover, no clear morphological discontinuities exist within *H. vayredanum* Arv.-Touv. and *H. glaucophyllum*, and these two taxa are probably conspecific. *H. glaucophyllum* is endemic to northeastern Catalonia (BOLÒS & VIGO, 1996; SÁEZ & al., 2010) where it usually grows in forests and rocky places, usually on siliceous substrate, at 1000-1550 m a.s.l.


This species is morphologically close to *H. neocerinthe*, but differs by its coriaceous leaves and higher number of cauline leaves (4-8). See also comments under *H. eriomallum*. From ZAHN (1921-23) to BOLÒS & VIGO (1996) it is regarded as a subspecies of *H. cordifolium*. CHRTEK & al. (2007) published a chromosomal count of 2n = 18 from plants collected at the road between Ripoll and Ribes de Freser. The type material of *H. vernicosum* consists of *H. gouanii* (TISON & GREUTER, 2013). These authors formally accept *H. vernicosum* as synonym for *H. gouanii*.

*H. gouanii* is endemic to Pyrenees and Catalanidic Mountains (BOLÒS & VIGO, 1996; Mateo, 2005, 2008).


It is a poorly known species showing taxonomic relationships with *H. candidum* and *H. hastile* (MATEO, 2016b). *H. graellsianum* is accepted at species level by MATEO (2008, 2016) and GREUTER (2008), but it is recognized from ZAHN (1921-23) to BOLÒS & VIGO (1996) as a subspecies within *H. rupicaprimum*. *H. graellsianum* is allegedly endemic to Pre-Pyrenees (cf. SÁEZ & al., 2010). BOLÒS & VIGO (1996) reported it from central and eastern Pre-Pyrenees (Alt Urgell, Berguedà and Montsec range). It grows in scree and open rocky places, between 600 and 1550 m a.s.l.


This conspicuous principal species was treated as a subspecies within *H. cerinthoides* from ZAHN (1921-23) to BOLÒS & VIGO (1996). It is close to *H. ramondii* (MATEO, 2008) from which it differs mainly in the indumentum of the phyllaries (numerous simple eglandular hairs in *H. ramondii* and numerous glandular hairs in *H. gymnocerinthe*); leaves are glabrous (cf. CHRTEK & al., 2007). The latter authors published a chromosomal count of 2n = 27 on the basis of plants collected in eastern Pre-Pyrenees (Adraén, Serra de Cadi).
≡ H. phlomoides subsp. hastile (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 148 (1921)

This species was described on the basis of specimens collected in “rochers de Caruby” (Capcir, eastern French Pyrenees). It is related to H. phlomoides, but in our opinion H. hastile is not a subspecies of H. phlomoides as is treated from ZAHN (1921-23) to BOLÒS & VIGO (1996).

Hieracium hispanicum Arv.-Touv., Notes Pl. Alpes: 19 (1883)
≡ H. cordatum subsp. hispanicum (Arv.-Touv.) Zahn in Engler, Pflanzenr. 77: 736 (1921)

This species was regarded as a subspecies within H. cordatum from ZAHN (1921-23) to BOLÒS & VIGO (1996), but in our opinion it has an intermediate position between H. cordatum and H. glaucinum (MATEO, 2016b) although the latter species could in fact be H. schmidtii. GREUTER (2008) recognized three subspecies: subsp. hispanicum, subsp. dimorphotrichum (Arv.-Touv. & Gaut.) Greuter and subsp. sacalmianum (Arv.-Touv. & Gaut.) Greuter. However their taxonomic status is unclear, since MATEO (2016b) included H. dimorphotrichum and H. sacalmianum within the synonymy of H. cordatum and H. hispanicum respectively.

MERXMÜLLER (1975) reported 2n = 18 from plants referred to H. cordatum subsp. hispanicum collected in northern Catalanidic Mountains (Montseny massif). H. hispanicum is allegedly endemic to eastern Pyrenees and Catalanidic Mountains (MATEO, 2007a). However, concrete records are scanty.

Hieracium huteri Bamb. in Flora 40: 626 (1857)
See comments under H. violletianum.

Hieracium hypochoeroides S. Gibson in Phytologist 1: 741 (1843)

H. hypochoeroides aggr. is endemic to central and southern Europe (GREUTER, 2008). In our area its detailed distribution is poorly known. It is known from central Pyrenees (see below); also collected in southern Catalanidic Mountains.

H. hypochoeroides shows intermediate characters between H. bifidum and H. schmidtii (MATEO, 2007a). According to
The genus *Hieracium* in Catalonia


*Hieracium ilerdense* Mateo in Fl. Montiber. 84: 87 (2013)

It shows intermediate characters between *H. candidum* and *H. murorum* (MATEO, 2013). *H. ilerdense* is endemic to central Pre-Pyrenees (Les Escales reservoir) where it grows in limestone rocky habitats.


See comments under *H. cryptanthum*

*Hieracium inuloideus* Tausch in Flora 20, Beibl. 1: 71 (1837)

See comments under *H. lanceolatum.*


See comments under *H. jurassicum.*


*Hieracium lachenalii* Suter, Helvet. Fl. 2: 145 (1802)


- *H. vulgatum* auct.

BOLÒS & VIGO (1996) recognized 15 subspecies within *H. lachenalii,* six of which are found in the studied area. The alleged discriminant features for some subspecies recognized by BOLÒS & VIGO (1996) and GREUTER (2008) are probably not reliable. In our area this eurosiberian species is known from central Pyrenees (Vall d’Aran, Pallars Jussà) to eastern Pyrenees (Ripollès) where it usually grows in deciduous forests and heaths, mainly between 1000 to 1800 m a.s.l.

*Hieracium laevigatum* Willd., Sp. Pl. 3: 1590 (1803)

This eurosiberian species reaches in the studied area one of the southern limits of its range. It was reported by BOLÒS & VIGO (1996) from eastern Pyrenees and northern Catalanic Mountains (Guilleries) (see below). It usually grows in deciduous forests and heaths in the montane belt (BOLÒS & VIGO, 1996). The analytical taxonomic treatments of this species recognize several dozens of subspecies (see GREUTER, 2008). In our area, typical *H. laevigatum* was reported from a single locality in eastern Pyrenees (cf. VIGO & al., 2003), whereas subsp. *retardatum* Zahn in Schinz & Keller, Fl. Schweiz, ed. 2, 2: 341 (1905) was reported from northern Catalanic Mountains (Guilleries) by BOLÒS & VIGO (1996).


This species shows taxonomic relationships with *H. lachenalii* and *H. laevigatum* (MATEO, 2013). According to the latter author, the type material of *H. acu-
minatum falls within the variation of H. lachenalii. BOLÒS & VIGO (1996) recognized H. acuminatum at subspecies level within H. lachenalii [H. lachenalii subsp. acuminatum (Jord.) Zahn in Hegi, Ill. Fl. Mitt-Eur. 6: 1285 (1929)]. In Catalonia it is known only from eastern Pyrenees (Ripollès, 1200 m) according to BOLÒS & VIGO (1996). It was also reported by MATEO (2006b) based upon the following herbarium specimen: Ribes de Freser, pr. Pardines, 31TDG38, 22-VIII-1972, Vigo (BC 641583). There are not concrete data about its ecology, although the species of this group usually grow in montane forests.

Hieracium lagascanum Arv.-Touv. & Gaut., Hieracioth. 17: Hisp. nº 169-172 (1901) [in sched.]

This species is morphologically intermediate between H. gouanii and H. neocerinthe (MATEO, 2016b). It was described from eastern Pre-Pyrenees (Serra de Cadi, Bellver de Cerdanya). BOLÒS & VIGO (1996) reported this species from central Pre-Pyrenees (Montsec) and central-southern Catalanidic Mountains.

Hieracium lamprophyllum Scheele in Linnaea 31: 653 (1863)

This Pyrenean endemic shows intermediate characters between H. murorum and H. ramondii (MATEO, 2016b), although it was previously considered as intermediate between H. olivaceum and H. ramondii (BOLÒS & VIGO, 1996). H. lamprophyllum [including H. mendiolanum Arv.-Touv. & Gaut., Hieracioth. 20: Gall. nº 1602 (1908), in sched.], which is included within the synonymy of H. lamprophyllum by MATEO (2016b)] was reported from central and eastern Pyrenees (Alta Ribagorça, Pallars Jussà and Alt Empordà) by BOLÒS & VIGO (1996). GREUTER (2008) also recognized H. lamprophyllum subsp. asturicum (Zahn) Greuter -which was treated as a subspecies within H. vogesiacum by BOLÒS & VIGO (1996)- and subsp. souliei (Arv.-Touv. & Gaut.) Greuter, recognized as specific rank by BOLÒS & VIGO (1996). The latter taxon (whose presence in the studied area requires confirmation) is included within the synonymy of H. lividum by MATEO (2016b).


Known only from the Boumort massif [“Montanisell hacia Santa Fe”] (central Pre-Pyrenees), where it grows on limestone rocky places at 1240 m a.s.l. This taxon includes intermediate plants between H. candidum and H. nargonense (see MATEO, 2016a).


Known only from the Boumort massif [Montanisell and Serra de Carreu] (central Pre-Pyrenees), where it grows on limestone rocky places between 1240 and 1540 m a.s.l. It is morphologically related to H. nargonense, H. hastile and H. graellsianum (MATEO, 2015). As other closely related recently described, this species requires a detailed study in order to establish their boundaries and taxonomic relationships.

Hieracium lanceolatum Vill., Hist. Pl. Dauphiné 3: 123 (1779)

The genus *Hieracium* in Catalonia

ed. 3: 1909 (1901). There are uncertainties about the correct interpretation of these names.

*H. lanceolatum* is mainly distributed throughout Europe. In our area it is found scattered in central and eastern Pyrenees (Vall d’Aran, Pallars Jussà Baixa Cerdanya), where it usually grows in forests and stony places.

**Hieracium langei** Fr. in Uppsala Univ. Arsskr. 1862: 57 (1862)

≡ *H. ramondii* subsp. *langei* (Fr.) Zahn in Engler, Pflanzenr. 75: 164 (1921)


This species was treated as a subspecies within *H. ramondii* from ZAHN (1921-23) to BOLÒS & VIGO (1996), but our opinion it occupies an intermediate position between *H. glaucinum* and *H. ramondii*, so it deserves recognition as a separate species. It is endemic to the Cantabrian range and Pyrenees. In our area it was reported from central Pyrenees (Alta Ribagorca and Pallars Sobirà) (BOLÒS & VIGO, 1996; MATEO & EGIDO, 2014, sub *H. aetheorhizoides*) where it grows in rocky places between 1500-1920 m a.s.l.

**Hieracium laniferum** Cav., Icon. 3: 181 (1795)

This species, which is endemic to eastern Iberian Peninsula, was traditionally regarded as widespread in southern Catalonia, being reported from the main mountain areas comprised between Massís del Port and Prades Mountains. However, its distribution is currently overestimated due to taxonomic confusion, mainly with *H. spathulatum*. Reports from Montsec range, central Pre-Pyrenees (BOLÒS & VIGO, 1996; MATEO & EGIDO, 2014, sub *H. aetheorhizoides*) where it grows in rocky places between 1500-1920 m a.s.l.

**Hieracium laniferum** Cav., Icon. 3: 181 (1795)

This species, which is endemic to eastern Iberian Peninsula, was traditionally regarded as widespread in southern Catalonia, being reported from the main mountain areas comprised between Massís del Port and Prades Mountains. However, its distribution is currently overestimated due to taxonomic confusion, mainly with *H. spathulatum*. Reports from Montsec range, central Pre-Pyrenees (BOLÒS & VIGO, 1996; MATEO & EGIDO, 2014, sub *H. aetheorhizoides*) where it grows in rocky places between 1500-1920 m a.s.l.

*H. laniferum* is closely related to *H. spathulatum*, but can be easily separated by its glabrous or glabrescent phyllaries, sometimes with scattered glandular and stellate hairs. The diploid level (2n = 18) was detected in southern Catalanidic Mountains (Mas de Barberans) accessions of this species (see CASTRO & al., 2007), which agrees with previous chromosome counts showing the diploid level for this endemic species (MERXMÜLLER, 1975).

**Hieracium lanifolium** Arv.-Touv. & Gaut., Hierarioth. 3: Gall. nº 148 (1898) [in sched.]

≡ *H. colmeiroanum* subsp. *lanipalliatum* Zahn in Engler, Pflazenz. 75: 160 (1921)


This species has an intermediate position between *H. aemulum* and *H. andurense*. Typical *H. lanifolium* was reported from central Pre-Pyrenees (Montsec) by Romo (cf. BOLÒS & VIGO, 1996).

**Hieracium latequeraltense** Mateo, Egido & Gómiz in Fl. Montiber. 63: 39 (2016)

Known only from the type locality: “Barcelona, Berga, pr. santuario de Queralt, 31TDG0362, 1140 m” (eastern Pre-pyrenees). This taxon has an intermediate position between *H. murorum* and *H. queraltense* (MATEO & al., 2016). At least six species of *Hieracium* were described from this locality: *H. berganum* Arv.-Touv. [= *H. telephrocinthe* subsp. berganum (Arv.-Touv.) Zahn in Engler, Pflazenz. 75: 157 (1921); *H. purpurascens* subsp. berganum (Arv.-Touv.) O. Bolòs & Vigo, Fl. Països Catalans 3: 1080 (1996)], *H. latequeraltense* Mateo, Egido & Gómiz, *H. protoconquense* Mateo, Egido & Gómiz, *H. queraltense* de Retz, *H. recoderi* de Retz and *H. tossalense* Mateo; and further for another species (*H. plecoides* Arv.-Touv.) the locality of Queralt is indicated in the protologue.


It differs distinctively from most of the species included within sect. *Cerinthoidea* in its phyllaries and peduncles
densely covered by long glandular hairs, being the stellate hairs rare and the simple hairs absent (MATEO, 2008). This species is endemic to southwestern Europe (its presence in northwestern Africa requires verification). In our area *H. lawsonii* [including *H. acrocerinthe* Arv.-Touv., Hier. Gall. Hisp. Cat.: 141 (1913)] seems to be restricted to central Pyrenees, where it grows in limestone rocks and cliffs. Nevertheless, this species should be searched for in southern Catalanic Mountains (massis del Port), where suitable stations are located.


It has an intermediate position between *H. amplexicaule* and *H. gouanii* (MATEO, 2016b), although until recently (from ZAHN, 1921-23 to BOLÒS & VIGO, 1996 and GREUTER, 2008) it was recognized as a subspecies within *H. cordatum*. *H. legrandianum* is endemic to Pyrenees and neighboring areas. In our area it is found in Pyrenees with few occurrences in northeastern Catalonia (northern Catalanic Mountains and Osona) (BOLÒS & VIGO, 1996). It usually grows in rocky places, between 650 and 1400 m a.s.l.

Intermediate specimens between *H. legrandianum* and *H. nobile*, presumably of hybrid origin, are found in Pyrenees, northern Catalanic Mountains (Montserrat, Guilleries) and southeastern France. Perhaps the name *H. dipsacifolium* Arv.-Touv., Spicil. Rar. Hierac.: 49 (1886) [= *H. patens* subsp. *dipsacifolium* (Arv.-Touv.) Greuter in Wildenowia 37: 169 (2007)] could be applicable to these plants. *H. praecordatum* Arv.-Touv. & Gaut., Hieracioth. 6: Gall. n° 358 (1899) [in sched.] was reported from central Pre-Pyrenees (Montsec) and eastern Pre-Pyrenees (Serra de Cadi). This species, whose taxonomic status is unclear, seems to be related to *H. legrandianum.*
The genus *Hieracium* in Catalonia

deo in Fl. Montiber. 84: 90 (2013) is probably conspecific with *H. loeflingianum* since it has been regarded as *candidum/glaucinum* (MATEO, 2013).

*H. loeflingianum* is endemic to Pyrenees (BOLÒS & VIGO, 1996). Most of known localities are found in Aragonese Pyrenees reaching eastern Navarra (LORDA, 2013). In our area was reported from central and eastern Pre-Pyrenees [Pallars Jussà, Alt Urgell (Boumort massif, type locality), Berguedà and Ripollès (Gombrèn)] (BOLÒS & VIGO, 1996; SCHUHWERK & LIPPERT, 1998), where it usually grows in montane limestone rocky places.

**Hieracium loscosianum** Scheele in Linnaea 32: 668 (1863)

This species, endemic to eastern Iberian Peninsula, occupies an intermediate position between *H. elisaeanum* and *H. planchonianum*. It is close to *H. bourgaei*, from which can be distinguished by indument characters (MATEO, 2012). In our area *H. loscosianum* seems to be restricted to southern Catalonia (massís del Port) where it grows in rocky places between 1000 and 1280 m a.s.l.

**Hieracium lycopoides** Arv.-Touv. & Gaut., Hieracioth. 12: Gall. n° 749-750 (1901)

≡ *H. sonchoides* subsp. *lycopoides* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 174 (1921)

This poorly known species includes intermediate plants between *H. glaucinum* and *H. gouanii* (MATEO, 2005, 2016b). GREUTER (2008) listed this species as endemic to France and Spain. *H. lycopoides* was reported by BOLÒS & VIGO (1996, as a subspecies within *H. sonchoides*) from central and eastern Pyrenees, Olositanic territory and central Catalanic Mountains (Montsant). This species is solely known from two collections (made in Serra de Cadi and Pic de l’Orri, MATEO, 2005). *H. lycopoides* was also reported by BOLÒS & VIGO (1996) from central Pyrenees (Pallars Jussà and Pallars Sobirà) and northeastern Catalonia (Montseny, Cabrèrs and Vallès Occidental). *H. maculatum* was also listed for southern Catalonia (Tarragona province) by MATEO (2007a). Known localities correspond to deciduous forests, usually on siliceous substrate, between 600 and 1450 m a.s.l.

**Hieracium lycanum** Arv.-Touv. & Gaut., Hieracioth. 14: Gall. n° 999 (1902) [in sched.]

≡ *H. cantalicum* subsp. *lycanum* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 76: 777 (1921)

It is a poorly known species morphologically intermediate between *H. glaucinum* and *H. nobile* (MATEO, 2016b). In our area *H. lycanum* was reported from Alt Urgell (BOLÒS & VIGO, 1996; as subspecies within *H. cantalicum*). No information concerning concrete localities of this taxon is available.

**Hieracium maculatum** Schrank, Baier Fl. 2: 319 (1789)

This species is close to *H. glaucinum* and *H. lachenalii* (ZAHN, 1921-23; BOLÒS & VIGO, 1996). The alleged discriminant features for some subspecies recognized by BOLÒS & VIGO (1996) are probably not reliable.

Within this eurosiberian species BOLÒS & VIGO (1996) recognized ten subspecies, six of which are found in the studied area: central Pyrenees (Pallars Jussà and Pallars Sobirà) and northeastern Catalonia (Montseny, Cabrèrs and Vallès Occidental). *H. maculatum* was also listed for southern Catalonia (Tarragona province) by MATEO (2007a). Known localities correspond to deciduous forests, usually on siliceous substrate, between 600 and 1450 m a.s.l.

**Hieracium mixtum** Froel. in DC., Prodr. 7: 216 (1838)

It differs distinctively from most of the species included within sect. *Cerinthoidea* in having long plumulose hairs which hide other hair types (MATEO, 2008). It is endemic to Cantabrian range, Pyrenees and northern Iberian range (BOLÒS & VIGO, 1996; MATEO, 2008). In our area scattered localities are known from Boumort massif (central Pre-Pyrenees), Vall d’Aran (central Pyrenees) and Port del Compte (eastern Pre-Pyrenees) (BOLÒS & VIGO, 1996; VIGO & al., 2003). It usually grows in montane or subalpine calcareous rocks.

**Hieracium montsaticola** Mateo in Fl. Montiber. 38: 52 (2008)

This poorly known species occupies an intermediate position between *H. ero-
sulum and *H. glaucinum* (MATEO, 2008). *H. montsaticola* was reported from central and southern Catalanidic Mountains: from Montsant to massís del Port.


Known only from the Montseny massif, where it grows in rocky places on siliceous substrate at c. 700 m a.s.l. The taxonomic relationships of this species are unknown. It was interpreted as intermediate between *H. cordatum* and *H. nobile* (MATEO & SÁEZ, 2016) although it may be regarded as intermediate between *H. cordatum* and a species related to *H. nobile* as *H. protoconquense*. Further research is needed in order to clarify the taxonomic relationships of *H. montsignaticum*.


This species is allegedly endemic to Pyrenees. In our area MATEO (2005) reported it from eastern Pre-Pyrenees (Serra de Cadi). It shows taxonomic relationships with *H. candidum* and *H. murorum* (MATEO, 2005), although it may be interpreted as intermediate between *H. murorum* and *H. orteganum*. CASTRO & al. (2007) published a chromosomic count of 2n = 27 from rocks plans collected near Canillo (Andorra).

**Hieracium myriophyllum** Scheele in Linnaea 32: 660 (1863)

See comments under *Hieracium patens*.


This species was described on the basis of plants collected in central Pre-Pyrenees (Boumort massif, Montanisell). *H. nargonense*, which belongs to sect. Cerinhtoidea (MATEO, 2015), does not seem to have any direct relationship (at least from the morphological point of view) with other species of the section. In the same work, MATEO (2015) also described several species very close to *H. nargonense*.

**Hieracium neocerinthe** Fr. in Nova Acta Reg. Soc. Sci. Upsal. 14: 67 (1848)

≡ *H. cordifolium* subsp. neocerinthe (Fr.) Zahn in Engler, Pflanzenr. 75: 152 (1921)

This species shows similarities to *H. gouantii* (see comments under this species). SCHUHWERK & LIPPERT (1998, sub *H. cordifolium* subsp. *neocerinthe*) reported 2n = 18 from plants collected in eastern Pre-Pyrenees (el Mont and Castellar de n’Hug). *H. neocerinthe* is endemic to Pyrenees, northeastern Iberian Peninsula and southern France and was regarded subendemic by SÁEZ & al. (2010). However most of its distribution area is probably outside the geographical coverage considered by these authors. In our area it occurs mainly in Pyrenees and northeastern Catalonia; scattered localities are known from central and southern Catalanidic Mountains. It usually grows in rocky places (mainly on limestone rocks, but also in siliceous substrate) between 500 and 1600 m a.s.l.

The genus *Hieracium* in Catalonia

Hieracium neochlorum Arv.-Touv. & Gaut., Hieracioth. 1: Gall. nº 41 (1897) [in sched.]

See comments under *H. cantalicum*.

Hieracium neoclosianum Mateo in Fl. Montiber. 51: 35 (2012)

≡ *H. closianum* Arv.-Touv. & Gaut., Hieracioth. 16: Gall. nº 1295-1296 (1903) [in sched.], non Timb.-Lagr. & Març. (1885);

≡ *H. pyrenaicum* subsp. *ibericum* Zahn in Engler, Pflanzenr. 79: 994 (1922);


This taxon can be distinguished from the most similar *H. nobile* in its habit (although less robust), scarcer cauline leaves, smaller capitula and the common presence of glandular hairs on the phyllaries (BOLÒS & VIGO, 1996; MATEO, 2012).


≡ *H. coriaceum* Scheele ex Willk. in Willk. & Lange, Prodr. Fl. Hispan. 2: 269 (1865) nom. illeg., non Martr.-Donos (1864);

≡ *H. sonchoides* subsp. *coriaceum* Zahn in Engler, Pflanzenr. 75: 175 (1921);


This species shows taxonomic relationships with *H. gouanii* and *H. murosum* (MATEO, 2016 a). The analytical taxonomic treatments of *H. racemosum* Willd. recognize several dozens of subspecies (see GREUTER, 2008). According to the latter author *H. racemosum* (in strict sense) is not found in the Iberian Peninsula, being this species represented in this area by subsp. *niveobarbatum* Zahn. GREUTER (2008) listed it for France and Spain (Iberian Peninsula).

In our area *H. niveobarbatoides* is known from northern Catalanidic Mountains (Guilleries) (BOLÒS & VIGO, 1996) and eastern Cadi range (VIGO & al., 2003) where it occurs in clearings of deciduous forests on the mountains areas, between 750 and 1250 m a.s.l.
Hieracium nobile Gren. & Godr., Fl. France 2: 361 (1850)

It shows taxonomic relationships with H. racemosum and H. recoderi (MATEO, 2007b). H. nobile is endemic to northern Iberian Peninsula and southern France (BOLÒS & VIGO, 1996). In our area it is widespread in Pyrenees with occurrences throughout northeastern Catalonia (northern Catalanidic territory) where it usually grows in humid forests and heaths on siliceous or limestones substrates, between 500 and 1500 m a.s.l. Five subspecies were reported by BOLÒS & VIGO (1996) for our area, although the alleged discriminant features for some subspecies are probably not reliable. MATEO (2016b) treated H. catalaunicum Arv.-Touv. & Gaut. and H. burserianum Arv.-Touv. [= H. nobile subsp. burserianum (Arv.-Touv.) O. Bolòs & Vigo, Fl. Països Catalans 3: 1137 (1996)] as synonyms for H. nobile.

Hieracium olivaceum Gren. & Godr., Fl. France 2: 361 (1850)
≡ H. juranum subsp. olivaceum (Gren. & Godr.) Greuter, Med-Checkl. 2: 340 (2008)

It shows intermediate characters between H. glaucinum and H. neocerinthe (MATEO, 2016b). H. olivaceum is endemic to Cantabrian range, northern Iberian range, Pyrenees and Catalanidic Mountains (BOLÒS & VIGO, 1996). It usually grows in rocky habitats, forests and grassy places, between 500 and 2000 m a.s.l.

The delimitation of this species is somewhat controversial because some of the subspecies recognized by BOLÒS & VIGO (1996) and GREUTER (2008) have been included in other species related or were included in their synonymy. The following examples explain this situation:

H. querianum Arv.-Touv. & Gaut. [= H. eriopogon subsp. querianum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 172 (1921)] should be included within the synonymy of H. olivaceum (MATEO, 2016b).

H. webbianum Arv.-Touv. & Gaut. [= H. solidagineum subsp. webbianum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 177 (1921)] was regarded as endemic to northeastern Iberian Peninsula and southeastern France. GREUTER (2008) recognized two subspecies: subsp. webbianum and subsp. tarradasum (Arv.-Touv. & Gaut.) Greuter [= H. tarradasanum Arv.-Touv. & Gaut.; H. solidagineum subsp. tarradasanum (Arv.-Touv. & Gaut.) Zahn]. Both subspecies were also recognized (within H. solidagineum) by BOLÒS & VIGO (1996). However, H. tarradasanum and H. webbianum were included within the synonymy of H. olivaceum in MATEO (2016 b). The triploid level (2n = 27) was detected in Pre-Pyrenean accessions of this taxon (SCHUHWERK & LIPPERT, 1998).

H. xatardianum Arv.-Touv. ex Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 353 (1894) [= H. sonchoides subsp. xatardianum (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 175 (1921)] was also included within the synonymy of H. olivaceum by MATEO (2016b).

See comments under H. saxifragum.

Hieracium orteganum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. nº 312-313 (1908) [in sched.]
≡ H. vellereum subsp. orteganum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 173 (1921) was reported from Pyrenees and central Catalanidic Mountains (BOLÒS & VIGO, 1996). This taxon is probably conspecific also with H. olivaceum (MATEO, 2016b).

Hieracium orteganum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. nº 312-313 (1908) [in sched.]
≡ H. vellereum subsp. orteganum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 173 (1921)
It is a poorly known species showing taxonomic relationships with H. bifidum and H. candidum (MATEO, 2008, 2016b). This species is allegedly endemic to central Pyrenees. GREUTER (2008) listed it as endemic to Spain. In our area this taxon occurs in Alt Urgell (Boumort massif, type locality), Pallars Jussà and Pallars Sobirà (BOLÒS & VIGO, 1996).
Hieracium orthoglossum Arv.-Touv. & Gaut., Hieracioth. 5: Gall. n° 272-273 (1898) [in sched.]
≡ H. onosmoides subsp. orthoglossum (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 248 (1921)

This is a poorly known species showing taxonomic relationships with *H. sabaudum* and *H. schmidtii* (MATEO, 2016 b). According to GREUTER (2008) it is endemic to Andorra, France and Spain [Pyrenees]. In our area *H. orthoglossum* was reported from central Pyrenees (Pallars Sobirà) and eastern Pre-Pyrenees (Serra de Cadi) where it usually grows in montane or subalpine crevices between 200 and 1500 m a.s.l.

The taxonomy of this species (in broad sense) is poorly understood and requires a conclusive resolution. *H. patens* is morphologically intermediate between *H. cordatum* and *H. sabaudum*. From ZAHN (1921-23) to BOLÒS & VIGO (1996) (*H. rectum*) and GREUTER (2008) several subspecies are recognized in our area. Some of these subspecies are variable, showing many combinations of characters sometimes connected by intermediates. On the other hand, some of these subspecies might be worthy of recognition at specific rank.

*H. myriophyllum* Scheele was recognized at subspecific level by ZAHN (1921-23) to BOLÒS & VIGO (1996, *H. rectum*) and GREUTER (2008) (*H. patens* subsp. *myriophyllum* (Scheele) Greuter in Willdenowia 37: 169 (2007)). It was described from eastern Pyrenees (Eyne). It is a poorly known species showing taxonomic relationships with *H. cordatum* and *H. lachenalii*, allegedly endemic to Pyrenees (Baixa and Alta Cerdanya).


Hieracium phlomoides Froel in DC., Prodr. 7: 233 (1838)

Flora Montibericana 65: 88-121 (XI-2016)
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This species seems intermediate between *H. argyreum* and *H. hastile* (MATEO, 2012). *H. phlomoides* is endemic to Pyrenees (BOLÒS & VIGO, 1996). It was described from central French Pyrenees (Gavarnie and Gèdre) and most known localities correspond to central Pyrenees. This species was regarded subendemic by SÁEZ & al. (2010). However most of its distribution area is outside the geographical coverage considered by these authors. In our area where it usually grows in rocky places, mainly in limestone substrates, between 580 and 1500 m a.s.l.

The taxonomic status of *H. phlomoides* subsp. *pseudoandurense* de Retz, allegedly endemic from Pyrenees, is uncertain: it was recognized at subspecific rank within *H. phlomoides* by BOLÒS & VIGO (1996) or treated as a subspecies of *H. laniferum* (GREUTER, 2008).

**Hieracium piliferum** Hoppe in Bot. Taschen. Anfänger Wiss Apothekerkunst 1799: 130 (1799)

It is endemic to mountain areas in central and southern Europe (GREUTER, 2008). In our area it is restricted to central and eastern Pyrenees, where it usually grows in alpine meadows on siliceous substrate, between 1900 and 2250 m a.s.l. Typical *H. piliferum* was reported by BOLÒS & VIGO (1996) from Central Pyrenees (Alta Ribagorça, Pallars Jussà amb Pallars Sobirà). See comments under *H. glanduliferum*. Intermediate specimens between the latter species and *H. piliferum* were called *H. amphigenum* Arv.-Touv. & Briq. in Bull. Soc. Bot. Genève 5: 211 (1889).


This boreo-alpine species (BOLÒS & VIGO, 1996) reaches in the Pyrenees one the southern limits of its range. The triploid level (2n = 27) was detected in Andorrana accessions of this species (CASTRO & al., 2007). See BOLÒS & VIGO (1996) and GREUTER (2008) for information about its subspecies. See also SÁEZ & al. (2010) for information about alleged endemic taxa. Intermediate specimens between *H. prenanthoides* and *H. murorum*, presumably of hybrid origin, are common in Pyrenees (mainly between 1500 and 2000 m a.s.l.), where these species constituted mixed populations or are very close geographically. MATEO (2016b, 2016b) included *H. prenanthoides* subsp. *grandifolioides* Zahn in Engler, Pflanzenr. 76: 750 (1921) within the synonymy of *H. prenanthoides*.

**Hieracium protoconquense** Mateo, Egido & Gómiz in Fl. Montiber. 63: 42 (2016)

It is somewhat related to *H. recoderi* and *H. queraltense*. However the latter two species are more glabrescent, having longer and narrower leaves (MATEO & al., 2016). *H. protoconquense* is known only from the type locality: “Barcelona, Berga,
pr. santuario de Queralt, 31TDG0362, 1170 m" (eastern Pre-pyrenees). It should be searched for in Catalanic Mountains where suitable stations are located.

_Hieracium pseudocerinthe_ (Gaudin) W.D.J. Koch, Taschenb. Deut. Schweiz. Fl.: 334 (1843)  
≡ _H. amplexicaule_ subsp. _pseudocerinthe_ Gaudin, Fl. Helv. 5: 112 (1829)

This species was regarded as intermediate between _H. amplexicaule_ and _H. lawsonii_ (SELL & WEST, 1976; BOLÓS & VIGO, 1996) although it is considered closer to _H. amplexicaule_ (TISON & al., 2014). The information about the presence of this species in our area is unclear.

_H. pseudocerinthe_ (without indication of subspecies) was reported from central Pyrenees (NINOT & al., 2010) and also from eastern Pyrenees and eastern Pre-Pyrenees (VIGO & al., 2003). BOLÒS & VIGO (1996) listed _H. pseudocerinthe_ subsp. _calocerinthe_ (Arv.-Touv. & Gaut.) Zahn from central Pyrenees (Pallars Jussà) whereas _H. p._ subsp. _scapiflorum_ (Arv.-Touv.) Greuter [= _H. ucenicum_ subsp. _scapiflorum_ (Arv.-Touv.) Zahn] was reported from Vall d’Aran (cf. BOLÒS & VIGO, 1996, sub _H. ucenicum_ subsp. _scapiflorum_).


This species appear to have a complex origin: it was regarded as intermediate between _H. bifidum_ and _H. phlomoides_ (MATEO, 2008). Further research is needed in order to clarify the taxonomic relationships of _H. pseudoloscosianum_. It was described on the basis of specimens collected in central Pyrenees (Chisagüés, Huesca Province). In our area it was reported for Pyrenees in Lleida province, without precise locality (MATEO, 2008).

≡ _H. amplexicaule_ subsp. _pulmonarioides_ (Vill.) Ces. in Cattaneo, Notizie Nat. Civ. Lombardia 1: 304 (1844)

This species includes morphologically intermediate plants between _H. amplexicaule_ and _H. murorum_ (MATEO, 2006a) although it was also considered as intermediate between _H. amplexicaule_ and _H. humile_ TISON & al. (2014). Several authors (ZAHN, 1921-233; BOLÒS & VIGO, 1996; GREUTER, 2008) recognized _H. pulmonarioides_ at subspecific level within _H. amplexicaule_. _H. pulmonarioides_ is distributed throughout southwestern and central Europe (GREUTER, 2008). In our area its distribution is poorly known due to confusion with other species of the genus. It is known from central and eastern Pyrenees (Pallars Sobirà and Baixa Cerdanya) and southern Catalanic Mountains, where usually grows rocky places, between 900 and 1250 m a.s.l.

_Hieracium purpurascens_ Willk. in Willk. & Lange, Prodr. Fl. Hisp. 2: 262 (1865)

This species, which was described on the basis of specimens collected in Montserrat, has an intermediate position between _H. neocerinthe_ and _H. erosulum_ (MATEO, 2016b). Two subspecies were recognized by GREUTER (2008) within it: _H. p._ subsp. _purpurascens_ and _H. p._ subsp. _lloydianum_ (Arv.-Touv.) Greuter, Med-Checkl. 2: 429 (2008) [= _H. lloydianum_ Arv.-Touv., Hier. Gall. Hisp. Cat.: 188 (1913)].

_H. bowlesianum_ Arv.-Touv. & Gaut. Hieracioth. 19: [in sched.] Hisp. n° 307-308 (1908)  

The distribution of _H. purpurascens_ is poorly known due to confusion with other species of the genus. It is known from Pyrenees (Boumort, Pallars Jussà, Pallars Sobirà and Berguedà), northeastern Catalonia (Osona and Garrotxa) and central Catalanic Mountains, where it usually grows on
limestone rocky places, between 900 and 1350 m.

**Hieracium pyrenaeojurassicum** Mateo in Fl. Montiber. 37: 50 (2007)

This species seems intermediate between *H. ramondii* and *H. umbrosum* (MATEO & EGIDO, 2014). *H. pyrenaeojurassicum* was described from Huesca province and is also present in the Cantabrian range and the Basque mountains. See also comments under *H. altaneuense*.

*H. pyrenaeojurassicum* is endemic to the Cantabrian range, Basque Mountains and Pyrenees (MATEO & EGIDO, 2014). In our area it is known from central Pyrenees (Pallars Sobirà) where it usually grows in montane forests between 1410 and 1620 m a.s.l.


This species includes intermediate populations between *H. recoderi* and *H. neocecinthe*, presumably of hybrid origin (BOLÒS & VIGO, 1996; SÁEZ & GUARDIA, 2003a). *H. queraltense* was described on the basis of specimens collected near Berga (eastern Pre-Pyrenees, De RETZ, 1978). It is known from several localities in north-central Catalonia (MATEO, 2008).

**Hieracium querianum** Arv.-Touv. & Gaut., Hieracioth. 12: Hisp. nº 166-167 (1901) [in sched.]

See comments under *H. olivaceum*.

**Hieracium racemosum** Willd., Sp. Pl. 3: 1588 (1803)

= *H. viscosum* Arv.-Touv., Monogr. Pilosella & Hieracium, Suppl.: 26 (1876)

This species is usually regarded as intermediate between *H. amplexicaule* and *H. prenanthoides* from ZAHN (1921-23) to BOLÒS & VIGO (1996, sub *H. viscosum*) and MATEO (2007b, sub *H. viscosum*).

*H. racemosum* (in broad sense) is endemic to SW Europe (Pyrenees, Alps and Corsica). In the Iberian Peninsula it was reported from Cantabrian range, Pyrenees and Iberian range. In our area *H. racemosum* (in strict sense) was reported from central and eastern Pyrenees, Olositanic territory and northern Catalanidic Mountains (Guille- ries), whereas subsp. *oxygonum* Zahn, Hierac. Alp. Mar.: 321 (1916) [subsp. *euoxygonoides* Zahn, nom. illeg.] was solely reported from Vall de Ribes by VIGO (1983). The taxonomic distinctiveness of this subspecies is unclear. In our area *H. racemosum* grows in heaths and forests, mainly on siliceous substrates, between 750 and 1600 m a.s.l.
Hieracium rapunculoides Arv.-Touv., Monogr. Pilosella & Hieracium, Suppl.: 17 (1876)

This species occupies an intermediate position between H. lachenalii and H. prenanthoides (ZAHN, 1921-23 to BOLÓS & VIGO, 1996). According to BOLÓS & VIGO (1996) and GREUTER (2008) it is represented in the studied area by subsp. rapunculoides. H. rapunculoides is endemic to Alps, Central France and Pyrenees (BO- LÓS & VIGO, 1996; GREUTER, 2008). In our area it was reported from central Pyrenees (Vall d’Aran). It grows in forests and scree between 1300 and 1400 m a.s.l.

Hieracium recensitum Boreau, Fl. Centre France, ed. 3, 2: 415 (1857)


This species was described on the basis of specimens collected in Queralt, eastern Pre-Pyrenees (De RETZ, 1978; SÁEZ & GUARDIA, 2003b). It is known from several localities in north-central Catalonia (CHRTEK & al., 2007; MATEO, 2008).

CHRTEK & al. (2007) provide a karyological record (2n = 18) from plants collected in the locus classicus. It could be considered as a probable ancestor for several Hieracia taxa endemic to northeastern Iberian Peninsula (MATEO, 2008).


This species occupies an intermediate position between H. hastile and H. Lawsonii. This taxon is indicate for GREUTER (2008) listed from France, Spain and Morocco, although its presence in northern Africa should be verified. In our area BO- LÓS & VIGO (1996, sub H. lawsonii subsp. flocciramum Zahn) reported this taxon from Pyrenees (Vall d’Aran, Pallars Jussà, la Noguera and Serra de Cadí) where usually grows on limestone rocks.
1996). Its morphological variability in our area has not been studied in detail. Several subspecies were recognized (cf. BOLÓS & VIGO, 1996; GREUTER, 2008), some of them are too poorly differentiated both morphologically and geographically to be worth maintaining. SÁEZ & al. (2010) provide information about alleged endemic taxa.

Hieracium santaniolense Mateo, Egido & Gómiz in Fl. Montiber. 63: 45 (2016)

Known only from the type locality: “Gerona, Oix, unos 2 Km al sur de Sant Aniol d’Aguja, 31TDG6683, 400 m, roquesos calizos” (eastern Pre-pyrenees). This taxon has an intermediate position between H. gouanii and H. recoderi (MATEO & al., 2016).

Hieracium saxifragum Fr. in Nova Acta Regiae Soc. Sci. Upsal. 14: 100 (1848)

This species occupies an intermediate position between H. lachenalii and H. schmidtii (MATEO, 2007a) or between H. schmidtii and H. vulgatum (from ZAHN, 1921-23 to BOLÓS & VIGO, 1996). H. saxifragum is an eurosiberian species which occurs in central Pyrenees (Alta Ribagorça, Pallars Sobirà and Boumort massif) and Olotianic territory where it grows in siliceous rocks. MATEO (2016b) included H. buglossoides Arv.-Touv., Monogr. Pilos. & Hier., Suppl.: 18 (1876) and H. onosmoides Fries within the synonymy of H. saxifragum. Several subspecies were recognized by GREUTER (2008) and BOLÓS & VIGO (1996) within H. saxifragum (including H. onosmoides). The alleged discriminant features for some subspecies are probably not reliable.

Hieracium schmidtii Tausch in Flora 11, Ergänzungsbl. 1: 65 (1828)

This eurosiberian species (circumscribed in broad sense) is widely distributed in northeastern Iberian Peninsula. In our area it is also widespread in the Pyrenees with occurrences throughout northern, central and southern Catalanic Mountains (BOLÓS & VIGO, 1996). It usually occurs in rocky habitats on the mountains areas, between c. 500 and 2220 m a.s.l.

The morphological variability of this species in our area has not been studied in detail. Nevertheless, H. schmidtii was the object of more or less analytical taxonomic treatments: see BOLÓS & VIGO (1996) and GREUTER (2008) for information about its subspecies.


≡ H. tephocerinthe subsp. serdanyolae Zahn in Engler, Pflanzenzr. 75: 157 (1921); H. purpurascens subsp. serdanyolae (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1080 (1996)]

It is a poorly known taxon showing taxonomic relationships with H. purpurascens (erosulum/neocerinthe), which can be regarded as intermediate between H. erosulum and H. gouanii. Typical populations of H. serdanyolae are found in Berguedà (eastern Pre-Pyrenees). A report from cental Catalanic Mountains (Baix Camp) (BOLÓS & VIGO, 1996) requires confirmation.


It was described on the basis of plants collected in Adraen, Cadí range (eastern Pre-Pyrenees) at 1950 m a.s.l. Known only from the type locality. This species is intermediate between H. candidum and H. gymnocerinthe. (MATEO & EGIDO, 2015). According to these authors H. abellense is close to H. serracadiense but the latter species has peduncles and phyllaries without simple hairs.

Hieracium solidagineum Fr. in Uppsala Univ. Årsskr. 1862: 55 (1862)

This species is morphologically intermediate between H. murorum and H. neocerinthe. It is endemic to Pyrenees and nearby mountain areas. H. solidagineum is widespread in northern Catalonia, but
The genus *Hieracium* in Catalonia

rare in central and southern Catalanicid Mountains. It was regarded subendemic by SÁEZ & al. (2010). However most of its distribution area is outside the geographical coverage considered in this study.

*H. solidagineum* is a species with remarkable morphological variability. This has contributed to the recognition of different taxa in some analytical treatments. BOLÒS & VIGO (1996) recognized eight subspecies for our area whereas GREU TER (2008) accepted eleven subspecies, most of them endemic to Spain and France (except *H. solidagineum* subsp. jahandiezii Zahn, allegedly endemic to Morocco). Some of these subspecies are of uncertain taxonomic value, since the characters used for the delimitation of some subspecies seem to be extremely variable and readily environmentally modified.


*H. oleovirens* Arv.-Touv., Monogr. Pilosella & Hieracioth., Suppl.: 9 (1876) [= *H. sonchoides* subsp. oleovirens (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 82: 1645 (1921)] is also probably conspecific with *H. olivaceum*.


The presence in the studied area of typical *H. sonchoides* is unclear. Reports of this species are probably rereferable to other species, including *H. solidagineum*. See also TISON & al. (2014: 1687).

*Hieracium souliei* Arv.-Touv. & Gaut., Hieracioth. 20: Gall. nº 1587-1588, Hisp. nº 369-370 (1908) [in sched.]

See comments under *H. lamprophyllum*.

*Hieracium spathulatum* Scheele in Linnæa 32: 666 (1864)

≡ *H. laniferum* subsp. *spathulatum* (Scheele) Zahn in Engler, Pflanzenr. 75: 145 (1921)

This species is morphologically close to *H. laniferum* and *H. neocerinthe* (see comments under the former species). It is a variable species for which some subspecies (sometimes recognized at species level) were described (BOLÒS & VIGO, 1996; GREuter, 2008). However, much of this variation is continuous and the characters used in keys to separate the entities are based on unsatisfactory characters. The following taxa probably do not deserve recognition from *H. spathulatum*: *H. ilergabonum* Pau in Bol. Soc. Esp. Hist. Nat. 21: 148 (1921) [= *H. spathulatum* subsp. ilergabonum (Pau) Greuter, Med-Checkl. 2: 460 (2008)] (reported from Massís del Port, in Castellón province); *H. spathulatum* subsp. *spathuliforme* (Zahn) Greuter, Med-Checkl. 2: 460 (2008) [= *H. laniferum* subsp. *spathuliforme* Zahn in Engler, Pflanzenr. 75: 145 (1921)] (reported from central Pre-Pyrenees, and central-southern Catalanicid Mountains); and *H. albacetum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 169 (1913) [= *H. spathulatum* subsp. albacetum (Arv.-Touv.) Greuter, Med-Checkl. 2: 460 (2008)] (reported from Muntanyes de Prades).

*H. spathulatum* is endemic to northern and eastern Iberian Peninsula. In our area it is found in central and southern Catalanicid Mountains, although its distribution is currently underestimated due to taxonomic confusion with *H. laniferum*. It usually grows in limestone rocks and vertical cliffs, between 500 and 1400 m a.s.l.

*Hieracium spectandum* Jeanb. & Timb.-Lagr. in Rev. Bot. 2(Extr.): 94 (1884)

≡ *H. conocerinthe* Arv.-Touv. & Gaut., Hieracioth. 20 Hisp. No. 377-381 (1908) [in sched.]
This Pyrenean endemic has an intermediate position between *H. gymnocerithe* and *H. jurassicum*. In our area it was reported from central Pyrenees: Espot and Viella (MATEO, 2007b, sub *H. pinicola*). It grows in open grasslands and rocky places (c. 1600-2400 m a.s.l.).

*Hieracium stenanthelum* Zahn in Engler, Pflanzenr. 79: 995 (1922)
≡ *H. chamaadenium* subsp. *stenanthelum* (Zahn) Zahn in Engler, Pflanzenr. 82: 1676 (1923)

This species occupies an intermediate position between *H. nobile* and *H. schmidtii*. Known only from the type locality: “vallée de la Noguera-de-Mongary, sous le Port de Salau” (central Pyrenees, Pallars Sobirà), collected by Timbal-Lagrave.


This Pyrenean endemic has an intermediate position between *H. andurense* and *H. lawsonii* (MATEO, 2012). In our area a single site collection is known for *H. subandurense* (MATEO, 2012): “31TCH30 22, Valle de Arán, Tredós, pr. Los Baños, 2000 m, 25-VII-2006, Mateo & Rosselló (VAL 178484)”.


This species, endemic to eastern Iberian Peninsula, is morphologically intermediate between *H. aragonense* and *H. elisaeanum*. It was reported from southern Tarragona province (MATEO, 2008).


See comments under *H. flocciferum*.

≡ *H. cerinthoides* subsp. *gouanii* Zahn in Engler, Pflanzenr. 75: 163 (1921)

This species is intermediate between *H. gouanii* and *H. gymnocerithe* (MATEO, 2016b). In our area *H. subgouanii* was reported from central and eastern Pyrenees (Vall de Ruda and Baixa Cerdanya) (BOLÓS & VIGO, 1996; SÁEZ & al., 2010). Few information concerning the ecology of this taxon is available. It seems to grow in rocky habitats in the montane belt.

≡ *H. laevigatum* subsp. *gracilipes* Zahn in Engler, Pflanzenr. 79: 878 (1922)

This species, endemic to central and southern Europe (GREUTER, 2008) has an intermediate position between *H. laevigatum* and *H. murorum* (MATEO, 2012). In our area a single site collection is known for *H. subgracilipes* (MATEO, 2012): “Vall Fosca, camino de Tili, 31TCH30, 1300, Carrillo & Ninot (BCC s/n)”.


This species occupies an intermediate position between *H. prenanthoides* and *H. schmidtii* (MATEO, 2007a, b). It is endemic to southwestern Europe (GREUTER, 2008). It was reported from central Pyrenees (Vall d’Aran), where it grows in siliceous rocky habitats.


Known only from the type locality: “Barcelona, Serra dels Toossals pr. ermita de Queralt, 31TDG06, 1200 m” (eastern Pre-Pyrenees). It has an intermediate position between *H. hastile* and *H. recoderi*.

Known only from Serra de Cadí (Mateo, 2016a), where it grows in forests at 1320 m a.s.l. This species seems intermediate between *H. phlomoides* and *H. orophylexicaule* Mateo & Egido (*orophylexicaule/schmidii*). The presence of the latter species in our area, although possible, requires verification.

**Hieracium turritifolium** Arv.-Touv. in Bull. Soc. Bot. France 41: 363 (1894)
See comments under *H. cantalicum*.

**Hieracium umbellatum** L., Sp. Pl.: 804 (1753)
Within this species several subspecies were recognized by GREUTER (2008) and BOLÒS & VIGO (1996). According to the latter authors, *H. umbellatum* is represented in the studied area by subsp. *umbellatum*. This eurosiberian species occurs mainly in eastern Pyrenees; scattered localities are known from and central Pyrenees, Olistanic territory and northern Catalanidic Mountains. It usually grows in deciduous forests and heaths, mainly on siliceous substrate, between 500 and 1300 m a.s.l.

The type specimen of *H. cordifolium* Lapeyr. is unrelated to the species to which it was generally applied but instead belongs to *H. umbellatum* L. (Tison & GREUTER in RAAB-STRAUBE & RAUS, 2013). However, the type specimen of *H. cordifolium* correspond to an anomalous specimen (which has a smaller size, lower number of capitula, broader leaves which are more scarce) of *H. umbellatum* or, perhaps, a morphologically intermediate between this species *H. umbellatum* and *H. bifidum*. The great majority of herbarium samples from northeastern Iberian Peninsula previously identified as *H. cordifolium* are probably referable to *H. neocerinthe*.

**Hieracium umbrosum** Jord., Cat. Graines Jard. Dijon 1848: 24 (1848)
It is morphologically intermediate between *H. murorum* and *H. jurassicum* (Mateo, 2007b) or *murorum > prenanthoides* (as saids Zahn, 1921-23). *H. umbrosum* is represented in the studied area by subsp. *umbrosum* (Bolòs & Vigo, 1996). This eurosiberian species occurs in central and eastern Pyrenees (Vall d’Aran, Alta Ribagorça, Berguedà and Ripollès) where it grows in montane and subalpine forests, between c. 1200 and 1900 m a.s.l.

**Hieracium valentinum** Pau, Gazapos Bot. 71: (1891)
This Iberian endemic is intermediate between *H. amplexicaule* and *H. spathulatum* (cf. Mateo, 2006a). Here we provide the first concrete record for Catalonia (southern Catalanicid Mountains): “Massis del Port, Horta de Sant Joan Barranc del Grebolar, 31TBF7226, 815 m, limestone rock crevices, 22-VI-2005, A. Polo & L. Sáez, LS-6231”. In this locality *H. amplexicaule* and *H. spathulatum* occur side by side, which also supports the assumption of the hybrid origin for *H. valentinum*. In the above locality *H. valentinum* reaches the absolute northeastern limit of its range.

**Hieracium valirense** Arv.-Touv. & Gaut., Hieracioth. 3: Hisp. No. 43. (1898)
It is morphologically intermediate between *H. andurense* and *H. glaucinum* (Mateo, 2016b). *H. valirense* is endemic to central and eastern Pyrenees (Bolòs & Vigo, 1996). In the studied area it is known so far from few localities in Montsec (Romó, 1989a; Bolòs & Vigo, 1996), where it grows in limestone rocky places, scree and grassy banks, between 600 and 1220 m a.s.l.

**Hieracium vasconicum** Martrin-Donos, Fl. Tarn.: 452 (1864)
See comments under *H. virgultorum*.

**Hieracium vayredanum** Arv.-Touv., Spicil. Rar. Hierac.: 46 (1886)
≡ *H. cordatum* subsp. *vayredanum* (Arv.-Touv.) Zahn in Engler, Pflanzenr. 77: 734 (1921)
See comments under *H. glaucophyllum*.
Hieracium vellereum Willk. in Willk. & Lange, Prodr. Fl. Hispan 2: 261 (1865)

This species, which was described on the basis of specimens collected by A.C. Costa in Setcases, is a little known taxon requiring further study. Typical specimens of *H. vellereum* (excluding plants called *H. vellereum* subsp. orteganum) are restricted to eastern Pyrenees (ARVET-TOUVET, 1913; BOLÒS & VIGO, 1996; SÁEZ & al., 2010).


≡ *H. lantoscanum* Burnat & Gremli, Cat. Hierac. Alp. Mar.: 22 (1883); *H. pallidiflorum* subsp. *lantoscanum* (Burnat & Gremli) Zahn in Koch, l.c.: 1899 (1901)

≡ *H. pallidiflorum* Jord. ex Asch. in Flora 37: 119 (1883), nom. illeg.

Endemic to Alps and Pyrenees. According GREUTER (2008, sub *Schlagintweitia huteri* subsp. *lantoscanum* (Burnat & Gremli) Gottschl. & Greuter), reports of *H. pallidiflorum* subsp. *pallidiflorum* due to BOLÒS & VIGO (1996) are referable to *H. violettianum*, since typical *H. huteri* Bamb. [≡ *Schlagintweitia huteri* (Bamb.) Gottschl. & Greuter] in Willdenowia 37: 182 (2007)]] is not found in our area. It was reported from Vall d’Aran (BOLÒS & VIGO, 1996). Very little is known about the habitat preferences of this species. It apparently grows in subalpine screes (BOLÒS & VIGO, 1996).

Hieracium vinyasianum Font Quer, Fl. Cardó: 149 (1950)

According to FONT QUER (1950) this species is apparently a derivative resulting from hybridization of *H. amplexicaule* and *H. laniferum*. However, the leaves of *H. vinyasianum* (including the type material) lack glandular hairs, suggesting that this species is not closely related to *H. amplexicaule*. *H. vinyasianum* shows a striking morphological similarity to *H. lawsonii* and *H. neocerinthe*. Further research is needed in order to clarify the systematic relationships of it. See SÁEZ & al. (2010) for information about its morphology, distribution and conservation status.

Hieracium virgultorum Jord., Cat. Graines Jard. Dijon 1848: 24 (1848)


≡ *H. vasconicum* Martim-Donos, Fl. Tarn.: 452 (1864) - *H. laurinum* auct.

It is morphologically intermediate between *H. sabaudum* and *H. umbellatum*. As is circumscribed here *H. virgultorum* appears to be broadly distributed throughout central and southern Europe (GREUTER, 2008, sub *H. vasconicum*). BOLÒS & VIGO (1996, sub *H. laurinum* subsp. *amygdalinum*) reported *H virgultorum* from central and eastern Pyrenees (Vall d’Aran and Baixa Cerdanya), where it grows in montane forests, on siliceous substrate.


Hieracium viride Arv.-Touv., Essai Pl. Dauph.: 69 (1872)

This species is morphologically intermediate between *H. schmidtii* and *H. umbrosum* (cf. ZAHN, 1921-23; BOLÒS & VIGO, 1996; MATEO, 2007a; etc.). *H. viride* is endemic to south-western Europe (GREUTER, 2008; BOLÒS & VIGO ,1996). In our area it grows in open rocky places and scree, between 1150 and 1850 m a.s.l. Populations from Central Pyrenees (Vall d’Aran and Alta Ribagorça) and Montseny were referred to subsp. *brumale* (Arv.-Touv.) Zahn and subsp. *submacilentum* (Rouy) Zahn, respectively (BOLÒS & VIGO, 1996). The taxonomic distinctiveness of these taxa is unclear and merits further study.

Hieracium viscosum Arv.-Touv., Monogr. Pilosella & Hieracium, Suppl.: 26 (1876)

See comments under *H. ramosissimum*. 

L. SÁEZ & G. MATEO

Hieracium webbianum  Arv.-Touvet. & Gaut., Hieracioth. 16: Hisp. n° 236 (1903) [in sched.]

See comments under H. olivaceum.

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