

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; STROTHER, 2006)- making difficult attempts to clarify the taxonomy of the genus. BOLÒS & VIGO (1996) in their account of Catalonian hawkweeds (French and other Spanish taxa and localities are not included) recog-

nized 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

Hieracium abellense Mateo & Alejandre in Fl. Montiber. 34: 29 (2006)

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*.

Hieracium acalephoides Arv.-Touv. & Gaut., Hieracioth. 20: Hisp. n° 390-391 (1908), in sched.

≡ *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 Catalanidic 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. n° 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. Montib. 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. aemuliflorum* Sudre in Bull. Acad. Int. Geogr. Bot. 26: 145 (1916), nom. illeg.; *H. lawsonii* subsp. *aemuliflorum* Zahn in Engler, Pflanze. 75: 150 (1916)

= *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).

Hieracium aguilari Pau in Bol. Soc. Esp. Hist. Nat. 21: 148 (1921)

= *H. fredesianum* Mateo in Monogr., Inst. Pir. Ecol. (Jaca): 256 (1988)

This species, which was described on the basis of specimens collected in northern Castellón province, is found in southern Catalanidic Mountains (massís 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 phyl-

laries (simple hairs are usually absent and stellate hairs are scanty).

This is a triploid species ($2n = 27$) (SÁEZ & al., unpublished data) endemic to massís 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. gymnocerintho* 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. olivaceum* 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. pyrenaeojurassicum* (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

with *H. langei* (*glaucinum/ramondii*) and *H. olivaceum* (*glaucinum/gymnocerinthae*) seem to be somewhat remote.

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 Catalanidic 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 *H. 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 Marcaillou 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 interpretations (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.

Hieracium arevacorum Mateo in Fl. Montiber. 34: 40 (2006)

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 Rocabrúna, 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).

Hieracium atropictum Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 51: lxxvii (1904)

See comments under *H. planchonianum*.

Hieracium attractum Arv.-Touv. & Gaut.
in Bull. Soc. Bot. France 41: 340 (1894)

≡ *H. vogesiacum* subsp. *attractum* (Arv.-Touv.) O.
Bolòs & Vigo, Fl. Països Catalans 3: 1106 (1996)

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.

Hieracium aymericianum Arv.-Touv. in
Bull. Soc. Bot. France 41: 346 (1894)

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, Pflanzl. 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.

Hieracium baenitzianum Arv.-Touv.,
Spicil. Rar. Hierac.: 47 (1886)

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.

Hieracium balbisanum Arv.-Touv. &
Briq. in Annuaire Conserv. Jard. Bot. Gè-
neve 3: 137 (1899)

Intermediate specimens between *H. bifidum* and *H. humile*, particularly with regards to leaves shape and size were collected in central Pyrenees (MATEO, 2012): “Llès 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. balbisanum* by GREUTER (2008).

Hieracium barbdatum Arv.-Touv. & Gaut.,
Hieracioth. 2: No. 90 (1897), in sched.

See comments under *H. olivaceum*.

Hieracium berganum Arv.-Touv., Hier. Gall.
Hispan. Cat.: 167 (1913)

See comments under *H. purpurascens*.

Hieracium bicolor Scheele in Linnaea 31:
654 (1863)

≡ *H. bourgaei* subsp. *bicolor* (Scheele) O. Bolòs &
Vigo, Fl. Països Catalans 3: 1092 (1996)

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 eglandular 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 Catalanidic Mountains: Lleida province: La Vansa i Fòrnols (Alt Urgell), Serra del Cadí, ombria d'Adraén, 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).

Hieracium bourgaei Boiss., Diagn. Pl.

Orient., ser. 2, 3: 102 (1856)

≡ *H. bicolor* subsp. *bourgaei* (Boiss.) Zahn in Engler, Pflanzenz. 75: 203 (1921)

= *H. catalanum* Arv.-Touv. in Bull. Herb. Boissier 5: 726 (1897)

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 Catalanidic 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. elisaeum* 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 bowlesianum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 307-308 (1908), in sched.

See comments under *H. purpurascens*.

Hieracium brevifolium Tausch in Flora, Ergänzungsb. 1: 71 (1828)

- *H. latifolium* auct.

The presence of this eurosiberian species in the studied area requires confirmation. It was reported from northern Catalanidic Mountains by BOLÒS & VIGO (1996: 1123, in the distribution map). Several subspecies were recognized by GREUTER (2008) of them, only *H. brevifolium* subsp. *halimifolium* (Froel.) Zahn is found in the Iberian Peninsula. *Hieracium brevifolium* is closely related to *H. cordifolium* Lapeyr., Suppl. Hist. Pl. Pyrén.: 128 (1818), whose type material could 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 to a intermediate between this species and *H. bifidum*.

Hieracium briziflorum Arv.-Touv., Hier. Gall. Hisp. Cat.: 143 (1913)

See comments under *H. aemulum*.

Hieracium burserianum Arv.-Touv. in Bull. Soc. Bot. France 41: 356 (1894)

See comments under *H. nobile*.

Hieracium cabreranum Arv.-Touv., Hier. Gall. Hisp. Cat.: 168 (1913)

≡ *H. tephrocerinthe* subsp. *cabreranum* (Arv.-Touv.) Zahn in Engler, Pflanzenz. 75: 157 (1921)

It is a poorly known species allegedly endemic to Pyrenees (MATEO, 2008; SÁEZ & al., 2010) showing taxonomic relationships with *H. argyreum* and *H. candidum* (MATEO, 2016b). It was described on the basis of specimens collected by Soulié in Boumort massif (central Pre-Pyrenees). Some populations from central Pre-Pyrenees (Alt Urgell) were recognized as *H. cabreranum* subsp. *lanuzae* (Zahn) Greuter ex Greuter & Raabe-Str., Med-Checkl. 2: 274 (2008) [≡ *H. tephrocerinthe* subsp. *lanuzae* Zahn in Engler, Pflanzenz. 75: 156 (1921); *H. purpurascens* subsp. *lanuzae* (Zahn) O. Bolòs & Vigo, Fl. Paisos Catalans 3: 1080 (1996)].

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. *Cerinthoidea* 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. drazeticum* (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.

Hieracium carolipauanum Mateo in Fl. Montiber. 27: 25 (2004)

This is a plant remotely related to *H. amplexicaule* an other species present in the Ports massif (as *H. neocerinthae* 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. gymnocerinthae* (MATEO, 2016b). This species is somewhat close to *H. pseudocerinthae*, from which can be distinguished by its longer stems, longer phyllaries and leaves (more or less denticulate, with scattered glandular hairs, vs. subentire and densely covered by short glandular hairs in *H. pseudocerinthae*).

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.

The taxonomic distinctiveness of *H. aldeanum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 121 (1913) [= *H. cavanillesianum* subsp. *aldeanum* (Arv.-Touv.) Greuter in Willdenowia 37: 148 (2007); *H. rupicola* subsp. *aldeanum* (Arv.-Touv.) O. Bolòs & Vigo, Fl. Països Catalans 3: 1118 (1996)], which was included in the synonymy of *H. cavanillesianum* (MATEO, 2006a), is unclear.

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. gymnocerinthae* 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. *H. rhomboidale* Lapeyr. [= *H. cerinthoides* subsp. *rhomboidale* (Lapeyr.) Zahn in Engler, Pflanzenr. 75: 163 (1921)] was regarded as intermediate between *H. andurense* and *H. gymnocerinthae* (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 Civís). *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 (1908)

= *H. souliei* subsp. *cezycola* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 194 (1921); *H. lamprophyllum* subsp. *cezycola* (Arv.-Touv. & Gaut.) Greuter in Greuter & Raab-Str., Med-Checkl. 2: 363 (2008)

= *H. dubyanum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 177 (1913); *H. cordifolium* subsp. *dubyanum*

(Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 152 (1921)

The taxonomic status of this species, which was described on the basis of plants collected in French Pyrenees (mont Cézzy) is unclear. Its morphology is intermediate between *H. bifidum* and *H. gymnocerinthae*. It was reported from central and eastern Pyrenees and southern Catalonia (BOLÒS & VIGO, 1996, sub *H. cordifolium* subsp. *dubyanum*) although its presence in the latter area should be verified.

Hieracium chamaepicris Arv.-Touv. in Annuaire Conserv. Jard. Bot. Genève 1: 102 (1897)

= *Schlagintweitia chamaepicris* (Arv.-Touv.) Greuter, Med-Checkl. 2: 699 (2008)

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. viollettianum* and usually is regarded as intermediate between the latter and *H. amplexicaule*.

Hieracium coderianum Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 350 (1894)

= *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* > *neocerinthae*) (MATEO, 2016b). The detailed distribution of this taxon is little known: northeastern Iberian Peninsula and eastern-southern France (Dauphiné, Corbières, 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.

Hieracium colmeiroanum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 291-292 (1908), in sched.

≡ *H. lanifolium* subsp. *colmeiroanum* (Arv.-Touv. & Gaut.) Greuter in Greuter & Raabe-Str., Med-Checkl. 2: 364 (2008)

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).

Hieracium compositum Lapeyr., Hist. Abr. Pl. Pyrénées: 476 (1813)

This species shows intermediate morphology between *H. gouanii* and *H. racemosum* 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 (2016 b) included it within the synonymy of *H. nobile*.

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

This species, which is regarded as intermediate between *H. amplexicaule* and *H. neocerinthae* (MATEO, 1996, 2006a), is very variable in stem height, ramification, robustness and hairiness. 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*.

Hieracium cordifolium Lapeyr., Suppl. Hist. Pl. Pyrénées: 128 (1818)

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 Llès 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 Engler, Pflanzenr. 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. & Marcaillou in Rev. Bot. Bull. Mens 9: 30 (1891)

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. ramondii*. 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. n° 133 (1899) [in sched.]

= *H. prenanthoides* subsp. *cynanchoides* (Arv.-Touv. & Gaut.) Zahn, Hierac. Alp. Mar.: 277 (1916)

- *H. dermatophyllum* auct., non Arv.-Touv. & Briq. in Annuaire Conserv. Jard. Bot. Genève 5: 163 (1901)

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)”.

Hieracium dertosense Mateo in Fl. Montiber. 27: 25 (2004)

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.

Hieracium diaphanoides Lindeb. in Bot. Not. 1882: 127 (1882)

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.

Hieracium drazeticum Arv.-Touv. & Marcaillou in Bull. Soc. Bot. France 41: 364 (1894)

= *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).

Hieracium elisaeanum Arv.-Touv. ex Willk., Suppl. Prodr. Fl. Hisp.: 120 (1893)

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*.

Hieracium fabregatii Mateo in Fl. Montiber. 34: 41 (2006)

This species occupies intermediate position between *H. compositum* and *H. sabaudum* (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).

Hieracium flocciferum Arv.-Touv. in Rev. Bot. Bull. Mens. 9: 31 (1891)

= *H. flocculiferum* Zahn in Engler, Pflanzenr. 75: 156 (1921), nom. Illeg.; *H. briziflorum* subsp. *flocculiferum* (Zahn) O. Bolòs & Vigo, Fl. Paisos Catalans 3: 1081 (1996)

It is morphologically close to *H. aemulum*, from which can be distinguished by its densely hairy leaves in both surfa-

ces. *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 Catalanic Mountains (BOLÒS & VIGO, 1996) where it usually grows in rocky places.

H. subflocciferum (Zahn) Mateo [= *H. flocciferum* subsp. *subflocciferum* Zahn in Engler, Pflanzenz. 75: 156 (1921); *H. briziflorum* subsp. *subflocculiferum* (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 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 fontanesianum Arv.-Touv. & Gaut., Hieracioth. 20: Gall. n° 1590-1597 (1908) [in sched.]

It is a poorly known species, morphologically related to *H. cryptanthum* (MATEO, 2008, sub *H. subsericeum*). *H. fontanesianum* was subject to several taxonomic interpretations: as intermediate *eriopogon/ramondii* (MATEO, 2016b); *alatum/colmeiroanum* (BOLÒS & VIGO, 1996) or *mougeotii/colmeiroanum* (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.

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 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 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. 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 Linnaea 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 taxons 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.

Hieracium gouanii Arv.-Touv., Spicil. Rar. Nov. Hier., Suppl.: 47 (1886)

≡ *H. cordifolium* subsp. *gouanii* (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 153 (1921)
 = *H. vernicosum* Arv.-Touv., Spicil. Rar. Hierac.: 39 (1886); *H. cordifolium* subsp. *vernicosum* (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 152 (1921)
 – *H. macrophyllum* Scheele in Linnaea 32: 674 (1864), nom. illeg. [non Pursh, 1814]

This species is morphologically close to *H. neocerinthae*, 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 chromosomic count of $2n = 18$ from plants collected at the road between Ripoll and Ribes de Fresser. 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).

H. cerdanum Arv.-Touv. [= *H. cordifolium* subsp. *cerdanum* (Arv.-Touv.) Zahn] was reported from eastern Pyrenees and north-eastern Catalonia (Osona county). However, MATEO (2016b) treated it as a synonym for *H. gouanii*.

Hieracium graellsianum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 310 (1908) [in sched.]

≡ *H. rupicaprinum* subsp. *graellsianum* (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 155 (1921)

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. rupicaprinum*. *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.

Hieracium gymnocerinthae Arv.-Touv. & Gaut., Hier. Gall. Hisp. (Exsicc.) 1: n° 39 (1897)

≡ *H. cerinthoides* subsp. *gymnocerinthae* (Arv.-Touv. & Gaut.) Zahn, in Engler, Pflanzenr. 75: 162 (1921)

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. gymnocerinthae*); leaves are glabrous (cf. CHRTEK & al., 2007). The latter authors published a chromosomic count of $2n = 27$ on the basis of plants collected in eastern Pre-Pyrenees (Adraén, Serra de Cadí).

H. gymnocerinthe is endemic to central and eastern Pyrenees, where it grows in rocky habitats.

Hieracium hastile Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 347 (1894)

≡ *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). *H. hastile* is endemic to Pyrenees; while claims from Iberian range (Teruel Province) (MATEO & EGIDO, 2014) require confirmation. In our area it is known from central Pyrenees (BOLÒS & VIGO, 1996), although it is likely their presence in eastern Pre-Pyrenees. It grows in rocky places, mainly on limestone substrates.

Hieracium heteradenum Arv.-Touv. & Cadevall in Arvet-Touvet, Hier. Gall. Hisp. Cat.: 130 (1913)

This taxon, which was recognized as a subspecies within *H. cordatum*, could be regarded as intermediate between the latter species and *H. erosulum*. Very little is known about the habitat preferences of this species. It was reported from eastern Pre-Pyrenees (Berguedà, 1900 m) by BOLÒS & VIGO (1996).

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

This species seems to be intermediate between *H. amplexicaule* and *H. sabaudum* (MATEO, 2013). It is known only from the type locality “Anglés, San Hilari de Sacalm, a 8 km de Osor, 710 m” (northern Catalanidic Mountains).

Hieracium hirsutum Tausch in Flora 11, Ergänzungsbl. 1: 72 (1828)

This species occupies an intermediate position between *H. nobile* and *H. sabaudum* (BOLÒS & VIGO, 1996; MATEO, 2007

b). It was reported as subsp. *insignitum* (Jeanb. & Timb.-Lagr.) Zahn in Engler, Pflanzenr. 79: 1009 (1922) from eastern Pyrenees (Núria) (BOLÒS & VIGO, 1996). MATEO (2007b) reported it from eastern Pyrenees (Garrotxa county).

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. violetianum*.

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

GREUTER (2008) it is represented in our area by subsp. *guaranum* (Arv.-Touv. & Gaut.) Greuter [= *H. guaranum* Arv.-Touv. & Gaut., Hieracioth. 20: Hisp. No. 403 (1908), in sched.]. BOLÒS & VIGO (1996) treated this taxon as *H. glaucinum* subsp. *guaranum* (Arv.-Touv. & Gaut.) Bolòs & Vigo, Fl. Països Catalans 3: 1053 (1996) and reported it from central Pyrenees (Alta Ribagorça and La Noguera). Nevertheless, *H. guaranum* and *H. echinanthum* Arv.-Touv. & Gaut., Hieracioth. 2: Gall. n° 74 (1897) [in sched.] were included within the synonymy of *H. hypochoeroides* (MATEO, 2016b).

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

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

Hieracium inuliflorum Arv.-Touv. & Gaut. in Butll. Soc. Bot. France 51: XLV (1905)

See comments under *H. cryptanthum*

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

See comments under *H. lanceolatum*.

Hieracium juranum Fries in Nova Acta Regiae Soc. Sci. Upsal. 14: 129 (1848), nom. illeg., non Rapin (1842)

See comments under *H. jurassicum*.

Hieracium jurassicum Griseb. in Abh. Königl. Ges. Wiss. Göttingen 5: 122 (1853)

= *H. juranum* Fries in Nova Acta Regiae Soc. Sci. Upsal. 14: 129 (1848), nom. illeg., non Rapin, Guide Bot. Vaud: 212 (1842)

This widely distributed species was the subject of analytical taxonomic treatments. GREUTER (2008) recognized up to 42 subspecies. According to this author *H. jurassicum* is represented in the Iberian Peninsula [Pyrenees] by subsp. *esseranum* (Arv.-Touv. & Gaut.) Greuter in Willdenowia 37: 158 (2007) [= *H. esseranum* Arv.-Touv. & Gaut., Hieracioth. 14: Hisp. n° 225-226 (1902), in sched.]. We collected *H. jurassicum* in central Pyrenees: Alòs d'Isil, valle del río Noguera Pallaresa, 31TCH3935, 1700 m, 24-VII-

2012, Mateo, Rosselló, Sáez & Egido (VAL 210698).

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

= *H. vulgatum* subsp. *lachenalii* (Suter) Zahn in Neue Denkschr. Allg. Schweiz Ges. Gesamnten Naturwiss. 40: 403 (1906)

- *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 Catalanidic 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 Catalanidic Mountains (Guilleries) by BOLÒS & VIGO (1996).

Hieracium laevigodentatum Mateo in Fl. Montiber. 54: 88 (2013)

- *H. acuminatum* auct., non Jord., Cat. Graines Jard. Bot. Grenoble 1849: 17 (1849)

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) and GREUTER (2008) 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. n° 169-172 (1901) [in sched.]

≡ *H. neocerinthae* subsp. *lagascanum* (Arv.-Touv. & Gaut.) Greuter in Greuter & Raabe-Str., Med-Checkl. 2: 395 (2008)

This species is morphologically intermediate between *H. gouanii* and *H. neocerinthae* (MATEO, 2016b). It was described from eastern Pre-Pyrenees (Serra de Cadí, 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. n° 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 sub-

species 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).

Hieracium lanatissimum Mateo in Fl. Montiber. 62: 5 (2016)

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).

Hieracium lanatonargonense Mateo in Fl. Montiber. 61: 155 (2015)

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)

As circumscribed here, *H. lanceolatum* includes *H. inuloides* Tausch in Flora 20, Beibl. 1: 71 (1837). According to BOLÒS & VIGO (1996, sub *H. inuloides*) and MATEO (2006b, sub *H. inuloides*) this species shows intermediate characters between *H. laevigatum* and *H. prenanthoides*. BOLÒS & VIGO (1996) and GREUTER (2008) recognized two subspecies within *H. inuloides* from our area: subsp. *subvirens* (Arv.-Touv.) Greuter in Willdenowia 37: 156 (2007) [= *H. inuloides* subsp. *aurigeranum* (Loret & Timb.-Lagr.) Zahn in Engler, Pflanzn. 79: 903 (1922)] and subsp. *tridentatifolium* (Zahn) Zahn in Koch, Syn Deut. Schweiz Fl.,

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. Arsk. 1862: 57 (1862)

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

= *H. aetheorhizoides* Mateo, Egido & Alejandre in Fl. Montiber. 52: 28 (2012)

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 Ribagorça 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) are referable to *H. spathulatum* (in broad sense). *H. laniferum* grows in limestone rocks and vertical cliffs. Its populations are usually placed in an altitudinal zone between 400 and 1000 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., Hieracioth. 3: Gall. n° 148 (1898) [in sched.]

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

= *H. lawsonii* var. *subandurensis* Zahn in Engler, Pflanz. 75: 150 (1921); *H. subandurensis* (Zahn) Mateo in Fl. Montiber. 38: 58 (2008)

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. tephrocerinthe* subsp. *berganum* (Arv.-Touv.) Zahn in Engler, Pflanz. 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.

Hieracium lawsonii Vill., Prosp. Hist. Pl. Dauphiné: 36 (1779)

– *H. saxatile* Vill., Prosp. Hist. Pl. Dauphiné: 35 (1779), nom. illeg., non Jacq.

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 Catalanidic Mountains (massís del Port), where suitable stations are located.

Hieracium legrandianum Arv.-Touv. in Bull. Soc. Bot. France 31: 186 (1884)

≡ *H. cordatum* subsp. *legrandianum* (Arv.-Touv.) Zahn in Engler, Pflanzenn. 77: 735 (1921), incl. *H. adenocerinthe* Arv.-Touv. & Gaut., Hieracioth. 6: Gall. n° 359-361 (1899), in sched.]

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) 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 Catalanidic 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 Catalanidic Mountains (Montseny, Guillerries) and southeastern France. Perhaps the name *H. dipsacifolium* Arv.-Touv., Spicil. Rar. Hierac.: 49 (1886) [≡ *H. patens* subsp. *dipsacifolium* (Arv.-Touv.) Greuter in Willdenowia 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*.

Hieracium leucodermum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 318 (1908) [in sched.]

This poorly known species was described on the basis of specimens collected in Segre river valley (Pre-Pyrenees) (MATEO, 2016b). It was included within the synonymy of *H. candidum* (GREUTER, 2008), although MATEO (2016b) considered it intermediate between *H. candidum* and *H. lanatonargonense*.

Hieracium lividum Arv.-Touv., Monogr. Pilosella & Hieracium, Addit.: 8 (1879)

This species is regarded as intermediate between *H. gymnocerinthe* and *H. glaucinum* (MATEO, 2016b). It is endemic to central France and Pyrenees (ARVET-TOUVET, 1913; MATEO, 2016b). In our area its detailed distribution is still poorly known. It is known from central and eastern Pyrenees (Vall d'Aran, Alta Ribagorça, Pallars Sobirà, Boumort massif, Berguedà and Ripollès), where it occurs in rocky habitats (mainly scree), between 1000 and 1900 m a.s.l.

The following names were regarded as synonyms of *H. lividum* (cf. MATEO, 2016b): *H. hedyppoides* Arv.-Touv. & Gaut., Hieracioth. 20: Hisp. n° 402 (1908) [in sched.]; *H. lividoideus* Arv.-Touv. & Gaut., Hieracioth. 4: Hisp. n° 55 (1898) [in sched.]; *H. lividulum* Arv.-Touv. & Gaut. in Bull. Herb. Boiss. 5: 726 (1897); *H. souliei* Arv.-Touv. & Gaut., Hieracioth. 20: Gall. n° 1587-1588, Hisp. n° 369-370 (1908) [in sched.]; *H. mougeotii* subsp. *stelliceps* Zahn in Engler, Pflanzenn. 75: 187 (1921) [≡ *H. vogesiacum* subsp. *stelliceps* (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1106 (1996)].

Hieracium loeflingianum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 311 (1908) [in sched.]

According to MATEO (2008, 2016b) it is morphologically intermediate between *H. candidum* and *H. glaucinum*. SCHUHWERK & LIPPERT (1998) reported $2n = 18$ from plants collected in eastern Pre-Pyrenees (Gombrèn). *H. pseudoilerdense* Ma-

teo 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., Hieracioph. 12: Gall. n° 749-750 (1901)

≡ *H. sonchoides* subsp. *lycopoides* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 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 Catalanidic Mountains (Montsant). This species is solely known from two collections (made in Serra de Cadí and Pic de l'Orri, MATEO, 2005).

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

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

It is a poorly known species morphologically intermediate between *H. glaucinum* and *H. nobile* (MATEO, 2016b). In our area *H. lysanum* 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, Cabreres 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.

Hieracium montsignaticum Mateo & L. Sáez in Fl. Montiber. 63: 3 (2016)

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*.

Hieracium murcandidum Mateo in Fl. Montiber. 28: 69 (2004)

This species is allegedly endemic to Pyrenees. In our area MATEO (2005) reported it from eastern Pre-Pyrenees (Serra de Cadí). 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 murorum L., Sp. Pl.: 802 (1753)

This widely distributed species was the subject of analytical taxonomic treatments. Within *H. murorum* BOLÒS & VIGO (1996) recognized sixteen subspecies, eleven of which are found in the studied area. Some of these subspecies can be variable, showing many combinations of characters sometimes connected by intermediates. This eurosiberian species is widespread in northern Catalonia with occurrences throughout central and southern Catalanidic Mountains. It usually occurs in forests and grassy banks between 100 and 2100 m a.s.l.

Hieracium myriophyllum Scheele in Linnaea 32: 660 (1863)

See comments under *Hieracium patens*.

Hieracium nargonense Mateo in Fl. Montiber. 61: 153 (2015)

This species was described on the basis of plants collected in central Pre-Pyrenees (Boumort massif, Montanisell). *H. nargonense*, which belongs to sect. *Cerinthoidea* (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 neocerinthae Fr. in Nova Acta Reg. Soc. Sci. Upsal. 14: 67 (1848)

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

This species shows similarities to *H. gouanii* (see comments under this species). SCHUHWERK & LIPPERT (1998, sub *H. cordifolium* subsp. *neocerinthae*) reported $2n = 18$ from plants collected in eastern Pre-Pyrenees (el Mont and Castellar de n'Hug). *H. neocerinthae* 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 following taxa probably do not deserve recognition from *H. neocerinthae*: *H. sericifolium* Arv.-Touv. & Gaut. in Bull. Herb. Boissier 5: 720 (1897) [≡ *H. cordifolium* subsp. *sericifolium* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 75: 152 (1921)]; *H. neocerinthae* subsp. *sericifolium* (Arv.-Touv. & Gaut.) Greuter, Med-Chckl. 2: 395 (2008)]; *H. protocerinthae* Arv.-Touv. & Sennen in Arv.-Touv., Hier. Gall. Hisp. Cat.: 178 (1913); ≡ *H. neocerinthae*

subsp. *protocerinthe* (Arv.-Touv. & Sennen) Greuter in Med-Checkl. 2: 395 (2008); *H. diarsianum* Marcet in Butll. Inst. Catalana Hist. Nat. 5: 63 (1905) and *H. minutiflorum* Marcet in Butll. Inst. Catalana Hist. Nat. 5: 63 (1905).

Hieracium neochlorum Arv.-Touv. & Gaut., Hieracioth. 1: Gall. n° 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. n° 1295-1296 (1903) [in sched.], non Timb.-Lagr. & Març. (1885); ≡ *H. pyrenaicum* subsp. *ibericum* Zahn in Engler, Pflanzenz. 79: 994 (1922); *H. nobile* subsp. *ibericum* (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1137 (1996).

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). The latter author attributed to *H. neoclosianum* an intermediate position between *H. bifidum* and *H. nobile*.

H. neoclosianum was reported from northern Catalanidic Mountains, where it grows in deciduous forests and heaths, between 600 and 1200 m a.s.l. (BOLÒS & VIGO, 1996).

Hieracium neocoriaceum Mateo in Fl. Montib. 62: 6 (2016)

≡ *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, Pflanzenz. 75: 175 (1921); *H. attractum* subsp. *coriaceum* (Zahn) Greuter, Med-Checkl. 2: 256 (2008)

This species shows taxonomic relationships with *H. gouanii* and *H. muro-rum* (MATEO, 2016b). It was described on the basis of plants collected in Sant Joan de les Abadesses, eastern Pyrenees (cf. SÁEZ & al., 2010). Its distribution is poorly known and no sound information concerning the ecology of this taxon is available.

Hieracium neopicris Arv.-Touv., Spicil. Rar. Hierac.: 34 (1881)

Endemic to eastern Pyrenees where it grows in alpine or subalpine scree (BOLÒS & VIGO, 1996). According to the latter authors, most of known localities are found in French Pyrenees. This species is related to *H. prenanthoides* and *H. chamaepicris*, although perhaps it can be more simply interpretable as intermediate between *H. prenanthoides* and *H. violet-tianum*. Two subspecies, differing in the hairyness of the leaves and stems, were recognized as present in our area by BOLÒS & VIGO (1996): subsp. *neopicris* and subsp. *conyzoides* (Arv.-Touv.) Zahn in Engler, Pflanzenz. 77: 854 (1921) [≡ *H. conyzoides* Arv.-Touv. in Bull. Soc. Bot. France 41: 369 (1894)]. Both subspecies can be found in the same locality: La Tosa d'Alp (2400 m). This locality was called "La Roxa" by ARVET-TOUVET (1913). VIGO (1983) also reported *H. neopicris* subsp. *conyzoides* from a single locality in Vall de Ribes. The taxonomic status of these subspecies is unclear.

Hieracium niveobarbatoides Mateo in Fl. Montib. 62: 6 (2016)

≡ *H. heterospermum* var. *niveobarbatum* Arv.-Touv. ex Arv.-Touv. & Gaut., Hieracioth. 5: Gall. n° 315 (1898) [in sched.]; *H. racemosum* subsp. *niveobarbatum* Zahn in Engler, Pflanzenz. 79: 982 (1922)

It is regarded as intermediate between *H. lachenalii* and *H. nobile* (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: 376 (1850)

- *H. pyrenaicum* Jord., Observ. Pl. Nouv. 7: 37 (1849), nom. illeg., non L.

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. Paisos 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. neocerinth* (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. tarradasum* Arv.-Touv. & Gaut.; *H. solidagineum* subsp. *tarradasum* (Arv.-Touv. & Gaut.) Zahn]. Both subspecies were also recognized (within *H. solidagineum*) by BOLÒS & VIGO (1996). However, *H. tarradasum* 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).

H. barbulatorum Arv.-Touv. & Gaut., Hieracioth. 2: Gall. n° 90 (1897) [in sched.] [= *H. solidagineum* subsp. *barbulatorum* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 177 (1921)] was reported from Pyrenees and central Catalanidic Mountains (BOLÒS & VIGO, 1996). This taxon is probably conspecific also with *H. olivaceum* (MATEO, 2016b).

Hieracium onosmoides Fries in Nova Acta Regiae Soc. Sci. Upsal. 14: 102 (1848)

See comments under *H. saxifragum*.

Hieracium orteganum Arv.-Touv. & Gaut., Hieracioth. 19: Hisp. n° 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, Pflanzenz. 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 Cadí) where it usually grows in montane or subalpine scree.

Hieracium patens Bartl., Index Sem. Hort. Acad. Gotting. 1850: 4 (1850)

– *H. rectum* auct.

Endemic to northeastern Iberian Peninsula and Southern France. It occurs mainly in eastern Pyrenees and northern Catalanidic Mountains (BOLÒS & VIGO, 1996, sub *H. rectum*) where it usually grows in forests and rocky habitats (scree, rock 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, sub *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), BOLÒS & VIGO (1996) and GREUTER (2008): *H. rectum* subsp. *myriophyllum* (Scheele) Zahn in Engler, Pflanzenz. 79: 1000 (1922); *H. patens* subsp. *myriophyllum* (Scheele) Greuter in Willdenowia 37: 169 (2007). It is found scattered in eastern Pyrenees (Conflent, Ripollès) and northern Catalanidic Mountains (Guileries, Montseny, Vallès Occidental). However, plants labelled as *H. myriophyllum* (includ-

ing type specimens) are morphologically intermediate between *H. cordatum* and *H. sabaudum*. Further research is needed in order to clarify the taxonomic status of plants called *H. myriophyllum*.

H. eynense Sudre in Bull. Acad. Int. Géogr. Bot. 22: 57 (1912) was also recognized at subspecies level from ZAHN (1921-23) to BOLÒS & VIGO (1996) [*H. rectum* subsp. *eynense* (Sudre) Zahn in Engler in Engler, Pflanzenz. 79: 999 (1922)] and GREUTER (2008) [*H. patens* subsp. *eynense* (Sudre) Greuter in Willdenowia 37: 169 (2007)]. It was described from eastern French 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).

The taxonomic distinctiveness of *H. euryypus* K. Knaf in Österr. Bot. Z. 25: 181 (1875) [≡ *H. patens* subsp. *euryypus* (K. Knaf) Greuter in Willdenowia 37: 169 (2007); ≡ *H. rectum* subsp. *euryypus* (K. Knaf) Zahn in Engler, Pflanzenz. 79: 1001 (1922); = *H. serratuloides* Arv.-Touv. in Annuaire Conserv. Jard. Bot. Genève 1: 103 (1897)], which was reported from Vallès Occidental (BOLÒS & VIGO, 1996) [Caldes de Montbui] is unclear and requires further study.

The following names are probably synonyms of *H. patens*: *H. costae* Scheele in Linnaea 32: 686 (1864) [≡ *H. patens* subsp. *costae* (Scheele) Greuter in Willdenowia 37: 168 (2007); *H. rectum* subsp. *costae* (Scheele) Zahn in Engler, Pflanzenz. 79: 998 (1922)]; *H. hecatadenum* (Arv.-Touv. & Gaut., Hieracioth. 5: Hisp. N° 61 (1898) [in sched.] [≡ *H. patens* subsp. *hecatadenum* (Arv.-Touv. & Gaut.) Greuter in Willdenowia 37: 169 (2007)]; *H. praerectum* Arv.-Touv. & Gaut. Hieracioth. 2: Hisp. n° 36 (1897) [in sched.] [≡ *H. patens* subsp. *praerectum* (Arv.-Touv. & Gaut.) Greuter, Med-Checkl. 2: 409 (2008); *H. rectum* subsp. *praerectum* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 79: 1001 (1922)]; *H. pseuderiophorum* Loret & Timb.-Lagr. in Bull. Soc. Bot. France 5: 616 (1858) [≡ *H. patens* subsp. *pseudederiophorum* (Loret & Timb.-Lagr.) Greuter in Willdenowia 37: 169 (2007)].

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

= *H. scaposum* Arv.-Touv. ex Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 330 (1894)

This species seems intermediate between *H. argyreum* and *H. hostile* (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. *pseudoandurensis* 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. Taschenb. 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).

Hieracium pinicola Arv.-Touv. & Gaut., Hieracioth. 20: Hisp. No. 416-417 (1908) [in sched.]
See comments under *H. spectandum*

Hieracium planchonianum Timb.-Lagr. & Loret in Bull. Soc. Bot. France 5: 508 (1859)

This species is morphologically intermediate between *H. bifidum* and *H. glaucinum* (MATEO, 2016b). *H. planchonianum*

is endemic to southern France and northeastern Iberian Peninsula (TISON & al., 2014). In our area this taxon was reported from Pyrenees (Boumort massif, Serra de Cadí and Estany de la Pera) (BOLÒS & VIGO, 1996, sub *H. atropictum*, MATEO, 2005; SÁEZ & al., 2010, sub *H. atropictum*).

The following names should be included within the synonymy of *H. planchonianum* (MATEO, 2016b): *H. atropictum* Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 51: lxxvii (1904); *H. incisoides* Arv.-Touv. & Gaut., Hieracioth. 2: Gall. n° 84-85 (1897) [in sched.] [= *H. praecox* subsp. *incisoides* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 242 (1921); = *H. glaucinum* subsp. *incisoides* (Zahn) O. Bolòs & Vigo, Fl. Països Catalans 3: 1054 (1996)]; *H. sagittibifidum* Arv.-Touv. & Gaut., Hieracioth. 18: Gall. n° 1479-1481 (1906) [in sched.].

Hieracium prenanthoides Vill., Prosp. Hist. Pl. Dauphiné: 35 (1779)

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 Andorran (Pessons-Mont Malús, 2500-2700 m) 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 Catalanidic Mountains where suitable stations are located.

Hieracium pseudocerinth (Gaudin) W.D. J. Koch, Taschenb. Deut. Schweiz. Fl.: 334 (1843)
 = *H. amplexicaule* subsp. *pseudocerinth* Gaudin, Fl. Helv. 5: 112 (1829)

This species was regarded as intermediate between *H. amplexicaule* and *H. lawsonii* (SELL & WEST, 1976; BOLÒS & 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. pseudocerinth* (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. pseudocerinth* subsp. *calocerinth* (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*).

Hieracium pseudoloscosianum Mateo in Fl. Montiber. 26: 64 (2004)

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).

Hieracium pulmonarioides Vill., Prosp. Hist. Pl. Dauphiné: 36 (1779)
 = *H. amplexicaule* subsp. *pulmonarioides* (Vill.) Ces. in Cattaneo, Notizie Nat. Civ. Lombardia I: 304 (1844)

This species includes morphologically intermediate plants between *H. amplexi-*

caule 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) recongized *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 Catalanidic 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. neocerinth* 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) [= *H. phlomoides* subsp. *bowlesianum* (Arv.-Touv. & Gaut.) Greuter, Med-Checkl. 2: 410 (2008)] was included within the synonymy of *H. purpurascens* (MATEO, 2016b). Moreover *H. berganum* Arv.-Touv. and *H. corrisifolium* Arv.-Touv. Arv.-Touv., Hier. Gall. Hisp. Cat.: 185 (1913) [= *H. candidum* subsp. *corrosifolium* (Arv.-Touv.) Zahn in Engler, Pflanzenr. 75: 147 (1921)] should also be included within the synonymy of *H. purpurascens*.

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 Catalanidic 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.

Hieracium queraltense de Retz in Bull. Soc. Bot. France 125: 211 (1978)

This species includes intermediate populations between *H. recoderi* and *H. neocerinthae*, 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. Hieraciath. 12: Hisp. n° 166-167 (1901) [in sched.]
See comments under *H. olivaceum*.

Hieracium racemosum Willd., Sp. Pl. 3: 1588 (1803)
See comments under *H. niveobarbatoides*.

Hieracium ramondii Griseb. in Abh. Königl. Ges. Wiss. Göttingen 5: 100 (1853)

This species is close to *H. gymnocerinthae*. Some subspecies recognized by BOLÒS & VIGO (1996) within *H. ramondii* have been transferred to other species of the genus (see comments under *H. cerinthoides*). *H. ramondii* is endemic to the Cantabrian range and Pyrenees. In our area principal populations are found in central

Pyrenees (Vall d'Aran, Pallars Jussà, Pallars Sobirà and Alta Ribagorça), growing mainly on limestone rocks. The presence of *H. ramondii* in northern Catalanidic Mountains (Guilleries) is unclear [cf. BOLÒS & VIGO, 1996, sub *H. ramondii* subsp. *trichocerinthae* (Arv.-Touv.) Zahn].

The following names were included within the synonymy of *H. ramondii* (see MATEO, 2016b, 2016b): *H. chloroides* Arv.-Touv. & Gaut., Hieraciath. 17: Gall. n° 1421 (1906) [in sched.] It was recognized at subspecific level by ZAHN (1921-23) [= *H. ramondii* subsp. *chloroides* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanze. 75: 165 (1921)], BOLÒS & VIGO (1996) and GREUTER (2008) [*H. cerinthoides* subsp. *chloroides* (Arv.-Touv. & Gaut.) Greuter, Med-Checkl. 2: 281 (2008)]. In our area it was reported from central Pre-Pyrenees (Serra del Boumort, 1700-1900 m).

Hieracium ramosissimum Schleich. ex Hegetschw. in Beitr. Krit. Aufz. Schweizerpfl.: 365 (1831)
= *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. ramosissimum* (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. ramosissimum* (in strict sense) was reported from central and eastern Pyrenees, Olositanic territory and northern Catalanidic Mountains (Guilleries), 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. ramosissimum* 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 BOLÒS & VIGO, 1996). According to BOLÒS & 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 (BOLÒS & 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)

≡ *H. glaucinum* subsp. *recensitum* (Boreau) Gottschl. in Bull. Soc. Échange Pl. Vasc. Eur. Occid. Bassin Médit. 24: 69 (1993)

This species is intermediate between *H. bifidum* and *H. murorum* (MATEO, 2007a). It is endemic to western Europe (GREUTER, 2008). It was reported from central Catalanidic Mountains (Muntanyes de Prades) by BOLÒS & VIGO (1996), whereas MATEO (2007a) listed it for Barcelona and Girona Provinces. We provide here some references based on herbarium specimens (VAL) that expand its distribution area: "Girona: La Molina, estaciones de esquí, 31TDG18, 1800, 23-VII-1994, *G. Mateo*; Lleida: Tuixent, hacia Gósol, 31TCG 87, 1800, 23-VII-2006, *Mateo & Rosselló*; Àreu, la Vall Ferrera, 31TCC6620, 1620, 25-VII-2012, *Mateo, Rosselló, Sáez & del Egidó*; La Seu d'Urgell, hacia Sort, N Rubió, 31TCG 68, 1740 m, 4-VII-1991, *Nydegger*; Gósol, 31TCG87, 27-VII-1994, *G. Mateo*. Tarragona: Serra del Montsant, obac, 31TCF27, 13-VI-1982, *Aguilella, Boisset & García-Fayos*".

Hieracium recoderi de Retz in Bull. Soc. Bot. France 125(3-4): 210 (1978)

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).

Hieracium rhomboidale Lapeyr. in Hist. & Mém. Acad. Roy. Sci. Toulouse 1: 215 (1782)

See comments under *H. cerinthoides*.

Hieracium richertianum Arv.-Touv. & Gaut., Hieraciath. 12: Gall. n° 752 (1901) [in sched.]

≡ *H. sonchoides* subsp. *richertianum* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 75: 176 (1921)

This species, which was described from eastern French Pyrenees, is morphologically intermediate between *H. prenanthoides* and *H. recoderi* (MATEO, 2016b). Although this species was not reported from Catalonia, its presence in central and eastern Pre-Pyrenees is likely.

Hieracium rupicaprinum Arv.-Touv. & Gaut., Hieraciath. 6: Hisp. N° 69-73 (1899) [in sched.]

See comments under *H. cryptanthum*.

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

See comments under *H. cordatum*.

Hieracium rupivivum Sudre in Buttl. Acad. Int. Géogr. Bot. 27: 115 (1917)

≡ *H. lawsonii* subsp. *floccirumum* Zahn in Engler, Pflanz. 75: 150 (1921)

This species occupies an intermediate position between *H. hastile* and *H. lawsonii*. This taxon is indicated for GREUTER (2008) listed from France, Spain and Morocco, although its presence in northern Africa should be verified. In our area BOLÒS & VIGO (1996, sub *H. lawsonii* subsp. *floccirumum* Zahn) reported this taxon from Pyrenees (Vall d'Aran, Pallars Jussà, la Noguera and Serra de Cadí) where usually grows on limestone rocks.

Hieracium sabaudum L., Sp. Pl.: 804 (1753)

This eurosiberian species is widespread in Pyrenees and northern to central Catalanidic Mountains (BOLÒS & VIGO,

1996). Its morphological variability in our area has not been studied in detail. Several subspecies were recognized (cf. BOLÒS & 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, roquedos 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 BOLÒS & VIGO, 1996). *H. saxifragum* is an eurosiberian species which occurs in central Pyrenees (Alta Ribagorça, Pallars Sobirà and Boumort massif) and Olositanic 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 BOLÒS & 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 Catalanidic Mountains (BOLÒS & 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 BOLÒS & VIGO (1996) and GREUTER (2008) for information about its subspecies.

Hieracium serdanyolae (Zahn) Mateo in Fl. Montiber. 38: 57 (2008)

≡ *H. tephrocerinthe* subsp. *serdanyolae* Zahn in Engler, Pflanzenz. 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/neoecerinthe*), 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 central Catalanidic Mountains (Baix Camp) (BOLÒS & VIGO, 1996) requires confirmation.

Hieracium sericifolium Arv.-Touv. & Gaut. in Bull. Herb. Boissier 5: 720 (1897)

See comments under *H. neoecerinthe*.

Hieracium serracadiense Mateo in Fl. Montiber. 60: 119 (2015)

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. neoecerinthe*. It is endemic to Pyrenees and nearby mountain areas. *H. solidagineum* is widespread in northern Catalonia, but

rare in central and southern Catalanidic 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 GREUTER (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.

The following names are included within the synonymy of *H. solidagineum*: *H. heterocerinthae* Arv.-Touv. & Gaut., Hieracioth. 12: Hisp. n° 176 (1901), in sched. [= *H. sonchoides* subsp. *heterocerinthae* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 75: 176 (1921)]; *H. malacotrichum* Arv.-Touv. & Gaut., Hieracioth. 2: Gall. n° 118 (1898), in sched. [= *H. sonchoides* subsp. *malacotrichellum* Zahn in Engler, Pflanzenz. 75: 175 (1921)]; *H. sonchoides* subsp. *malacotrichodes* Zahn in Engler, Pflanzenz. 75: 175 (1921)]; *H. solidagineum* subsp. *neosonchoides* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 75: 178 (1921) [= *H. neosonchoides* Arv.-Touv. & Gaut., Hieracioth. 20: n° 390-391 (1908), in sched.]; *H. tarraconense* Font Quer in Treb. Inst. Catalana Hist. Nat. 1: 26 (1916).

H. oleovirens Arv.-Touv., Monogr. Pilosella & Hieracium, Suppl.: 9 (1876) [= *H. sonchoides* subsp. *oleovirens* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenz. 82: 1645 (1923)] is also probably conspecific with *H. olivaceum*.

Hieracium sonchoides Arv.-Touv., Monogr. Pilosella & Hieracium, Suppl.: 8 (1876)
= *H. mougeotii* subsp. *sonchoides* (Arv.-Touv.) Rouy, Fl. France 9: 307 (1905)

The presence in the studied area of typical *H. sonchoides* is unclear. Reports of this species are probably rereferable to other species, in-

cluding *H. solidagineum*. See also TISON & al. (2014: 1687).

Hieracium souliei Arv.-Touv. & Gaut., Hieracioth. 20: Gall. n° 1587- 1588, Hisp. n° 369-370 (1908) [in sched.]
See comments under *H. lamprophyllum*.

Hieracium spathulatum Scheele in Linnaea 32: 666 (1864)
= *H. laniferum* subsp. *spathulatum* (Scheele) Zahn in Engler, Pflanzenz. 75: 145 (1921)

This species is morphologically close to *H. laniferum* and *H. neocerinthae* (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, Pflanzenz. 75: 145 (1921)] (reported from central Pre-Pyrenees, and central-southern Catalanidic 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 Catalanidic 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. conocerinthae* Arv.-Touv. & Gaut., Hieracioth. 20 Hisp. No. 377-381 (1908) [in sched.]

= *H. pinicola* Arv.-Touv. & Gaut., Hieracioth. 20: Hisp. No. 416-417 (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. chamaeadenium* subsp. *stenanthelum* (Zahn) Zahn in Engler, Pflanzenr. 82: 1676 (1923)

- *H. lateriflorum* Arv.-Touv., Hier. Gall. Hisp. Cat.: 298 (1913), nom. illeg., non Norrl.

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.

H. stenanthelum is somewhat related to *H. chamaeadenium* Oborny & Zahn in Verh. Naturf. Vereins Brünn 44: 68 (1905) (*H. racemosum* > *H. schmidtii*, cf. ZAHN, 1921-23) which is endemic to the Czech Republic (GREUTER, 2008).

Hieracium subandurens (Zahn) Mateo in Fl. Montiber. 38: 58 (2008)

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

Hieracium subbellidifolium (Zahn) Mateo in Fl. Montiber. 31: 59 (2005)

≡ *H. bellidifolium* Scheele, nom. illeg., non Froel.; *H. elisaeum* subsp. *subbellidifolium* Zahn in Engler, Pflanzenr. 72: 155 (1921)

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

Hieracium subflocciferum (Zahn) Mateo in Fl. Montiber. 38: 59 (2008)

See comments under *H. flocciferum*.

Hieracium subgouanii (Zahn) Mateo in Fl. Montib. 38: 59 (2008)

≡ *H. cerinthoides* subsp. *subgouanii* 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) (BOLÒS & 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.

Hieracium subgracilipes (Zahn) P.D. Sell & C. West in Bot. J. Linn. 71: 267 (1976)

≡ *H. laevigatum* subsp. *subgracilipes* 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)”.

Hieracium subtilissimum Zahn in Koch, Syn. Deut. Schweiz. Fl. ed. 3: 1876 (1901)

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.

Hieracium tossalense Mateo in Fl. Montiber. 51: 39 (2012)

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

Hieracium tuixentianum Mateo in Fl. Montiber. 62: 7 (2016)

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. amplexicaule* Mateo & Egido (*amplexicaule/schmidtii*). 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 central Pyrenees, Olositanic 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. neocerinthae*.

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 said 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 Catalanidic Mountains): “Massís 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 (ROMO, 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. *ortegianum*) are restricted to eastern Pyrenees (ARVET-TOUVET, 1913; BOLÒS & VIGO, 1996; SÁEZ & al., 2010).

Hieracium violettianum Jeanb. & Timb.-

Lagr. in Bull. Soc. Sci. Phys. Nat. Toulouse 3: 586 (1879)

= *H. lantoscana* Burnat & Gremlí, Cat. Hierac. Alp. Mar.: 22 (1883); *H. pallidiflorum* subsp. *lantoscana* (Burnat & Gremlí) 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. *lantoscana* (Burnat & Gremlí) 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. neocerinthae*. 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. sabaudum* subsp. *virgultorum* (Jord.) Zahn in Schinz & Keller, Fl. Schweiz, ed. 2, 2: 344 (1905)

= *H. vasconicum* Martrin-Donos, Fl. Tam.: 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.

BOLÒS & VIGO (1996) reported for our area *H. laurinum* subsp. *amygdalinum* (Arv.-Touv. & Gaut.) Zahn in Engler, Pflanzenr. 75: 927 (1922) [= *H. amygdalinum* Arv.-Touv. & Gaut. in Bull. Soc. Bot. France 41: 371 (1894); *H. vasconicum* subsp. *amygdalinum* (Arv.-Touv. & Gaut.) Greuter in Willdenowia 37: 180 (2008)].

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*.

Hieracium webbianum Arv.-Touv. & Gaut., Hieraciath. 16: Hisp. n° 236 (1903) [in sched.]
See comments under *H. olivaceum*.

REFERENCES

- ARVET-TOUVET, C. (1913) *Hieraciorum praesertim Galliae et Hispaniae Catalogus systematicus*. París, Francia.
- BOLÒS, O. & J. VIGO (1996) *Flora dels Països Catalans*. Vol. 3. Ed. Barcino. Barcelona.
- CASTRO, M., G. MATEO & J.A. ROSSELLÓ (2007) Chromosome numbers in *Hieracium* and *Pilosella* species (Asteraceae) from the Iberian Peninsula and the Balearic Islands. *Bot. J. Linn. Soc.* 153: 311-320.
- CHRTEK, J., P. MRÁZ & M. SEVERA (2004) Chromosome numbers in selected species of *Hieracium* s. str. (*Hieracium* subgen. *Hieracium*) in the Western Carpathians. *Preslia* 76: 119-139.
- CHRHEK, J., P. MRÁZ, J. ZAHRADNÍČEK, G. MATEO & Z. SZELAG (2007) Chromosome numbers and DNA polidy levels of selected species of *Hieracium* s. str. (Asteraceae). *Folia Geobot.* 42: 411-430.
- DE RETZ, B. (1978) Contributions à la connaissance de la flore hiéraciologique de la France et de l'Espagne, 5. Taxons nouveaux pour le genre *Hieracium* dans les Pyrénées françaises et en Espagne. *Bull. Soc. Bot. France* 125: 209-218.
- FERRER, P.P., W. GREUTER, F. del EGIDO & G. MATEO (2015) Typification of the Linnaean name *Hieracium cerinthoides* (Compositae). *Willdenowia* 45: 385-389.
- FONT CASTELL, X. (2016) *Mòdul Flora i Vegetació. Banc de Dades de Biodiversitat de Catalunya*. Generalitat de Catalunya i Universitat de Barcelona. <http://biodiver.bio.ub.es/biocat/homepage.html>
- FONT QUER, P. (1950) *Flórmula de Cardó*. Barcelona.
- GREUTER, W. (2007) *Hieracium* (pp. 143-181) in: W. Greuter & E. von Raab-Straube (ed.), Euro+Med Notulae, 3. *Willdenowia* 37: 139-189.
- GREUTER, W. (2008) *Hieracium* L. In W. Greuter & E. von Raab-Straube (eds.). *Med-checklist*, vol. 2 Dicotyledones (Compositae): 242-487. OPTIMA. Ginebra, Suiza.
- LORDA LÓPEZ, M. (2013) *Catálogo florístico de Navarra*. Jolube Consutor Botánico y Editor. Jaca (Huesca).
- MATEO, G. (2004) Aportaciones al conocimiento del género *Hieracium* L. en España, IV. Novedades para Aragón. *Fl. Montib.* 26: 62-67.
- MATEO, G. (2005) Aportaciones al conocimiento del género *Hieracium* L. en España, X. Novedades para el Pirineo Catalán. *Fl. Montib.* 31: 62-69.
- MATEO, G. (2006a) Revisión sintética del género *Hieracium* L. en España, I. Secciones *Amplexicaulia* y *Lanata*. *Fl. Montib.* 34: 10-24.
- MATEO, G. (2006b) Revisión sintética del género *Hieracium* L. en España, II. Sect. *Sabauda*. *Fl. Montib.* 34: 38-49.
- MATEO, G. (2007a) Revisión sintética del género *Hieracium* L. en España, III. Secciones *Oreadea* y *Hieracium*. *Fl. Montib.* 35: 60-76.
- MATEO, G. (2007b) Revisión sintética del género *Hieracium* L. en España, IV. Sect. *Prenanthoidea*, *Glutinosa*, *Barbarta*, *Intybacea*, *Italica* y *Eriophora*. *Fl. Montib.* 37: 47-62.
- MATEO, G. (2008) Revisión sintética del género *Hieracium* L. en España, V. Sect. *Cerinthoidea*. *Fl. Montib.* 38: 25-71.
- MATEO, G. (2012) Aportaciones al conocimiento del género *Hieracium* L. en España, XV. *Fl. Montib.* 51: 33-60.
- MATEO, G. (2013) Aportaciones al conocimiento del género *Hieracium* L. en España, XVI. *Fl. Montib.* 54: 84-105.
- MATEO, G. (2016a) Aportaciones al conocimiento del género *Hieracium* L. en España, XII. *Fl. Montib.* 62: 3-17.
- MATEO, G. (2016b) Sobre las especies iberio-pirenaicas del género *Hieracium* L. distribuidas en la *Hieraciotheca* de Arvet-Touvét y Gautier. *Fl. Montib.* 62: 100-143.
- MATEO, G. & J.A. ALEJANDRE (2006) Novedades y consideraciones sobre el género *Hieracium* L. en la cordillera Cantábrica y áreas periféricas, II. *Fl. Montib.* 34: 28-37.
- MATEO, G. & F. del EGIDO (2014) Aportaciones al conocimiento del género *Hieracium* L. en España, XVII. *Fl. Montib.* 58: 45-56.
- MATEO, G. & F. del EGIDO (2015) Aportaciones al conocimiento del género *Hieracium* L. en España, XX. *Fl. Montib.* 60: 116-126.
- MATEO, G., F. del EGIDO & F. GÓMIZ (2016) Aportaciones al conocimiento del gé-

- nero *Hieracium* L. en España, XXIII. *Fl. Montib.* 63: 34-63.
- MATEO, G., & L. SÁEZ (2016) Sobre una nueva especie catalana del género *Hieracium* L. (Asteraceae). *Fl. Montib.* 63: 3-7.
- MERXMÜLLER, H. (1975) Diploide Hieracien. *Anales Inst. Bot. Cavanilles* 32: 189-196.
- NINOT, J.M., E. BATRIU, A. MERCADÉ, A. PÉREZ-HAASE, E. CARRILLO, S. MARCH & A. SALVAT (2010) Flora vascular de les Planes de Son i la mata de València». In: J. GERMAIN [cur.]. Els sistemes naturals de les Planes de Son i la mata de València. Barcelona. *Treb. Inst. Catalana Hist. Nat.* 16: 255-325.
- RAAB-STRAUBE E. von & T. RAUS (eds.) (2013) Euro+Med-Checklist Notulæ, 1 [Notulæ ad floram euro-mediterraneam pertinentes 30]. *Willdenowia* 43: 151-164.
- SÁEZ, L., P. AYMERICH & C. BLANCHÉ (2010) *Llibre Vermell de les plantes vasculares endèmiques i amenaçades de Catalunya*. Argania Ed. Barcelona.
- SÁEZ, L. & L. GUÀRDIA VALLE (2003a) *Hieracium queraltense* Retz. In A. Bañares, G. Blanca, J. Güemes, J.C. Moreno & S. Ortiz (eds.) *Atlas y Libro Rojo de la Flora Vascular Amenazada de España*: 296-297. Dirección General de Conservación de la Naturaleza. Madrid.
- SÁEZ, L. & L. GUÀRDIA VALLE (2003b) *Hieracium recoderi* Retz. In A. Bañares, G. Blanca, J. Güemes, J.C. Moreno & S. Ortiz (eds.) *Atlas y Libro Rojo de la Flora Vascular Amenazada de España*: 298-299. Dirección General de Conservación de la Naturaleza. Madrid.
- SCHUHWERK, F. & W. LIPPERT (1998) Chromosomenzahlen von *Hieracium* (Compositae, Lactuceae). Teil 2. *Sendtnera* 5: 269-286.
- SELL P. & G. MURRELL G (2006) *Flora of Great Britain and Ireland*, vol. 4. Cambridge University Press. Reino Unido.
- SELL, P. & C. WEST (2006) *Flora Europaea*. Vol. 4. Cambridge University Press.
- STROTHER, J.L. (2006) *Hieracium* L. in *Flora of North America*. Vol. 19: Magnoliophyta: Asteridae: Asteraceae, part 1: 278-294. Oxford University Press. Nueva York, EE.UU.
- TISON, J.M., P. JAUNZIEN. & H. MICHAUD (2014) *Flore de la France méditerranéenne continentale*. Conservatoire Botanique National Méditerranéen de Porquerolles. Naturalia Publications. Turriers, Francia.
- VIGO, J. (1983) Flora de la vall de Ribes. I. Generalitats. Catàleg florístic. *Acta Bot. Barcinon.* 35: 1-793.
- VIGO, J., I. SORIANO, J. CARRERAS, P. AYMERICH, E. CARRILLO, X. FONT, R.M. MASALLES & J.M. NINOT (2003) Flora del Parc Natural del Cadí-Moixeró i de les serres veïnes. *Monografies del Museu de Ciències Naturals*, 1. Barcelona.
- ZAHN, K.H. (1921-23) In A. Engler (ed.): *Das Pflanzenreich*. Compositae-Hieracium. [Heft 79] IV. 280. Leipzig, Alemania.

(Recibido el 8-IX-2016)
(Aceptado el 29-IX-2016)



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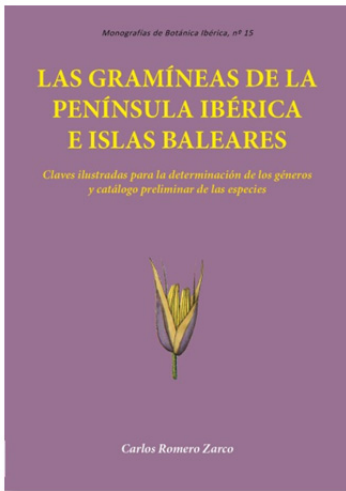
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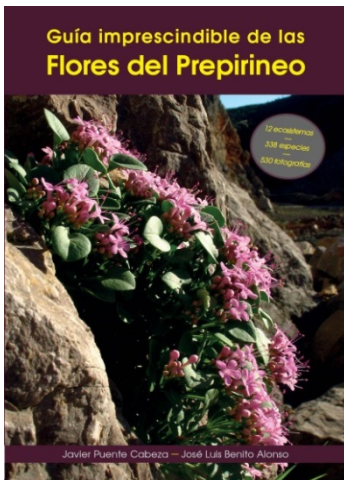
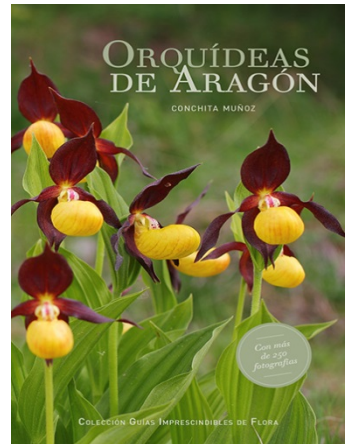
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