Taraxacum sect. *Erythrosperma* in Moravia (Czech Republic): Taxonomic notes and the distribution of previously described species

Pampelišky ze sekce *Erythrosperma* na Moravě: taxonomické poznámky a rozšíření rozlišených druhů

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Dandelions (*Taraxacum*) of the section *Erythrosperma* were studied in Moravia, Czech Republic, where both sexual diploid and apomictic polyploid species occur. Diploid species *T. erythrospermum* grows in the warmest part of southern Moravia and is confined to natural dry grasslands, whereas some apomictic species have ranges extending up to the submontane regions and prefer ruderal habits. Altogether, 21 apomictic types were found repeatedly but only seven were identified as previously described species: *T. arcuatum*, *T. danubium*, *T. lacistophylloides*, *T. parnassicum*, *T. plumbeum*, *T. proximum* and *T. scanicum*. Descriptions, notes on variation and distribution in Moravia, dot maps and pictures are given for eight species.

Keywords: *Asteraceae*, Czech Republic, dandelions, geographical distribution, Moravia, *Taraxacum* sect. *Erythrosperma*

Introduction

Taraxacum Wigg. is a large genus consisting of 46 sections (Kirschner & Štěpánek 1997a) distributed throughout the temperate regions of the world. In the Czech Republic, the genus is represented by 8–10 sections. *Taraxacum* sect. *Erythrosperma* (H. Lindb.) Dahlst. is a derived section (Wittzell 1999) and consists of at least one diploid sexual species and approximately 150 polyploid apomictic microspecies. The group was initially considered to be a single species, *T. laevigatum* DC. (or *T. corniculatum* Kit. or *T. erythrospermum* Andrz.). In the first study of this section from the former Czechoslovakia, Richards (1970) mentioned nine species from Slovakia (mainly W European taxa) and described two new species (*T. danubium* A. J. Richards and *T. punctatum* A. J. Richards). Doll (1973) in his revision of European erythrosperms mentioned 28 species from the former Czechoslovakia, but most of them erroneously. Study of the herbarium material revised by Doll in PR, PRC and BRA revealed that only six of the species were collected in Moravia: *T. brachyglossum* (Dahlst.) Raunk., *T. austriacum* Soest, *T. silesiacum* G. E. Hagl., *T. scanicum* Dahlst., *T. lacistophyllum* (Dahlst.) Raunk., *T. plumbeum* Dahlst. and *T. rubicundum* (Dahlst.) Dahlst. With the exception of *T. silesiacum* (= *T. parnassicum* Dahlst.); all of them were erroneously determined. Both Richards and Doll did not consider diploid sexual species as one species with a large morphological variation. They erroneously determined some morphotypes of *T. erythrospermum* as W European or Nordic taxa.

An intensive and critical study of Czech and Slovak dandelions started in the 1980s. It was initiated by J. Kirschner and J. Štěpánek, who were later joined by B. Trávníček. They mention five taxa from Moravia, i.e. *T. parnassicum*, *T. erythrospermum*, *T. danubium*, *T. scanicum* and *T. lacistophylloides* Dahlst. (Trávníček & Trávníčková 1994, Kirschner & Štěpánek 1995, 1997b, Trávníček & Hájek 1996, Trávníček et al. 2000), which were all confirmed in the present study.

The aim of this study was to carry out a revision of the microspecies occurring in Moravia, delimitate the range of the Pannonian area in SW Moravia where the diploid species occurs and find characteristics for identifying the apomictic microspecies and *T. erythrospermum*.

Taraxacum as a taxonomical concept

The taxonomy of dandelions is difficult because they have three types of reproduction: allogamy, autogamy and apomixis. Usually advanced sections contain one or a few (or none) sexual species and many apomictic microspecies (Kirschner & Štěpánek 1994, Wittzell 1999). Sexual species are mostly diploids, rarely tetraploids (Kirschner & Štěpánek 1994) and have a broad spectrum of morphological variation. Some of the forms resemble apomictic microspecies and lead to erroneous determinations. The distribution of diploids in Europe is restricted to warmer areas than that of polyploids (den Nijs & van der Hulst 1988, den Nijs et al. 1990, den Nijs 1997, Kirschner & Štěpánek 1998a, Uhlemann 2001, van Dijk 2003). It seems that autogamy is quite rare within the genus. It is known to be present only in underived groups (viz Kirschner et al. 1994).

Apomixis in *Taraxacum* is based on meiotic diplospory (Asker & Jerling 1992, van Baarlen et al. 2000). Apomictic species posses fixed morphological characters because they reproduce clonally. Therefore, specific characteristics are very stable within populations and influenced only by ecological conditions. This morphological plasticity can be larger than specific differences between two closely related microspecies (e.g. in the *T. scanicum* group) and make determination even more difficult. It has been revealed, using several different molecular techniques, that within purely apomictic dandelion populations or morphologically similar types (of section *Naevosa* M. P. Christ.) clones show high genetic diversity, and somatic mutations can play an important role in their population biology (van der Hulst et al. 2000, 2003, Mes et al. 2002).

Although apomixis is considered to be obligate in *Taraxacum,* sometimes it fails. Apomicts can produce fertile pollen and thus may cross with sexual diploids (Morita et al. 1990). Such hybridization produces new lineages (Menken et al. 1995, Tas & van Dijk 1999, van Dijk et al. 1999 etc.). Rarely do apomicts produce fertile ovules (reduced egg cells) (van Baarlen et al. 2000). Hybridization occurs in the field in mixed populations of sexuals and apomicts in Austria and the Netherlands (Menken et al. 1995, den Nijs 1997, M. H. Verduijn unpubl.). Some indeterminable plants and populations occur in Moravia. Besides the sexual species *T. erythrospermum* and several repeatedly found apomictic types, there are several unique apomicts and some populations of plants with unique character combination in Moravia. They may have originated from recent hybridization, but this needs to be confirmed. These types make determination of apomictic microspecies in the Pannonian Basin

extremely difficult. Therefore it is advisable to study large population samples and be sure that the specific characteristics of plants match those of particular species.

Material and methods

Morphology and plasticity of living plants were studied at 246 localities in Moravia. Several selected samples (poorly developed plants and taxonomically problematic ones) were cultivated in the garden of the Department of Botany, University of Palacký in Olomouc-Holice. Altogether 146 plants were planted in small pots in potting soil with a little admixture of sand.

Species distribution was investigated by studying herbarium specimens from the following public collections: BRA, BRNM, BRNU (incl. collection of V. Grulich), FMM, HR, CHOM, MJ, MP, NJM, OL (incl. collection of B. Trávníček), OLM, PR, PRA (collection of J. Kirschner and J. Štěpánek), PRC, ROZ, SAV, SLO (abbreviations follow Holmgren et al. 1990) and from the private collections of J. Danihelka (Brno), Z. Kaplan (Průhonice) and J. W. Jongepier (Veselí nad Moravou). Nomenclature of Nordic dandelions follows Lundevall & Øllgaard (1999). Names of units of the phytogeographic division follow Skalický (1988).

Chromosome numbers were counted in somatic mitoses from the root tips of seedlings (ca 1 week old). Root tips were pre-treated with a saturated solution of p-dichlorbenzen (3 hrs at room temperature), fixed in cold acetic acid-ethanol solution (3:1) overnight and stored in 70% ethanol. The Feulgen method was used for chromosome staining. After a short maceration in HCl the root tips were stained with Schiff's reagent for 1 hr at room temperature. Only temporary slides were made. Flow cytometry analysis follows Doležel et al. (1989). Approximately 1 mg of leaf tissue was used. Leaves were cut with a razor blade and mixed with Otto I buffer (containing DAPI stain). Samples were filtered through 50-μm nylon filters and mixed with Otto II buffer. Samples were analyzed with a PAS flow cytometer (Partec Gmbh, Münster, D).

List of recognized taxa

During the field study (1998–2002) 22 species and repeatedly found types were recognized in Moravia (Vašut 2001). In addition, many populations of plants with unique character combinations were documented; these may represent species with as yet unknown distribution areas or "young" species with small areas, the results of a recent hybridization. Some of these populations contained many individuals. These unique types usually occur in populations with other dandelion species, that maybe common or rare. These types may be found again in W Pannonia or in the Carpathians. This work deals with eight species, which were identified as previously described species. Four new species will be described elsewhere (J. Kirschner et al. in prep., R. J. Vašut & B. Trávníček in prep., M. Schmid et al. in prep.). The eleven remaining undescribed species and unclear types, and some unique populations require further study.

Taraxacum erythrospermum Andrz. in Besser, Enum. Pl. Volhyn. 75. 1822.

Typus: Lectotype not yet selected. Andrzejewski's name unquestionably refers to this diploid species as shown by pollen grain size in flowers of the plants from his original collection in K (J. Kirschner pers. comm.).

Synonyms: *Taraxacum austriacum* Soest, Proc. Koninkl. Nederl. Akad. Wetensch., ser C, 69: 434. 1966. – ? *Taraxacum punctatum* A. J. Richards, Acta Fac. Rer. Nat. Univ. Comen., ser. bot., 18: 111. 1970. – ? *Taraxacum austriacum* var. *punctatum* (A. J. Richards) Doll, Feddes Repert., 84: 22. 1973. – ? *Taraxacum slovacum* Klášt., Stud. Bot. Čechosl. 1: 8. 1938.

Exsiccates: *Taraxaca* Exs., No. 177–180.

Description: Small plants, usually only up to 10 cm tall, usually with deeply dissected and laciniate leaves and with a tunic of withered leaves at the base of a rich leaf rosette (Fig. 1). Leaves greenish or greyish-green, glabrous, 3–10 (–15) cm long, (0.5–) 0.7–1.5 (–2.0) cm wide; lateral lobes usually 3–5, very variable in size and shape (Fig. 2), but usually narrow, often linear, obtuse at apex and denticulate; terminal lobe regular and triangular (outer leaves) to trilobate and linear (inner leaves). Petiole narrow, greenish to violet, sometimes lanate at the base. Scapes many (up to 30), usually equalling leaves, base gradually narrowed (V-like shaped); outer bracts tightly to not tightly adpressed, rarely suberect, usually (7–) 9–11, narrowly lanceolate to ovate, (0.7–) 1.0–2.0 × (3.0–) 3.5–6.0 (–7.0) mm, greyish-green, occasionally reddish, with a hyaline margin, up to 0.5 mm wide, corniculate at the apex; capitulum concave (styles exserted), pale yellow, small, 10–15 mm in diameter; outer ligules striped pale greyish-yellow to reddish brown; styles usually yellow or greenish-yellow, pollen present, pollen grains ca 27 μm in diameter, not varying in size. Achenes red, small, 2.5–3.0 mm long, achene body densely spinulose above; cone 0.6–0.8 mm long.

Karyology: 2n = 2x = 16 (SW Moravia, Miroslav, Markův kopec hill; S Moravia, Mikulov, Svatý kopeček hill); 2n ~ 2x (measured by flow cytometry: SW Moravia, Miroslav, Markův kopec hill; SW Moravia, Bohutice, U Michálka; S Moravia, Mikulov, Svatý kopeček hill; S Moravia, Mikulov, Kočičí skála rock; S Moravia, Pavlov, Děvín hill; S Moravia, Brno, Hády hill).

Taraxacum erythrospermum is a sexual diploid species. It shows a broad spectrum of morphological variation with each plant in a population different from the others. It is similar to some apomictic microspecies, especially *T. arcuatum* (Tausch) Dumort., *T. danubium*, *T. cristatum* Kirschner et al. ined. and *T. parnassicum*. The leaf shape is very variable: from deeply dissected, laciniate leaves with denticulate to filiform-toothed lateral lobes (the most frequent type), to almost regular and only slightly denticulate leaves (Fig. 2). The important characteristic, i.e. the outer bracts are also variable: they are usually adpressed, narrowly lanceolate with a ± 0.3 mm wide hyaline margin, but vary to erect, broadly ovate, with a 0.1–0.5 mm wide hyaline margin. Throughout the range of *T. erythrospermum* a rarely disseminated form with grey achenes named f. *achyrocarpum* (Soest) occurs [≡ *T. austriacum* f. *achyrocarpum* Soest, Proc. Koninkl. Nederl. Akad. Wetensch., ser. C, 69/4: 436. 1966].

T. erythrospermum occurs in W Europe (Iberian Peninsula, S France, Switzerland) and central/eastern Europe (Pannonian Basin, Balkan Peninsula, SW Ukraine – for map see den Nijs 1997). In the Czech Republic, the range is delimited to the NW by a line between the towns Znojmo – Tišnov – Prostějov. Continual distribution does not extend N of the surroundings of the town of Brno. An isolated occurrence is found near Prostějov with

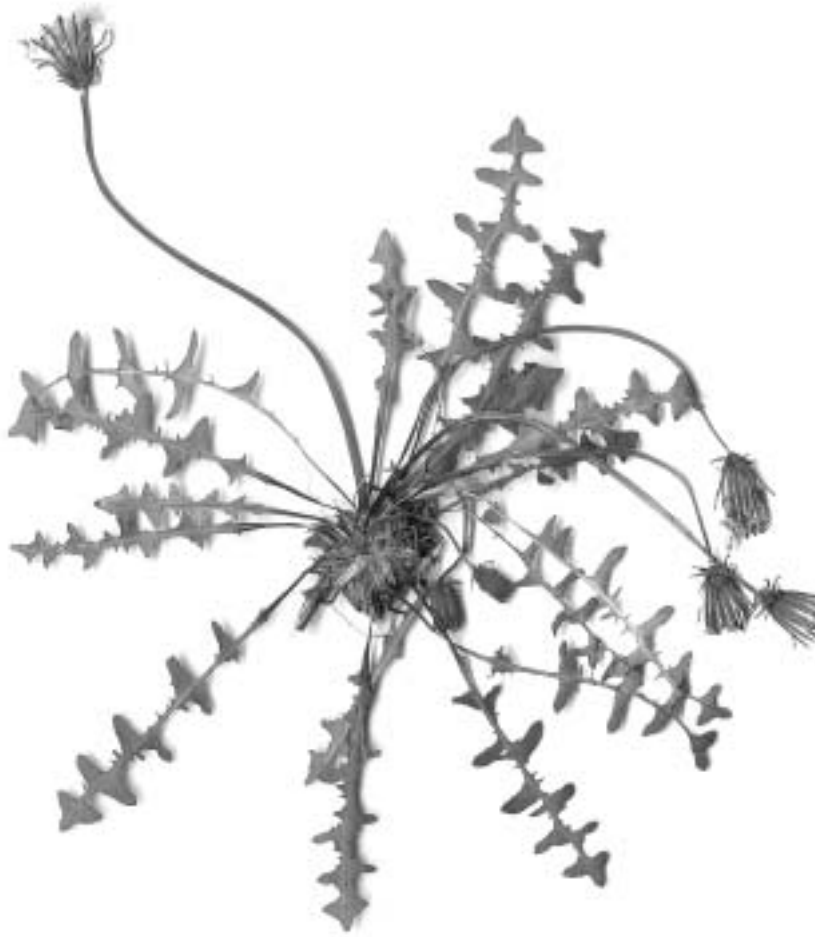

Fig. 1. – *Taraxacum erythrospermum*, habitus – Biskoupky (Vašut 1999 OL).

a few localities around the town of Plumlov. Localities in E Moravia match the distribution of the species in W Slovakia, but most populations in the Moravian Carpathians have become extinct (Fig. 3). *T. erythrospermum* prefers natural dry grasslands (especially *Koelerio-Phleion phleiodis*, *Festucion vallesiacae* or *Alysso alyssoidis-Sedion albi*) or slightly ruderalised dry grasslands (mostly trampled grasslands near pilgrimage sites). The species is most frequent in southernmost Moravia, especially near the town of Znojmo (between Znojmo and Pulkau in Lower Austria) and Mikulov (Pálava hills), where it dominates mixed dandelion populations of section *Erythrosperma*. In contrast, the species is rarely recorded from E Moravia and herbarium specimens are lacking for this region. It is probable that this species grew there, but was uncommon and disappeared with changing agricultural management. The known localities are in the lowlands and hill country belt, rarely in the upper hill country belt; the highest occurrence is on the ridge of Mt Děvín in the Pálava hills, ca 500 m a. s. l.

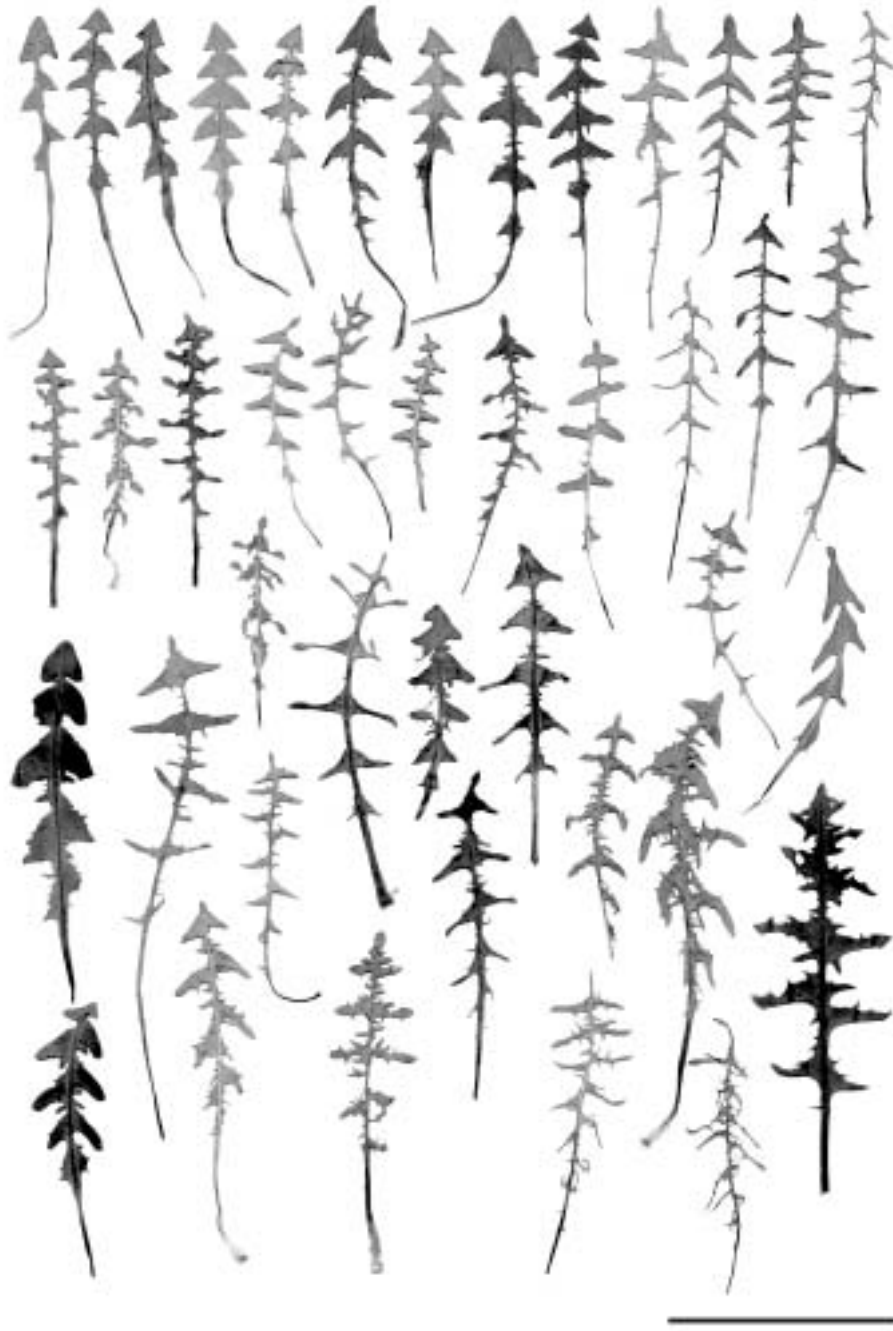

Fig. 2. –Variation in leaf-shape in *Taraxacum erythrospermum* . Leaves are from plants growing in different localities and habitats. Bar = 5 cm.

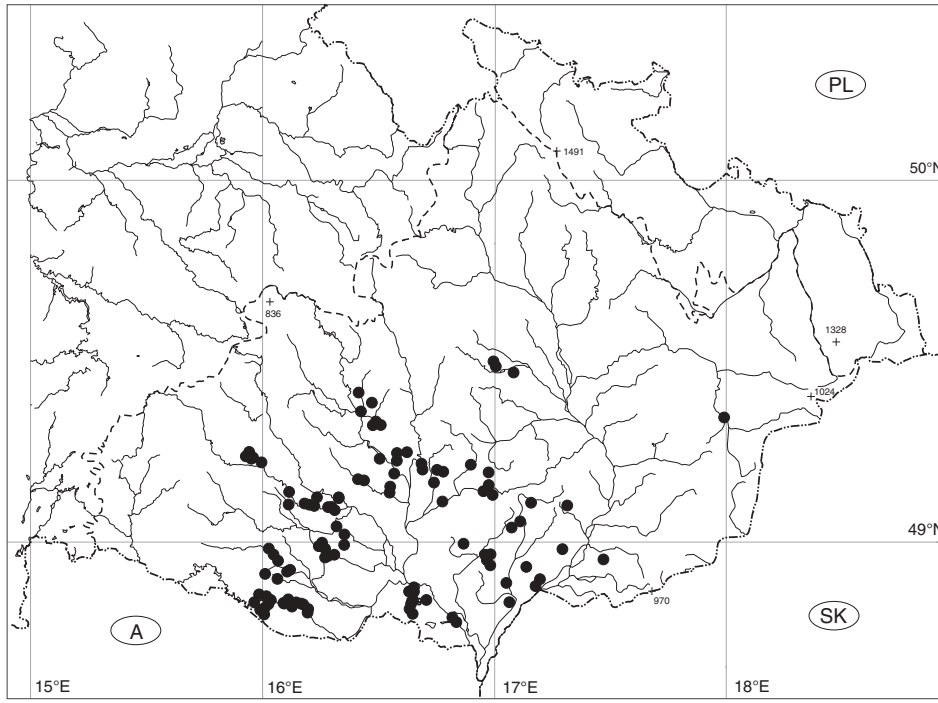

Fig. 3. – Distribution of *Taraxacum erythrospermum* in Moravia.

Taraxacum arcuatum (Tausch) Dumort., Fl. Belg. 61. 1827.

T y p u s : Lectotype from Tausch's original collection in PRC not yet selected.

S y n o n y m : *Leontodon arcuatus* Tausch, Flora, Regenburg, 4: 567. 1821.

D e s c r i p t i o n : Small plants, usually up to 20 cm high, with a tunic of withered leaves at the base of a leaf rosette (Fig. 4). Leaves green (almost sublustrous), glabrous, 5–15 cm long, 1–3 cm wide, very regularly lobed; lateral lobes usually 3–6 (mostly 4), interlobes unblotched with a plicate margin, midrib green (to faintly coloured); lateral lobes 4–7 (mostly 5), opposite (rarely remote), patent or slightly recurved, subacute, with distal margin convex and entire, proximal lobes very rarely denticulate on distal margin and usually with a solitary tooth on the proximal margin; interlobes also frequently with a solitary tooth; terminal lobe triangular or short, trilobate with a short, obtuse tip; petiole narrowly winged, purple. Scapes equal to or longer than leaves, purplish, arachnoid-hairy below capitulum; outer bracts not tightly adpressed to erect, usually 8–11, narrow, lanceolate, 1.0–2.0 × 3.5–5.0 mm, greyish-green, with a narrow hyaline margin (ca 0.1 mm), corniculate; capitulum flat, pale yellow, small, 15–20 mm in diameter; outer ligules with pale greyish-yellow to reddish brown stripes; styles usually yellow or greenish-yellow, pollen present, grains of varying diameter, but the differences are sometimes only slight. Achenes red (reddish-brown), 3.1–3.7 mm; cone 0.7 mm.

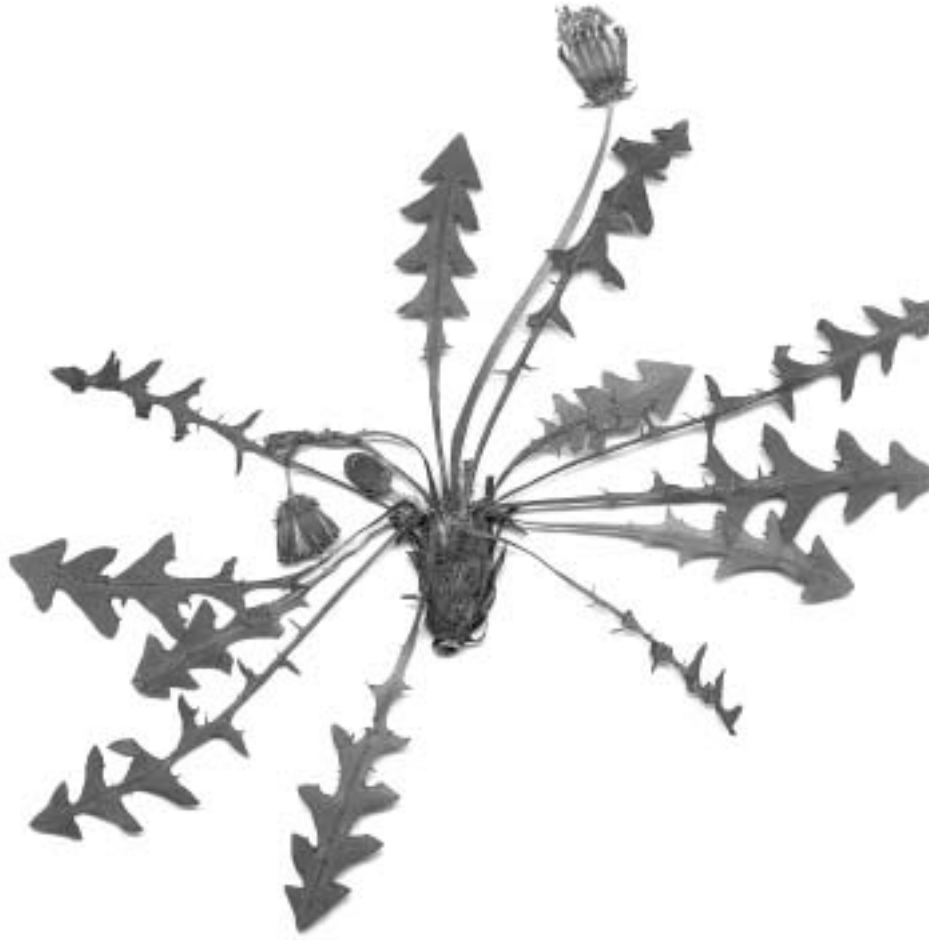

Fig. 4. – *Taraxacum arcuatum* , habitus – Dolní Dunajovice, Liščí kopec (Vašut 2000 OL).

K a r y o l o g y : 2n ~ 3x (measured by flow cytometry: S Moravia, Dunajovické kopce hills, Dolní Dunajovice near Mikulov, Liščí kopec hill).

Taraxacum arcuatum is a distinct species but not easy to determine. It seems to be a close relative of *T. erythrospermum*; both species share some characteristics, e.g. (almost) adpressed outer bracts and a tunic of withered leaves at the base of the leaf rosette. Moreover, some forms (morphotypes) of *T. erythrospermum* are very similar in leaf-shape to *T. arcuatum*. In some cases, the only reliable character is the size of the pollen grains. The anthers (visible on styles) of *T. erythrospermum* invariably carry grains of the same diameter. The anthers of *T. arcuatum* often carry pollen grains of slightly varying diameter, so it is necessary to study many pollen grains from several plants. Another very closely related species is *T. rubicundum*, which is not known from Moravia and rarely occurs in W Bohemia. This species has glabrous scapes below the capitulum, narrow interlobes, outer bracts with a conspicuous hyaline border and a red stripe on the outer ligules.

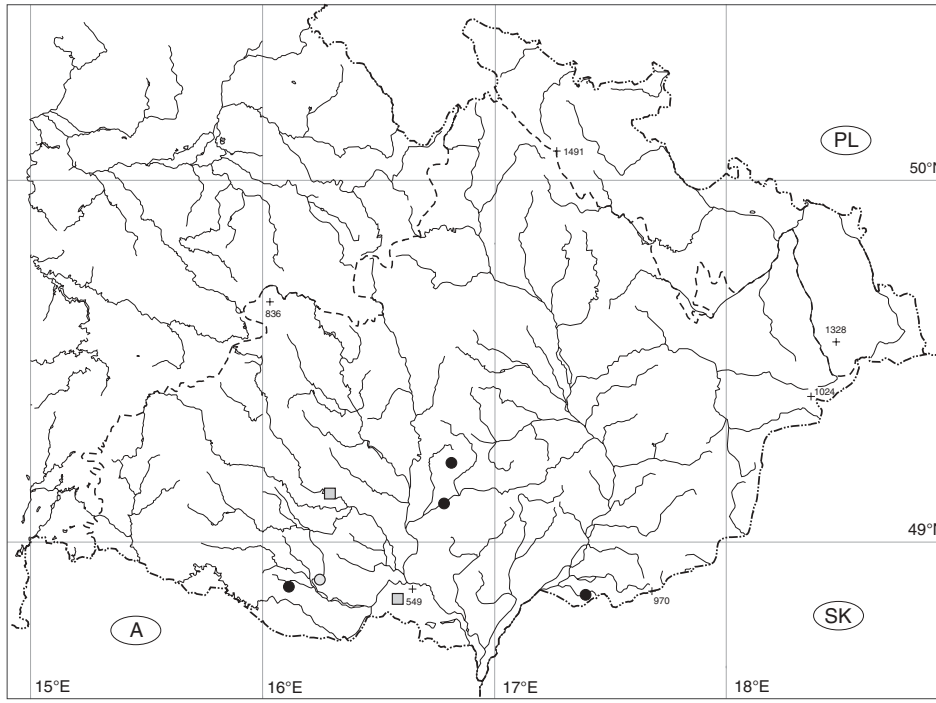

Fig. 5. – Distribution of a) □ *Taraxacum arcuatum*, b) ○ *T. scanicum* and c) ● *T. lacistophylloides* in Moravia.

T. arcuatum is very rare in Moravia, only two sparse populations are known (Fig. 5a). It is plausible that additional localities will be discovered. Some plants with uncertain determination are known from the Pálava hills (herbarium specimens in BRNU). *T. arcuatum* was considered to be an endemic species in the Czech Republic (Kirschner & Štěpánek 1998b) until recently found at several localities in central Slovakia (B. Trávníček & R. J. Vašut, in prep.). *T. arcuatum* is on the Red List of Vascular Plants of the Czech Republic (Holub & Procházka 2000) and classified as a C1 (critically threatened) species, which is in agreement with its known distribution in Moravia.

Taraxacum danubium A. J. Richards, Acta Fac. Rer. Nat. Univ. Comen., ser. bot., 18: 108. 1970.

T y p u s : Slovakia, Devínská Kobyla u Bratislavy 1. 5. 1968 A. J. Richards. – Holotype in OXF.

S y n o n y m : *Taraxacum austriacum* var. *danubium* (A. J. Richards) Doll, Feddes Repert., 84: 21. 1973.

E x s i c c a t e s : *Taraxaca* Exs., No. 400–402, 404.

D e s c r i p t i o n : Small plants, up to 20 cm tall (Fig. 6). Leaves patent, greyish greenish, dull, 5–15 (–20) cm long, 1.5–3.0 (–4.0) cm wide, widest in the middle, sparsely arachnoid-hairy when young; interlobes long, unblotched; lateral lobes 3–6 (mostly 4), opposite to remote, of inner leaves patent, narrow, linear, from wide base abruptly narrowed, usually swollen at apex, of outer leaves somewhat recurved and obtuse at apex, en-

Fig. 6. – *Taraxacum danubium*, habitus – Oleksovice (Vašut 2000 OL).

tire at distal margin and sometimes with filiform-teeth at proximal margin; terminal lobe short, trilobate with a short, obtuse tip (of inner leaves) or triangular, obtuse tip (of outer leaves); interlobes frequently with teeth; petiole narrowly winged, at the base pale purplish. Scapes equal to or longer than leaves, purplish, arachnoid hairy when young, later only below the capitulum; outer bracts regularly spreading, recurved at apex, 9–12 (–14), variable in shape, narrow lanceolate to lanceolate, 2–4 × 6–8 mm, greyish green (rarely reddish or blackish), narrowly but noticeably bordered (< 0.1 mm), corniculate. Capitulum yellow, concave, 20–30 mm in diameter, ligules with greyish-brown stripes, sometimes reddish; styles exserted, dark green; pollen present, grains of varying diameter. Achenes dark brownish-red (immature brick red), 3.2–3.5 mm, achene body densely spinulose above; cone 0.6–0.9 mm.

K a r y o l o g y : 2n = 3x = 24 (SE Moravia, Bzenec, Váté písky); 2n ~ 3x (measured by flow cytometry: SE Moravia, Bzenec, Váté písky; central Moravia, Plumlov, a xerothermic slope near a castle).

Taraxacum danubium is a very conspicuous species (Fig. 6). Its remarkable characteristic is the typical leaf-shape, with patent and narrow lateral lobes and a swollen apex. Some morphotypes

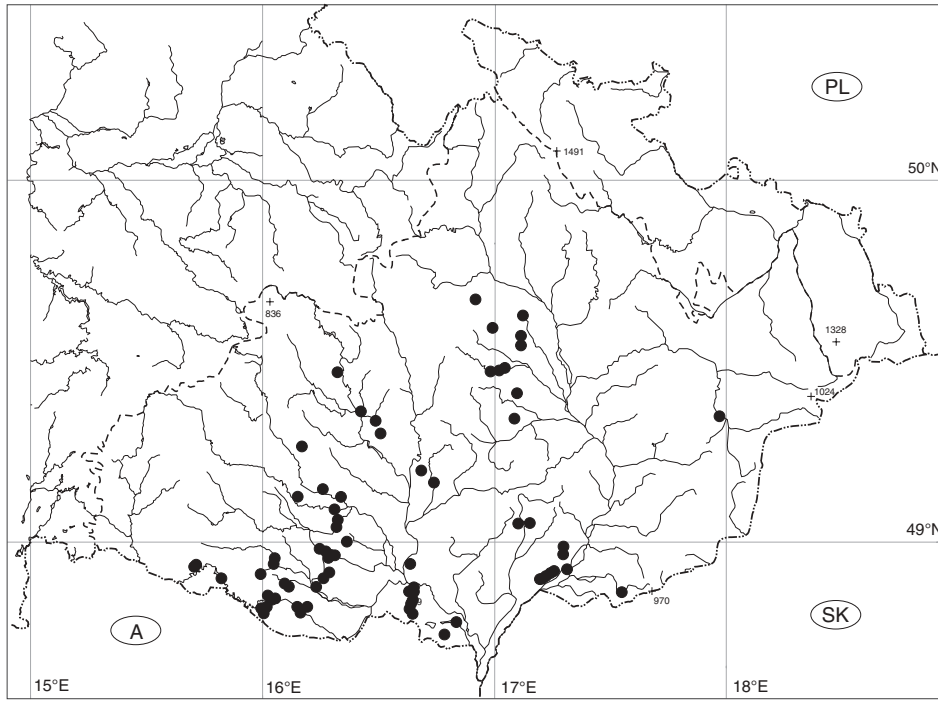

Fig. 7. – Distribution of *Taraxacum danubium* in Moravia.

of *T. erythrospermum* have similar leaves but are distinguishable by adpressed outer bracts, a tunic of withered leaves at the base of the leaf rosette and especially by pollen grains of invarying diameter (ca 27 μm), whereas those of *T. danubium* vary between 17–43 μm.

This species occurs scattered in the warmest part of Moravia, mainly in Praebohemicum (especially near the town of Znojmo) and in open woods on sandy soils near Hodonín (Fig. 7). Localities are situated in the lowlands and hill altitudinal belt (rarely in the upper hill belt), up to maximum altitudes on the ridge of the Děvín hill in the Pálava hills of ca 500 m a.s.l. and Zelený kopec hill near Kramolín of 491 m a.s.l. *T. danubium* is a Central European species, known from Bohemia, Moravia, Saxony (I. Uhlemann, pers. comm.), Slovakia, Austria and Hungary (see also Kirschner & Štěpánek 1997b).

Taraxacum parnassicum Dahlst., Acta Horti Berg. 9: 29. 1926.

T y p u s : Greece, Parnassos 1921 G. Samuelson – cult. In Hort. Bot. Upsaliensis 22. 5. 1924 G. Samuelson. – Lectotype in S, isolectotypes in S and BM, selected by Lundevall & Øllgaard (1999).

S y n o n y m s : *Taraxacum silesiacum* Dahlst. ex G. E. Hagl., Bot. Not., 500. 1938 – *Taraxacum badium* Soest, Veröff. Geobot. Inst. Rübel, 42: 111. 1969.

E x s i c c a t e s : Petrak Fl. Bohem. Morav. Exs. No. 900. (ut *T. laevigatum* DC; *Taraxacum* sp. admixt.!). – Extra fines: Magnier Fl. Select. Exs., No. 2509 (ut *T. erythrospermum*). – Callier Fl. Siles. Exs., No. 847, 1224 (ut *T. erythrospermum*). – Pl. Polon. Exs., No. 76 (ut *T. laevigatum* DC.). – *Taraxaca* Exs., No. 101–103, 201 (ut *T. silesiacum*).

Fig. 8. – *Taraxacum parnassicum*, habitus – Kravsko (Vašut 2000 OL).

Description: Small plants, up to 20 cm tall (Fig. 8). Leaves green (almost sublustrous), 5–15 cm long, 1–3 cm wide, glabrous, leaf shape of inner leaves narrow elliptical in outline (widest in the middle), of outer leaves oblanceolate; midrib green (to faintly coloured); lateral lobes 4–7 (mostly 5), regular, slightly recurved, with distal margin convex and entire, upper lateral lobes very rarely denticulate on distal margin; interlobes frequently with a solitary tooth; terminal lobe triangular or shortly trilobate with a short, subacute tip; interlobes unblotched with a plicate margin; petiole unwinged, purple. Scapes equal to or longer than leaves, often purplish, arachnoid hairy below capitulum when young; inner bracts unequaly wide (connate); outer bracts erect to subspreading, recurved at apex, 9–12, lanceolate, 1–3 × 5–8 mm, greyish green (rarely blackish), scarcely bordered, corniculate. Capitulum (pale) yellow, flat or scarcely convex (becoming slightly concave with age), 20 (–25) mm in diameter, ligules with brownish-purple stripes, with reddish teeth; styles short, discoloured; pollen absent. Achenes dark red (immature brick red), (3.0–) 3.5–4.0 mm, achene body only in upper 1/3 densely spinulose; cone 0.7–1.0 mm.

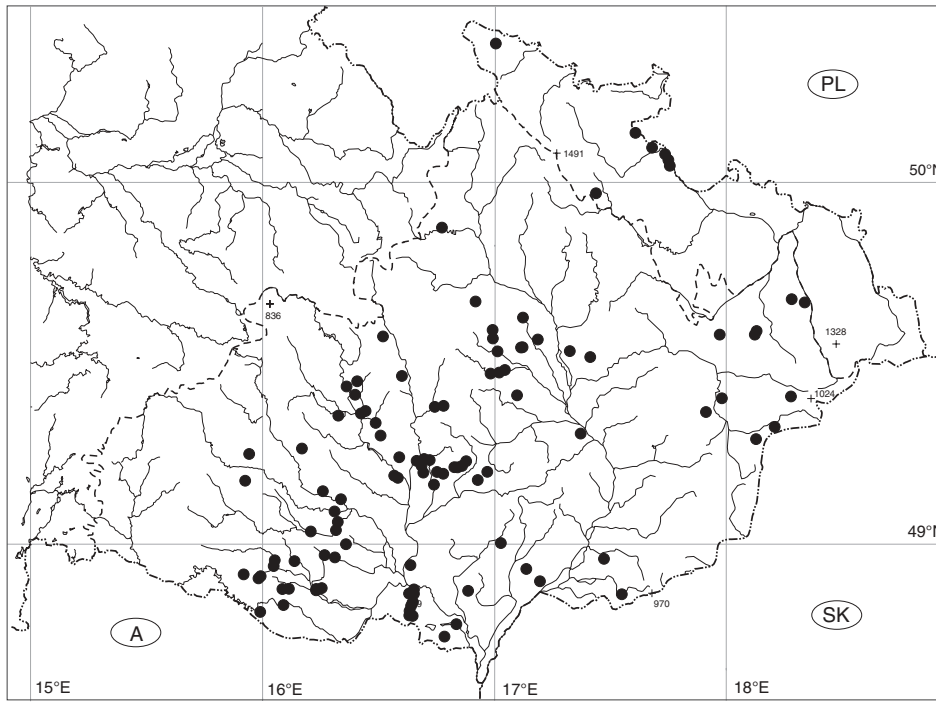

Fig. 9. – Distribution of *Taraxacum parnassicum* in Moravia.

K a r y o l o g y : 2n = 3x = 24 (S Moravia, Mikulov, Svatý kopeček hill); 2n ~ 3x (measured by flow cytometry: S Moravia, Mikulov, Svatý kopeček hill; S Moravia, Mikulov, Kozí hrádek; S Moravia, Brno, Stránská skála hill; S Moravia, xerothermic slopes near the village of Velatice; S Moravia, Tvarožná, Santon hill; Moravian Silesia, Úvalno near Krnov, Strážiště hill).

Taraxacum parnassicum is a widespread species occurring in most of Europe (Dahlstedt 1926, Marklund 1938, 1940, van Soest 1957, 1966, 1969, Małecka 1969, Oosterveld 1993, Øllgaard 1994, Jung 1995, Schmid & Horn 1995, Schmid 1996, Uhlemann 1996, Dudman & Richards 1997, Sackwitz et al. 1998, Schmid et al. 1998, Kirschner & Štěpánek 1999, Wendt 2001, Kallen et al. 2003 and many others). Its specific characters are: a small plant with regular, mostly 5, crowded, deltoid lateral lobes and a triangular to shortly trilobate terminal lobe. The capitulum is light yellow with anthers lacking pollen, outer bracts erect to spreading, lanceolate. Achenes are red. This species is almost unmistakable, one of the easiest to determine in Moravia. Variability has been observed in lobe characters; plants from shaded places have wider, triangular lateral lobes and triangular terminal lobes, while plants from sunny places have narrow, falcate lateral lobes and trilobate terminal lobes.

Plants from a population from the Strážiště hill near the town of Krnov in Silesia produced pollen grains, but were more or less the same in other characteristics; only the leaf shape deviated slightly. These plants also kept production of pollen and have a slightly different leaf shape in cultivation. The species *T. arenastrum* A. J. Richards, which is morphologically very close to *T. parnassicum*, is known from W Europe. The plants from

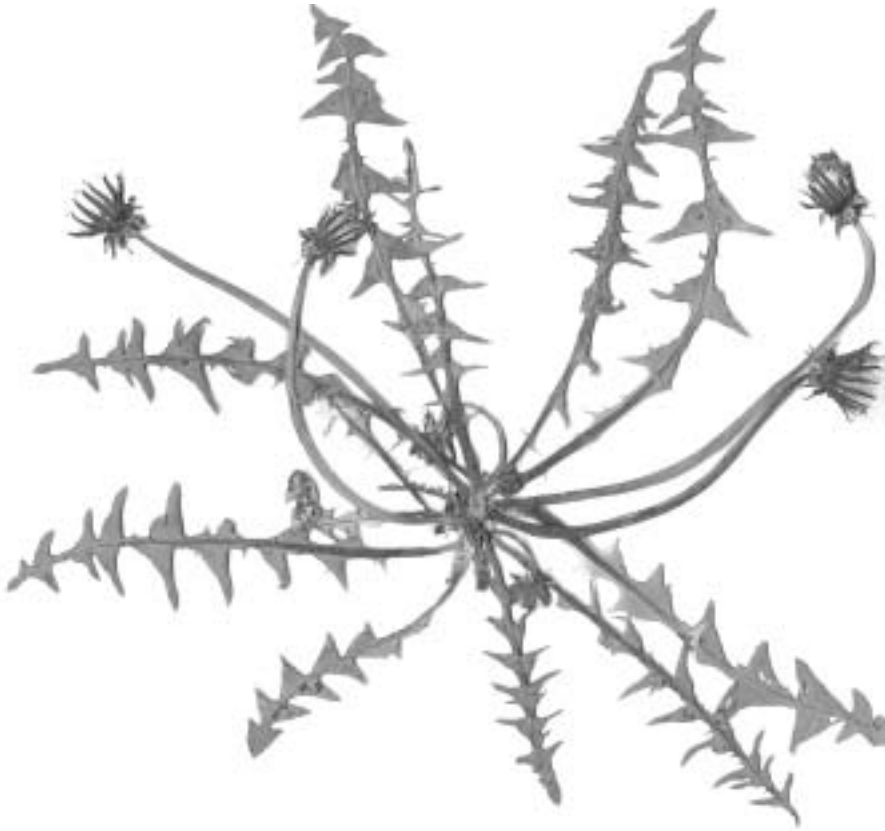

Fig. 10. – *Taraxacum scanicum*, habitus – Oleksovice (Vašut 2001 OL).

Silesia require further study to determine their relationship to this western-European taxon. It is possible that they merely represent a rare mutation of *T. parnassicum*.

Taraxacum parnassicum is the commonest member of *T.* sect. *Erythrosperma* in the Czech Republic. In Moravia, it occurs in all regions up to the upper hill altitudinal belt, rarely even the submontane belt (Fig. 9). It prefers dry grasslands (especially the alliance *Koelerio-Phleion phleoidis*) and pastures, but also ruderal stands (pathways, abandoned mining areas, etc.). It prefers trampled grasslands near castle ruins or chapels (churches) in colder regions. The highest localities are at Horní Bečva, Jezerné hill, 750 m a.s.l. (presently extinct there) and Hrachovec hill near Huslenky, 750 m a.s.l.

Taraxacum scanicum Dahlst., Arkiv Bot., 10 (11): 21. 1911.

T y p u s : Sweden, Skåne, Lund, the garden of the infectious-diseases hospital, 21. 5. 1910 E. L. Ekman, det. H. Dahlstedt. – Lectotype in S [upper specimen], selected by Lundevall & Øllgaard (1999).

D e s c r i p t i o n : Small or medium-sized plants, up to 25 cm tall (Fig. 10). Leaves green, almost glabrous, (5–) 7–15 cm long, 1.5–3.5 cm wide, usually quite narrow in outline,

interlobes sometimes blackish rimmed; lateral lobes usually 4–6, long, patent or somewhat recurved, narrowed in the waist, acute, distal margin convex, dentate (often sublaciniate); terminal lobe of inner leaves typically with an elongated lingulate apex, distal margin usually with teeth at the base; petiole unwinged, pale purplish. Scapes equal to or longer than leaves, green to purplish, arachnoid-hairy below capitulum. Outer bracts spreading or more or less inordinately recurved, usually 10–15, lanceolate, 1.0–3.5 × 6.5–9.0 (–10.0) mm, green, narrowly bordered, corniculate. Capitulum dark yellow, concave, 25–30 (–35) mm in diameter, ligules with grey-brown stripes; styles exserted, discoloured; pollen present, grains of varying diameter. Achenes reddish-brown, 3.5–3.8 mm long, achene body sparsely spinulose above; cone narrow, (0.9–) 1.0–1.2 mm long.

Taraxacum scanicum was described by Dahlstedt from the Skåne region in S Sweden (Dahlstedt 1921). This species is taxonomically distinct and one of the commonest in NW Europe. The situation differs in Central Europe. It was known that at least one other taxon occurs in the region, provisionally named *T. cristatum* Kirschner et al. ined. (J. Kirschner et al., in prep.) During a field study in Moravia, W Slovakia and Lower Austria five (seven in a broader concept) types of *T. scanicum*-like dandelions were repeatedly observed (*T. scanicum*, *T. cristatum* and three other types with provisional names). Moreover, Central European populations, traditionally determined as *T. scanicum*, belong to another, yet undescribed species *T. prunicolor* M. Schmid et al. ined. (M. Schmid et al., in prep.). Comparative cultivation (P. Oosterveld in M. Schmid et al., in prep.) revealed that the Central European species can be distinguished by regularly recurved and reddish-violet outer bracts, brown coloured achenes (when dried) and less complex leaf-shape.

Only a single locality of *T. scanicum* s. str. is known in Moravia (Fig. 5c). There are no differences between Moravian plants, herbarium material from Sweden, Estonia and Germany and plants from the Netherlands. Similar plants collected in Bohemia and Lower Austria (near Gänserndorf) may represent rare and isolated easternmost localities, beyond the continuous distribution range. In contrast, the undescribed species *T. prunicolor* M. Schmid et al. ined. is one of the most widespread species in Moravia (M. Schmid et al., in prep.).

Taraxacum scanicum is known from most of W Europe: United Kingdom, France, the Netherlands, Germany (e.g. Saxony, Pomerania), Denmark, Scandinavia and Baltic countries (Oosterveld 1993, Øllgaard 1994, Uhlemann 1996, Dudman & Richards 1997, Sackwitz et al. 1998, Wendt 2001, Kallen et al. 2003 etc.). In Central Europe, *T. scanicum* is replaced by a vicariant species *T. prunicolor*, which is known from S Germany (Bavaria, Hesse, Baden-Würtemberg, Thuringia), Switzerland, Czechia (Bohemia, Moravia, Silesia), Austria (Lower Austria) and Slovakia (M. Schmid et al., in prep.).

Taraxacum plumbeum Dahlst., Arkiv. Bot. 10 (6): 2. 1911.

T y p u s : Sweden, Gotland, Visby, the old harbour, 6. 6. 1909 H. Dahlstedt. – Lectotype in S [bottom specimen], selected by Doll in Feddes Repert. 84: 123 (1973); isolectotypes in S.

S y n o n y m : *Taraxacum franconicum* Sahlin, Ber. Bayer. Bot. Ges. 55: 49. 1984. – ? *Taraxacum brachycarpum* Soest, Veröff. Geobot. Inst. Rübel, 42: 112. 1969.

D e s c r i p t i o n : Small plants, usually up to 15 cm tall, with deeply dissected leaves (Fig. 11). Leaves dark green, matt, hairy when young, 5–12 cm long, 1.5–2.5 cm wide,

Fig. 11. – *Taraxacum plumbeum*, habitus – Klentnice (Trávníček 2000 OL).

outer leaves quite narrow in outline; lateral lobes 5–6, opposite, patent to somewhat falcate, often narrowed in the waist, acute, sometimes dentate on the distal margin; terminal lobe of inner leaves typically with an elongated lingulate apex and filiform-dentate margin at base, terminal lobes of outer leaves small, triangular; interlobes quite long with filiform teeth and plicate margin, blackish rimmed to blotched; petiole narrowly winged, brownish purple, arachnoid-hairy at base. Scapes equal to or shorter than leaves, purplish, arachnoid-hairy. Outer bracts erect to subspreading, usually 9–12, ovate to lanceolate, 1.7–2.5 (–3.2) × 6.0–7.0 mm, dark green (to blackish), frequently reddish/purplish at apex, distinctly bordered (0.1–0.3 mm), corniculate. Capitulum yellow, convex, 25 mm in diameter, ligules purple-striped; styles exserted, discoloured (olive-green); pollen present, grains of varying diameter. Achenes pale brown, 3.1–3.6 mm long, achene body densely spinulose above and slightly tuberculate below; cone cylindrical 0.7–0.8 mm long.

K a r y o l o g y : 2n ~ 3x (measured by flow cytometry: SW Moravia, Miroslav, Markův kopec hill; SW Moravia, Mohelno, xerothermic slopes near the village).

Taraxacum plumbeum is a rare species in Moravia, easily confused with *T. cristatum* on superficial examination. Both species have a similar leaf shape: recurved lateral lobes denticulate on the distal margin, terminal lobe with an elongate lingulate apex and small

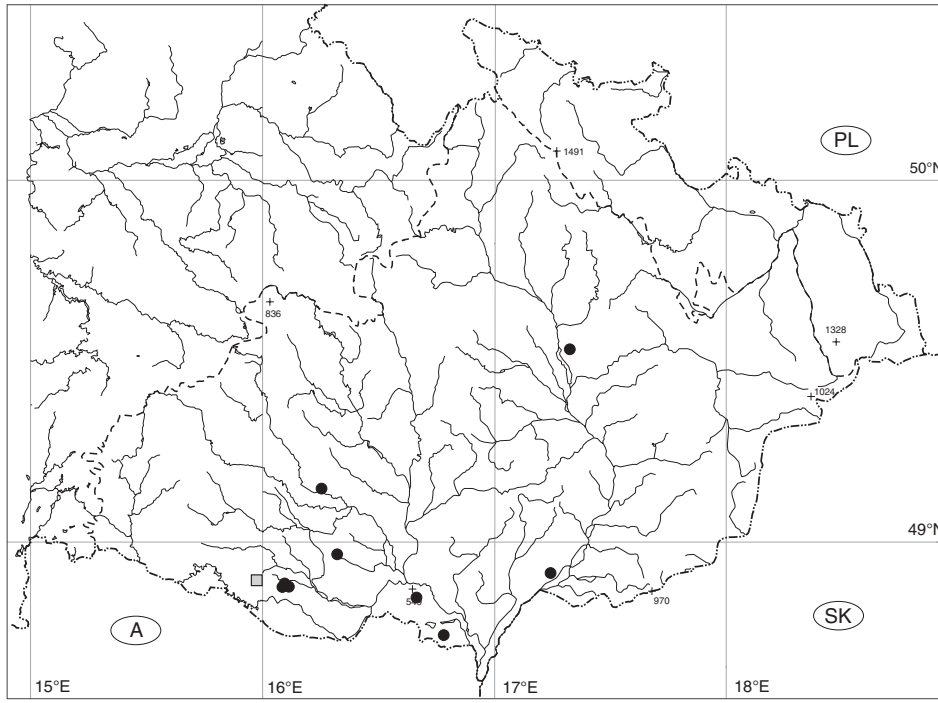

Fig. 12. – Distribution of a) ● *Taraxacum plumbeum* and b) □ *T. proximum* in Moravia.

teeth at the base. *T. plumbeum* is easy to distinguish from *T. cristatum* because it has a dark pruinose and erect outer bracts with a conspicuous hyaline margin and light brown coloured achenes with a short conical cone.

Most localities are in the Praebohemicum phytogeographical region not far from the town of Znojmo (Fig. 12a). Most of the localities are in the hill altitudinal belt, two are known from a lowland region; the locality with the highest altitude is the foot of Mt Děvín (Pálava hills) near Klentnice, 420 m a.s.l. The species was described from Gotland, Sweden, from an isolated area far away from the main distribution range in Central Europe (Øllgaard 2003). It is most common in the SW part of Central Europe and known from Germany (e.g. Sahlin 1984, Uhlemann 1996, Sackwitz et al. 1998, Kallen et al. 2003), Austria, Switzerland, Italy and Slovakia. The species is quite rare throughout Czech Republic, and included in the Red List (Holub & Procházka 2000), where it is classified as a C3 (threatened taxa) species.

Taraxacum proximum (Dahlst.) Raunk., Dansk Ekskursionsfl., ed. 2, 258. 1906.

T y p u s : Sweden, Stockholm, Djurgårdsfrescati, under oaks, 5. 6. 1903 H. Dahlstedt. – Lectotype in S [lower plant], selected by Doll (1973).

S y n o n y m s : *Taraxacum erythrospermum* subsp. *proximum* Dahlst., Bot. Not. 1905: 152, 165. 1905. – *Taraxacum attenuatum* Brenner, Medd. Soc. Fauna Fl. Fenn. 32: 114. 1906.

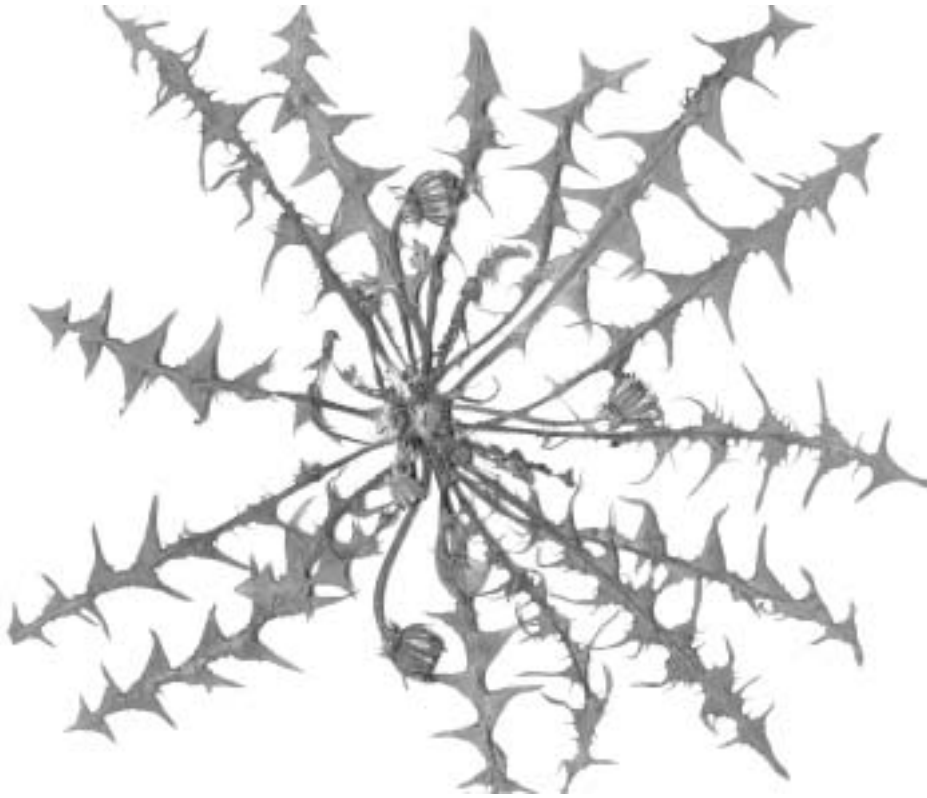

Fig. 13. – *Taraxacum proximum*, habitus – Kravsko (Vašut 2000 OL).

D e s c r i p t i o n : Small to medium-sized plants (Fig. 13). Leaves ± patent, dark green, often dark coloured in interlobes, 7–15 (–25) cm long, 2–4 cm wide, usually 3–4 times longer than wide; leaf shape long elliptic; lateral lobes 4–6 (mainly 5), patent, usually opposite or slightly remote, of outer leaves triangular, distal margin convex and usually entire, of inner leaves long and narrow, drawn from a wide base to a long narrow apex, acute, distal margin filiform-dentate to sublaciniate; terminal lobe triangular to trilobate, acute, entire; petiole only slightly winged, purplish, arachnoid-hairy at base. Scapes equal to leaves, outer bracts spreading, usually 11–14, lanceolate, 2–3 × 7–9 mm, greyish green (to reddish), with inconspicuous white hyaline margin (less than 0.1 mm wide), slightly corniculate (tuberculate). Capitulum yellow, convex, ca 3 cm in diameter; ligules with greyish-brown stripes; styles exserted, dark green, dried almost black, pollen absent. Achenes brown, ca 3.6 mm long with a 0.8–1.0 long cone.

K a r y o l o g y : 2n ~ 3x (measured by flow cytometry: SW Moravia, Kravsko, pathways in locust-wood near the village).

The *Taraxacum proximum* group includes species that resemble members of *Taraxacum* sect. *Ruderalia* Kirschner, H. Øllg. et Štěpánek. They are characterized by more robust growth, simple leaf-shape and usually brown achenes; they mostly grow in ruderal habi-

tats. *T. proximum* does not seem to be morphologically homogenous in the Netherlands and might be split into several new species (Oosterveld 1993). The situation is similar in Moravia, where several types similar to *T. proximum* are common. The species (in its narrow sense) is rare in the Czech Republic. Parallel types are more frequent, but only two of them were found repeatedly (Vašut 2001). In addition, flow cytometry revealed that one of the repeatedly found types is a tetraploid. These different, unique morphotypes might represent recent hybridization events. The main character that separates *T. proximum* s. str. from the parallel types are anthers that do not produce pollen grains. Most *T. proximum*-like plants have anthers with pollen. However, exceptions are found, e.g. the tetraploid morphotype sometimes produces pollen.

Taraxacum proximum s. str. is very rare in Moravia; only one locality is recorded (revised by H. Øllgaard) (Fig. 12b). The species is known from N and W Europe, e.g. Iceland, Scandinavia, Baltic countries, United Kingdom, the Netherlands and Germany (Dahlstedt 1921, Marklund 1938, 1940, Oosterveld 1993, Øllgaard 1994, Uhlemann 1996, Dudman & Richards 1997, Sackwitz et al. 1998, Schmid et al. 1998). It is also reported from the Iberian and Balkan peninsulas (Doll 1973, Richards & Sell 1976), but there are no recent, reliable records. The Czech localities may represent the southeastern border of its distribution range.

Taraxacum lacistophylloides Dahlst., Ber. Schweiz. Bot. Gesellsch., 42: 719. 1933.

T y p u s : Helvetia, Basel, gravelly courtyard of the old Bad-Bauhof 6. 6. 1932 P. Aellen. – Lectotype in S [upper plant], selected by Lundevall & Øllgaard (1999).

S y n o n y m s : *Taraxacum affine* G. E. Hagl., Ber. Schweiz Bot. Ges. 60: 233. 1950, non Jordan, Pugill. Pl. Nov., Paris. 1852. – *Taraxacum pseudolacistophyllum* Soest, Bull. Jard. Bot., Bruxelles, 26: 228. 1956. – *Taraxacum varense* Soest, Acta Bot. Neerl. 26: 146. 1977.

E x s i c c a t e s : *Taraxaca* Exs., No. 1–3, 200, 287, 288.

D e s c r i p t i o n : Medium-sized plants with deeply dissected leaves (Fig. 14). Leaves dark green, more or less hairy, 10–20 cm long, 2.5–6.0 cm wide, broad in outline, interlobes blotched; lateral lobes 4–6 (–8), patent or somewhat recurved, rather long and narrow, sigmoid, from a wide base abruptly narrowed and frequently swollen at the apex, entire or filiform-dentate on distal margin; terminal lobes of inner leaves with an elongated lingulate apex, terminal lobes of outer leaves triangular; interlobes long, usually with filiform teeth; petiole very narrowly winged, pale purplish, hairy. Scapes ± equal to leaves, green to pale purplish, especially below capitulum thickly arachnoid-hairy; outer bracts regularly recurved, usually 11–15, lanceolate, 2.0–3.5 (–4.0) × 7–11 mm, distinctively greyish-green, with narrow hyaline margin (ca 0.1 mm), not corniculate. Capitulum yellow, convex, 30–35 mm in diameter, ligules striped reddish grey-brown; styles exserted, yellow; pollen present, grains of varying diameter. Achenes (greyish) straw-coloured, 3.7 mm long; cone narrow 0.5–0.6 mm long.

K a r y o l o g y : 2n ~ 3x (measured by flow cytometry: S Moravia, Újezd u Brna, Stará hora hill; S Moravia, Viničné Šumice, xerothermic slopes in N outskirts of the village).

Taraxacum lacistophylloides is a very conspicuous species within the section *Erythrosperma*, because it combines the morphological and ecological characters of sections *Erythrosperma* and *Ruderalia*. It has a robust appearance (Fig. 14), straw-coloured

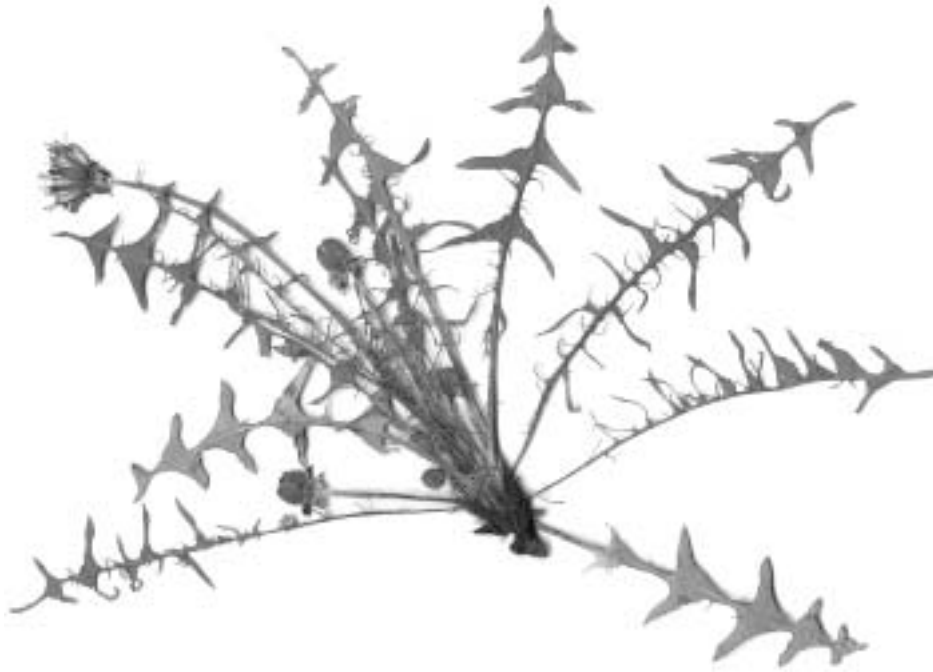

Fig. 14. – *Taraxacum lacistophylloides* , habitus – Viničné Šumice (Vašut 1999 OL).

achenes and does not avoid closed or ruderal grasslands. It is recognizable as it has quite broad, laciniate and hairy leaves, and greyish-green, regularly recurved outer bracts with narrow (but conspicuous) hyaline borders.

The distribution range of this species is mainly Central and S European; it is known from Germany, Switzerland, Italy, Austria and Slovakia (e.g. van Soest 1969, Doll 1973, Richards & Sell 1976, Kirschner & Štěpánek 1995, Sackwitz et al. 1998, Schmid et al. 1998), and is an alien in the United Kingdom (Dudman & Richards 1997). This species is very rare in Moravia despite being quite common in Bohemia. The four scattered localities from which it is known in Moravia have no common phytogeographical association (Fig. 5b).

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Souhrn

Práce přináší výsledky studia červenoplodých pampelišek (*Taraxacum* sect. *Erythrosperma*) na území Moravy. Ve studované oblasti dosahuje v rámci své pannonské arely severozápadní hranice rozšíření diploidní sexuální druh *T. erythrospermum* (pampeliška červenoplodá). Tento druh se vyznačuje drobným vzrůstem, tunikou ze zbytků řapíků při bázi listové růžice, velmi variabilním utvářením listové čepele (obr. 6), vnějšími zákrovními listeny přitisknutými k vnitřním, obvykle sivozelenými a často s bělavým hyalinním okrajem; úbory jsou drobné, pyl na bliznách je vždy stejného průměru (důležitý diagnostický znak pro odlišení apomiktických mikrospecií). Druh roste převážně na přirozených stanovištích jako jsou suché, často také sešlapávané trávníky v teplých oblastech.

Kromě sexuálního druhu bylo zjištěno dalších 21 opakujících se apomiktických typů, z nichž sedm bylo determinováno jako již dříve popsané druhy: *T. arcuatum* (p. obloučkatá), *T. danubium* (p. podunajská), *T. lacistophylloides* (p. třásnitá), *T. parnassicum* (p. slezská), *T. plumbeum* (p. franská), *T. proximum* (p. spřízněná) a *T. scanicum* (p. skandinávská). U všech sedmi apomiktických mikrospecií byl zjištěn triploidní počet chromozómů, jen u jednoho typu blízkého *T. proximum* byl zjištěn počet tetraploidní. Tři druhy (*T. arcuatum*, *T. plumbeum* a *T. proximum*) jsou zde poprvé zmiňovány z území Moravy. Druhy *T. parnassicum*, *T. danubium* a *T. erythrospermum* jsou na Moravě poměrně hojně rozšířené, především v nejteplejších oblastech jižní a jihozápadní Moravy (do chladnějších oblastí mezofytika zasahuje jen vzácně *T. parnassicum*). Zbývající taxony jsou v oblasti poměrně vzácné (*T. plumbeum* a *T. lacistophylloides*) až velmi vzácné (*T. arcuatum*, *T. proximum* a *T. scanicum*). Apomiktické mikrospecie rostou převážně v přirozených teplomilných společenstvech, některé i v ruderalizovaných společenstvech (nejčastěji v opuštěných lomech, na hradních vrších a pěšinách v akátinách).

Ze zbývajících 14 opakujících se typů jsou čtyři druhy připraveny k popisu, další je nutno nadále studovat.

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Appendix1. – List of examined herbarium specimens. The districts of phytogeographical classification of the Czech Republic (Skalický 1988) are given in bold.

Taraxacum erythrospermum Andrz. in Besser

16. Znojemsko-brněnská pahorkatina: Malhostovice, 1 km towards SSW, Malhostovická Pecka hill, 300 m a.s.l. (Černoch 1965 BRNM; Vašut 1999 OL). – Malhostovice, Malá skalka hill, 1.2 km towards SSW, 330 m (Vašut 1999 OL). – Kuřim, Čebínka hill (Šmarda 1920 PR; Opravil 1953 OP; J. Dvořák 1962 BRNM). – Kuřim, Zlobice (Šmarda 1926 PR; David 1943 OP; Saul 1977 BRNM; Saul 1997 BRNU). – Brno, Kamenný kopec hill (Podpěra 1932 PR; Thenius 1934 BRNU; Smejkal 1977 BRNM; Rotreklová 1999 BRNU). – Brno-Medlánky, spot height 340 m (Kozí hora hill, towards N) (Sutorý 1974 BRNM). – Brno, Kozí hora hill (339 m) (Pokluda 1958 BRNM). – [Brno], Vrch Palackého hill near Žabovřesky (Jedlička 1929 ZL). – [Brno], Medlánky, 0.8 km towards S, Medlánecké kopce hill, 335 m (Hladíková 1995 BRNU). – Nebovidy, hill Nebovid (370 m) (Sutorý 1985 BRNM). – Ostopovice, 1 km towards S, Urbanův kopec hill (333 m) (Sutorý 1985 BRNM). – Mohelno (Dvořák 1938 ROZ). – Mohelno, S outsk., plateau of Mohelenská hadcová step, 380 m (Vašut 1999 OL). – Mohelno, 1.5 km towards SSE, margin of the wood, 350 m (Vašut 1999 OL). – Lhánice, 1.5 km towards E, Kozének hill, 360 m (Vašut 1999 OL). – Biskoupky, 1.1 km towards W, 340 m (Sedlářová 1983 BRNU). – Biskoupky, S slopes, towards SW, above left bank of the Jihlava river (Chytrý 1992 BRNU). – Biskoupky, towards S, serpentinite slopes, 250 m (Vašut 1999 OL). – Hrubšice, 1 km towards W, 260 m (Hetešová 1984 BRNU; Vašut 1999 OL). – Moravský Krumlov, vicinity of the church of St. Florian, 300 m (Grulich 1991 BRNU; Bureš 1991 BRNU; Vašut 1999 OL). – Moravský Krumlov, balk, 310 m (Černoch 1956 BRNM). – Vémyslice, xerothermic hill "Na Kocourkách" (Horňanský 1953 BRNM). – Vémyslice, 2 km towards S, Na Vartě hill (323 m) (Vašut 1999 OL). – Bohutice, Leskoun hill (Weber 1929 PR). – Bohutice, towards S, Kameniště hill (278 m) (Skřivánek 1946 BRNM; Horňanský 1953 BRNM; Pospíšil 1963 BRNM; Vašut & Trávníček 1998 OL). – Hostěradice, E outsk., near chapel, 230 m (Vašut 1999 OL). – Hostěradice, 2 km towards SSE, locust wood on hill "Sandberg" (250 m)

(Sutorý 1986 BRNM). – Hostěradice, 2 km SSE, on xerothermic hill, 255 m (Vašut 2000 OL). – Miroslav, xerothermic slope near the village Rošice (Weber 1930 PR). – Miroslav, S outsk., margin of pine-wood, spot height 290 m (Roček 1992 BRNU). – Miroslav, Markův kopec hill (303 m) (Sutorý 1981 BRNM; Roček 1992 BRNU; Vašut 1998 OL, 2000 not.). – Výrovice, 1 km towards SW, spot height 297 m (Vašut 1999 OL). – Výrovice, S outsk., 270 m (Vašut 1999 OL, 2000 OL). – Hodonice near Znojmo (Oborny 1871 PRC). – Hodonice, 2 km towards SE, Vraní vrch hill (232 m) (Vašut 2000 OL). – Dyje, 1 km towards SSW, xerothermic slopes above the Dyje river, 210 m (Vašut 2000 OL). – Tasovice, W outsk., 235 m (Vašut 2000 OL). – Tasovice, 1.3 towards W, xerothermic slopes "Nad Splavem", 220 m (Vašut 2000 OL). – Načeratice, 2 km towards NW, Načeratický kopec hill (290 m) (Vašut 2000 OL). – Oblekovice, towards E, N slopes of spot height 278 m, 250 m (Sutorý 1981 BRNM). – Havraníky (Oborny 1909 PRC). – Havraníky, Hrubý vrch hill near Znojmo (Kvapilík 1933 OLM). – Havraníky, heathland, 330 m (Cvrlíková 1984 BRNU). – Havraníky, N outsk., heathland "Havranické vřesoviště", 320 m (Vašut 1999 OL). – Havraníky, towards S, xerothermic slopes "Skalky", 300 m (Vašut 1999 OL). – Znojmo, towards S, Konice (Kirschner 1981 PRA). – Konice, W outsk., heathland, 300 m (Vašut 1999 OL). – Popice, 2 km towards SE, Suchý vrch hill (264 m), 260 m (Vašut 1999 OL). – Popice near Znojmo (Oborny 1882 PR). – Znojmo, between Popice and Konice (Švestka 1946 BRNM). – Popice, Popický vrch hill near village (Kirschner 1984 PRA). – Znojmo, S outsk., Kraví hora hill (Kirschner 1981 PRA; Tučková 1999 OL). – Nesachleby, NE outsk., 4 km of town Znojmo (Kirschner 1981 PRA). – Znojmo, pasture towards S (Kirschner 1984 PRA). **17b. Pavlovské kopce:** Dolní Věstonice, vicinity of the castle ruins Děvičky, ca 330 m (Opravil 1953 OP; Bureš 1991 BRNU; Vašut 1998 OL). – Horní Věstonice, Děvín (549 m), on the ridge near summit, 540 m (Vašut 2000 OL). – Mikulov, 8 km towards N, Děvín hill (Kirschner 1981 PRA). – Horní Věstonice, Děvín hill (549 m), 1 km towards WSW, vicinity of Martinka rock, 350 m (Vašut 2000 OL). – Horní Věstonice, Děvín hill (549 m) towards SW, above Soutěska rock, ca 470 m (Vašut 1998 OL, 2000 OL). – [Pavlov]: S slopes of Děvín hill, ca 400 m (Horák 1958 MP). – Pavlov, Děvín (549 m), E slopes, ca 420 m (Vašut & Faltýnková 1998 OL). – Pavlov, Děvín hill (549 m), 0.2 km towards S, 510 m (Vašut 1998 OL). – Klentnice, "Růžový hrad", 430 m (Pospíšil 1963 BRNM). – Klentnice, vicinity of the castle ruins Sirotčí hrádek, ca 8 km towards N of town Mikulov (Kirschner 1981 PRA; Vašut 1998 OL). – Klentnice, Skaliska, spot height 409 m (Kvapilík 1937 OLM). – Bavory, Stolová Hora hill (459 m), plateau on summit, 450 m (Skřivánek 1950 BRNM; Vašut 1998 OL). – Mikulov (Leneček 1935 PRC). – Mikulov, towards N, Kočičí skála rock, 340 m (Kirschner 1981 PRA; Vašut 1998 OL). – Mikulov, Turold hill (385 m), near summit (Sillinger 1927 PRC; 1927 PR; Leneček 1935 PRC; Vašut 1998, 1999 OL). – Mikulov, Janičův kopec hill, 310 m (Černoch 1952 BRNM). – Mikulov, N outsk., Sv. Kopeček hill, vicinity of chapel of St. Sebastian and stations of the Cross, 360 m (Weber 1928 PR; Skřivánek 1952 BRNM; Šourek 1954 PR; Businský 1970 ROZ; Hadinec 1976 MP; Kirschner 1981; 1984 PRA; Vašut 1998, 1999 OL). **17c. Milovicko-valtická pahorkatina:** Milovice, 0.5 km towards SW, W slopes, 250 m (Sutorý 1981 BRNM). **18a. Dyjsko-svratecký úval:** Krhovice, W outsk., abandoned mining area, 200 m (Vašut 2000 OL). – Lednice na Moravě (Zimmermann 1912 PR). – Lednice, vicinity of Apollonův chrám castle on the SE bank of fishpond "Mlýnský rybník", 180 m (Vašut 2000 OL). **18b. Dolnomoravský úval:** Milotice: Náklo hill (265 m), vicinity of summit, 0.5 km towards NWN, 250 m (Vašut, Trávníček & Lustyk 1998 OL). – Rohatec, NE outsk. (Kirschner 1982 PRA). – Rohatec, in village (Kirschner 1984 PRA). – Lužice, 0.5 km towards W, 180 m (Vašut 2000 OL). **19. Bílé Karpaty stepní:** Blatnice pod Sv. Antonínkem, Sv. Antonínek hill (Weber 1931 PR). **20a. Bučovická pahorkatina:** Vyškov, "Na Větrnících", towards S of village Dražovice, ca 390 m (Skřivánek 1943 PRC). – Křižanovice (Tomková 1959 BRNM). – Marefy, xerothermic S slopes Člupy, 250 m (Novotný 1980 BRNM.). – [Marefy], Ševy (Vítek 1913 BRNM). **20b. Hustopečská pahorkatina:** Brno, SE outsk., Stránská skála hill (310 m) (Štěpánek 1982 PRA; Vašut 1998 OL). – Brno, Hády hill (424 m), vicinity of abodandoned mining area, 1 km towards S of summit, 330 m (Vašut 1998 OL). – Tvarožná, SW outsk., NE slopes of Santon hill (296 m), 275 m (Weber 1930 BRNM; Hanousek 1978 BRNU; Vašut 1998 OL). – Velatice, SE outsk., xerothermic slopes "Velatická slepencová stráň", 300 m (Kirschner 1981 PRA; Vašut 1998 OL). – Komořany, above village (Weber 1930 OLM). – Újezd u Brna, S slopes of Stará hora hill (307 m), ca 280 m (Trávníček 1998 OL). – Bedřichovice, 0.5 km towards S, xerothermic slopes above the stream Říčka, 240 m (Vašut 1999 OL). – Koryčany, NW outsk., vicinity of chapel of St. Florian, 280 m (Pospíšil 1970 BRNM; Zavřel 1973 OP; Vašut & Vašutová 2000 OL). – Bohuslavice u Kyjova, S outsk., xerothermic slopes above church, 250 m (Pospíšil 1964 BRNM; Trávníček 1986 OL; Pluhař 1988 OL; Vašut & Vašutová 2000 OL). – Věteřov, S outsk., 320 m (Sutorý 1980 BRNM). – Čejč, Velký vrch hill, 264 m (Unarová 1962 ZL). – Čejč, Luka (Deyl 1940 PR). – Čejč, Špičák (Prát 1920 PR). – Čejč, Terezín, towards NE of rocky hill, 200 m (Jindra 1967 ZL). – Klobouky, "Obohazky" (Deyl 1940 PR). – Mutěnice, towards E, sands (Pospíšil 1964 BRNM). – Mutěnice, Srálek (Šmarda & Vaněčková 1962 BRNM). – Bzenec, Starý hrad (Bubela 1882 PR; 1882 PRC). **21a. Hanácká pahorkatina:** Prostějov, Záhoří hill in Mostkovice, near column of the crucification, 343 m (Jančík 1978 BRNU). – Domamyslice, Záhoří hill (Weber 1969 PR). **67. Českomoravská vrchovina:** Trnava, SW outsk., Kobylinec hill, 450 m (Vašut 2000 OL). –

Pocoucov, 1.5 km towards NE, 460 m (Vašut 2000 OL). **68. Moravské podhůří Vysočiny:** Ptáčov, 0.8 km towards NE, Ptáčovský kopeček hill, 430 m (Vašut 2000 OL). – Ptáčov, S outsk., near column of the crucification, 420 m (Vašut 2000 OL). – Kramolín, S slopes of the Dřínová hora hill (Pospíšil 1976 BRNM). – Třebíč, ca 1.7 km towards E, 400 m (Sutorý 1979 BRNM). – Vladislav, 0.3 km towards N, 400 m (Vašut 2000 OL). – Jamné, 0.5 towards NE, Svídovec hill, 440 m (Vašut 1999 OL). – Brno, near the raod towards Soběšice (Královo Pole towards Obřany) (Vítek 1903 BRNM). – Brno-Bystrc, rocks on the bank of Brněnská přehrada (Vašut 2000 OL). – Omice u Brna, railway embankment near the station, 300 m (Čáp 1983 OLM). – Tetčice, small rock in the centre of village, 300 m (Foralová 1978 BRNU; Vašut 1999 OL). – Březník near Oslavany (Drimlová 1944 PRC). – Oslavany, ca 2 km towards NW, 230 m (Schusterová 1980 BRNU). – Oslavany: Kovářův kopec hill, above right bank of the Oslava river (Gruna 1999 OL). – Slavětice, 0.5 km towards S, slope above stream Strouha, 390 m (Sutorý 1975 BRNM). – Senorady, W outsk., vicinity of fort ruins, 330 m (Vašut 1999 OL). – Skalice, 3.5 km towards NEN, Stříbrný vrch hill (Grulich 1991 BRNU). – Černín, N outsk., 300 m (Vašut 1999 OL). – Rudlice, N outsk., 300 m (Vašut 1999 OL). – Vevčice, 2 km towards NW, 350 m (Vašut 1999 OL). – Únanov, E outsk., spot height 332 m (Vašut 2000 OL). – Plenkovice, xerothermic slope above E bank of the fishpond "Plenkovický rybník", 330 m (Sutorý 1985 BRNM; Vašut 2000 OL). – Mašovice, between Mašovice and Soběslav, near N margin of wood (Kvapilík 1933 OLM). – Podmolí near Znojmo (Oborny 1889 PRC). – Znojmo, W outsk., vicinity of abandoned mining area "Cínová hora", ca 320 m (Vašut 1999 OL, 2000 not.). **71c. Drahanské podhůří:** Lomnice (s. c. 1875 SLO). – Ohrozim, W outsk., road towards Vícov (Albrecht 1990 OL). – Ohrozim, 0.7 km towards NW, "Horka" hill, 370 m (Trávníček 1991 OL). – Plumlov, 1 km towards N, 340 m (Trávníček 1991 OL; Vašut 1999 OL). **77c. Chřiby:** [Buchlovice], Buchlov castle, towards W, Slunečný pahorek hill (s. c. 1911 SAV). **80a. Vsetínská kotlina:** Vsetín, town district Na Trávníkách (Bubela 1882 PR).

Taraxacum arcuatum (Tausch) Dumort

16. Znojemsko-brněnská pahorkatina: Biskoupky, towards S, serpentinite slopes, 250 m (Vašut 1999 OL). **17a. Dunajovické kopce:** Dolní Dunajovice, 2 km towards SW, Liščí vrch hill (272 m) (Vašut 1999 OL., rev. Štěpánek 2000; Vašut 2000 OL).

Taraxacum danubium A. J. Richards

16. Znojemsko-brněnská pahorkatina: Biskoupky, towards S, serpentinite slopes, 250 m (Vašut 1999 OL). – Rokytná: 0.5 km towards E, 250 m (Vašut 1999 OL). – Moravský Krumlov, along the road near railway station. (Bureš 1989 BRNU). – Bohutice, Leskoun hill (Weber 1929 PR). – Bohutice, towards S, Kameniště hill (278 m) (Horňanský 1956 BRNM; Vašut & Trávníček 1998 OL). – Miroslav, Markův kopec hill (303 m) (Vašut 1998 OL, 2000 not.). – Skalice, 3.5 km towards NEN, Stříbrný vrch hill (Grulich 1991 BRNU). – Hostěradice, E outsk., near chapel, 230 m (Vašut 1999 OL). – Hostěradice, 2 km towards ESE, Paseka hill (289 m) (Vašut 2000 OL). – Hostěradice, 2 km towards SSE, 255 m (Vašut 2000 OL). – Oleksovice, Dvorská hill (270 m), 0.5 km towards NE of summit, 255 m (Vašut 2001 OL). – Oleksovice, 1 km towards ESE, 230 m (Vašut 2000 OL). – Únanov, 3 km towards S, Deblínek hill (356 m) (Vašut 2001 OL). – Lechovice, NE outsk., locust-wood near church, 230 m (Vašut 2001 OL). – Suchohrdly u Znojma, 2 km towards NE, Purkrábka wood, 320 m (Vašut 2001 OL). – Hodonice, 2 km towards SE, Vraní vrch hill (232 m) (Vašut 2000 OL). – Derflice, 1 km towards NE, Kamenná hora hill (229 m) (Vašut 2000 OL). – Derflice, 1.5 km towards NEN, Kraví hora hill, 230 m (Vašut 2000 OL). – Znojmo, towards village Konice (Kirschner 1981 PRA). – Znojmo, rocky slopes above the Dyje river, near castle (Kirschner 1981 PRA). – Znojmo, S outsk. (Kirschner 1981 PRA; Kirschner 1984 PRA). – Popice, 2 km towards SE, Suchý vrch hill (264 m) (Vašut 1999 OL). – Havraníky (Oborny 1909 PRC). – Havraníky, N outsk., heathland "Havranické vřesoviště", 320 m (Vašut 1999 OL). – Havraníky, towards S, xerothermic slopes "Skalky", 300 m (Vašut 1999 OL). **17b. Pavlovské kopce:** Dolní Věstonice, vicinity of the castle ruins Děvičky, ca 330 m (Šrůtek 1980 ROZ; Vašut 1998 OL). – Horní Věstonice, Děvín (549 m), on the ridge near summit, 540 m (Vašut 2000 OL). – Pavlov, Děvín hill (549 m), 0.2 km towards NE of summit (Vašut 1998 OL). – Pavlov, Děvín (549 m), E slopes, ca 420 m (Vašut & Faltýnková 1998 OL). – Mikulov, towards N, Kočičí skála rock, 340 m (Vašut 1998 OL). – Mikulov, Turold hill (385 m), near summit (Vašut 1999 OL). – Mikulov, N outsk., Sv. Kopeček hill, vicinity of chapel of St. Sebastian and stations of the Cross, 360 m (Vašut 1999 OL). **18a. Dyjsko-svratecký úval:** Valtice, 2.5 km towards NE, castle Rendez-vous, 195 m (Vašut 1999 OL). – Lednice, vicinity of Apollonův chrám castle on the SE bank of fishpond "Mlýnský rybník", 180 m (Vašut 2000 OL). **18b. Dolnomoravský úval:** Bzenec (Bubela 1882 PR; J. Dvořák 1954 OP). – Bzenec, Lideřovice, sands (Weber 1933 PRC). – Bzenec, 2 km towards SE, 200 m (Vašut 1999 OL, 2000 OL). – Bzenec, along railway line between Hodonín and Moravský Písek, 1.5 km towards NE of spot height 190 m (Vašut 1998 OL). – Rohatec, Hodonín and Moravský Písek, 2 km

towards SW of spot height 190 m (Vašut 1998 OL). – Rohatec, E outsk., between railway line and road (Kirschner 1982 PRA; van der Hulst, den Nijs, Kirschner & Štěpánek 1985 PRA). **20b. Hustopečská pahorkatina:** Brno, SE outsk., Stránská skála hill (310 m) (Sutorý 1975 BRNM; Štěpánek 1982 PRA; Vašut 1998 OL). – Pouzdřany, 2 km towards NE, 290 m (Vašut 1998 OL). – Čeložnice, 0.5 km towards SW of the Zelená hora hill (306 m) (Vašut & Vašutová 2000 OL). – Bohuslavice u Kyjova, S outsk., xerothermic slopes above church, 250 m (Vašut & Vašutová 2000 OL). – Bzenec, Starý hrad (Bubela 1882 PR). **21a. Hanácká pahorkatina:** Slatinice, Malý Kosíř hill, vicinity of summit, 316 m (Vašut 1999 OL). – Plumlov, SW outsk., xerothermic slopes above Podzámecký rybník fishpond, 290 m (Vašut 2000 OL). – Plumlov, SW outsk. Rocky slopes under the castle, 290 m (Vašut 2000 OL). – Plumlov, 1 km towards NE, Čubernice hill (332 m) (Vašut 2000 OL). – Želeč, between Drysice and Želeč, vicinity of abandoned mining area (Vašut & Vašutová 1999 OL). – Vranovice, 0.8 km towards SW, vicinity of abandoned mining area, 245 m (Trávníček 1996 OL; Kaplan 1996 herb. Kaplan; Vašut & Vašutová 1999 OL; Trávníček et al. 2000: 258). **68. Moravské podhůří Vysočiny:** Pernštejn, in front of the 1st castle gate, 420 m (Vašut 1999 OL). – Kramolín, Zelený vrch (492 m), near tower Babylón, 491 m (Vašut 1999 OL). – Ketkovice, 3 km towards SW, castle ruins of Levnov, 330 m (Sutorý 1978 BRNM; Vašut 1999 OL). – Hluboké Mašůvky, 2.5 km towards NE, 300 m (Vašut 2000 OL). – Vevčice, S outsk., 270 m (Vašut 1999 OL). – Znojmo, W outsk., vicinity of abandoned mining area "Cínová hora", ca 320 m (Vašut 1999 OL). – Vranov nad Dyjí, N outsk., near chapel, 370 m (Vašut 1999 OL). – Bítov, 0.8 km towards SW, 360 m (Vašut 1999 OL). – Cornštejn, vicinity of castle ruins, 400 m (Vašut 1999 OL). **71a. Bouzovská pahorkatina:** Javoříčko, rocks "Pustý zámek" (Vašut 1999 OL). **71c. Drahanské podhůří:** Čelechovice na Hané, 0.5 km towards N, SE foothill of Velký Kosíř hill (442 m), 280 m (Kaplan 1995 herb. Kaplan). – Čelechovice na Hané, 1.5 km towards NW, vicinity of abandoned mining area "Růžičkův lom", 280 m (Vašut 1998 OL). – Krakovec, 1 km towards SW, vicinity of the chapel of St. Anthony, 355 m (Vašut 1999 OL). – Hamry, 0.5 km towards SE, xerothermic slopes "Hamerská stráň", 330 m (Vašut 2000 OL). – Olomouc, Náměšť na Hané, Hluboký žleb, spot height 364 m (Otruba 1942 PRC). **80a. Vsetínská kotlina:** Vsetín, town district Na Trávníkách (Bubela 1882 PR).

Taraxacum parnassicum Dahlst.

16. Znojemsko-brněnská pahorkatina: Malhostovice, 1 km towards SSW, Malhostovická Pecka hill, 330 m (Vašut 1999 OL). – Tišnov, Květnice hill (470 m), 0.8 km towards SW of summit, S xerothermic slopes, 380 m (Vašut 1999 OL). – Kuřim, Kuřimský vrch hill (397 m), 0.5 km towards S of summit, S foothill, 310 m (Vašut 1999 OL). – Tišnov, Malá Čebínka hill (Šmarda 1920 PR). – Brno, Královo Pole, 1 km towards N, W slopes of hill "Na Úlehlích", ca 260 m (Klementová 1995 BRNU). – Obřany, valley of the Svitava river, on the wall (Grulich 1991 BRNU). – Brno, Obřany, NE outsk., xerothermic slopes "Obřanská stráň", 290 m (Vašut 1998 OL). – Brno, Nový Lískovec, Kamenný kopec hill (Grulich 1991 BRNU). – Brno, hill between river Svratka (camp Riviera) and city district Nový Lískovec, ca 240 m (Smejkal 1984 BRNU). – Troubsko u Brna, SE outsk., along railway line near the railway station, 270 m (Bureš 1991 BRNU). – Mohelno, S outsk., plateau of Mohelenská hadcová step, 380 m (Vašut 1999 OL). – Hrubšice, 1 km towards W, 260 m (Vašut 1999 OL). – Rokytná, 0.5 km towards, 250 m (Vašut 1999 OL). – Moravský Krumlov, 2 km towards N, valley of the Rokytná river (Bureš 1991 BRNU). – Tulešice, E outsk., near the chapel of St. Florian, 310 m (Vašut 2001 OL). – Mikulovice, 2 km towards ESE, 320 m (Vašut 2000 OL). – Miroslav, Markův kopec hill (303 m) (Roček 1992 BRNU; Vašut 1998 OL, 2000 not.). – Hostěradice, E outsk., near chapel, 230 m (Vašut 1999 OL). – Bohutice, towards S, Kameniště hill (278 m) (Vašut & Trávníček 1998 OL). – Oleksovice, 2 km SES, sandy location "Na pískách", 225 m (Vašut 2001 OL). – Lechovice, NE outsk., locust wood near church, 230 m (Pospíšil 1960 BRNM; Vašut 2001 OL). – Suchohrdly u Znojma, 2 km towards NE, Purkrábka wood, 320 m (Bezunková 1994 BRNU; Vašut 2001 OL). – Kuchařovice, NE outsk., 320 m (Vašut 2001 OL). – Havraníky, N outsk., heathland "Havranické vřesoviště", 320 m (Vašut 1999 OL). – Načeratice, 2 km towards NW, Načeratický kopec hill (290 m) (Vašut 2000 OL). **17b. Pavlovské kopce:** Dolní Věstonice, vicinity of the castle ruins Děvičky, ca 330 m (Pyšek 1979 ROZ; Vašut 1998 OL). – Pavlov, Děvín hill (549 m), 0.2 km towards S of summit, 510 m (Vašut 1998 OL). – Pavlov, Děvín (549 m), E slopes, ca 420 m (Vašut 1998 OL). – Horní Věstonice, Děvín hill (549 m), 1 km towards WSW of the summit, near the Martinka rock, 350 m (Vašut 2000 OL). – Klentnice, Tabulová hill, S slope (Trávníček 1996 OL). – Bavory, Stolová Hora hill (459 m), plateau on summit, 450 m (Vašut 1998 OL). – Klentnice, 0.6 km towards WSW, Stolová hora hill, N part of summit plateau, 450–458 m (Danihelka 1999 herb. Danihelka). – Klentnice, vicinity of the castle ruins Sirotčí hrádek, ca 8 km towards N of town Mikulov, 430 m (Vašut 1998 OL). – Mikulov, towards N, Kočičí skála rock, 340 m (Trávníček 1986 OL; Vašut 1998 OL). – Mikulov, vicinity of castle ruins of Kozí hrádek, ca 260 m (Vašut 1998 OL). – Mikulov, N outsk., Sv. Kopeček hill, vicinity of chapel of St. Sebastian and stations of the Cross, 360 m (Šourek 1954 PR; Trávníček 1983 OL; Vašut 1998 OL). – Mikulov (Leneček 1935 PRC). **18a. Dyjsko-svratecký úval:** Lechovice, E outsk., locust wood, 220 m (Vašut 2001 OL). – Lednice

na Moravě (Zimmermann 1912 PR). – Lednice, vicinity of Apollonův chrám castle on the SE bank of fishpond "Mlýnský rybník", 180 m (Vašut 2000 OL). – Valtice, 2.5 km towards NE, castle Rendez-vous, 195 m (Vašut 1999 OL). **18b. Dolnomoravský úval:** Milotice, Horky (Jongepier 1990 herb. Jongepier). – Rohatec, Soboňky, 1.3 km towards NEN, 185 m (Vašut 1998 OL). **19. Bílé Karpaty stepní:** Blatnice pod Sv. Antonínkem, Sv. Antonínek hill (Weber 1931 PR). – Blatnice pod Sv. Antonínkem, Milejové louky meadows (Jongepier 1996 herb. Jongepier). **20a. Bučovická pahorkatina:** Dražovice, Větrníky, ca 390 m (Deyl 1940 PR; Skřivánek 1943 PRC; Skřivánek 1967 BRNM). – Němčany, Lutršték, near the church of Our Lady, 290 m (Vašut & Vašutová 1999 OL). **20b. Hustopečská pahorkatina:** between Viničné Šumice and Vítovice, near Hynčicovy skály rocks, 310 m (Vašut & Vašutová 1999 OL). – Tvarožná, SW outsk., NE slopes of Santon hill (296 m), 275 m (Vašut 1998 OL). – Velatice, SE outsk., xerothermic slopes "Velatická slepencová stráň", 300 m (Vašut 1998 OL). – Velatice, SW outsk., along pathway in locust wood, 290 m (Vašut 1998 OL). – Brno, Hády hill (424 m), vicinity of abodandoned mining area, 1 km towards S of summit, 330 m (Vašut 1998 OL). – Brno, SE outsk., Stránská skála hill (310 m) (Vašut 1998 OL). – Bedřichovice, 0.5 km towards S, xerothermic slopes above the stream Říčka, 240 m (Vašut 1999 OL). – Pouzdřany, 2 km towards NE, near spot height 307 m (Vašut 1998 OL). – Velké Bílovice, 3 km towards NWN, Zimárky hill (262 m) (Vašut & Vašutová 1999 OL). **21a. Hanácká pahorkatina:** Senička, 0.7 km towards SW, 300 m (Vašut 1999 OL). – Hněvotín, 1.5 km towards SSW, vicinity of abandoned mining area "Na Skále", 265 m (Vašut 1998 OL). – Slatinice, 1 km towards SW, Malý Kosíř hill, vicinity of summit, 316 m (Trávníček 1991 OL). – Olomouc, Chrást (Deyl 1932 PRC). – Plumlov, SW outsk., xerothermic slopes above Podzámecký rybník fishpond, 290 m (Vašut 2000 OL). – Plumlov, 1 km towards NE, Čubernice hill (332 m) (Vašut 2000 OL). – Vranovice, 0.8 km towards SW, vicinity of abandoned mining area, 245 m (Trávníček 1996 OL; Kaplan 1996 herb. Kaplan; Vašut & Vašutová 1999 OL; Trávníček et al. 2000: 258). – Kroměříž, Barbořina hill, ca 250 m (Zavřel 1934 BRNM; PR). **67. Českomoravská vrchovina:** Trnava, SW outsk., Kobylinec hill, 450 m (Vašut 2000 OL). – Between Trnava and Pocoucov, xerothermic hill near the road (Vašut 2000 OL). – Synalov, Kopaniny, S slopes of Sýkoř hill (702 m), 1 km towards S of summit, 620 m (Vašut 1999 OL). – Veselí, Veselský Chlum hill (578 m), vicinity of the summit (Vašut 1999 OL). – Kuřimská Nová Ves, in front of church, 460 m (Vašut 2000 OL). **68. Moravské podhůří Vysočiny:** Lazinov, rocky slope near the village (Vaněčková 1971 BRNM). – Doubravník, near the rock above the railway station, 350 m (Vašut 1999 OL). – Obora, Huť Sv. Antonie, Malý Chlum hill (489 m), vicinity of mining area on the E slope of the hill, 470 m (Vašut 1999 OL). – Železné, 0.8 km towards NW, vicinity of abandoned mining area "Hradisko", 320 m (Vašut 1999 OL). – Jasenice, SE outsk., along pathways towards church of St. Clement, 440 m (Vašut 2000 OL). – Klučov, Klučovský kopec hill (595 m), 0.5 km towards S of summit, 570 m (Vašut 2000 OL). – Ketkovice, 3 km towards SW, castle ruins of Levnov, 330 m (Švarc 1972 MJ; Sutorý 1978 BRNM; Vašut 1999 OL). – Olbramkostel, 3 km towards WWN, vicinity of the castle ruins of Šimperk, 390 m (Vašut 2000 OL). – Kravsko, 1 km towards SW, 360 m (Vašut 2000 OL). – Kravsko, N outsk., 340 m (Vašut 2000 OL). – Vevčice, 1 km towards SE, 280 m (Vašut 2000 OL). – Hluboké Mašůvky, 2.8 km towards NE, S slope of spot height 353 m (Vašut 2000 OL). – Hradiště, Hradišťské terasy (Kaplan 1991 OL). **70. Moravský kras:** Vilémovice, 1.3 km towards NW, along road towards the Macocha cleft, 440 m (Vašut & Vašutová 1999 OL). – Ostrov u Macochy, vicinity of the Balcarka cave, 450 m (Vaněčková 1978 BRNM; Vašut & Vašutová 1999 OL). – Brno, Hády, slope towards the railway line (Vaněčková 1971 BRNM). – Brno, Líšeň, 3 km towards NEN, vicinity of the rock "Hronek", 410 m (Vašut 2000 OL). – Brno, Hády hill (424 m), summit plateau, towards E, ca 420 m (D. Dvořák & Vašutová 2001 OL). **71a. Bouzovská pahorkatina:** Javoříčko, rocks "Pustý zámek" (Vašut 1999 OL). **71b. Drahanská plošina:** Blansko, Sloup, Neselov, towards N, 540 m (Pospíšil 1962 BRNM). **71c. Drahanské podhůří:** Dvorek, 0.3 km towards S, xerothermic slopes above the Přemyslovský potok stream, 330 m (Vašut 1999 OL). – Krakovec, 1 km towards SW, vicinity of the chapel of St. Anthony, 355 m (Vašut 1999 OL). – Prostějov, Čelechovické lomy, 250 m (Otruba 1941 PRC). – Stařechovice, towards E, Velký Kosíř hill, SW slopes (Trávníček 1983 OL). – Stařechovice, 1.5 km towards E, Velký Kosíř hill, ca 300 m (Trávníček 1990 OL; Trávníček & Pluhař 1991 OL; Trávníček & Trávníčková 1994: 78). – Stařechovice, 1.8 km towards E, S slopes ("Kosířské vinohrady"), ca 270–310 m (Trávníček & Trávníčková 1994: 78). – [Čelechovice, Velký] Kosíř hill, S slopes (Roztomilý 1965 OLM). – Čelechovice, 1.7 km towards NWN, Velký Kosíř hill, mining areas, ca 290 m (Trávníček 1988 OL; Trávníček & Trávníčková 1994: 78). – Čelechovice na Hané, 0.5 km towards N, SE foothill of Velký Kosíř hill (442 m), 280 m (Kaplan 1995 herb. Kaplan). – Čelechovice na Hané, 1.5 km towards NW, vicinity of abandoned mining area "Růžičkův lom", 280 m (Vašut 1998 OL). – Lutotín, 0.7 km towards WWN, 280 m (Vašut 2000 OL). – Hamry, 0.5 km towards SE, xerothermic slopes "Hamerská stráň", 330 m (Vašut 2000 OL). – Habrovany, N outsk., 320 m (Pospíšil 1970 BRNM). – Viničné Šumice, N outsk., spot height 410 m (Vašut 1999 OL). – Vítovice, 0.3 km towards N, 2.5 km towards NW of Rousínov (Růžička 1976 BRNM). – Vítovice, N outsk., rock above the Vítovický potok stream, 310 m (Vašut 1999 OL). **73b. Hanušovická vrchovina:** Hoštejn, NE outsk., vicinity of castle ruins, 360 m. a. s. l. (Vašut & Pečinka 1999 OL). **74a. Vidnavsko-osoblažská pahorkatina:**

Javorník, Jánský vršek hill, near the castle, ca 330 m (Vašut 2000 OL). – Linhartovy, 0.3 km towards NW, 380 m (Pečinka & Dočkalová 1999 OL). **74b. Opavská pahorkatina:** Krnov, Bezručův vrch hill, 340–360 m (Dočkalová 1998 OL; Pečinka & Dočkalová 1998 OL). – Krnov, E outsk., Přední Cvilínský kopec hill, SW slopes, vicinity of mining area, 440 m (Dočkalová & Pečinka 1998 OL). – Krnov, E outsk., Cvilín hill (439 m), near church of Our Lady, 439 m (Pečinka & Dočkalová 2000 OL; Vašut 2000 OL). – Krnov, vicinity of the castle ruins of Šelenburk, 420 m (Dočkalová & Pečinka 1998 OL). – (*T.* cf. *arenastrum*): Úvalno, Strážiště hill, 380 m (Dočkalová & Pečinka 1998 OL; Vašut & Pečinka 1999 OL). **75. Jesenické podhůří:** Slezský Kočov, Uhlířský kopec hill (672 m), vicinity of church (Pečinka & Dočkalová 1999 OL). **76a. Moravská brána vlastní:** Starý Jičín, 0.4 km towards NEN, castle ruins of the Starojický hrad, 450 m (Vašut 2000 OL). – Štramberk, S slope of the Bílá hora hill (557 m), 480 m (Pečinka 1998 OL; Vašut 1999 not.). – Štramberk, Kotouč hill, Velký lom (Petrak 1912 PR). – Štramberk (Petrak 1912 PR). – Štramberk, Kotouč hill, Skalky, castle hill (Otruba 1930: 95). **76b. Tršická pahorkatina:** Lhotka u Přerova, xerothermic slopes (Hájek 1996 OL). **78. Bílé Karpaty lesní:** Javorník, Paličky (Jongepier 1996 herb. Jongepier). **80a. Vsetínská kotlina:** Růžďka u Vsetína, location "Nad Vršky", ca 600 m (Pospíšil 1943 PRC). – Ratiboř, N outsk., 350 m (Dančák 1995 OL). **82. Javorníky:** Nový Hrozenkov, Vranečka, 600 m (Pospíšil 1940 PRC). – Nový Hrozenkov (Pospíšil 1940 PRC). – Huslenky, 2 km towards SSE, Hrachovec hill above the Uherská valley, ca 580–750 m (Dančák 1997 OL, 2001 OL). **84a. Beskydské podhůří:** Staříč, Kamenná hora hill, S slopes, 375 m (Talpa 1945 PRC). – Sviadnov, near the military ground, 280 m (Talpa 1944 PRC). **99a. Radhošťské Beskydy:** Horní Bečva, Jezerné hill, 750 m (Deyl 1943 PR).

Taraxacum scanicum Dahlst.

16. Znojemsko-brněnská pahorkatina: Oleksovice, 0.8 km towards SWS, locust wood near heathland "Oleksovické vřesoviště", 250 m (Vašut 2001 OL).

Taraxacum plumbeum Dahlst.

16. Znojemsko-brněnská pahorkatina: Miroslav, Markův kopec hill (303 m) (Vašut 1998 OL, 2000 OL). – Mohelno, S outsk., plateau of Mohelenská hadcová step, 380 m (Vašut 1999 OL). – Únanov, 3 km towards S, Deblínek hill (356 m) (Vašut 2001 OL). – Kuchařovice, NE outsk., 320 m (Vašut 2001 OL). – Suchohrdly u Znojma, 2 km towards NE, Purkrábka wood, 320 m (Vašut 2001 OL). **17b. Pavlovské kopce:** Klentnice, Děvín hill, 1 km towards SW/SSW (Trávníček 2000 OL). **18a. Dyjsko-svratecký úval:** Lednice, vicinity of Apollonův chrám castle on the SE bank of fishpond "Mlýnský rybník", 180 m (Vašut 2000 OL). – Valtice, 2.5 km towards NE, castle Rendez-vous, 195 m (Vašut 1999 OL). **18b. Dolnomoravský úval:** Rohatec, along railway line between Hodonín and Moravský Písek, 2 km towards SW of spot height 190 m (Vašut 1998 OL). **21a. Hanácká pahorkatina:** Grygov, 2 km towards SE, vicinity of abandoned mining area "Strejčkův lom", 230 m (Vašut & Faltýnková 1998 OL).

Taraxacum proximum (Dahlst.) Raunk.

68. Moravské podhůří Vysočiny: Kravsko, 2 km towards N, pathways in oak wood, sands, 370 m (Vašut 2000 OL, rev. Øllgaard 2001).

Taraxacum lacistophylloides Dahlst.

16. Znojemsko-brněnská pahorkatina: Suchohrdly u Znojma, 2 km towards NE, Purkrábka wood, 320 m (Vašut 2001 OL). **19. Bílé Karpaty stepní:** Radějov, Lučina, Jarkovec stream valley, meadows "Čertoryje", ca 350 m (Trávníček 1995 OL; Trávníček & Hájek 1996: 32). **20b. Hustopečská pahorkatina:** Újezd u Brna, S slopes of the Stará hora hill (307 m), ca 280 m (Trávníček 1998 OL). **71c. Drahanské podhůří:** Viničné Šumice, N outsk., near spot height 410 m, 380 m (Vašut 1999 OL).