



1. Introduction to collecting and identifying dandelions. BSBI 2018

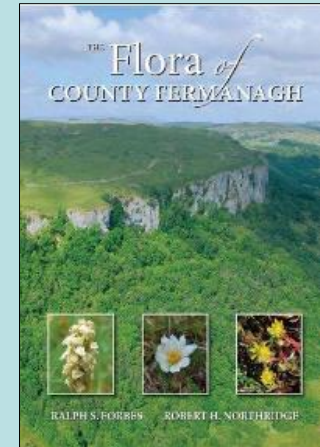
Tim Rich

- Bored of the usual spring flowers and want something to do in April?



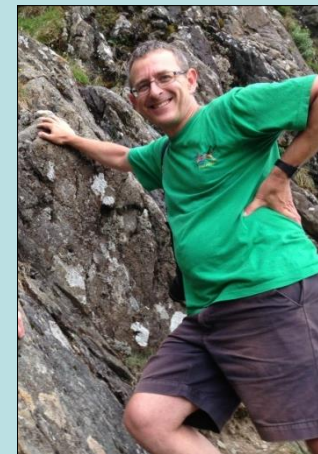
- Writing a county flora?

- Want to find new species and see things nobody else has seen?



- Want to pretend you are a credible botanist?

- **...then dandelions are for you!**



Pros

- It's a challenge
- Find new things
- See things nobody else sees
- Have an impact



Cons

- 1 manic month, many hours changing drying papers
- Only 50-200 collections/yr
- Confirmation can take months
- Fresh plants do not look like herbarium specimens
- 3-5 yrs to become proficient
- Everybody thinks you are mad



Tim's experience in Cardiff

began looking at local species in Cardiff -
amazed at the diversity

- 8 species in garden
 - 11 on Pantmawr A470 verges + 1 'new' species
 - 14 species on lawns of NMW
 - 110+ in Cardiff with 2 new taxa
- Despite all material being named by AJR still takes a lot of time to learn, and each year seem to forget what learned last year...

Resources:

1. John Richards!

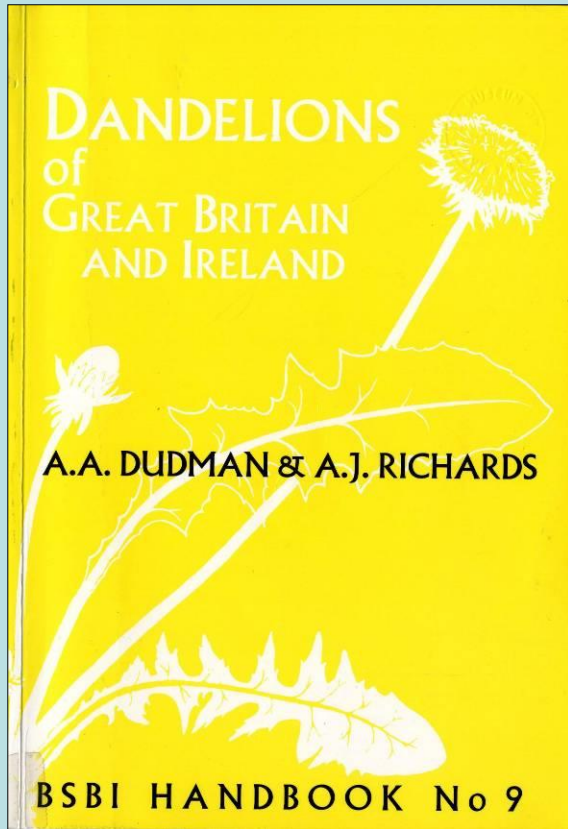
40 yrs studying dandelions (amongst many other things!), world expert, fantastic knowledge



John demonstrating
Taraxacum on BSBI
Scottish *Taraxacum*
workshop, May 2013

Resources

2: Literature



15a *T. platyglossum* Raunk. (1906) Map 15a


A small to medium-sized plant, with leaves 30-120 mm.


Leaves mid-green to dark green, unspotted, almost glabrous, interlobes unblotched, midrib green to faintly coloured; lateral lobes 7-12, recurved, acute, filiform-dentate proximally; terminal lobe trilobate with a subacute, sometimes somewhat elongated apex; petiole ± winged proximally, narrow, green or a coloured. Scapes many, 20-100 mm, slender, often coloured, glabrous. Exterior bracts erect to appressed, about 7 × 2 mm, green, with a purple or green corniculation and pale border. Capitulum deep yellow, 25-30 mm in diameter, usually flat, sometimes closed; ligules usually flat, sometimes involute, striped red; styles exerted, discoloured; pollen present or absent. Achenes grey-brown; body 3.0 mm; cone 0.4 mm.

Native. Sand-dunes. Scottish coasts and isolated localities in north-west England, the Isle of Man, Anglesey, Caerns, Somerset, Guernsey and Antrim. V.c.c. 6, 49, 52, 66, 68, 71, 74, 75, 82, 85, 90, 94-96, 101, 103, 105, 108-110, S, H39.

Very closely allied to **15 *T. obliquum***, into which, in some senses, it merges and of which it may possibly be best treated as a form. It is best distinguished by its darker leaves, more acute, dentate lateral lobes and a larger, usually flat, deep yellow capitulum. Very similar to **7 *T. howorthianum*** except for the very different achenes.

It has been suggested (1995) that at least one new taxon in Section *Obliqua* occurs in the British Isles. As yet the situation is unclear, and for the present we are maintaining these two traditional taxa.

Map 15a 

Section *Obliqua* 

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Section PALUSTRIA (H. Lindb.) Dahlst. (1921) Map 16

16 *T. palustre* (L.) Symons (1798)


A small to medium-sized slender plant, with decumbent to erect leaves 20-150 mm.

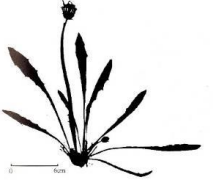
Leaves dull green, without spots, glabrous, linear or narrowly oblanceolate, entire to denticulate; leaf-lobes absent or lateral lobes 2-3, distant, very short, triangular, entire; midrib green to faintly coloured; petiole unwinged or narrowly winged, purple. Scapes 40-200 mm, decumbent to erect, often purplish, arch-nod-hairy above. Exterior bracts appressed, 7 × 3 mm, green or suffused with purple, with a broad, scarious border. Capitulum flat, deep yellow, to 40 mm in diameter; ligules flat, striped purple; styles scarcely exerted, discoloured; pollen absent. Achenes straw-coloured, oblong, scarcely spinulose; body 4.0 mm; cone 0.5 mm, 2n=40.

Native. In hay-meadows liable to seasonal flooding; less often in calcareous flushes, sometimes near the sea. V.c.c. 4, 11, 20, 22, 23, 27-30, 34, 37, 52, 61, 62, 64, 69, 73, 82, S, H8, H9, H15, H16, H19, H23, H27.

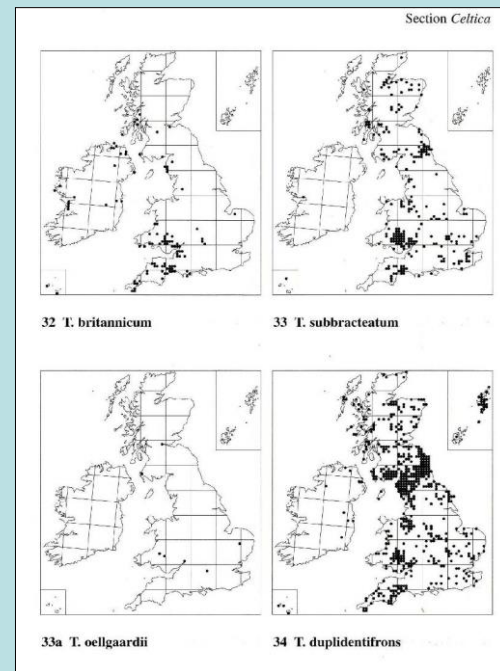
In 'The *Taraxacum* Flora' (1972) A.J. Richards wrote: "Rare, apparently only surviving in Norfolk, Cambridgeshire, Berkshire, Hampshire and Co. Clare. There are probably less than 500 plants left in the British Isles, and the world population may well number less than 1,000." It is a measure of the progress in taraxacology in Britain in the last twenty years that there are now records from 29 vice-counties, with records from 65 10-km squares, including at least one colony of some 500 plants in Kirkcudbrightshire.

T. palustre is readily distinguished as it is the only British or Irish species with such narrow leaves which lacks pollen.

Map 16 

Section *Palustria* 

77




Essential, but hard to use or get answer from without experience...

New photographic guides (Plant Crib 3, as free downloads on BSBI website)

- Sections *Celtica*, *Erythrosperma*, *Hamata*, *Naevosa*, *Palustria*, *Spectabilia* and *Ruderalia*
- Have adapted these to Ireland, but as very under-recorded be careful!

Plant Crib 3



TARAXACUM SECTION CELTICA

Section *Celtica* species are mostly found in the western and northern districts of the British Isles, being largely restricted to wet meadows in southern England. Elsewhere, they occur in a range of habitats from mountain cliffs to lane banks, grasslands and even somewhat saline habitats, but like the Section *Naevosa* species they are rarely found in waste places as ruderals or weeds. 34 species are known from the British Isles, and all (except perhaps *T. niotoi*) are native here. The British Isles forms the centre of the distribution of the section, with much more diversity here than in other countries, and no less than 19 species (56%) are endemic to these islands. Many endemics are rare and local, different species being restricted to e.g. Brecon (v.c. 42), Upper Teesdale and north Pennines, The Solway Firth (v.c. 70, 73), and Orkney (v.c. 111), while three species from the Low Countries are southern rarities, two of them halophytes. In all I have omitted 11 rare species from this account as we do not yet have a good photographic record of them. It is very unlikely that any would be encountered without a targeted search in their localised areas.

Features of Section *Celtica*

- *Celtica* species are never gross like some *Ruderalia* and usually have rather flat, simply lobed leaves.
- Like *Hamata* species, involucre are often pruinose and bluish-green and exterior bracts do not exceed 12 mm in length.
- Unlike the *Hamata*, the innermost exterior bracts are usually patent or erect, not arcuate.
- Also unlike any *Hamata*, many *Celtica* species lack pollen and have stigmas which dry yellow. These characters are also rare in section *Ruderalia*.
- Taken together, these features are closely allied to those in section *Naevosa*, from which *Celtica* differs chiefly by an absence of spotting on the upper leaf surface. In the *Celtica*, only *T. olgae* and *T. berthae* regularly have spots. These species are rare and localised in the north-west, and are related to *T. nordstedtii* which is why they are included here and not in section *Naevosa*. Occasionally *T. nordstedtii* itself also shows spotting, usually in extreme-Atlantic conditions.

Like *Naevosa*, most *Celtica* are tetraploid ($2n = 32$) or hexaploid ($2n = 48$). *Hamata* and *Ruderalia* species are invariably triploid ($2n=24$).


Botanical Society of the British Isles in association with National Museums of Wales
Plant Crib 3 (2012), edited T. C. G. Rich & H. B. R. Cleal.

1

Plant Crib 3


1a. Species lacking pollen (check stigmas with a lens) (2a-2b)

2a. Stigmas yellow, concolorous with the ligules in the fresh and dry condition (3a-3b)



Concolorous, pollenless stigmas in *T. ostensefeldii*

3a. Exterior bracts spreading to recurved (see above), ligule stripes solid, brown
Taraxacum ostensefeldii



Botanical Society of the British Isles in association with National Museums of Wales
Plant Crib 3 (2012), edited T. C. G. Rich & H. B. R. Cleal.

2

Resources

3: Herbaria

- Welsh National Herbarium

(National *Taraxacum* collection, 6200+ specimens of 560 species)

- Oxford University, Natural History Museum London, Edinburgh also have reasonable collections

- unsure of anything significant in Ireland?

(Declan's material in DBN)



Resources 4:

- On-line pictures
- iSpot



NMW website

Be very careful...

Taraxacum acroglossum Dahlst.

Rather uncommon in Britain and probably introduced. The leaves have a sigmoid leading edge and a narrow terminal lobe.

- Cardiff Bay, waste ground by ice rink, ST/180.730, 2010 Apr 10, T. C. G. Rich (T544; V.2010.1.356).
- Llanishen, Wyndham Terrace allotments, ST/180.815, T. C. G. Rich, 2009 Apr 19 (T354; V.2009.1.196).
- National Museum of Wales, Cathays, lawn SE corner, ST/183.770, T. C. G. Rich, 2009 Apr 8 (T283; V.2009.1.107).
- Rhiwbina, Heol Uchaf stream bank, ST/158.822, T. C. G. Rich, 2009 Apr 19 (T355; V.2009.1.202).



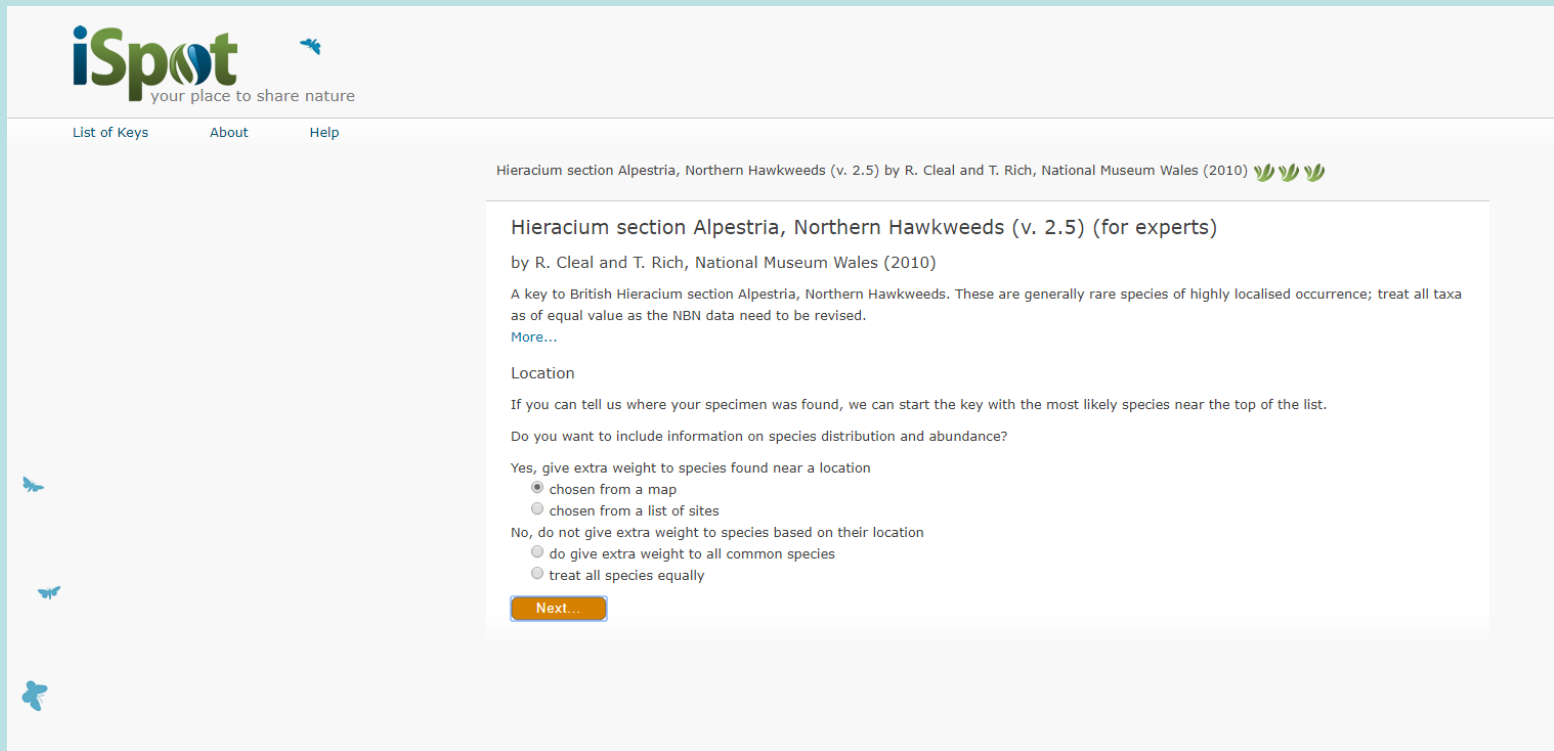
(Click to enlarge) (Click to enlarge)

Taraxacum acroglossum Dahlst. Taraxacum acroglossum Dahlst.

A screenshot of an iSpot observation page. The observation is titled 'Dandelion of the day 61' and was observed by Tim Rich on 19th April 2013. It includes three photographs of dandelion plants and flowers. The location is listed as 'Cwm Dare Country Park'. The page also features a 'Your Home Community' section for 'UK and Ireland', an 'Add observation' button, a 'Browse species' button, and 'Taxonomy links' for Asterales, Asteraceae, Taraxacum, and Taraxacum pannulatifforme. A search bar for iSpot is also visible.

Online computer keys

- tried developing an online Bayesian computer key to Section *Erythrosperma* using data in handbook in 2011
- trials showed little success, not released



The screenshot shows the iSpot website interface. At the top left is the iSpot logo with the tagline "your place to share nature". Below the logo are navigation links for "List of Keys", "About", and "Help". The main content area displays a key for "Hieracium section Alpestris, Northern Hawkweeds (v. 2.5) by R. Cleal and T. Rich, National Museum Wales (2010)". The key is titled "Hieracium section Alpestris, Northern Hawkweeds (v. 2.5) (for experts)" and is attributed to "R. Cleal and T. Rich, National Museum Wales (2010)". The text describes the key as being for "British Hieracium section Alpestris, Northern Hawkweeds" and notes that these are generally rare species of highly localised occurrence. A "More..." link is provided. The key includes a "Location" section with instructions on how to use location information to narrow down species. It asks if the user wants to include information on species distribution and abundance, and provides three radio button options: "Yes, give extra weight to species found near a location" (with sub-options "chosen from a map" and "chosen from a list of sites"), "No, do not give extra weight to species based on their location" (with sub-options "do give extra weight to all common species" and "treat all species equally"). A "Next..." button is located at the bottom of the key.

Example of Bayesian computer key; manual keys still give better results!

Resources 5:

- Pictures



Pedersen Danish pictures



John pictures (many contributors)

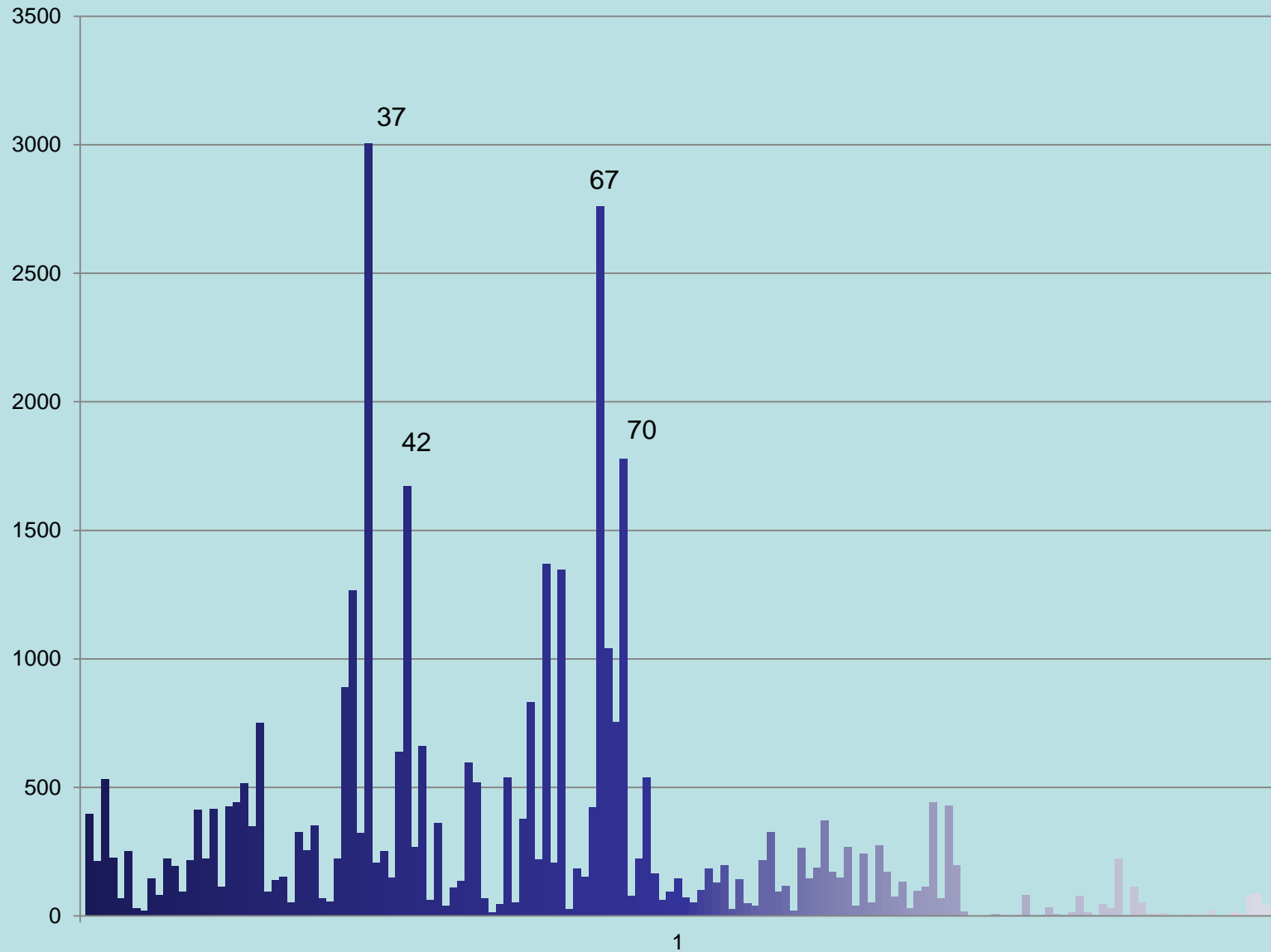
Resources

6: *Taraxacum* database

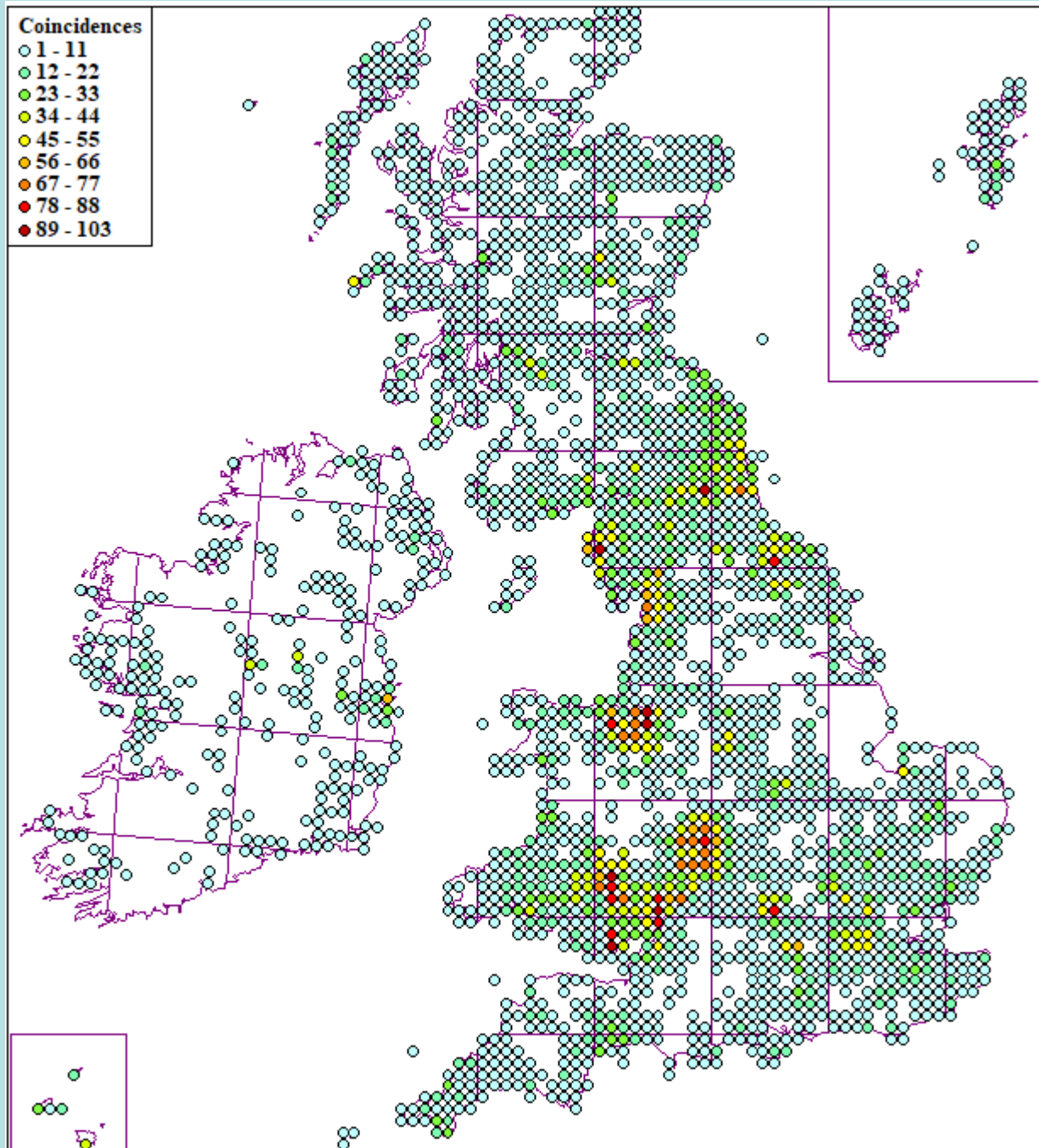
- helps to have some idea of what is around and what is common, but not that much!
- Ireland very under-recorded so little use

1	Key	Species	Status	VC	Gridref	Locality	Cname	Date	Dname	Herb
2	29430	aberrans		3	ST15-00-	Tracey Bridge, Honiton	Margetts L.J.	02.05.1993	Richards A.J.	PVT
3	33756	aberrans		20	TL110123	Redbourn	Richards A.J.	15.04.2002		
4	32366	aberrans		23	SP487596	Godstow Rd., Wolvercote	Flora Oxon	01.05.1999	Richards A.J.	
5	27718	aberrans		33	SO786123	Hardwicke	Marsden M.	10.05.1991	Richards A.J.	PVT
6	31476	aberrans		34	ST551904	under Severn Bridge & Beachley Head	Richards & Others	04.05.1996	Richards A.J.	PVT
7	27875	aberrans		34	ST79-86-	Swangrove	Rooney P.	29.04.1989	Richards A.J.	PVT
8	32632	aberrans		35	SO52-10-	Penallt Old Church	Evans T.G.	19.04.1999	Richards & Dudman	PVT
9	33562	aberrans		35	ST246991	Craig Gwent	Evans T.G.	30.04.2001	Richards A.J.	PVT
10	32125	aberrans		36	SO572193	Goodrich	Marsden M.	25.04.1998	Marsden M.	PVT
11	32467	aberrans		37	SO764458	West Malvern	Garner P.G.	27.04.1999	Richards A.J.	PVT
12	32243	aberrans		37	SO887636	Droitwich by-pass	Reid A.W.	25.04.1998	Richards & Dudman	PVT
13	35462	aberrans		37	SO890556	Trotshill Lane (disused section) - grass	Day J.J.	01.05.2007	Reid A.W.	
14	34781	aberrans		37	SO946778	Sling pool - wood pasture W side	Day J.J.	11.05.2005	Richards A.J & Reid A.W	
15	35945	aberrans		37	SP023625	Crofts Lane Astwood - grass verge	Day J.J.	30.03.2008	Reid A.W.	
16	32466	aberrans		37	SP036432	Avonside, Hampton	Knight, T.D.	19.04.1999	Richards A.J.	PVT
17	34310	aberrans		40	SJ3--2--	Bagley	Edmondson T.	00.00.1978		
18	29768	aberrans		44	SN353333	Gorllwyn	Pryce R.D.	25.04.1992	Richards A.J.	NMW
19	30647	aberrans		44	SN782436	Rhandirwyn Mine	Pryce R.D.	24.04.1993	Richards & Dudman	PVT
20	34311	aberrans		58	SJ4--6--	Little Barrow	Edmondson T.	00.00.1979		
21	30443	aberrans		62	NZ551173		Jones, V.	29.04.1993	Richards A.J.	PVT
22	31832	aberrans		62	SE613879	Carlton Park Farm, Helmsley	Jones, V.	04.05.1997	Richards A.J.	PVT

Number of records by VC in National Database (courtesy Bert Reid 2012)



Taraxacum
database
2017,
species
diversity



Resources

7: Cultivation

Can be grown, may or may not look like wild plants



Les Tucker's buckets



Our Royal Horticultural Society show exhibit Cardiff

Be warned, plants in cultivation can look very different to those in the wild



Wild, Ben Lawers (1050 m)



Cultivated (Les Tucker)

T. cymbifolium

General advice:

1. Have clear idea of what you want to do (learn them all, learn some, 'stamp collect' for flora)
2. Come on field training course to learn art of Taraxacology and how to interpret characters
3. Get to know few local ones and build up knowledge over time
4. Do it properly
 - Collect plants
 - Take photographs
 - Make notes

Advice: Collecting

- Visit range of sites and spend time looking for different things
- Collect only good material in right season
- Do not collect everything!
- Keep each plant separate
- Take field photos, and link them to specimens
- For some groups it helps to have ripe seeds

Things to note when fresh

- Petiole colour (at base and outside) of outer and inner leaves
- Presence of spots on leaves
- Interlobe blotching
- Midrib colours
- Size, shape, coloration of outer bracts of mature buds
- Capitulum width (if fully opened)
- Ligule strip colour
- Style colour
- Presence of pollen
- **Write on label or post-it or attach to material**



Sect. *Celtica*

bract
 not striated - brown above
 petals white - red underneath
 few lateral lobes
 styles discoloured pollen
 base unlobed

Campanula

Flora of Britain
Taraxacum ~~hemisphaerica~~
 Higham Farm, Stodmarsh, water meadows
 Grid ref.: TR1983.6078
 Vice county: 15
 02 May 2016
 TCGRich no. 2016-28

Taraxacum
ak-tem HSZ
 note pale *condensed*
bracts
 Det. A. J. Richards 2016



2017-72
 Ruewood
 Sect: *Rudeolin*
 Petal present
 Styles discoloured
 Bracts recurved (calotte type)
 13x3
 petals winged
 papillated form →

Taraxacum sp. *alatum* Lk. 6
 Ruewood pastures SSSI ATF 17

Flora of Britain
Taraxacum alatum
 Determined by: A.J. Richards
 Ruewood pastures SSSI, western field
 SJ4929 Vice county: 40
 03/05/2017 TCG Rich & A McVeigh
 Collecting number: 2017-72



set *Ruperratum*
Celtica
 Taraxacum
 hedgebank, Berry Cross VC 4
 SS/474.147 7/1/07 TCRich

^{mid rib}
~~petals~~ red, solid above
 leaves plicate, curled up
 outer ligules 12x4 mm, recurved in flower, pale above
 green below
 bud green
 heads c. 45 mm, styles yellow, pollen

T. subericinum

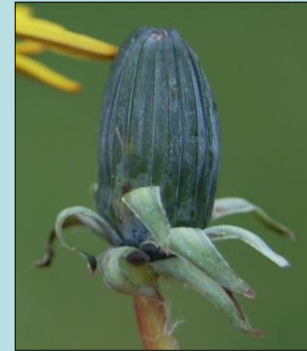
In all probability this material refers to a new and very distinctive member of section *Celtica*. Its nearest relative is undoubtedly *T. porteri* CC Haworth, but that species has less abruptly acute endlobes and no big teeth, and larger erect bracts.
 Whether this species should be described depends on whether it can be found in a number of localities over a reasonable area. It should be collected again and searched for in that part of Devon.
 A J Richards 11/2007

set *Ruperratum*
Celtica
 Taraxacum
 hedgebank, Berry Cross VC 4
 SS/474.147 7/1/07 TCRich

^{mid rib}
~~petals~~ red, solid above
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Photos to take when fresh

- Mature buds from side



- Can also do flowers at same time



- Several outer and inner leaves (heterophylly)



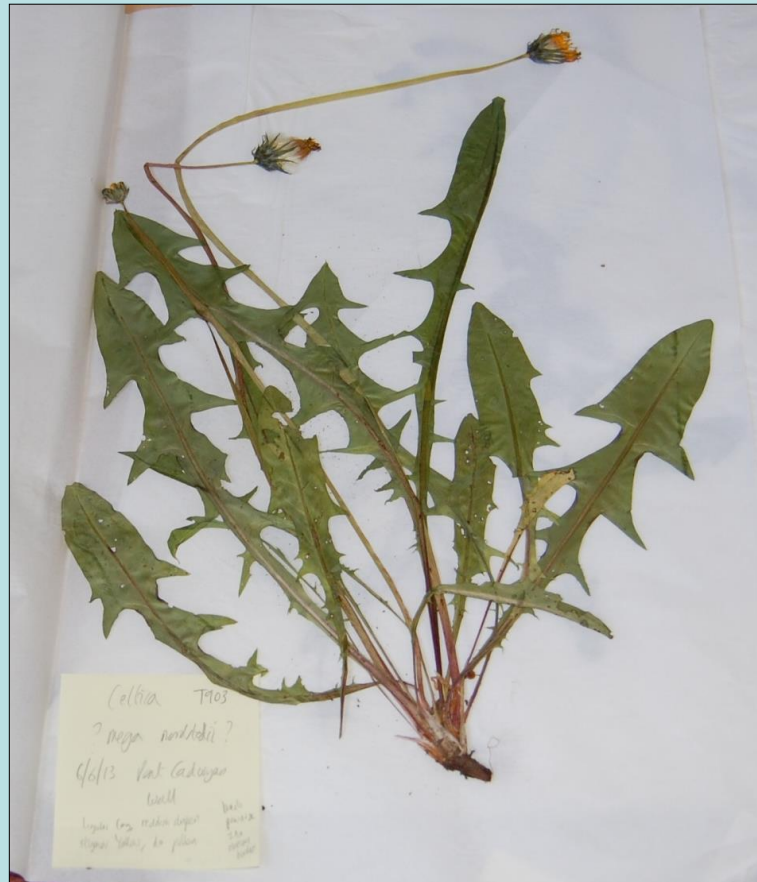
- Petiole colour



Photos can be printed (best) and put with specimens or put on cd

Advice: collect a good specimen

- Cut them at top of root
- Strip down to 8-10 leaves showing inner to outer petioles, with buds and flowers, notes and label, photos
- Dry quickly to retain colour



lancastriense



Drying quickly: in an ideal world...

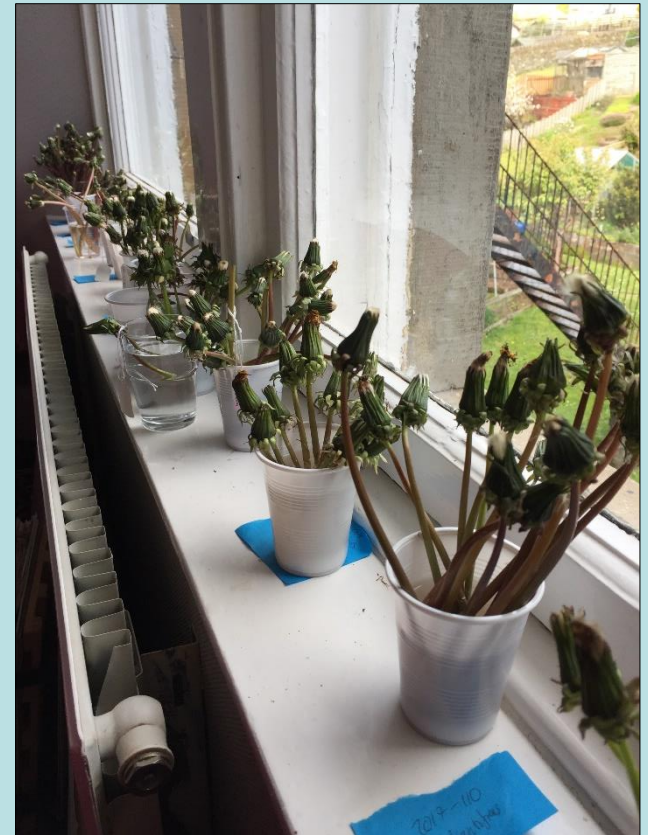


- Plants in flimsies
- Flimsies in drying paper changed every day
- Corrugated cardboard between drying paper to help with air circulation
- Sprung-loaded press to keep pressure on shrinking plants



Drying oven with air circulating, 30 degrees

In a more realistic world...



What makes a bad specimen?



Too many leaves, slow drying, no notes

Visit different habitats



T. lamprophyllum – allotments



T. angustisquameum – lawns



T. ekmanii – verges



T. britannicum – paving slabs



T. fulviforme – gravel

It can still be a daunting task!



“That’s half a field collected....”