

Asteraceae - Daisy (Aster or Sunflower) family, "Composites"

Bob Keeney July 2018

- 32,913 species } worldwide, mainly subtropical; c 148 species in
1,911 genera } Norfolk (mostly native)

- The largest family of flowering plants in the world ((perhaps) except for Orchidaceae)

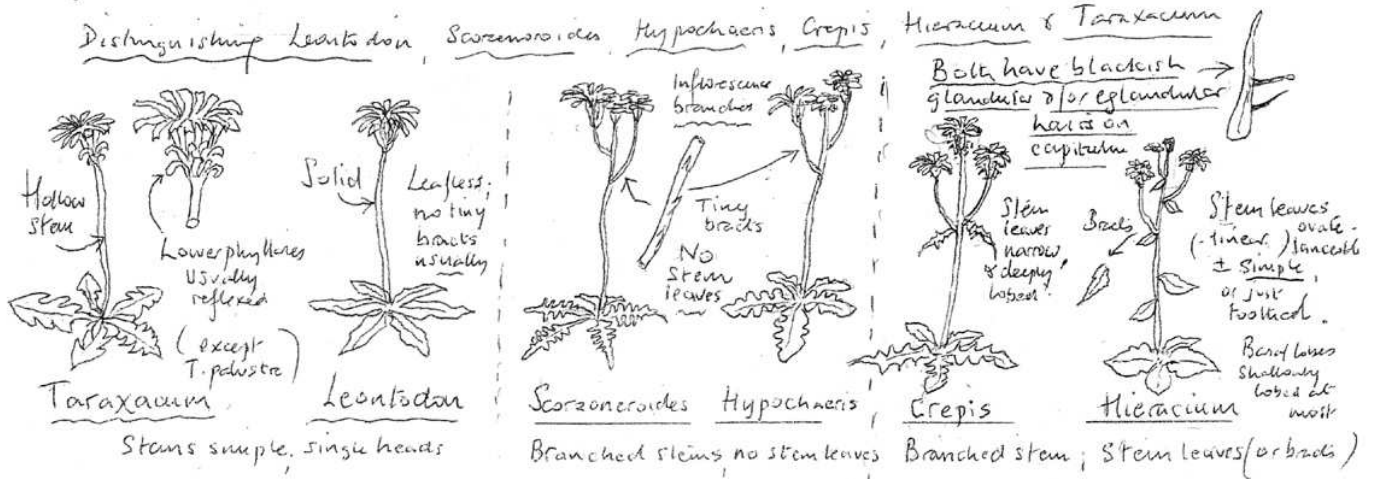
- Usually herbs or microshrubs, but can be shrubs or trees (eg Tree Senecios on E. African mountain tops).

Uses :-

- Oil plants: Sunflower; Seed plants: Sunflower.
- Vegetables & salad plants: Globe artichoke & Cardoon (Cynara spp); Lettuce; Dandelion; Chicory & Endive (Cichorium spp); Chrysanthemum coronarium (far East).
- Aromatics, herbs & flavourings: Wormwood (Artemisia absinthium); Tarragon, (Artemisia dracunculifolia), Tansy (Artemisia vulgaris); Chamomile (Chamaemelum nobile).
- Root-crops: Jerusalem artichoke (Helioscopia); Schozonera (Black salsify); Tragopogon porrifolius (Salsify).
- Latex & Rubber plant: Taraxacum kok-saghyz in steps of E. Asia (2 metre long root).
- Medicinal: Pyrethrum (now Chrysanthemum) "Dalmatian Chrysanthemum"; used as "natural insecticide"; permethrin (Synthetic derivative) important for lice & mosquito control; Artemisia annua (Chinese wormwood) - very important in malaria treatment.

Yellow composites - additions to August 2017 visual key :-

Distinguishing Leontodon, Scorzoneroideae, Hypochaeris, Crepis, Hieracium & Taraxacum



Identification of some selected Yellow Composites (Norphe Species) RMC Aug 2017

The "yellow composites" are a very old chestnut indeed, but continue to cause problems of identification in the field on a daily basis. The term is usually more or less confined to the usual culprits that cause difficulties with vegetative identification, the Hawkbits, Cat's-ears & Hawkweeds (*Leontodon*, *Scorzenoides*, *Hypochaeris* & *Crepis*), the leaves of which seem almost infinitely variable, with each species capable of producing "lookalikes" that can be confused with the other taxa in the group. Just a few of the possible variations can be found in the BSB Cris 1998 & in Sell Vol 4, but there are many, many more. One can usually come to a reliable identification using mainly the inflorescence characters, but one cannot ID every example found & also one should remember that *Crepis* & *Taraxacum* esp. basal leaves can look remarkably alike!

Since the identification of the usual yellow composites is hardly enough to keep us amused for a whole day, I have included other species with completely yellow flowers, as listed below in the Stace nomenclature (Ed 3). I have provided a check list of all genera with completely yellow flowered species, which may be useful if one finds an unfamiliar species. (Stace genus no. 5); those asterisked will be dealt with "in full".

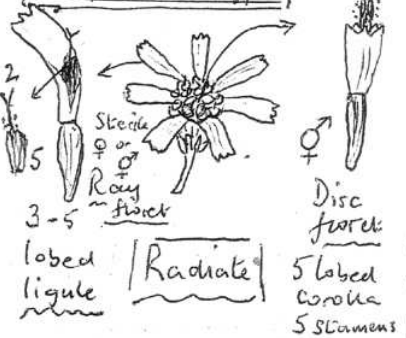
Yellow flowered Asteraceae genera	Subfamily Carduoideae	Also: (No latex)	Also: (No latex)
	(No latex)	(Echinops, Arctium, Thistles & creepweeds etc)	(Cichoreae, Artemisia, Daisies, Mayweeds, Camomiles, Fleabanes etc)
	Subfamily Cichorioideae	Carlthamus (Safflower)	
	14 <i>Scalymus</i> Golden Thistle	18 <i>Lapsana</i> *	20 <i>Hypochaeris</i> *
	(Latex often present)		
	21 <i>Scorzenoides</i> *	22 <i>Leontodon</i> *	23 <i>Picris</i> *
		24 <i>Hemithysanthe</i> *	26 <i>Tragopogon</i> *
	29 <i>Sonchus</i> *	30 <i>Lactuca</i> *	32 <i>Mycelis</i> *
		(33 <i>Taraxacum</i> *)	34 <i>Crepis</i> *
			35 <i>Pilosella</i> *
	(36 <i>Hieracium</i>)		
	Subfamily Asteroideae	45 <i>Inula</i>	47 <i>Pulicaria</i>
		48 <i>Telekia</i> (Yellow ox eye)	51 <i>Solidago</i>
	52 <i>Aster</i> (typical discoid form)	60 <i>Tanacetum</i> (vulgar)	65 <i>Anthemis</i> (finchbird)
	70 <i>Mabreana</i> (discoid)	72 <i>Eutula</i> *	74 <i>Senecio</i> *
		81 <i>Doronicum</i>	82 <i>Tussilago</i>
		85 <i>Calendula</i>	<i>Bidens</i>

Further reading: Sell Vol 4; Stace 2010; BSB Cris 1998; BSB Mamm Illustrations.

Norfolk Yellow Composites (cont)

Diagnostic characters & terminology

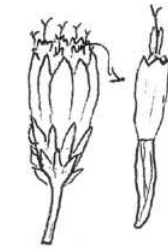
Capitulum type



Radiate

Solidago;
Some *Senecio*; *Pulicaria*;
Glebionis; *Calendula* etc.

(Occasionally v. lack
ligules: *Sen. jac.*; *Aster*.)



Discoid

Potentilla;
Inula; *Bidens*;
Cotula etc.

(Discoid form
of *Aster tripolium*)



Ligulate

Lapsana; *Hypochaeris*;
Scorzonoides; *Leontodon*;
Picris; *Helminthotheca*;
Taraxacum; *Sonchus*;
Loelice; *Mycelis*;
Taraxacum; *Crepis*;
Prasella; *Hieracium*

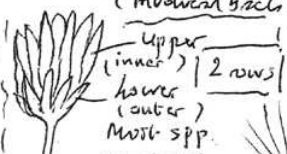
Hairy or smooth
immature
achenes
important in *Senecio*.



Needs good
light.

Achenes

Phyllaries



"Supplementary
phyllaries"
(below capitulum)

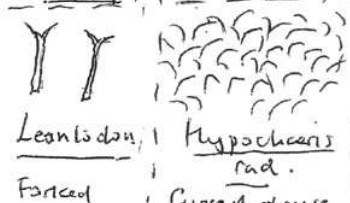
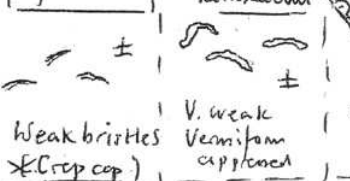
- *Senecio* has only 1 row of
fine phyllaries.
- *Lapsana* has no pappus *
- Coronet of scales in Leon. sax.



Senecio

Indumentum

Of leaves



Leonidion; *Hypochaeris*
rad.

Forced; Curved, dense

Crep. ves.



Stiff broad
bristles

Picris

Stiff sharp
long bristles

Picris / *Helminthoth.*

2

Crepis

3-4

Helminthoth.

Sc. aut.



Long white
knitted hairs

Picris

Stiff sharp
long bristles

Picris / *Helminthoth.*

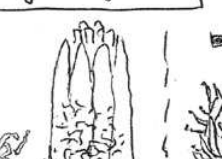
2

Crepis

3-4

Helminthoth.

Of Phyllaries



Pale,
Weak veniform
Scales (web like)

Crep. cap, *C. ves*,
Some *Senecio*,
Sc. autumnalis

Usually
bleached
based
glandular
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Long
usually
blackish
fine
simple
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Of Phyllaries



Long
usually
blackish
fine
simple
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Usually
glandular
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Long
usually
blackish
fine
simple
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Of Phyllaries



Long
usually
blackish
fine
simple
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Usually
glandular
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

Long
usually
blackish
fine
simple
hairs

Crep. cap, *C. ves*,
Sc. autumnalis

Hieracium

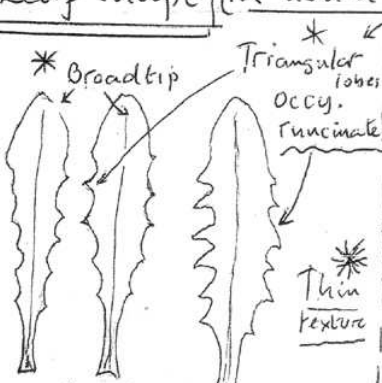
* NB Leaves of *Crep. cap* & *Taraxacum* often glabrous

* NB Phyllaries of *Hyp. rad.* are
the only ones truly glandular (save for *Coxcomb*)

Leaf shape

(in "usual culprits")

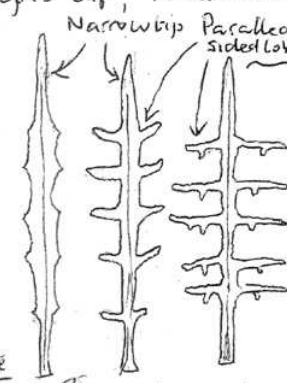
(*Crepis cap*, *Taraxacum*, *Sc. aut.*, *Leont.*, *Hypochaeris*)



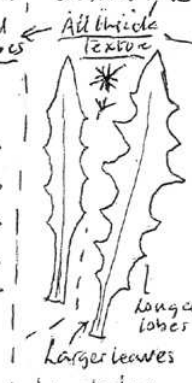
Crepis capillaris



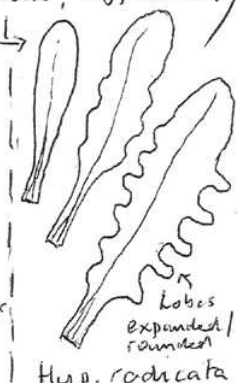
Taraxacum



Sc. autumnalis



Leontodon

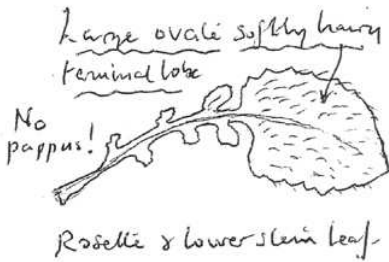


Hyp. radicata

Norfolk Yellow Composites (Cont)

Species by species (Stage Ed 3 genus no.)

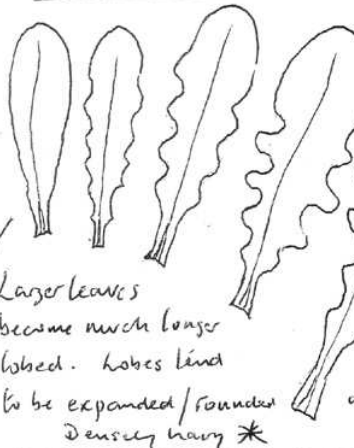
18 Lapsana communis



Rosette & lower stem leaf



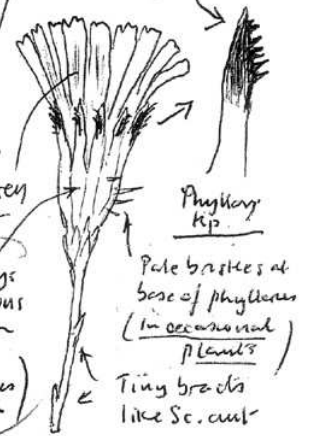
20 Hypochaeris radicata



*

*

Cox comb occ

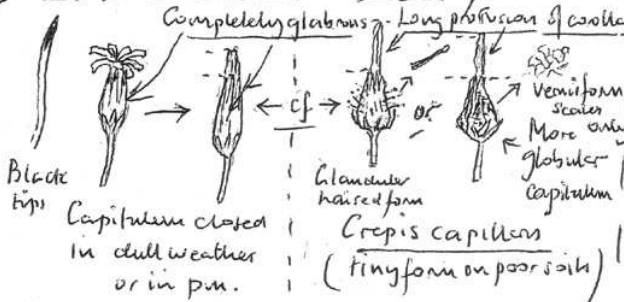


20 Hypochaeris glabra

(Capitulum always glabrous not leaves)

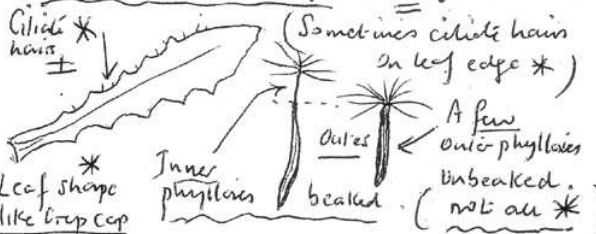
* Confusion likely with Crep cap.

NB not Hyp. radicata (esp leaves)

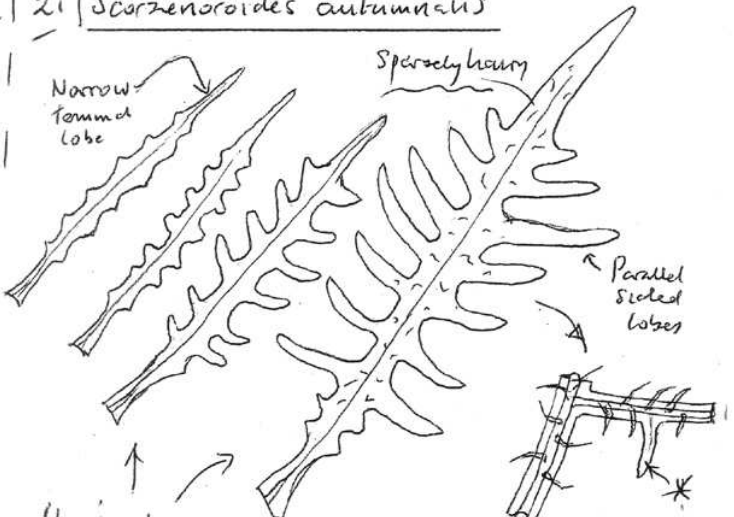


Leaves always small & thin textured even in larger plants (never like Hyp rad!);

Very constant in shape & ± glabrous.

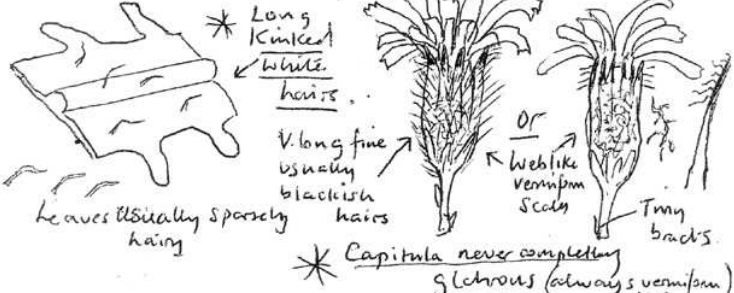


21 Scorzenoroides autumnalis



Unlike Hyp. rad. undirected portion & terminal lobe remain narrow as lobes lengthen.

Extreme form with hardly any lamina, & lobes on the lobes:

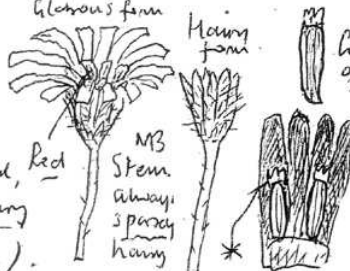


22 Leontodon

Leontodon saxatile



Usually a small plant with appressed leaf rosettes (flat on ground) short flower stalks & only sparsely hairy stalks & capitula, but can fairly often be large, very long leaved & long stalked, with wandering rosette leaves & quite densely hairy capitula (usually when growing in long grass).



Leontodon hispidus

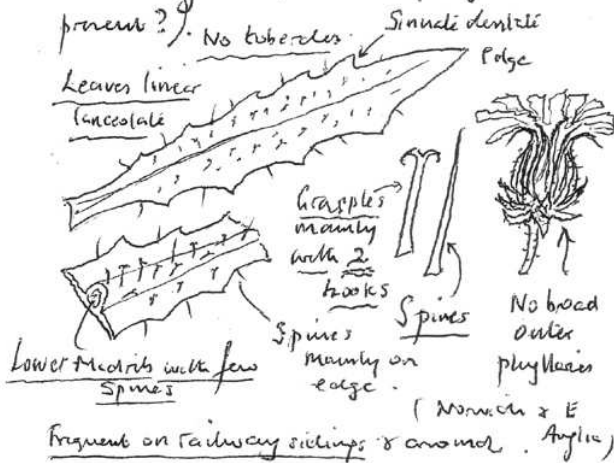
(Leaves as for L. sax with forked hairs)



Norfolk Yellow Composites (cont)

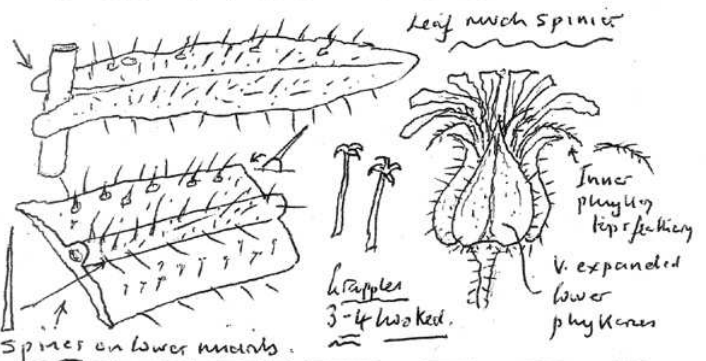
23 | Picris hieracoides

Usual problem is distinguishing
basal leaves from Helin. ech. early
in year ~ can be done on leaf
shape & indumentum (white
hairs of Helin. ech. not always
present? No tubercles. Sinus dentate



24 | Helminthotheca ecklonides

Easily distinguished on flower by
presence of very broad outer/lower phyllaries.
Leaves with more entire edge and broader -
elliptic-oblong. Usually white flowers,
but main difference is in many more long, very
sharp spines especially on underside of leaves.



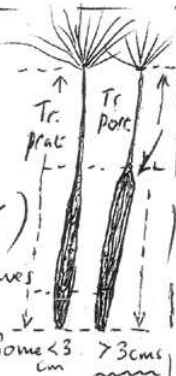
26 | Tragopogon pratensis

usually ssp minor ~ ligules
2-3/4 as long as phyllary
(ssp pratensis as long or longer)

Greyish oval-shaped basal leaves
with broad white midrib.

NB Tragopogon porrifolius very
similar apart from purplish ligules

But usually taller plant with broader
base to the leaves; & achenes abruptly
narrowed into beak (in commoner ssp)



29 | Sonchus

S. oleraceus



* Basal leaves of S. asperus
can be spotted
as in groups
or lines
(rhizomatous)

S. asper



? bases
of S. ole.
& S. asper
best not
identified
(need
stems
provenance)

S. arvensis



S. palustris



Upper stem
leaf dissected.
Glandular (organs)
hairs pale orange

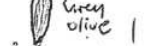
o Lactuca

L. scariola

f. integerrima



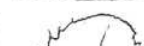
Achene



f. scariola



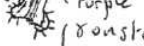
L. virosa



Achene



Var. viridula



Var. lactucaria



L. sativa



Norfolk Yellow Composites (Cont)

(5) (33) Taraxacum agg Hollow stems,

32 Mycelis muralis

Confusable with Sonchus oleraceus (basal leaves)

Myc. mur.

S. ole

Basal leaves

Letting texture; usually purplish rachis & edge Angular lobed lobes.

Rachis occ. purplish

Terminal lobes proportionally larger, lobes not angular lobed so much

Edge entire or irregularly sinuate dentate.

usually intricately reflexed lower/side play leaves but look out for Sedum palustre (incl. T. palustre) with lower phyllaries appressed (in fern etc. - unusual for T.)

+ Lots of latex



Lower middle usually glabrous Sometimes with veniform hairs

Hollow petiole

* Easily confused vegetatively with Crepis capillaris: globular or weakly bristly on lower nodes

35 Pilosella P. officinarum unmistakable, &

P. aurantiaca also in flower - leaves have same hairs as P. off. but larger & darker green. Stems much shorter & leaves in smaller groups (several only).

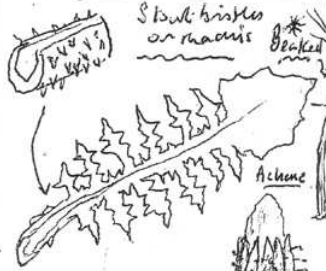


34 Crepis

C. Vesicaria

Flowers * May-June-July

Always compactly lobed lobes



Blackish glandular hairs, web-like + veniform scales

C. capillaris

Flowers (June/July to Sept.)



Glabrous or occ. weakly bristly

C. biennis V. rare

Flowers (June/July-Sept)

Much like C. vesicaria but coarser unbristled & much later flowering. Heads unwrinkled than C. capillaris. Smaller hairs as other two on phyllaries. Heads + larger than CV. No beak. 6 Norfolk records.

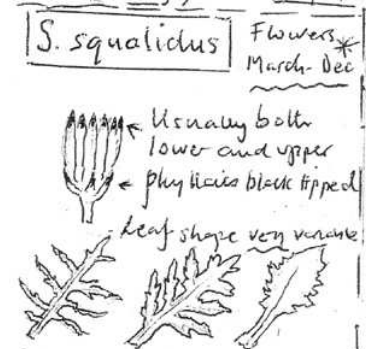
72 Cotula C. coronopifolia

becoming frequent in wet patches on grazing marshes (usually saline discoid). Has large bright yellow ball-like flowers (8-12 mm diam) & entire to irregularly pinnate leaves (usually < 6 lobes). 3 other spp to look out for have smaller, white or pale yellow, discoid flowers with quite deeply dissected leaves: - in Norfolk C. austral flowers white 3-7 mm C. dioica & C. sp. fl. pale yellow (See Phae.) Grow on lawns / road verges

74 Senecio

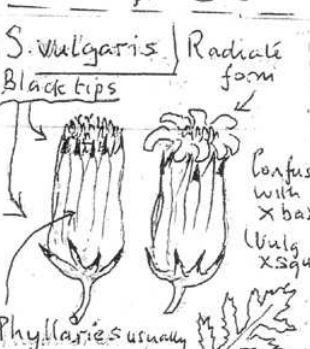
S. jacobaea

Occidoid * Single plants Black tips to upper phyllaries. All achenes only glabrous (leaf tips) Expanded angular



S. aquaticus

Single plants Broader (ligules) Pale brown tips. All achenes glabrous. Lower stem leaf.



S. erucifolius

Groups of plants Narrower ligules. Green tips. Hairs under leaves. Leaf tips lanceolate.



S. inaequidens Spreading in Norfolk

± winter green. Sprawling not erect. Bushy with weak stems & scattered flowers. Linear leaves. Turned downwards.



S. squalidus

Flowers * March-Dec

Usually both lower and upper phyllaries black tipped. Leaf shape very variable.

S. vulgaris

Radiate form

Black tips. Confusable with X. baltica be confused. (Vulg. X Squ.) Phyllaries usually strictly glabrous.

S. sylvaticus

Usually "healthy" soils. Leaves similar to S. vulg. usually taller & more branched but small plants may be confused. V Small ligule. Phyllary tips green - pale brown. Usually arching hairy.

S. viscosus

Like robust large headed S. vulgaris, but greyer due to pale glandular hairs all over. S. sylv. has glandular + web-like hairs. Always radiate. Leaves of S. vulg. S. sylv. & S. visc. all quite similar.

