

RANUNCULUS SUBGENUS RANUNCULUS

1. *Ranunculus acris*

Ranunculus acris L. is represented in the British Isles by subsp. *acris*, within which three varieties can be recognised (Coles 1971). The distribution of the taxa is not known with certainty. Descriptions of the leaves refer to spring leaves, i.e. those produced just before the first flowering stem of the year.

- 1 Leaves produced before the first flowering stem of the year glabrous (i.e. look at oldest leaves which persist; those produced later may be hairy*) usually shallowly lobed, never finely divided (Figs. c, d). Cairngorms, mainly confined to snow patches in the mountains
R. acris subsp. *acris* var. *pumilus* Wahlenb. 2
- 1 Leaves hairy, variously divided (Figs. a, b) 2
- 2 Hairs on the upper surface of the leaf rarely exceeding 1.2 mm; leaves variously divided, often very finely. Widespread
R. acris subsp. *acris* var. *acris*
- 2 Many hairs on the upper surface of the leaf exceeding 1.2 mm; leaves never finely divided, lobes usually broad. Ireland and Scotland, especially in areas of less intensive agriculture
R. acris subsp. *acris* var. *villosus* (Drabble) S. M. Coles



Leaves of *Ranunculus acris* (a, b) var. *acris*, (c, d) var. *pumilus*.

* Cultivation of var. *pumilus* from the Cairngorms by T. Rich confirms that the early leaves look very different to var. *acris* but later leaves are virtually indistinguishable.

Reference Coles, S. M. (1971). *Watsonia* 8: 237-261.

2. *Ranunculus acris* / *R. repens* / *R. bulbosus*, non-flowering plants

In grazed, closed grassland leaves of the three species can appear very similar. The leaves can be told apart without resorting to digging up plants to see if they have bulbous bases.

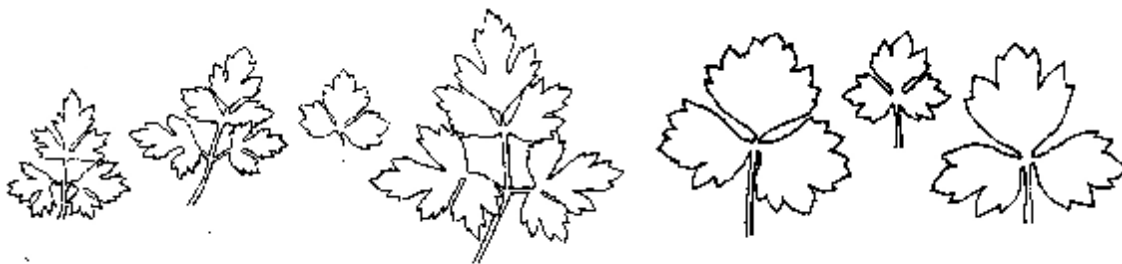
Ranunculus acris L. is very variable (cf. account above) but has evergreen leaves which are typically 5-lobed, and readily separable from the other species. *Ranunculus bulbosus* L. has leaves which mainly appear in the autumn and disappear by early summer after flowering, though a few small ones can

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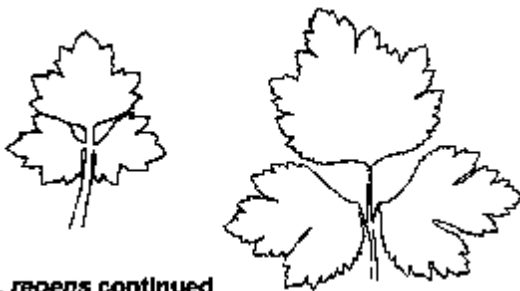
sometimes persist through the summer. It is significantly under-recorded due to its early flowering. Compared to *R. repens* L., its leaves tend to be squarer, the white blotches if present are usually weaker, and the side leaflets are usually joined to the petiole rather than having distinct stalks. *Ranunculus repens* is very variable, and plants may or may not produce runners.



R. bulbosus



R. repens



R. repens continued



R. acris

3. *Ranunculus lingua* / *R. flammula*

Large forms of *R. flammula* (e.g. var. *major* Schult., see below) may result in the unwary over-recording *R. lingua*. There is little doubt that *R. lingua* is spreading, possibly as a consequence of widespread planting in ponds. They can be distinguished as follows (cf. Stace's *New Flora*):

R. lingua L.: Flowers 20-50 mm wide; pedicels smooth; achenes *c.* 2.5 mm.

R. flammula L.: Flowers to 25 mm wide; pedicels furrowed; achenes 1-2(-2.3) mm.

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Ranunculus flammula is very variable. Field observations and transplant experiments demonstrate clearly the plasticity of habit, of leaf shape and serration, and of petiole length. With four exceptions (see below), these diverse leaf forms are not correlated with other characters, and most infraspecific taxa based on leaf form alone have little significance (Padmore 1957).

Ranunculus flammula subsp. *flammula* var. *flammula* is widespread (Padmore gives two environmentally-induced phenotypes).

Ranunculus flammula subsp. *flammula* var. *major* is a strikingly large plant which has been confused with *R. lingua* (cf. above). It occurs mainly in the south but has been recorded as far north as Aberdeenshire and in western Ireland.

Ranunculus flammula subsp. *minimus* is a dwarf form found in exposed situations near the sea growing in short turf. The distinctive features are the short internodes, thick fleshy leaves and comparatively large flowers. It has been recorded for V.cc. 101, 108-112 & H9.

Ranunculus flammula subsp. *scoticus* which has readily detachable, very narrow basal leaves which are reduced to awl-shaped petioles alone. Jizz characters, which are not diagnostic, are the slightly zigzag stem, the obtuse lower stem leaves, and the petals which have a cuneate base broadening upwards to a truncate apex so that they appear distant from one another. It has been confirmed from V.cc. 88, 94, 96-98, 103-105, 108, 110, H17, H26, H27 & H29.

Note the stem leaves are usually narrower than the basal leaves (the latter are the most important). The basal leaves tend to increase in size as they are produced. Silverside (1984) gives many useful notes. Intermediates between the taxa occur.

- 1 Basal leaves reduced to subulate petiole only, caducous (i.e. dropping early); later leaves sub-caducous with a more pronounced short, blunt, linear-oblong blade (Fig. c)
R. flammula subsp. *scoticus* (E. S. Marshall) A. R. Clapham 2
- 1 Lamina of basal leaves narrowly-lanceolate to wider than long, persistent 2
- 2 Lamina of basal leaves of mature plant orbicular or wider than long (Fig. b), distinctly cordate at base; achenes 1.0-1.3(1.4) x as long as wide (note 1); flowers 15 mm or more across; plant fleshy, mat-forming
R. flammula subsp. *minimus* (A. Benn.) Padmore
- 2 Lamina of basal leaves of mature plants lanceolate to broadly ovate, cuneate to rounded at base (Fig. a); achenes 1.15-1.65 x as long as wide (note 1); flowers 8-25 mm across 3
- 3 Plant 30-60 cm, robust, erect, rarely rooting at even the lowest node; flowers 18-25 mm across
R. flammula L. subsp. *flammula* var. *major* Schult.
- 3 Plant slender, stem ascending or creeping and rooting; flowers 8-20 mm across
R. flammula subsp. *flammula* var. *flammula*

Note

1. Silverside (1984) finds this character little use.

- References** Marshall, E. S. (1892). *Journal of Botany* **30**: 289-292.
Padmore, P. A. (1957). *Watsonia* **4**: 19-27.
Silverside, A. J. (1984). *BSBI Scottish Newsletter* **6**: 4-7.

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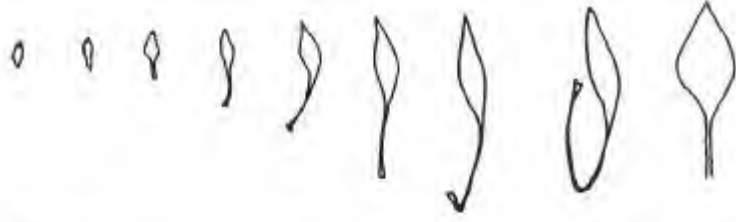


Fig. a. Basal leaves of *Ranunculus flammula* subsp. *flammula*

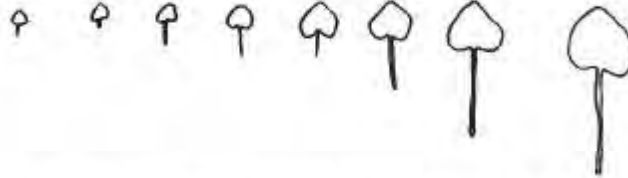


Fig. b. Basal leaves of *Ranunculus flammula* subsp. *minimus*

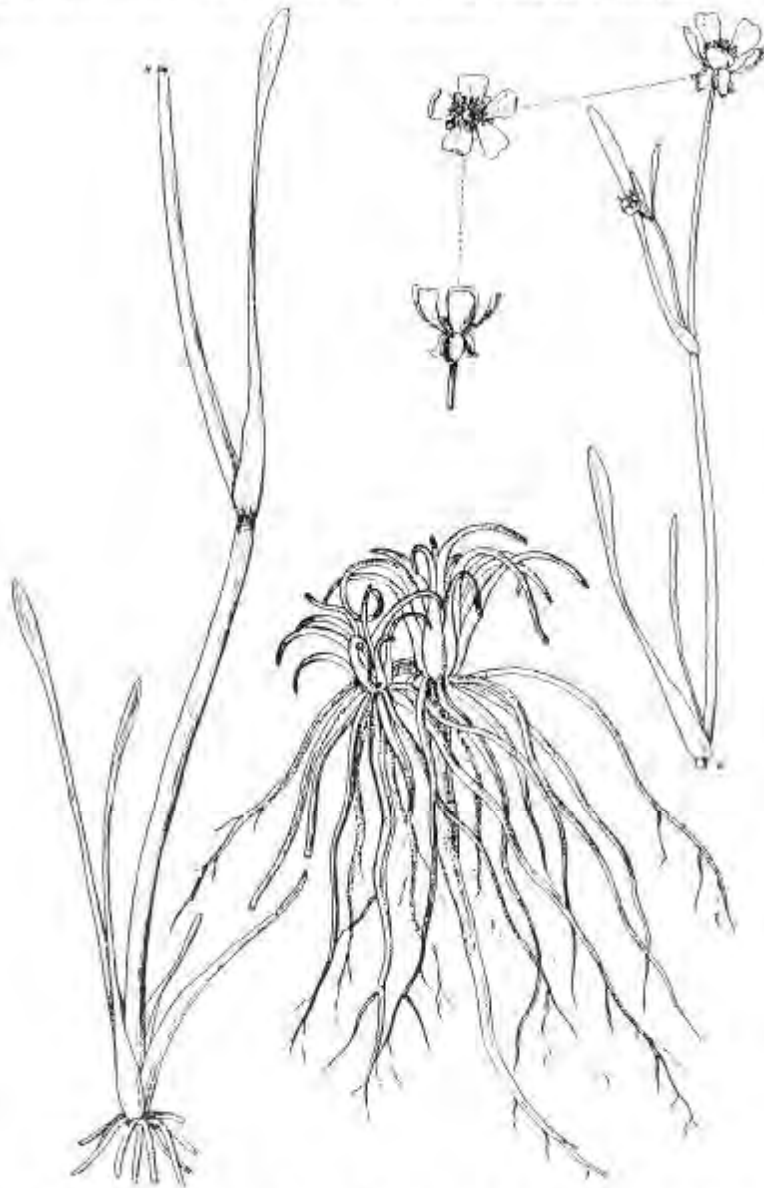


Fig. c. *Ranunculus flammula* subsp. *scoticus* (from Marshall 1892)

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4. *Ranunculus flammula* / *R. reptans* / *R. × levenensis*

Creeping spearworts recorded from stony lake shores in V.cc. 69, 70, 72, 73, 85, 93, 98 and H40 are probably mainly *Ranunculus flammula* × *R. reptans* hybrids (Gornall 1987). Pure *R. reptans* has been recorded in four localities but may not persist (Birse 1997; *Aquatic Plants*).

Plants can usually be distinguished using a combination of characters in the Table below. Unfortunately, most of these characters are highly plastic, and sometimes it can be particularly difficult to tell the hybrid from either procumbent forms of *R. flammula* or from pure *R. reptans* without a cultivation experiment, although the achene beak length/achene length ratio is reasonably diagnostic in both cases. Extreme difficulties arise in situations where the hybrid is a product of back-crossing to one parent or where it is a parental type segregate. In such cases there is no easy answer except arbitrarily to treat all variants that fall within the established morphological ranges of the parents as pure species, even if hybrids occur in the same population.

Characters used to separate *R. × levenensis* from its parents are given below. Values quoted are ranges; all measurements have been made on wild-collected, herbarium material. Equivalent data on cultivated plants can be found in Gibbs & Gornall (1976).

	<i>R. flammula</i> L. erect	<i>R. flammula</i> L. procumbent	<i>R. × levenensis</i> Druce ex Gornall	<i>R. reptans</i> L. (note 1)
Stem diameter	1-9 mm	1-3.5 mm	0.5-2.8 mm	0.3-1.9 mm
Largest basal leaf, width	1-30 mm	1-20 mm	1-4(-10) mm	0.3-1.5 mm
Largest flower, diameter	6-20.5 mm	5-15 mm	6-12(-15) mm	6-10.8 mm
Width of largest petal	2-8.1 mm	1.1-5.0 mm	1.2-3(-4.5) mm	1.3-3.2 mm
Achene beak length / achene length excluding beak	6.5-20.6%	5.6-19.1%	12.3-28.8%	21.6-29.2%

Note

1. Non-British material.

References Birse, E. M. (1997). *BSBI News* **74**: 17-19.
Gibbs, P. E. & Gornall, R. J. (1976). *New Phytologist* **77**: 777-785.
Gornall, R. J. (1987). *Watsonia* **16**: 383-388.

Author R. J. Gornall, 1997.

Plant Crib

5. *Ranunculus ophioglossifolius* / *R. flammula*

Ranunculus ophioglossifolius is currently only known from two sites in Gloucestershire but could very easily be overlooked as *R. flammula* elsewhere. It is variable in size depending on the environmental conditions, ranging from small spindly plants only 3 cm tall to robust tall plants of similar size to *R. flammula*. It occurs in seasonally dry ponds; full details of any new sites of this very rare plant should be recorded.

Look for smaller plants with paler yellow flowers amongst *R. flammula*; be warned, *R. flammula* is very variable. In cultivation at least, *R. ophioglossifolius* is a paler yellowish-green with leaves glossy on upper surface.

	<i>Ranunculus ophioglossifolius</i> Vill.	<i>R. flammula</i> L.
Habit	3-60 cm tall, erect to ascending	10 - 100 cm tall, erect to prostrate
Flowers	Petals separated, not overlapping; canary yellow	Petals overlapping, usually at least at base; golden-yellow
Fruits	Tuberculate	Smooth

Reference Holland, S. C., ed. (1977). *Badgeworth Nature Reserve Handbook*. Gloucester Wildlife Trust.