

ALCHEMILLA

1. Introduction, especially to *A. mollis*

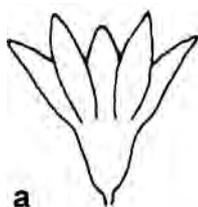
In terms of 'biomass', by far the commonest *Alchemilla* in most of Britain today is the robust garden plant *Alchemilla mollis*. This plant is usually what gardeners mean when they say 'Alchemilla', and it is essential to recognise it from the native species, because it is increasingly becoming naturalised in Britain. Although *A. mollis* is included in Stace's *New Flora*, the treatment fails to make it sufficiently clear how different this alien species is from any other British *Alchemilla*. It belongs to the series *Elatae*, typically robust plants characterised by the relatively large yellowish flowers on which the four epicalyx-segments are as long and often as wide as the alternating sepals, so that the open flower has the appearance of an eight-pointed star. Learn to recognise *A. mollis* when it flowers in your garden, and satisfy yourself that you can see the difference in the individual flower (Fig. a). (The three other *Elatae* *Alchemilla*s are in cultivation in Britain but they are much rarer than *A. mollis* and are not currently known in the wild. Details, including a key, can be found in Walters (1991).)

Excluding *A. mollis*, there are only three *Alchemilla* species you are likely to see in lowland Britain. Learn to distinguish these: with practice, all you need is a single leaf!

Records for all the rare and scarce plants are very sparse since the 1950s and detailed information, preferably with voucher specimens, is urgently needed.

2. Key to common lowland species (including *A. mollis*)

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|---|--|---------------------------------|
| 1 | Epicalyx segments about as long as sepals (Fig. a); tall robust plants | <i>A. mollis</i> (Buser) Rothm. |
| 1 | Epicalyx segments distinctly shorter than sepals (Fig. b); often small plants | 2 |
| 2 | Nearly glabrous plants with some appressed hairs on petioles and the lowest stem internode | <i>A. glabra</i> Ney genf. |
| 2 | Plants with obvious \pm spreading hairs, at least on petioles and lower part of stem | 3 |
| 3 | Leaves practically glabrous above; flowers and pedicels \pm glabrous | <i>A. xanthochlora</i> Rothm. |
| 3 | Leaves hairy on both sides; backs of flowers hairy | <i>A. filicaulis</i> Buser |



Epicalyx segments. (a) *A. mollis* (series *Elatae*) (b) native taxa.

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Notes on the 'lowland species'

All three common lowland species can also be found in upland areas.

A. glabra is at first glance glabrous, but look carefully for the appressed hairs, especially on petioles. Be careful not to be misled by specimens infected with mildew: the stalked conidia (reproductive bodies) can look like spreading hairs!

A. xanthochlora sometimes has a few hairs distally in the folds of the upper side of the leaf.

A. filicaulis presents the most difficulty. The widespread lowland variant is subsp. *vestita* (Buser) M. E. Bradshaw; it has spreading hairs throughout all parts of the plant. In Britain subsp. *filicaulis*, with the upper part of the stem, inflorescence and pedicels glabrous, is an upland or mountain plant, often (in grazed pasture) very small (Bradshaw 1963a).

A. minima Walters, described from Ingleborough, is a genetically dwarf variant of *A. filicaulis*, best treated as *A. filicaulis* var. *minima* (see Bradshaw 1964; Walters 1949, 1970, 1986).

3. Upland and mountain Alchemillas

Alchemilla alpina and related species

In several mountain areas of Britain and Ireland, the true Linnaean *Alchemilla alpina* occurs, sometimes (as in western Lake District and many Scottish mountains) in local abundance. Note that this species is absent from the Welsh mountains. The plant most gardeners call *A. alpina*, the 'Alpine Lady's Mantle', is *not* the British (and Scandinavian) native, but a related, more vigorous and handsome species *A. conjuncta* Bab. (There is a third 'alpina' species not uncommonly grown, which is the Alpine *A. plicatula* Gand., but this seems not to have been recorded as a garden escape). Be sure you can distinguish true *A. alpina* from *A. conjuncta*: the silhouettes in Stace's *New Flora* do not unfortunately show that all 5(-7) leaflets in *A. alpina* are separate to the base, whilst all 7(-9) *A. conjuncta* leaflets are obviously joined at the base. *A. conjuncta*, even in its long-established Glen Clova locality, is now considered to be originally introduced *via* gardens. It is now quite widely recorded in Britain, not always in mountain areas.

'Vulgaris' Alchemillas

Upper Teesdale and Weardale, and to a lesser extent the Craven area, are the regions in Britain which have the greatest number of *Alchemilla* species. Stace's *New Flora* includes all the rare and local species, but it is desirable to have a voucher specimen confirmed by a referee, especially if the record, if proved correct, is from a 'new' area. Here are some hints - and warnings!

- i) Be very careful to collect one or more summer basal leaves which belong to (and ideally are attached to) flowering stems. In *Alchemilla*-rich areas it is quite normal for several species to be growing mixed together.
- ii) The only 'Vulgaris' species with glabrous upper leaf surface and spreading hairs elsewhere is *A. xanthochlora*. Look critically at all *Alchemillas* with hairy upper leaf surfaces; these are the interesting ones. Note that, in well-grown *A. filicaulis*, there is nearly always a rich wine-red colour at the base of the plant. None of the other species normally shows this (particularly useful in distinguishing *A. filicaulis* from *A. glaucescens*).
- iii) In areas other than the 'classical' *Alchemilla*-rich ones, more and more interesting records for e.g. *A. acutiloba*, *A. gracilis* and *A. tythantha* are turning up. This may be partly due to the paucity of sharp-eyed botanists, but suggests also that in 'waste places' some of these rare species are still spreading (see, for example, Dickson *et al.* 1993).
- iv) The species with appressed hairs, which (except for *A. glabra*) are exclusively mountain and upland plants in Britain, present a special difficulty. The best general advice is to look closely at the plants in

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two respects, namely: are there any *appressed hairs* on the *second and third stem internodes* and/or on the *upper leaf surface*, and are the *teeth acute and regular*? Typical plants of *A. wichurae* and *A. glomerulans* are relatively easy to distinguish from *A. glabra*; but there are still problems with some British material, and it would be sensible to collect a voucher specimen of any plant that differs from *A. glabra* in the ways indicated.

4. Conservation problems

Unless there is abundant material, make only *one* decent pressed specimen with at least one basal summer leaf and the corresponding flowering stem, and send it to a referee. The biggest problem for mountain *Alchemillas* is over-grazing by sheep: the human pressure pales into insignificance beside the destruction of whole herb-rich communities by excessive sheep-grazing!

The best illustrations I know for British *Alchemilla* are the coloured plates in Garrard & Streeter (1983). The originals of these are water-colours by the late Ian Garrard: until I saw these I did not believe that any artist could so faithfully reproduce not only the shape, but also the texture and even the hairiness of the leaves. For the critical northern *Alchemillas* related to *A. glabra*, I recommend the coloured leaf-illustrations in Mossberg *et al.* 1992 (the text is in Swedish, but Latin names are given).

5. *Alchemilla* in the Yorkshire Dales

Of the two main areas of *Alchemilla* diversity in Britain, those of Teesdale have been described by Bradshaw (1962, 1985) and those of the N England in general in Wigginton & Graham (1981: NB note in this that couplet 20 on their page 48 should read that there is no distinct incision between the lobes for *A. glabra* and that a distinct incision is present in *A. wichurae*). The following key is to the second main area of diversity in the Yorkshire Dales (for a full account see Roberts 1992).

- | | | |
|---|--|---------------------------------------|
| 1 | Leaves and/or petioles with conspicuous dense spreading hairs | 2 |
| 1 | Leaves and petioles hairless or hairs inconspicuous and \pm appressed to surface | 4 |
| 2 | Upper-side of leaf \pm hairless | <i>A. xanthochlora</i> Rothm. |
| 2 | Leaf \pm hairy all over (rarely sparsely hairy on upper surface) | 3 |
| 3 | Plant compact, neat, deeply glaucous, densely softly silky-hairy, with 'lambs-ear' feel; leaves neat, rounded; no wine-red colour at base of plant (locally very abundant on limey soils) | <i>A. glaucescens</i> Wallr. |
| 3 | Plant dull blue-green to mid-green, not softly silky-hairy (perhaps coarsely hairy); leaves usually reniform, not round; often richly wine-red at base of petioles and base of stem (various soils; much more widespread) (note 1) | <i>A. filicaulis</i> Buser |
| | subsp. vestita (Buser) M. E. Bradshaw | |
| 4 | Leaf round; lobes rounded with teeth very fine and even-sized; basal lobes overlapping; obvious incision between lobes (sparse; typically on wet rocks by waterfalls and in short limestone turf, especially by tracks) | <i>A. wichurae</i> (Buser) Stefánsson |
| 4 | Not as above; teeth broader and varying in size | 5 |
| 5 | Upper leaf-surface \pm hairless (very common) | <i>A. glabra</i> Ney g. |
| 5 | Upper leaf-surface with inconspicuous but usually abundant \pm appressed hairs all over (very rare plant) | <i>A. glomerulans</i> Buser |

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Note

1. The two other forms of *A. filicaulis* would key out here; both are rare. Both have sparser hairs on the upper surface of the leaf than *A. filicaulis* subsp. *vestita*. Both have been mentioned earlier under Section 2.

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Authors

Sections 1-4 S. M. Walters, February 1998, section 5 F. J. Roberts, February 1998.