

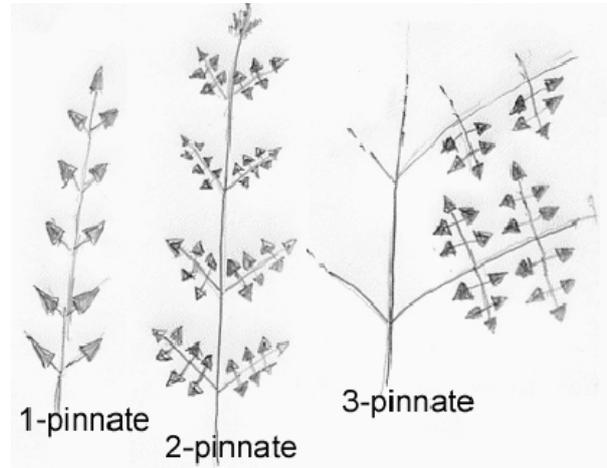
# Guide to Ferns Frequent in NW England

(NB *do not use this key* without first reading the INTRODUCTORY GUIDE available from the same source.

Note that this guide is a DRAFT version subject to correction) **Last revised 11/10/08**

Apart from a couple of species (see below) the “leaves” (*fronds*) of most ferns are “pinnately” divided. A 1-pinnate fern has “leaflets” (*pinnules*) attached to a single stalk. If the stalk carries *branches* to which the pinnules are attached the fern is 2-pinnate. If the branches are themselves branched the fern is 3-pinnate.

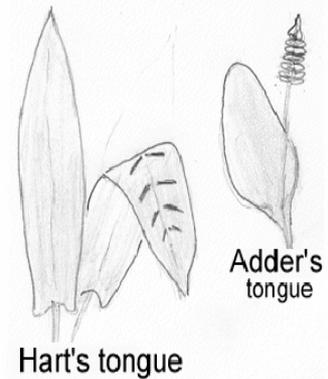
Ferns reproduce by spores which are (in most species) held in spore cases (*sori*) on the lower side of the pinnules. The form of the sori are very helpful in determining the species, but are not always present. The key below attempts to allow identification of reasonably mature ferns in the absence of sori; with some experience this is possible for all the species described but a clear cut decision will sometimes be difficult for the beginner if sori are absent. Very immature plants are difficult to identify even by experts.



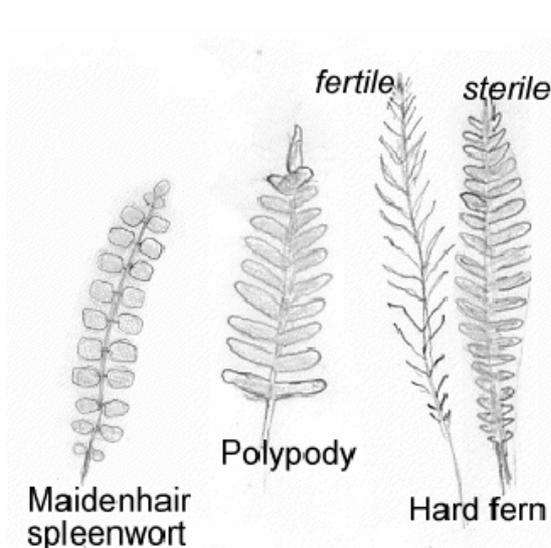
## 1. Ferns with undivided fronds

▲ **Hart’s tongue** (*Phyllitis scolopendrium*) is unlike any other fern but could be mistaken for the leaves of a flowering plant if the linear sori are not present. But its glossy leaves bunched in a “shuttlecock” are very characteristic. Fronds typically ~20cm, often considerably longer. Common on walls and in woodland.

▲ **Adder’s tongue** (*Ophioglossum vulgatum*) can be recognised by its spore cases held on a separate stalk instead of on the frond, which is typically a few cm long. Not easy to pick out if these spore cases are absent. Rather rare; usually found in old pasture etc.



## 2. 1-pinnate ferns



▲ **Maidenhair spleenwort** (*Asplenium trichomanes*)

Pinnules almost round or oblong (not much longer than wide) carried on a shiny black stalk. A small fern (fronds typically about 10 cm) almost exclusively on mortared walls. Sori linear (cf *Phyllitis*)

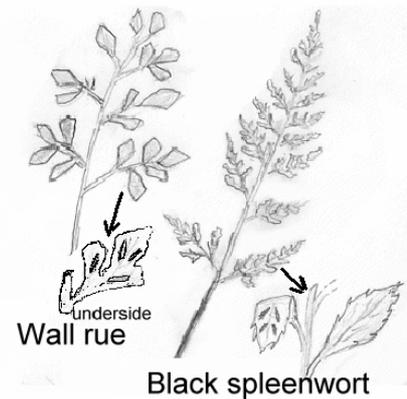
▲ **Polypody** (*Polypodium vulgare* agg.) is much larger (fronds typically 20cm) and the pinnules are much longer than wide and the sori round or slightly elliptical. Mostly on trees or old walls. (Actually an aggregate of three very similar and closely related species).

▲ **Hard Fern** (*Blechnum spicant*) similar to Polypody but the pinnules decrease in size toward the base so the the outline is lanceolate rather than triangular. The sori are carried on special fronds with narrow pinnules; these fertile fronds rise vertically at the centre of the “shuttlecock” of ordinary (sterile) fronds; if they are present this fern is instantly recognisable. Almost always on the ground, rarely on trees or walls.

### 3. Ferns with linear sori, almost always on mortared walls.

▲**Wall rue (*Asplenium ruta-muraria*)** Easily distinguished from other ferns but not always recognised as a fern if the linear sori are absent. Similar in size to maidenhair spleenwort and like that species it commonly occurs as “bunches” of fronds on mortared walls.

▲**Black spleenwort (*Asplenium adiantum-nigrum*)** is unambiguously recognisable if the linear sori are present but otherwise can be confused with immature plants of other species. The glossy fronds, taper strongly at the tip; they are typically about 10-15cm; the stalk is usually shiny black toward the base. With practice, these characters allow recognition even without sori.



Maidenhair spleenwort above also has linear sori. The ferns below (except Royal Fern and bracken) have round or slightly elliptical sori.

### 4. Large ferns with spore cases in green or brown tassels rising above the normal fronds.

▲**Royal fern (*Osmunda regalis*)** The tassels of spore cases are characteristic and often present. Otherwise, this species can be recognised by its large size and characteristic fronds. The pinnules are completely untoothed. Scarce, usually in wet places. Can be 2m high when well grown but more often seen as small specimens growing in canal masonry.



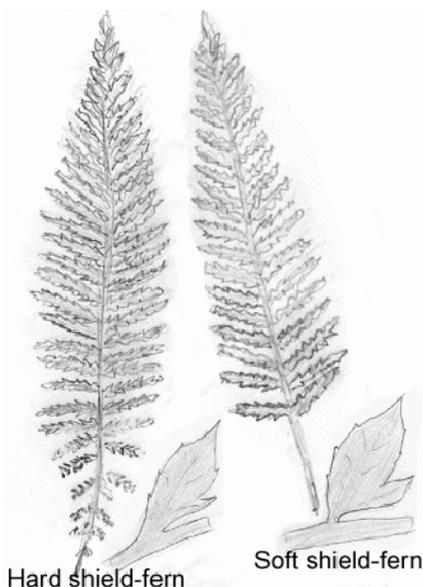
### 5. Two- or three- pinnate ferns with fronds arching out from a central point to form “shuttlecocks”; pinnules toothed or serrated, at least slightly. (Mature fronds typically 30-100 cm).



#### 5a Pinnules with finely drawn-out point. Basal pinnules usually asymmetric, with a characteristic “thumb” (Shield-ferns).

▲**Soft shield-fern (*Polystichum setiferum*)** Lowest branches not much shorter than the central ones. Pinnules on short stalks.

▲**Hard shield fern (*P. aculeatum*)** Frond tapering to base, with bottom branches very short. Pinnules merging with stem.



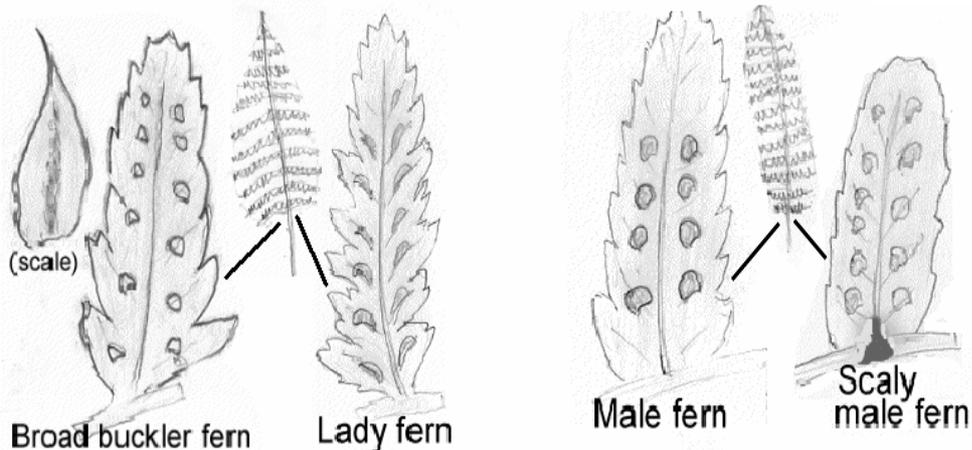
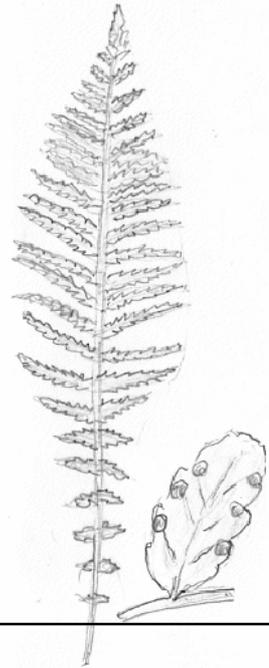
The stalked/not stalked character is not always very clear cut but the differently tapering fronds are consistently apparent. Generally, the “thumb” of the soft shield fern is more pronounced and sticks out at a bigger angle but again this is not always a clear cut difference. The mature fronds of *P. aculeatum* look and feel harder than those of *P. setiferum* and are somewhat more glossy and “plastic”. With experience, this reliably separates the two species.

**5b. Frond tapering strongly to base (lowest branches very short) Scales on lower part of stalk silvery or white; sori confined to extreme edge of pinnule.**

**▲Lemon-scented fern (*Oreopteris limbosperma*)**

The fronds have a lemony fragrance when slightly bruised (due to glands on the lower surface which are visible x10). This is a useful character but the scent is often very faint in older fronds unfurling. Mostly in hilly areas but not demanding high altitudes.

The silvery scales are diagnostic; they are prominent in very young fronds, so this fern is easily identifiable even at the initial stages of unfurling



**5c. Frond tapering only slightly toward base. Scales on stalk pale- or dark- or golden-brown. Sori centrally placed.**

**▲Lady fern (*Athyrium filix-femina*)**

Frond roughly triangular (broadening toward base) Pinnules deeply cut; sori elongated, often “comma”-shaped (the following 3 spp have round or kidney-shaped sori) .

**▲Broad Buckler (*Dryopteris dilatata*)** Pinnules deeply cut and frond roughly triangular as in the lady fern, but distinguished from all other ferns in this group by the scales on the stalk, which are: pale brown at the margins, dark brown toward the centre.

**▲Male fern (*Dryopteris filix-mas*)**

Pinnules much less deeply cut than either of the above, frond more nearly parallel-sided.

**▲Scaly male fern (*Dryopteris affinis* agg.)**

Similar to male fern but pinnules even less deeply cut. Junction of midrib and stalk stained black at least on lower surface.

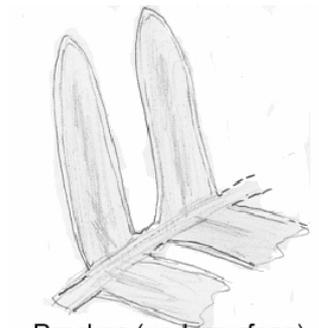
In the absence of sori beginners may have difficulty distinguishing male fern and lady fern but with practice the lady fern’s much lacier appearance and broader outline are easily recognised. The scaly male fern is actually a complex of several closely related species and subspecies. Some *but not all* of its forms have very dense golden-brown scales on the lower part of the stalk. The black spot is always present and diagnostic but it may be faint (and less obvious than the drawing implies!).

The broad buckler, lady fern & male fern are very common, the scaly male fern somewhat less so but not infrequent..

## 6. Fronds arising singly, not in shuttlecocks but often in dense stands. Pinnules untoothed, margins rolled down

### ▲Bracken (*Pteridium aquilinum*)

3-pinnate except for dwarf plants (all other common ferns are 2-pinnate, except the Broad Buckler which may be either). Stems rise straight from the ground, never arching; they may reach 2m in good habitat but much smaller plants occur on waste ground, walls, etc. Sori (often absent) are confined to the rolled-under edges, forming a continuous line.



Bracken (undersurface)

### Other species

▲Narrow buckler fern (*Dryopteris carthusiana*) Looks like broad buckler fern but with narrower lighter green fronds and has *uniformly* pale brown scales. It differs from lady fern, both the male ferns and the broad buckler ferns in not forming “shuttlecocks”: the fronds grow straight up. Occasional in wet habitats.

▲Beech fern (*Phegopteris connectilis*) is 1-pinnate but looks 2-pinnate because the pinnules are deeply cut. It is triangular in outline and is recognisable by the lowest pair of pinnules being strongly deflexed downwards. Rare; typically in woodland.

▲Oak fern (*Gymnocarpium dryopteris*) is very prominently 3-pinnate, somewhat like a *very* delicate and *very* small bracken (no more than 30cm). Rare, in shady places.

▲Rustyback (*Ceterach officinalis*) looks like a coarse dull-green maidenhair spleenwort but the pinnules are alternate along the stem rather than opposite and they have dense reddish scales on the lower surface. Scarce or rare, on mortared walls.

▲Brittle bladder fern (*Cystopteris fragilis*) a very delicate 2-pinnate fern with deeply cut pinnules; fronds up to about 20 cm long. Most plants answering this description will be juvenile lady ferns but the presence of sori on such small plants strongly suggest this species. Mortared walls and other basic habitats. Rare

▲Water fern (*Azolla filiculoides*) is not rare but excluded from the key because it unlikely to be recognised as fern if not already known. It floats on water and to casual inspection may be taken for a large duckweed, but very often the red tinge of at least some of the leaves distinguish it: in autumn extensive completely red patches can make a canal look like a clay tennis-court.

### References

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C. Jermy and J. Camus *The Illustrated Field Guide to Ferns and Allied Plants of the British Isles* Natural History Museum

C. N. Page *The Ferns of Britain and Ireland* Cambridge  
(an advanced treatise with full technical details)