

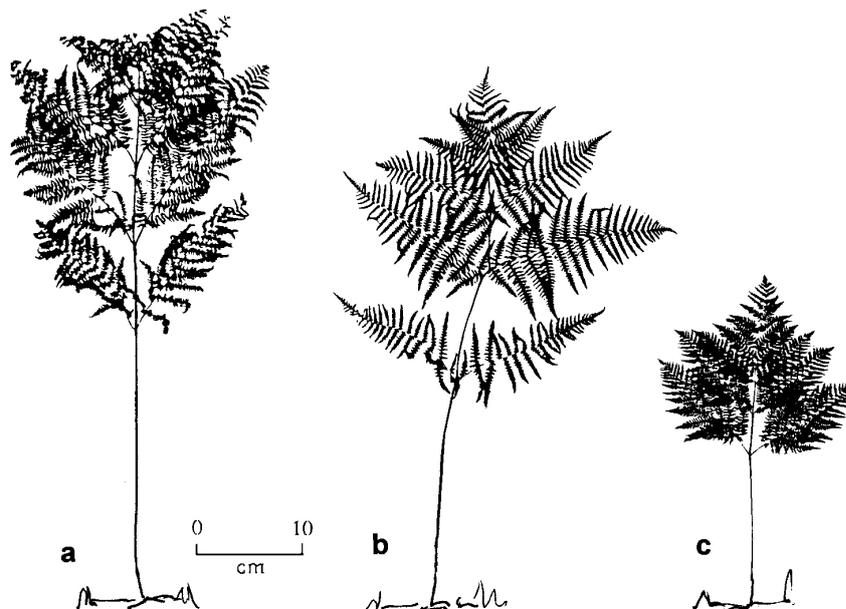
***PTERIDIUM AQUILINUM* AGGREGATE**

Two species of bracken have been recognised in Britain (*P. aquilinum* and *P. pinetorum* (*P. latiusculum* auctt. europ. non Michx.)). Page recognises further forms of both species at subspecific rank (Page & Mill 1994; Page 1997) which need further study to ascertain their ultimate taxonomic status. *P. pinetorum* subsp. *osmundaceum* (Christ) C.N. Page is a stunted form with broader oblong leaf segments and a superficial likeness to *Osmunda* and is known from only two populations. Three subspecies are recognised by Page (1997) in the *P. aquilinum* complex: subsp. *aquilinum*, the ubiquitous form and the only one that has become an agricultural pest; subsp. *atlanticum*, characteristic of lowland basic soils in SW Scotland; and subsp. *fulvum* C. N. Page, so far recorded in only a few sites in central Perthshire. The latter has some similarities in leaf-shape and wiry orange petiole to *P. pinetorum* and may be a 'hybrid' with that taxon.

Because each of the segregate taxa in Britain and Ireland have been only recently recognised, it is likely we have as yet a very incomplete picture of their ranges. Further occurrence of *P. pinetorum* is most likely within areas of present (and past?) native pine woods, especially in Scotland. Stands are most easily spotted in early summer when the nearly synchronous rapid expansion of the angled blades on thin upright petioles causes them to become fully expanded at least two weeks before those of *P. aquilinum* in the same area. See Figure (c) below, and the Table for further characters.

With regard to *P. aquilinum* subsp. *atlanticum*, further occurrence (especially in moist base-rich areas around limestone) in milder climates is most likely, and should be sought throughout the western seaboard of Britain and throughout Ireland. At a distance stands are also easily spotted in early summer when the strongly upright leaves with thick succulent petioles show a highly sequenced ('hypolepid') expansion of successive pinna-pairs with flaccid, drooping-tipped pinnules (Fig b). Closer-up the vivid white colour of the dense hairs on the expanding crozier tips compared to the brindled colour of the common *P. aquilinum* subsp. *aquilinum* and the long-persistent perpendicular white hairs to the petioles and pinnae rachides are particularly distinctive.

The table below compares the characters of *P. aquilinum* subsp. *aquilinum*, *P. aquilinum* subsp. *atlanticum*, and *P. pinetorum*. Field photographs and further leaf silhouettes showing the main diagnostic features of all taxa are give in Page (1997) pp. 344-370.



'Fronds' (leaves) of *Pteridium* collected at the same time: (a) *P. aquilinum* subsp. *aquilinum*; (b) *P. aquilinum* subsp. *atlanticum*; (c) *P. pinetorum*. (adapted from Page 1997).

Plant Crib

	<i>Pteridium aquilinum</i> (L.) Kuhn subsp. <i>aquilinum</i>	<i>P. aquilinum</i> subsp. <i>atlanticum</i> C. N. Page	<i>P. pinetorum</i> C.N. Page & R.R. Mill
General habit of plant	Orientation of leaflets variable but mostly twisted as in a venetian blind	Plane of leaflets always markedly twisted as in a venetian blind	Plane of leaflets same as whole leaf which is swept back at c. 30° to the horizontal
Height of plant	(30-) 80-200 cm	(30-) 80-180 cm	30-100 cm
Petiole of compound leaf (stalk of bracken 'plant') i.e. young 'frond'	Green, somewhat succulent-herbaceous, containing mucus, less than 15 mm wide	Green, markedly succulent-herbaceous, containing much mucus, less than 12 mm wide	Orange-red-brown, hard, wiry, with little mucus, c. 7 mm wide
Lower pinnae	Linear-lanceolate, tips ± drooping	Linear-lanceolate, tips flaccid, drooping	Broadly ovate, tips assurgent
Leaf texture	Somewhat coriaceous, ± dull	Relatively soft and dull.	Herbaceous to coriaceous, glossy
Hairs on croziers and underside of young leaves and pinna rachises	Short white hairs interlaced (brindled) with cinnamon coloured or reddish brown hairs which are easy to pick out	White hairs dominant with very few cinnamon or reddish brown hairs, the whole having a silvery appearance; hairs on pinnae rachises spreading and more persistent	White hairs few, red-brown hairs dominant and giving a reddish (cinnamon) hue to the crozier, hairs lost on ageing (and on drying)
Rate of unfurling of leaflets	Typically completed by early summer	Continuation of compound leaf and unfurling of apical leaflets continues well into autumn	Open almost simultaneously throughout frond, completed early in the season

Because of the unwieldy size and carcinogenic nature of all bracken fronds, and their potentially rapid rate of decay at the crozier stage, initial refereeing of unusual finds should first be gained **exclusively by use of duplicate colour slides** submitted to Chris Page, Gillywood Cottage, Trebost, Stithians, Truro, TR3 7DW. Pressed, **thoroughly dried, small pinnae**, including a crozier and pinna tip should **only be submitted if subsequently requested**.

References Page, C. N. (1997). *The ferns of Britain and Ireland*. Edn 2. Cambridge University Press, Cambridge.
Page, C. N. & Mill, R. R. (1994). *Botanical Journal of Scotland* **47**: 139-140.

Authors C. N. Page & A. C. Jermy, January 1998.