Plant Crib

POLYPODIUM

Three species of *Polypodium* occur throughout the British Isles. Two (*P. interjectum* and *P. vulgare*) are widespread and frequently hybridise to form *P.* × *mantoniae* Rothm.; it is the most frequent hybrid and often once established, forms large clones. The third species (*P. cambricum*) shows a South Atlantic/Mediterranean distribution preferring limestone rocks in areas where the January mean temperatures are above 2°C. It also hybridises with the other two when growing close by, forming with *P. interjectum*, *P.* × *shivasiae* Rothm. and with *P. vulgare*, *P.* × *font-queri* Rothm. The leaf-shape of the hybrids is intermediate between the parents and indurated cell numbers often vary to cover the whole range seen in the parents. Hybrid spores in *Polypodium* are colourless contrasting with the yellow-gold colour of viable spores and frequently sporangia do not dehisce.

	Polypodium cambricum L.	*P. interjectum* Shivas	*P. vulgare* L.
Leaves	5-50 cm long, yellow-green, new leaves produced autumn/winter; turning yellow and dying down in late spring or early summer	15-60 cm long, mid-green, new leaves produced late summer and autumn; wintergreen	5-25 cm long, mid-green, new leaves produced early summer; wintergreen
Leaf-blade	Broadly ovate-deltoid often with a long, narrow apical segment, pinnatisect	Narrowly ovate to oval, pinnatisect	Narrowly lanceolate to linear (but juvenile leaves triangular), pinnatisect to an obvious herringbone pattern
Leaf segments	Up to 7 cm long, usually serrated and with acute apices, lowest pair inflexed	*c.* 5 cm long, usually slightly serrate, tips tapering or bluntly rounded, lowest pairs somewhat inflexed	*c.* 2-4 cm long, entire or barely serrate, tips rounded, lowest pairs not inflexed
Rhizome scales	Narrowly triangular with a long wispy apex	Narrowly triangular with long, but not wispy, apex	Narrowly triangular with acute, but not long and twisted

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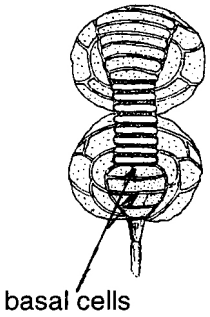
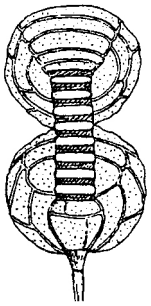
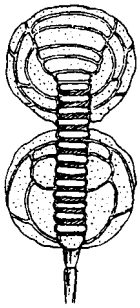
Sori	Oval, on upper 1/3 of leaf, paraphyses present	Initially oval, on upper 1/3 - 2/3 of leaf, paraphyses lacking	Round, on upper 1/4 - 3/4 leaf, paraphyses lacking
Sporangium	Annulus dark brown; indurated cells (4-) 5-10, 21-26 × 81-100 µm; basal cells 3-4 	Annulus pale brown; indurated cells (4-) 7-9 (-13), 28-35 µm × 76-86 µm; basal cells 2-3 	Annulus red-brown; indurated cells (7-) 10-14 (-17), 22 -28 × 60-80 µm; basal cell 1 
Spores maturing	In early spring	Summer to autumn	In summer

Notes

1. The best time to use this diagnostic character is early in the sporangia ripening sequence (which varies between species) and when the sporangia are yellow. With a ×10 lens the contrasting colour can be easily seen. The number of indurated cells and basal cells are best seen under a binocular at ×40 or above.
2. Illustrations of sporangia del. R. H. Roberts, with permission of C. A. Stace and Cambridge University Press.

Authors A.C.Jermy & J.M.Camus (*Field Guide*, 1991.)

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