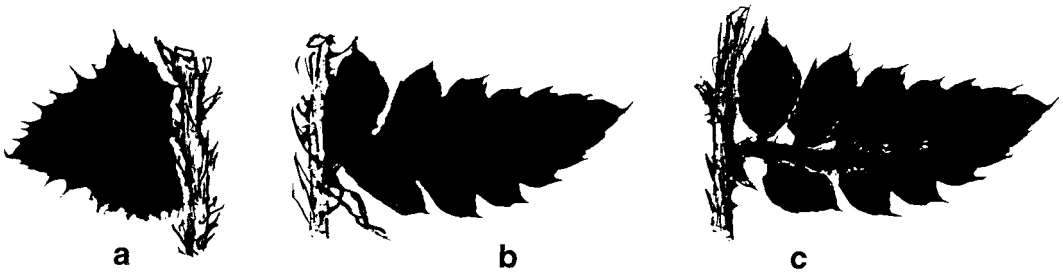
Plant Crib

POLYSTICHUM

Polystichum aculeatum, *P. lonchitis* (L.) Roth and *P. setiferum* show differences in ecological requirements*: P. aculeatum* and *P. lonchitis* preferring rocks and soils with relatively high calcium content and *P. setiferum* on soils which are base-poor. All three species hybridise but hybrids with *P. lonchitis* are very rare.

1. Hybrids with *Polystichum lonchitis*

P. aculeatum and *P. lonchitis* do grow together on upland calcareous rock scree and the hybrid *P.* × *illyricum* should be searched for. It has been recorded for V.c. 105, 108 & H29. The other hybrid, *P. setiferum* × *lonchitis* (*P.* × *lonchitiforme*) is rarer (recorded only from V.c. H29) but both are likely to occur where the two parents grow together. Both hybrids have abortive sporangia and spores. The lowermost pinnae show the best diagnostic characters (see Figures below).



Lowermost pinnae of *Polystichum* hybrids: (a) *P. lonchitis* L. (b) *P.* × *illyricum* (Borbás) Hahne; (c) *P.* × *lonchitiforme* (Halácsy) Bech.

Botanical Society of the British Isles in association with National Museums & Galleries of Wales
Plant Crib edited T. C. G. Rich & A. C. Jermy. Produced by M. D. B. Rich.

Plant Crib

2. *Polystichum aculeatum* / *P. setiferum* / *P.* × *bicknellii*

These two species can grow close together in areas of mixed geology, and there may form the hybrid *P.* × *bicknellii*; which is intermediate in morphology and frequently shows hybrid vigour. It is probably more common than hitherto recorded.

	Polystichum aculeatum (L.) Roth	*P.* × *bicknellii* (H. Christ) Hahne	*P. setiferum* (Forssk.) T. Moore ex Woyn.
Leaves	30-90 cm; leaf-blade narrowly lanceolate, variable in division, 1-pinnate-pinnatisect to 2-pinnate, tapering to base, glossy, deep green, feels stiff; petiole usually less than 1/6 leaf length	Up to 1.5 m; leaf-blade lanceolate, 2-pinnate, glossy, deep green, younger leaves bright green, feels stiff; petiole usually more than 1/6 leaf length	Up to 1.5 m; leaf-blade lanceolate, 2-pinnate, truncate at base, mildly glossy, bright green, feels soft; petiole usually more than 1/6 leaf length
Pinnae	Not overlapping, lowest pinna *c.* 1/2 length of middle pinnae	Not overlapping, lowest pinna *c.* 1/2 length of middle pinnae	Well-spaced apart, lowest pinna ± equal in length to middle pinnae
Pinnules	Those nearest rachis usually sessile and decurrent from an acute angled base and tapering to very acute angle at apex 	At least some nearest rachis stalked into an obtuse (90°) angled base and tapering to obtuse hair-tipped apex 	Those nearest rachis stalked into an obtuse angled base, tapering to obtuse hair-tipped apex 
Spores	(30-) 39–42 (-45) µm long, dark brown	Mostly all abortive (shrivelled), dark	*c.* (30-) 33–36 (38) µm long, yellow

There is a growth form of *P. aculeatum* scattered throughout its range (var. *cambricum* (Gray) Hyde & A. E. Wade, reduced to form in Hutchinson & Thomas 1996) which has been confused with *P. lonchitis*. It can be distinguished by noting two distinct lobes at the base of the lower pinnae. These are absent in the usually more coriaceous *P. lonchitis* (see Figure above and Table above).

References Hutchinson, G. & Thomas, B. A. (1996). *Welsh ferns*. National Museums and Galleries, Cardiff.

Authors A. C. Jermy & J. M. Camus (*Field Guide* 1991); revised A. C. Jermy, January 1998.