

Fern Hybrids - a fascinating snippet by Christopher Fraser-Jenkins.

'The question of British-cum-exotic hybrids is a jolly interesting one that would make a nice study and ought to be revived experimentally one day! I knew of several artificial hybrids made by Prof. Reichstein, with whom I worked for 25 years - that he synthesised in *Asplenium*. He made them in order to find out if a native European or Himalayan polyploid species was allopolyploid (derived from two ancestral diploid species) or not. Because by using an obviously completely unrelated diploid species, which one knows can't possibly have any chromosomes able to pair with those in the allopolyploid, one can count the number of bivalents (pairs) and see how much of the polyploid's genomes are in common with each other. [Excuse the explanation for those not working on this sort of thing!]. For the same reason Anne Sleep made several mixed-Country *Asplenium* and *Polystichum* hybrids, including her famous *Aspl. kobayashii* (i.e. *A. castaneo-viride*) hybrid. She also made a few *Polystichums*, partly just for fun, but several of which were very fine plants, with their hybrid-vigour and mixed characteristics. The best one she made was a superb plant of *Polystichum richardii* x *proliferum*, that she had in the greenhouse at Leeds (before the present regime replaced all Manton's and her ferns with *Coleus* varieties!). It had blue fronds - not so common in ferns (though I have a lovely climbing *Selaginella wildenowii* from Thailand in my back-yard that is bright blue!) - which were rigid-stiff and had the proliferous subapical buds, growing new plants, from the *proliferum* parent. I still have a couple of broken, but recognisable dried fronds of it - but I think it died in Leeds a few years later and the bulbil she gave me started OK at Bridgend, but didn't like British frosts. Then Dr. Mary Gibby made some interesting *Dryopteris* hybrids at Chelsea Physic Garden between the Canaries *D. guanchica* and the lovely Azorean *D. crispifolia*, and the British *D. dilatata* group to find out the nature and origin of the Macaronesian plants - some original plants are still going strong up at Edinburgh Botanics. She also crossed Caucasian *Dryopteris caucasica* with British *Dry. oreades* to recreate *D. filix-mas*! Nowadays I think only Johannes Vogel is going strong on active hybridisation programmes of this sort at the BM on *Asplenium*. It is a pity everyone else loves to do just RNA/DNA work and avoids growing real plants and crossing them. Few people have looked at this in terms of creating horticultural gems in ferns - but Martin Rickard can inform one of the strange *Polystichum* hybrid he rescued from the garden of the late Phil Drabington in Gloucestershire. I have some herbarium-specimens and it used to be an easy thing to grow - must have been something like *P. aculeatum* x *munitum* or *acrostichoides* from the USA. I think Chris Page also discovered and published on a naturally occurring *P. munitum* x *setiferum* hybrid he found on a wall near a garden in Cornwall. But I wonder if someone would ever try again to make some hybrid combinations that might be really nice ones? *Athyrium filix-femina* cv. 'Victoriae' x *A. niponicum* cv. 'Pictum', for example - or the proliferous *Dryopteris* in the manniana group, from S. and E. Africa, with *D. wallichiana* or something. Or finely dissect *Polystichum omeiense* x the scaly and hairy *P. longipaleatum* or *P. wilsonii* (wow! that WOULD be nice!). And while we're at it, why can't *Dryopteris remota* ever be synthesised to prove its parentage? And though not a mixed-country one, I think I've discovered a *Polystichum* hybrid up behind Annapurna Himal that might be the original diploid hybrid that gave rise to *P. braunii* - it's *P. wilsonii* x *P. piceopaleaceum*, and is the spitting image of our European (and N. Chinese + N. American) *P. braunii*. If so, it's another Asian origin for one of the circumboreal species that the N. Americans like to think must have evolved in their own back-yard, but probably didn't at all! Prof. Lovis did a super paper in the Fern

Gazette on Fern Hybridists and fern Hybridising about 30 years ago, which is a classic (what, of his papers wasn't, anyway?!) and should get us all jumping around manipulating prothalli merrily! - if anyone ever has enough time, nowadays.

Challenge: can anyone create *Asplenium bullatum* (I can send spores, from the Himalaya) x *A. nidus*/or/*A. phyllitidis*? That would be a spectacular one, too, if it didn't just go depauperate. *A. bullatum* is 2 ft. or more and tripinnate - *A. nidus* also big, but just the opposite, with a simple frond. *Dryopteris filix-mas* cv. 'Stableri' turned out to be a spontaneous hybrid in Stansfield's garden, from *D. affinis* cv. 'Pinderi' into which a stray *D. filix-mas* spore fell - as it's tetraploid apomictic-hybrid nature confirms. Finally I have long had a rather silly theory that *D. filix-mas* cv. 'Bollandiae' might just conceivably be *D. filix-mas* x *D. aemula* - my plant once produced a few sori, and the spores looked bad, though they didn't develop properly - I suppose a root-tip chromosome count would dispel the idea, though, if it turned out to be normal tetraploid, like *D. filix-mas*, and not triploid as it should be if that hybrid. Anyway, I'm going on a bit - apologies!

Chris F.-J., Katmandu (for now)'.