

RE: [uk-ferns] Re: Dryopteris affinis cx. morph. insolens

Christopher et al.

My comments interspersed below...

Regards

Anthony

-----Original Message-----

From: uk-ferns@yahoogroups.com [mailto:uk-ferns@yahoogroups.com] On

Behalf Of Christopher Roy Fraser-Jenkins

Sent: 12 November 2006 17:10

To: uk-ferns@yahoogroups.com

Subject: [uk-ferns] Re: Dryopteris affinis cx. morph. insolens

Dear Anthony (and all Borreroids),

Don't worry, I do indeed see the purpose and appreciate the importance of investigating any and every apparently different entity, as it remains possible some might turn out to be more important and significant than they appear at first sight!

Agreed

But I do also see - and this is where I have always differed from the morphotype approach - that there are obviously three major entities, and then a whole lot of others which are clearly much more minor variants, whose morphology does fit into the general pattern of one or other of the three main things. I am pretty confident now that this is correct and works and I have also found that many others can also see that pattern. It is this that helped convince me to treat three British species at this stage, which I'd previously separated as subspecies. This is on practical, character-based grounds, not because of the biological basis that has influenced some others more.

This is somewhere we fundamentally differ. I believe species are real and either exist or don't, regardless of botanists' ability to identify them.

Ironically, when I first separated the taxa it was against a very uphill struggle to convince anyone (except Hugh Corley) that they existed and should be separated at all! Certain people just couldn't see it in the BM in particular - only to have a turnaround a few years later where suddenly separate species were espoused because the infallible wagnerian school of the USA had made them so, albeit without even seeing the plants, on the principle of biologically different genomic entities (as opposed to any character-based understanding)!

I can't really comment on any initial reaction but I do know that when the *D. aff.* 'subspecies' were first brought to a wide audience in Chris Page's book, there was much enthusiasm in trying to find and identify them.

I simply don't follow the principles of biological species based on different genomes

because, while it may work in some groups, it may not in others. The recent declaration from Gent that all cytotypes in *Asplenium* will be species, to my mind goes quite against practical common-sense, as well as against the good and carefully rationalised practice of the actual formulator of the research-findings concerned, the late great Prof. Reichstein.

I wouldn't hold that all cytotypes should be species.

Thus when I mention I now prefer a change to species and am told by a couple of people that, yes, you had chosen the species rank years ago, it must be said that that was not at all for the same reason as why I am now converted to it! - it is, however, a happy coincidence, that the end result is the same and we are all (or almost all) pleased with it.

Agreed. As you allude to, there are those who would name every different thing as a species, as in brambles. I wouldn't agree with that.

Hugh Corley actually wanted to call AAB (present day *D. cambrensis*) and AB (present day *D. affinis*) subspecies of *D. affinis*, because he felt they were too close morphologically to be treated as species - in this respect he was more inclined towards the morphological approach I went for, though I do now feel the two can be practicably treated as species. Initially he, too, felt that the three entities I recognised were the three basic things.

Certainly latterly, Hugh wanted *affinis*, *cambrensis* and *borreri* to represent three species - I have an unpublished note from him to that effect.

- but his enormous interest in finding new possible combinations (as also in various other sexual species, which all turned out to be wrong, as did most of his *affinis* combinations) eventually overtook the practical side - yet on the many occasions I discussed it with him he definitely didn't plan to make all into species, nor to unrank them, as has in my view so unfortunately been done, albeit temporarily (in which case why publish to say "I don't know"?), by "Morphotypes".

Morphotypes are unranked; see below.

I really think the whole "Morphotype issue" has been entirely unfortunate and a most unusual state of affairs that it was thought appropriate to attempt to replace a clear taxonomic treatment with something designed to state that the subsequent authors concerned felt that they didn't know enough about it. I actually believe that at that time they evidently didn't!

No one was attempting to replace anything else (at least I wasn't). I have always tried to cross-reference my morph. descriptions with formal names where possible. I don't think it's about not knowing enough - in fact, describing more forms in detail cannot be done without a lot of knowledge.

It seems to me a slightly surprising comparison to make to say the various possible taxa within the general ambit of *borreri* are not as clear as "*affinis*", '*paleaceo-lobata*' '*convexa*' and '*kerryensis*'.

I do also agree they are generally less distinct than some of those within *D. affinis* (2x), but what I would definitely have said, as this is what strikes me as more obvious and immediate, is that they are definitely of the same general pattern as *D. borreri* and do not appear at present to be as clearly distinct as the big three are, inc. *D. affinis* and *D. cambrensis*!

Who said they were?

The hierarchy just shouts itself out to me on looking at the whole group. In my view, almost the opposite to yours, *kerryensis* and *convexa*, are immediately and obviously of the same general pattern as *affinis* (as is *punctata* in Switzerland etc.) -

I was just talking about the ease of circumscribing them - nothing else.

I just can't ignore that natural, visible hierarchy whenever I consider this group as it thrusts itself right at you out of the page/Page(!). With more careful study one can also recognise that *paleaceolobata*, which looks pretty "abnormal" at first - and that's in a way, how I think of it - is also of the *affinis* pattern, rather than the *cambrensis* pattern. This means to me that effectively equal ranking, or unranking, of all these things by "morphotypology" just HAS to be a non-starter right from the word go!

With great respect, I think you're consistently missing the point about morphotypes. They are merely giving labels to the tips of the hierarchy; they say nothing about the hierarchy itself one way or the other. In the same way, all your varieties of the 'old' *D. affinis* were of equal level; the significance was only implied by the way you grouped them into sub-species and into one species.

Even in your "Morphotypologically" orientated discussions I can't help but detect an inherent, but unsaid flavour of acceptance of the three main things, with others below them - hints that some things are more minor than others and in what general pattern they fit. That's why I can no longer talk about "*D. affinis* *Insolens*" (honest it was just a joke about the name - I actually thought from my poor Latin it must mean becoming in the sun" [preferring sunny localities], interesting to hear it was not that!). To me it has to be shoved over into *D. borreri* "*Insolens*", but as you know I prefer not to use a name at all that sounds like a formal name until we find a real name that does match it. In the cases where I have a potentially new taxon that I'm not sure of, as often happens over here, I usually call it after the place, *D. wallichiana* "Darjeeling form" - or something like that, to ensure there is absolutely no danger of it becoming used like a botanical name - as has unfortunately happened here, with "Morphotype" even appearing to be like a pseudorank, even being abbreviated like ranks, to "mt." - all alarmingly bad, non-botanical practice to me! Only later, when I believe I have got a grip on it and understood it properly, do I change that formula to a Latin epithet and publish it.

Morphotypes are really only like your working titles but made public so people can use them to communicate. They're not meant to be pseudo- formal ranks. I used existing Latin names when they were already in use because it seemed perverse to ignore them and use something completely arbitrary. In practice, I find that in conversation, botanists who know the group just talk about "*affinis*", "*insolens*", "*kerryensis*", etc. and don't actually mention "morphotypes" or "varieties" very much.

There's rarely any confusion.

In a way, I rather feel that it would be a considerable relief for nearly all concerned, whichever side of the fence they currently stand, if one could let one's hair down and almost admit that the basic hierarchy really does exist, even if some adjustments will no doubt become clear and necessary in time.

Of course there's a hierarchy. No, that's not quite true. Of course there's an evolutionary network (not a tree) from which we can almost certainly discern species and where we can probably find meaningful infra-specific divisions.

This would immediately allow the readoption of the universal taxonomic ranks already given them, which not only I find make good practical sense in the field and herbarium! Do you really think I got it all wrong? - if so, tell me how -

Let me put it this way: I expect that if we both had to draw up the most likely evolutionary network joining these morphs. or varieties or whatever, then we would produce similar results.

or was it more on a principle that modern molecular methods have not yet been applied, so we, i.e. you, should wait? - which is not an established botanical practice by any means and becomes quite irrelevant when one takes a look around the Himalaya etc. at a big fern-flora

I would like to see more quantitative evidence - it doesn't have to be molecular although that would be good and probably answer a lot of questions (probably raise a lot more as well!). At the moment it's all too subjective for my liking.

It will be nice to see the photos you are planning - but what will you be using as the basis for the names you use?

I'm just talking about illustrating morphotypes - I wouldn't try to equate them to an existing formal name without being sure of it.

As you know, I mentioned to you when we met recently at the Savill Garden that I was intending to put together my photos (if I can find them all) of the various type-specimens of all the published taxa that I could lay my hands on - and try to get the rest together, too.

I agree. That's why, as you know, I'm keen to get a list and good illustrations of the types widely available.

I explained and I think you agreed, that various names were possibly being used in mistaken or at least different senses - this particularly applied to the epithets *borreri* and the silly old mistake of mine, *robusta*.

I agree that many of the formal names have been wrongly used and I suspect that some of the current formal names may be wrong in the sense that their type is not contained within their circumscription.

They are proper formal names and have types and it is only from these that we can fix the identity and application of the name. So I very much hope that you would apply sufficient caution so as not to disseminate a wrong concept of any names - to get a photo of the type available FIRST, before thinking of posting photos of what you (or I) may THINK is *borreri*, for example, but which might not be.

As above

One can put a photo of better material (with more developed and less developed forms as well) beside that of the type - which Ken Trewren and I planned to do for the big monograph.

I'm uncomfortable with the idea of 'more developed and less developed forms'. I'd rather think about the range of variation of a natural taxon.

As we see already, it is very much more difficult to get people to unlearn concepts of names than to learn them correctly by typification in the first place. We've got to approach it type first! Anything else is dangerously vague guesswork.

Agreed, but a lot of the earlier formal publication has done just that.

With the *nomina nuda* "Morphotypes" one can choose whatever one wants to represent the name, though preferably like what you were originally thinking. Even so, trying to formalise an invalid name is a strange exercise in a way.

It's not formalising in that sense, just illustrating to aid understanding of what's being described and talked about.

Bearing in mind that the ICBN (Code of Botanical Nomenclature) makes it clear that any infraspecific rank is a direct subdivision of the species itself, and NOT of any intermediate rank - i.e a variety is a variety of the species, not of the subspecies - could it not now, surely, be more useful to everyone if you might just take the plunge and describe "*Insolens*" as a variety, and thus with a type to fix it by? This would agree with your (and my) wish to adopt formal nomenclature a.s.a.p.! It could always be made a subspecies later if thought to be so - or you could, I suppose, always continue to unrank it in subsequent papers, just as with the previous botanical names that got "Morphotyped" over?

Well, I suppose I might, but I'm uncomfortable about appearing to play nomenclatural games if I'm not really sure about where to place things. (This isn't just being overly pedantic - I've seen unpublished provisional flavonoid analysis that made *insolens* look more like *cambrensis* than *borreri*!) Perversely, having the three at species level, makes things more difficult because one then has to assign all the forms to one species or another, whereas with the old *D. affinis* they could all be vars. of it. Perhaps that's what I should have done. I was probably too influenced by you always putting the vars. in a hierarchy of subspecies!

Anyway, despite the differences of approach and practice so far, I do think there is a whole lot of common ground - but I just pretend to be a traditional botanist while you wish to discover the Meaning of Life!

Just the Meaning of Affinis!

But I feel that both approaches can actually come together into an honorable and glorious, formal, taxonomic, hierarchical treatment!! Or is that heresy?!

No, I hope so too.

Cheers,

Chris (I can only use 2 fingers on it!)

PS. Excuse my ignorance, but what is that ex., criss-cross thingy?

Do you mean what does ex. mean? - complex.

Dear All

Without wishing to get into the whole affinis issue again here (I can't type as fast as Christopher!), I thought I'd add a few comments (no particular order).

I'm in the process of putting together a comparative set of images of the distinct morphological forms of the *D. affinis* complex that have been described previously (in Britain, at least). Hopefully this will help to clarify what's being talked about as even good comparative text descriptions can be difficult to use with these plants. These forms mostly correspond, I believe, on a one to one basis with the varieties (and possibly now subspecies) that Christopher would prefer.

Although I'm comfortable with recognising at least three distinct genetic forms with the 'borrerioid' taxa ('borreri', 'robusta' and 'insolens', I must admit that drawing precise morphological boundaries around them is not as easy as with, say, 'affinis', 'paleaceolobata' 'convexa' and 'kerryensis'.

However, I believe that this is probably due to our lack of current knowledge of their environmental variation rather than because they are genetically continuous.

The name 'insolens' does not mean 'insolent' in the usual English sense of rude, cheeky, etc. The Latin word *insolens* means unusual, unexpected, funny - as in 'funny peculiar'. It came from the time before I realised what it was when often when out in the field with others I would say "I think it's a funny *borreri*" - usually met with a chorus of "Oh no! Not another funny *borreri*!" So when I had to think of a name for it, it seemed the obvious choice.

I think it's very good, Christopher, that you now believe that the divisions with presumed distinct genome combinations should be recognised at species level. I hope that you won't mind me saying, in the nicest possible way, that some of us have believed that for many years now. I think the original credit for this view has to go to the late (and great) Hugh Corley.

That's why I have described things as, for example *D. affinis* ex. morph. *insolens* (more fully: the morphological form 'insolens' of the *Dryopteris affinis* species complex.) rather than *D. affinis* morph. *insolens*.

I do think Christopher's point about finding any pre-existing name is very important from a nomenclatural point of view. I have always said that despite my attachment to the morphotype concept (there - I've said it!) as a useful temporary informal set of handles, I would hope that we can get to a stable set of formal names as quickly as possible.

Regards

Anthony