

R. Brown, *A. nilotica* DeCaisne, *A. filiculoides* Lamarck, *A. microphylla* Kaulfuss, *A. caroliniana* Willdenow, and *A. mexicana* Presl has a distinctive perine structure suitable for species recognition. One California population examined, thought to be *A. filiculoides*, had a perine structure unlike any of the 6 recognised species. Its perine partially resembled that of *A. filiculoides* var. *rubra* (R. Br.) Strasburger distally and that of *A. microphylla* laterally, as well as having some unique structural features. *A. mexicana* and *A. caroliniana*, recently considered by some as the same species, have distinctly different perine structures, and on this basis, both taxa seem as deserving of species status as do *A. filiculoides* and *A. microphylla*. The authors are grateful to Drs Diara, Kaplan, Kulasooriya, Rains, Talley, Warne and Watanabe for providing collections of sporulating *Azolla*.

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Perispore morphology in the Aspleniaceae

R. L. L. Viane

Botanical Institute, K. L. Ledeganckstr. 35, B.9000 Gent, Belgium

Perispore morphology in the Aspleniaceae is reviewed, and the following conclusions derived.

1. Similar perispore patterns have evolved independently in several groups within the family.
2. Perispore patterns change gradually by minor modifications of the perispore layers.
3. There are no sharp boundaries between perispore 'types'.
4. Perispore patterns in the 'satellite' genera are not different from patterns within *Asplenium sensu stricto*.
5. Perispore characters used with care and together with other characters may prove to be important in tracing phylogenetic relationships within this family.

Perispore morphology in New Guinea Aspleniaceae

R. J. Johns

P.N.G. University of Technology, Lal, Papua New Guinea

and

G. van Uffelen

Rijksherbarium, P.O. Box 9514, 2300 RA Leiden, The Netherlands

An investigation was conducted using the SEM into the perispore morphology of 60 species of *Asplenium* and 5 species of *Diplora*, to assess its value in constructing