



A reply to Smissen et al.

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Accepted 18 August 2005

Trans-Tasman or pan-Tethyan vicariance in *Scleranthus* would imply that the Caryophyllaceae need to be older than the planet (Smissen et al., 2005) only if the molecular tick rate is constant. But it's not, and so they don't. As Near and Sanderson (2004) observed, "With respect to rate heterogeneity, once the model of molecular evolution departs from a simple one-rate molecular clock, the divergence time problem enters a realm of model selection in which the number of models is effectively infinite." Adopting a cautious, prudent approach to this fundamental and difficult problem means we should not rule out possibilities such as molecular evolutionary stasis or parallel molecular evolution, either of which would produce no or very little difference among populations separated for millions of years (cf. Kim et al., 2004).

References

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