Abstract
International Botanical Congress, Vienna 2005

# Divergence times of phylogenetically basal eudicots

Cajsa Lisa Anderson, Kåre Bremer, and Else Marie Friis

A molecular dating of the phylogenetically basal eudicots (Ranunculales, Proteales, Sabiales, Buxales and Trochodendrales sensu APGII) has been performed using several fossils as minimum age constraints. We have sampled all *rbcL* sequences available in GenBank for the taxa in focus. Dating was done using Penalized Likelihood, and compared with NonParametric Rate Smoothing. We show that choice of method and fossil constraints has a great impact on the age estimates, and that it is important to use several fossil constraints to yield good age estimates. We discuss the 14 fossils we have chosen to include in this study and present a critical review of other fossils potentially useful in dating studies within the basal eudicots. Our results suggest a rapid diversification during the Early-mid Cretaceous, with all the lineages of basal eudicots emerging during the latest part of the Early Cretaceous. The age of Ranunculales was estimated to 120 myr, Proteales to 119 myr, Sabiales to 118 myr, Buxales to 117 myr and Trochodendrales to 116 myr.