

Figure S6. Results of Bayesian species tree analysis of the **complete character matrix**. Shown is the maximum clade credibility tree derived from a single MCMC analysis ( $5 \cdot 10^8$  generations, sampled every  $1 \cdot 10^4$ ) using \*BEAST v1.6.1 (Drummond et al. 2006, 2007), with two temporal constraints: a uniform distribution of [5,1.0] Ma on the node uniting *Paroreomyza* and *Oreomystis*, and a normal distribution with  $\mu=21.0$  and  $\sigma=3.9$  on the root node (see text for justification). Numbers associated with nodes are estimated Bayesian posterior probabilities (after removal of the first  $5 \cdot 10^7$  generations as burn-in), and bars at each node are 95% highest posterior density intervals for divergence times.

