**Supplementary File Legends**

**Supplementary Material Table S1.** List of species; chemistry; DNA sample number; locality; specimen notes; collector name; year of collection; collector number; herbarium where voucher is deposited; and GenBank accession numbers for the four loci used in this study. Samples with the same voucher specimen represent different individual thalli from that specimen. For sequences, ‘—’ indicates that no sequence data were obtained from the sample in question; therefore ‘missing data’ was coded for these loci in the phylogenetic analyses.

**Supplementary Material File S1.** Complete, concatenated alignment of ITS, IGS, *RPB1* and *RPB2* sequences used in the phylogenetic analyses (Fig. 2 and Supplementary Material Fig. S1). For collecting information for all samples, see Supplementary Material Table S1.

**Supplementary Material Fig. S1.** Phylogenetic relationships within the genus *Ramalina* based on a Bayesian analysis of concatenated ITS, IGS, *RPB1* and *RPB2* sequences. Posterior probabilities > 75% are given above the internodes; these branches are depicted with thickened lines. Clades highlighted in grey are samples from the ingroup, the *R. siliquosa* complex. For chemotype abbreviations for samples from the *R. siliquosa* complex, see Table 2. Chemotype numbers for the *R. americana* and *R. culbersoniorum* samples follow the numbering systems of Culberson *et al*. (1990) and LaGreca (1999). Scale = indicates relative time of divergence.

**Culberson CF, Culberson WL and Johnson A** (1990) The *Ramalina americana* complex (Ascomycotina, *Ramalinaceae*): chemical and geographic correlations. *Bryologist* **93**, 167–186.

**LaGreca S** (1999) A phylogenetic evaluation of the *Ramalina americana* chemotype complex (lichenized Ascomycota, *Ramalinaceae*) based on rDNA ITS sequence data. *Bryologist* **102**, 602–618.