Supporting Information: Inventory for SI Appendix

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Supporting Information: Materials and Methods

DNA extraction, amplification and sequencing

A modified protocol of the Doyle and Doyle (1987) (1) method was used to extract total genomic DNA from 0.3 to 0.5 g of leaf material dried using silica gel or collected from herbarium sheets (2). DNA was purified using QIAquick columns (Qiagen, Crawley, West Sussex, UK) according to the manufacturer's protocol. Polymerase chain reactions were carried out in 20µl reactions using the primers specified in the Table S36. The PCR protocol included an initial 4 minute denaturation (at 94°C) period followed by 28-32 cycles with 1 minute of denaturation (at 94°C), 1 minute of annealing (between 50-58°C depending on the primer combination), and 1 minute of elongation (72°C). PCR products were purified using QIAquick PCR columns (Qiagen) using the manufacturer's protocol. Both forward and reverse strands were sequenced using an Applied Biosystems 3730 capillary DNA automated sequencer (ABI, Warrington, Cheshire, UK) and Big Dye terminator v3.1 chemistry. Reactions were conducted according to the manufacturer's instructions (ABI). Contigs were assembled and edited in Sequencher version 4.9 (GeneCodes, Ann Arbor, Michigan, USA). For cloned sequences (ITS, *Calystegia* and *Myrsine*), Phusion® high-fidelity DNA polymerase (Finnzymes, Keilaranta, Finland) was used for PCR amplification according to the manufacturer's instructions. PCR products were cloned into the pGEM-T cloning vector kit (Promega, Mannheim, Germany). PCR and Cycle sequencing was carried out as described above for 20 clones, to detect allelic variants. One sequence for each detected variant was included in the phylogenetic reconstructions.

Parsimony phylogenetic reconstructions of *Coprosma* and *Metrosideros*

Maximum parsimony phylogenetic reconstructions containing multiple accessions of the LHI endemic *Metrosideros* and *Coprosma* species were performed in with PAUP* 4.0b10 (14). Heuristic tree searches were conducted with 1000 random taxon addition replicates, tree-bisection-reconnection (TBR) branch swapping, holding 100 trees at each step with multrees on. Insertion or deletion characters (gaps) were coded as a fifth state (15). Clade support was estimated using the bootstrap method (16): 10000 bootstrap replicates, 1 random taxon addition replicate, TBR branch swapping, and holding 10 trees at each step. For *Metrosideros, M. boninensis, M. collina, M. kermadecensis* and *M. exelsa* were used as outgroups. For *Coprosma* only Species with all three genes were included.

“Age-range correlation” analyses

Maps were drawn as described by Barraclough and Vogler (17) from dot maps and text descriptions from various sources (12, 18-23) (*Biodiversity occurrence data provided by*: Australian National Herbarium (CANB), Bernice Pauahi Bishop Museum, GBIF New Zealand, Missouri Botanical Garden, Royal Botanic Gardens, Kew, National Herbarium of New South Wales, Herbier de l'Université Louis Pasteur, *accessed through GBIF Data Portal, data.gbif.org, 2010-10-10 or Australia's Virtual Herbarium*, [map output], Council of Heads of Australasian Herbaria, viewed 10 October 2010, http://www.ersa.edu.au/avh/). We drew maps in ArcGIS V9.2 and scored presence absence in quarter degree squares. *M. collina* is a paraphyletic species, for the various accessions of this species we considered the island of collection as the range for that sample.

Figure Legends

Figures S1 - S7 Phylogenetic reconstructions for *Coprosma, Geniostoma, Korthalsella, Melicope, Metrosideros, Peperomia* and *Rytidosperma* of separate (a) nrDNA and (b) cpDNA. Trees were reconstructed for nuclear and plastid DNA regions using Beast v1.5.2 with parameter settings described in Table S34. Nodes with less than 0.8 posterior probabilities have been collapsed to aid identification of incongruence between trees. All phylograms are undated. Native LHI species are highlighted by red boxes.

Figures S8 - S38 Bayesian phylogenetic reconstructions of 32 LHI genera, performed using Beast v1.5.2 with parameter settings described in Table S34. Calibration points for dated trees are denoted by a letter (A, B, C etc...) corresponding to the information given in Table S33. Lord Howe Island native species are denoted by red branches. Underlined species are Lord Howe Island endemics. Posterior probabilities (p.p.) for nodes are denoted by stars: *** p.p. ≤ 0.95, ** p.p. ≤ 0.90, * p.p. ≤ 0.80. 95% Confidence intervals for estimated node ages in millions of years ago (mya) are depicted at species divergences relevant to the current study.

Figures S39 and S40 Multiple gene, parsimony phylogenetic reconstructions for *Coprosma* (only species with DNA sequences for all three regions) and *Metrosideros* (only species with 5S DNA sequences), including multiple individuals of LHI species. LHI species are highlighted in red. Numbers at nodes denote the bootstrap support values. C*oprosma_huttoniana_4* possessed mixed nuclear DNA sequences of *C. huttoniana* and C. *putida*. For these analyses the mixed regions were coded as ambiguities.

Figure S41 “Age-range correlation” graphs for (a) *Coprosma* and (b) *Metrosideros*.

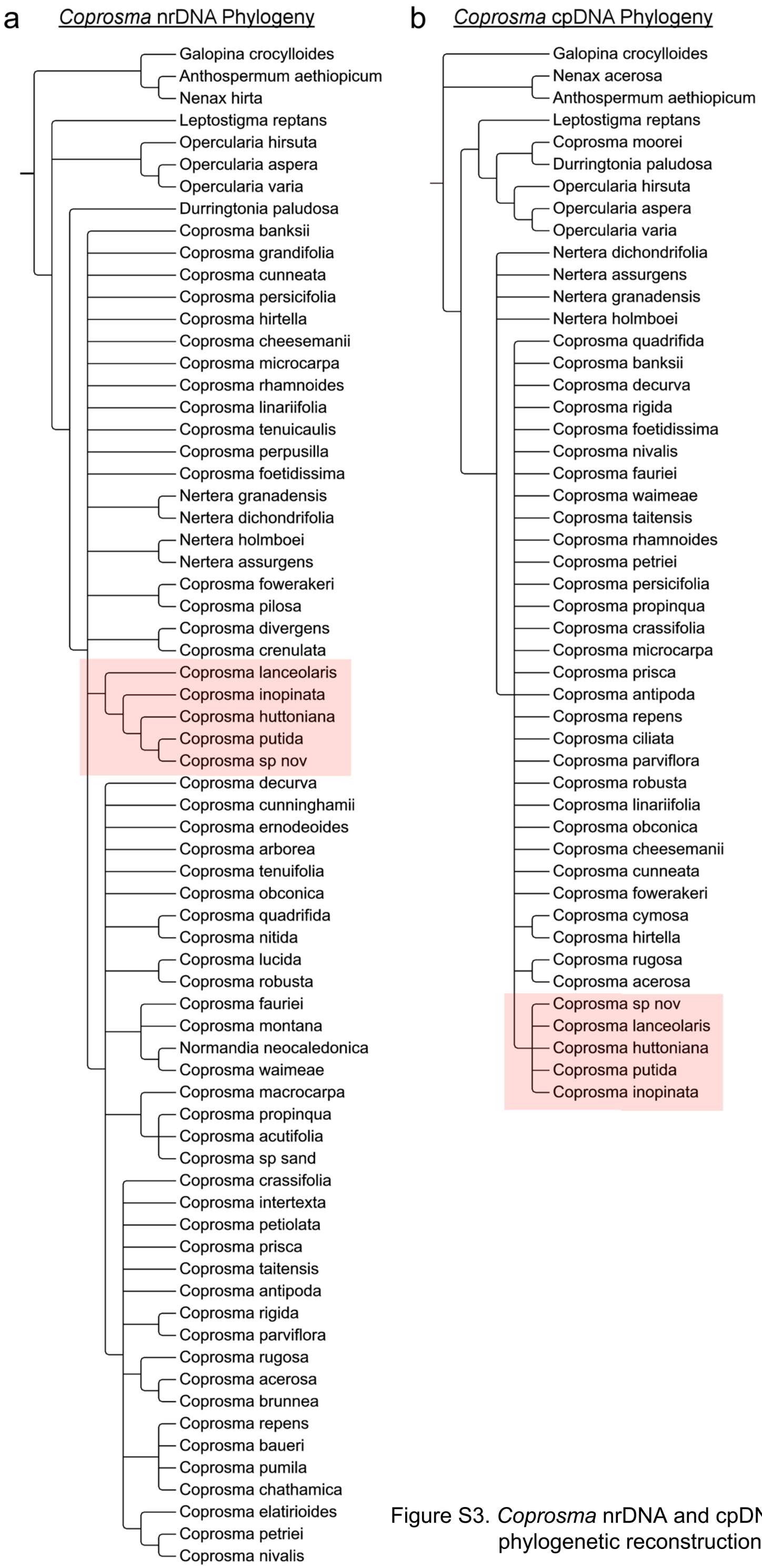


Figure S3. *Coprosma* nrDNA and cpDNA phylogenetic reconstructions

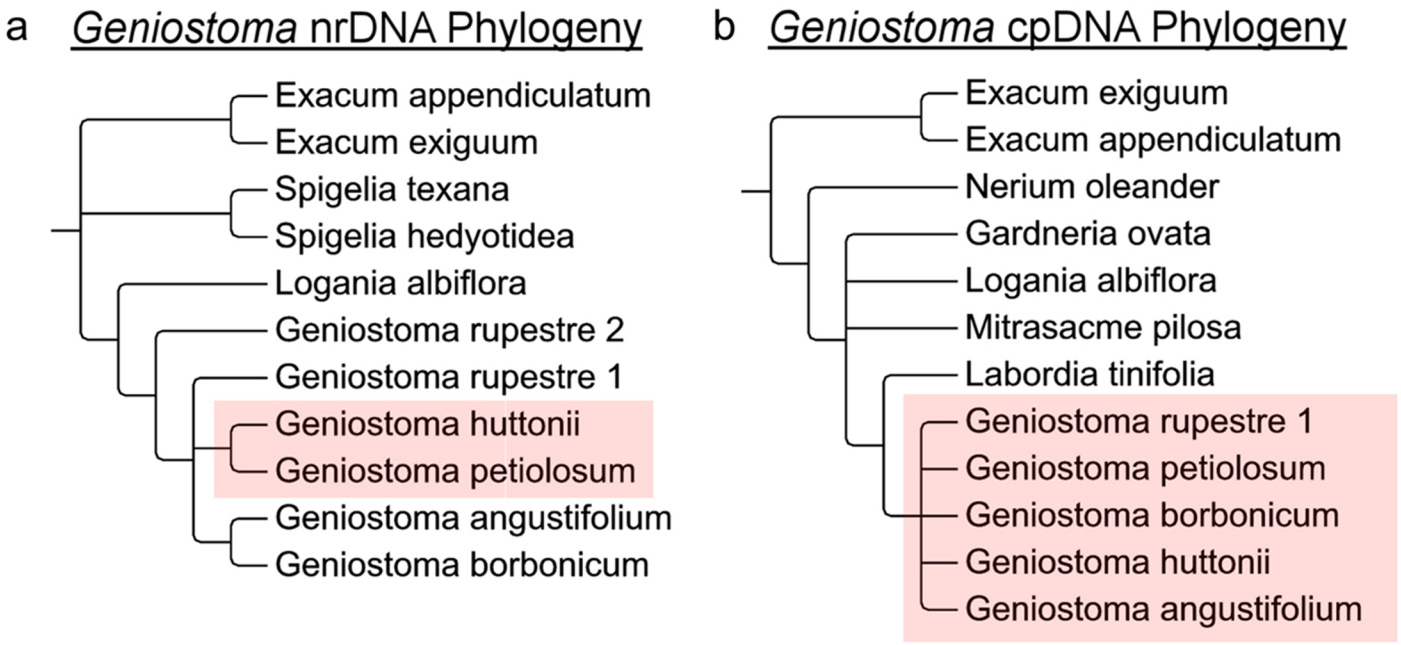


Figure S2. *Geniostoma* nrDNA and cpDNA phylogenetic reconstructions

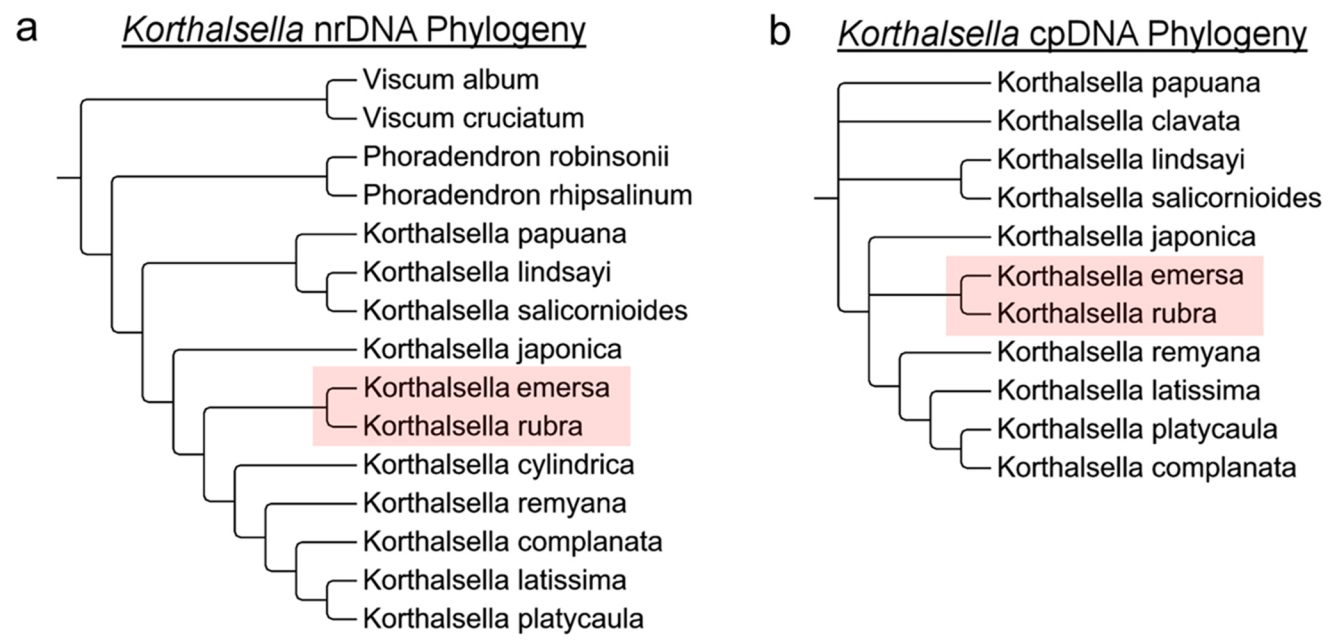


Figure S3. *Korthalsella* nrDNA and cpDNA phylogenetic reconstructions

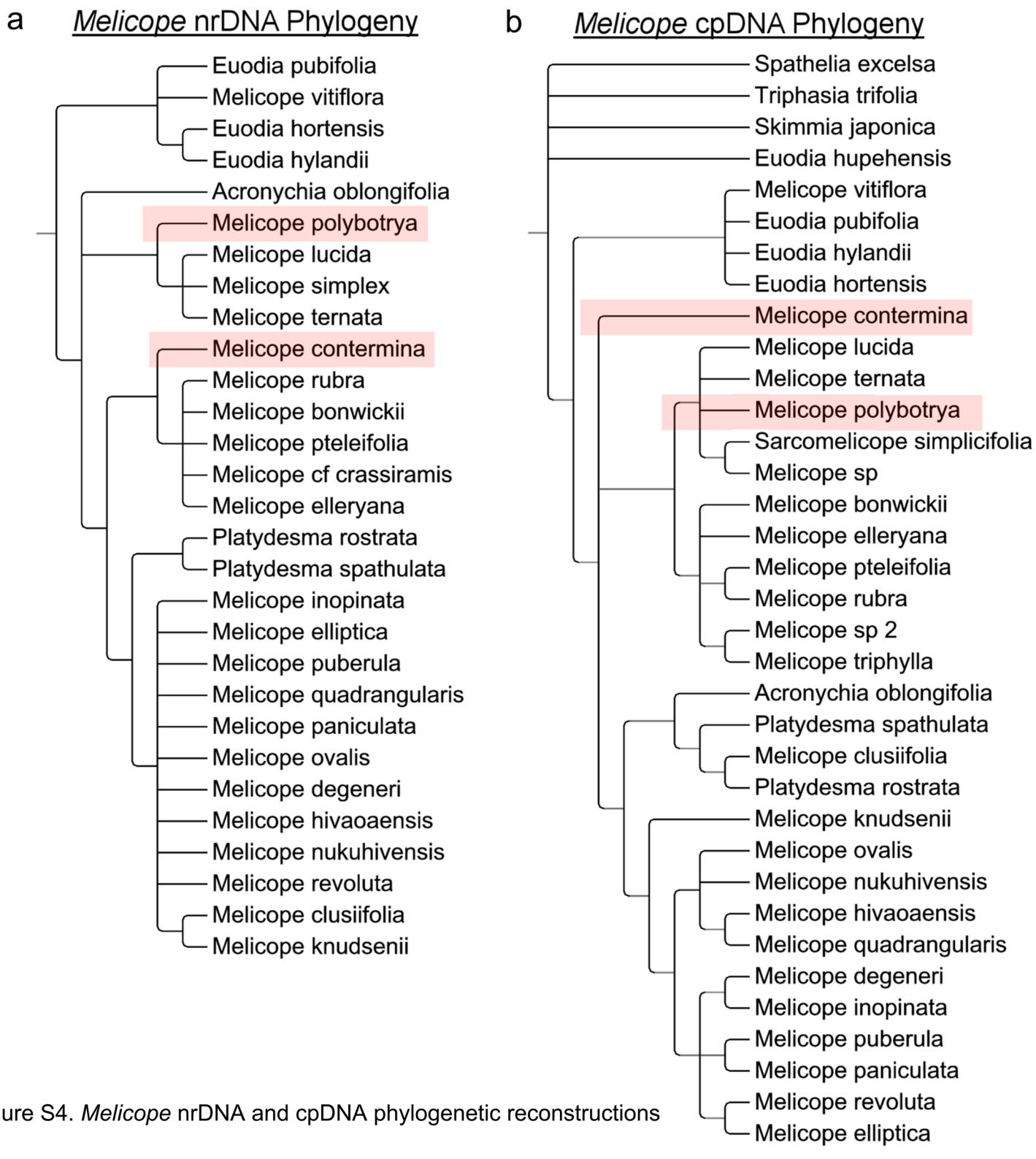


Figure S4. *Melicope* nrDNA and cpDNA phylogenetic reconstructions

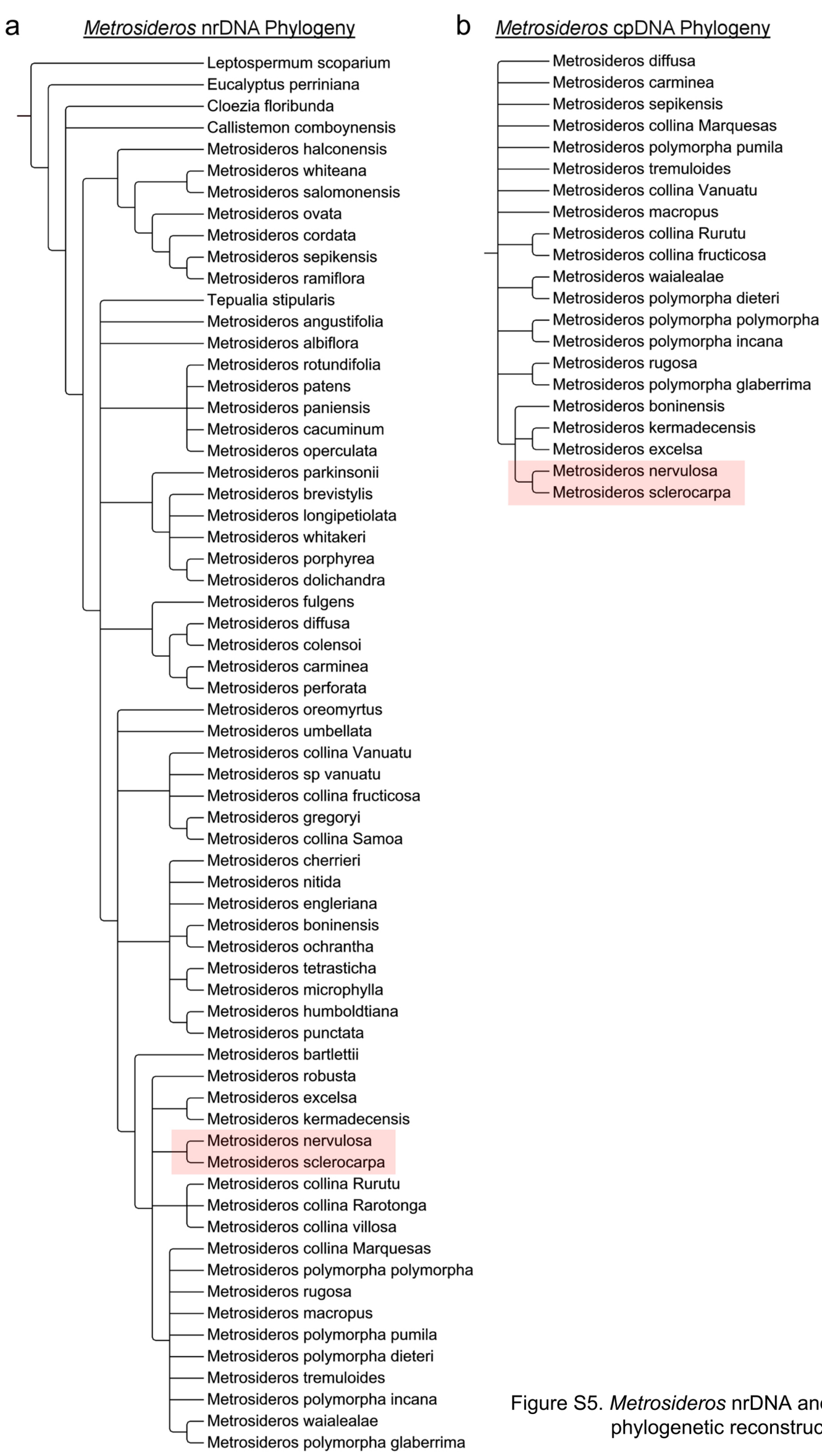


Figure S5. *Metrosideros* nrDNA and cpDNA phylogenetic reconstructions

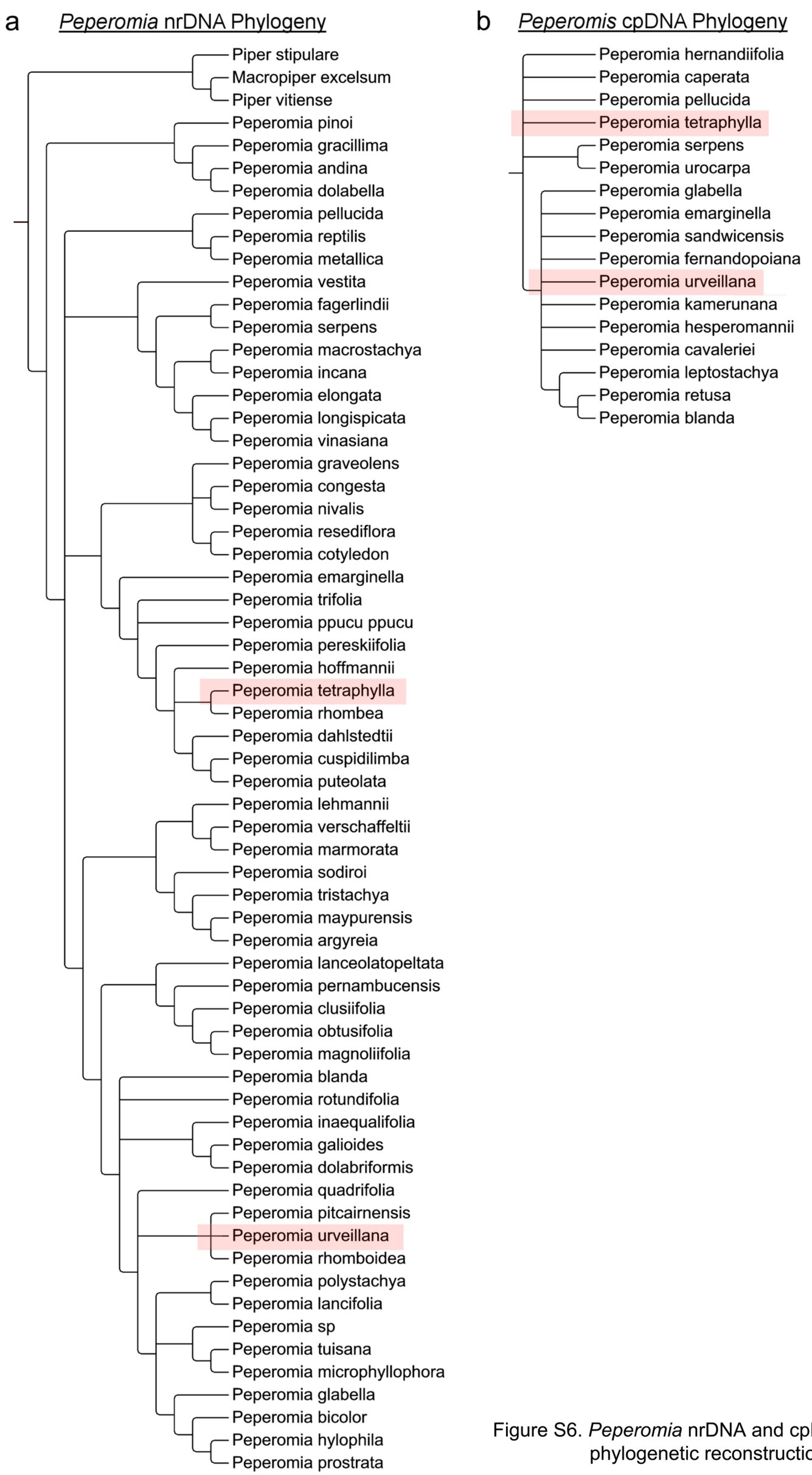


Figure S6. *Peperomia* nrDNA and cpDNA phylogenetic reconstructions

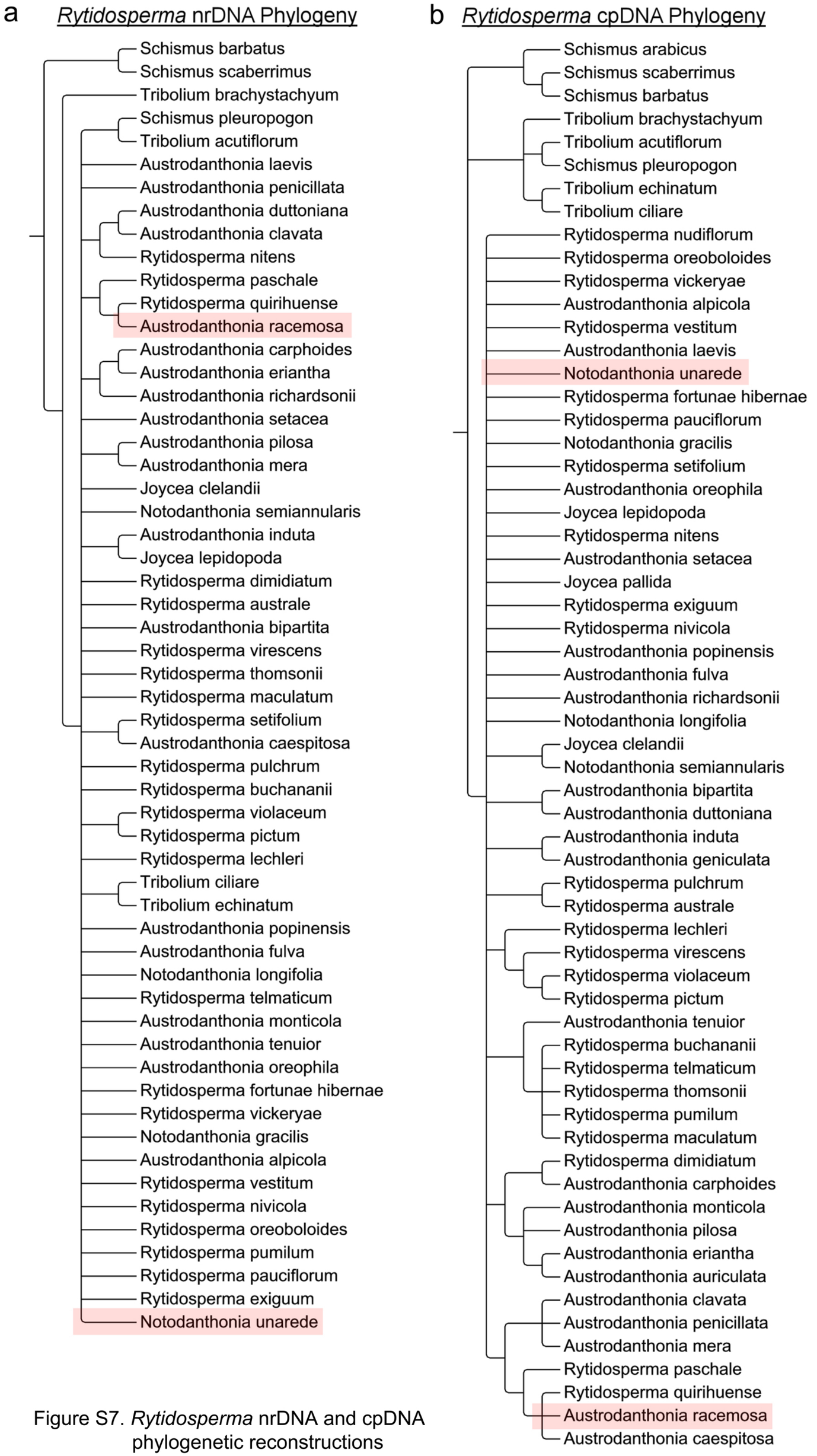


Figure S7. *Rytidosperma* nrDNA and cpDNA phylogenetic reconstructions

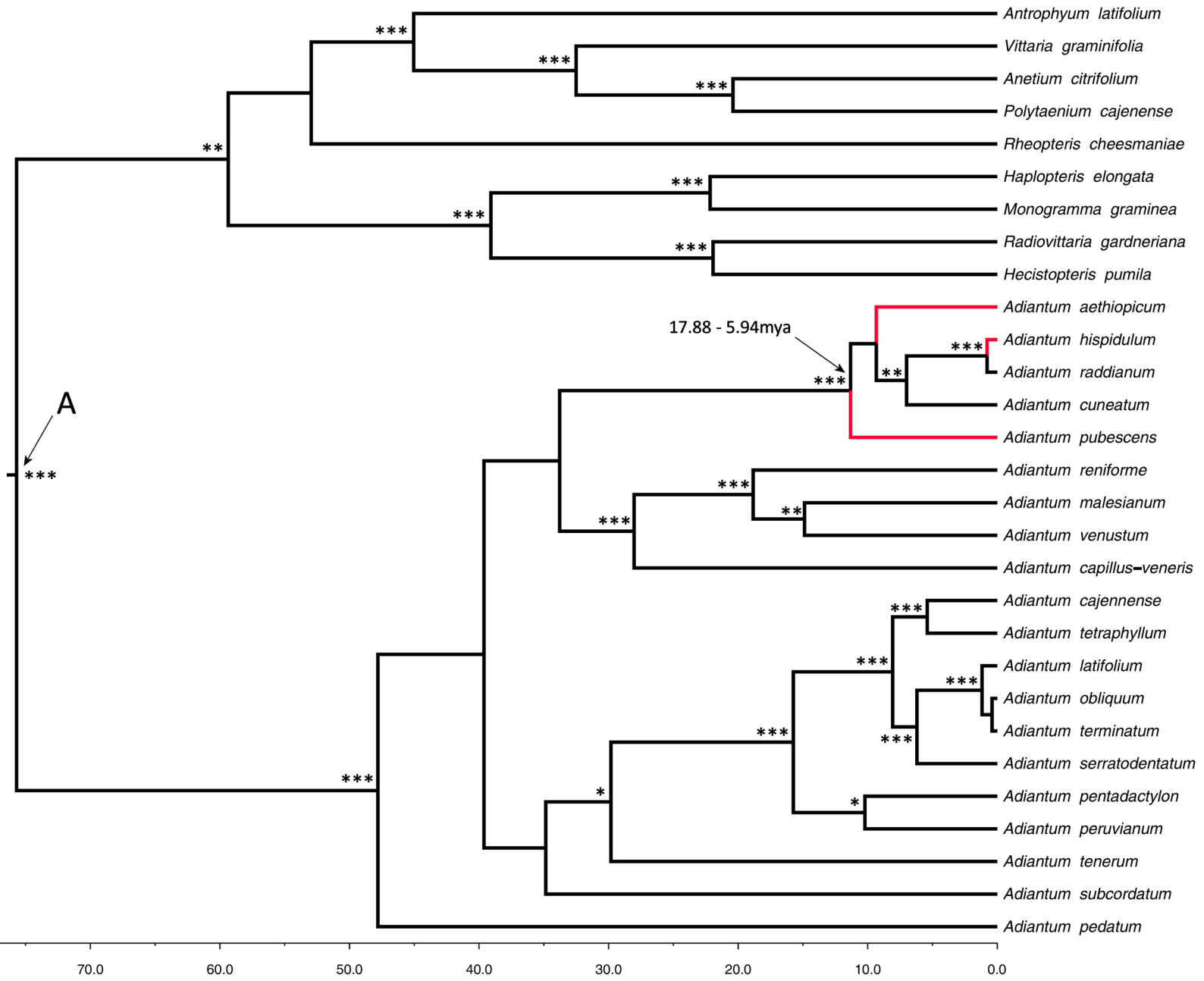


Figure S8. *Adiantum* Bayesian phylogenetic reconstruction

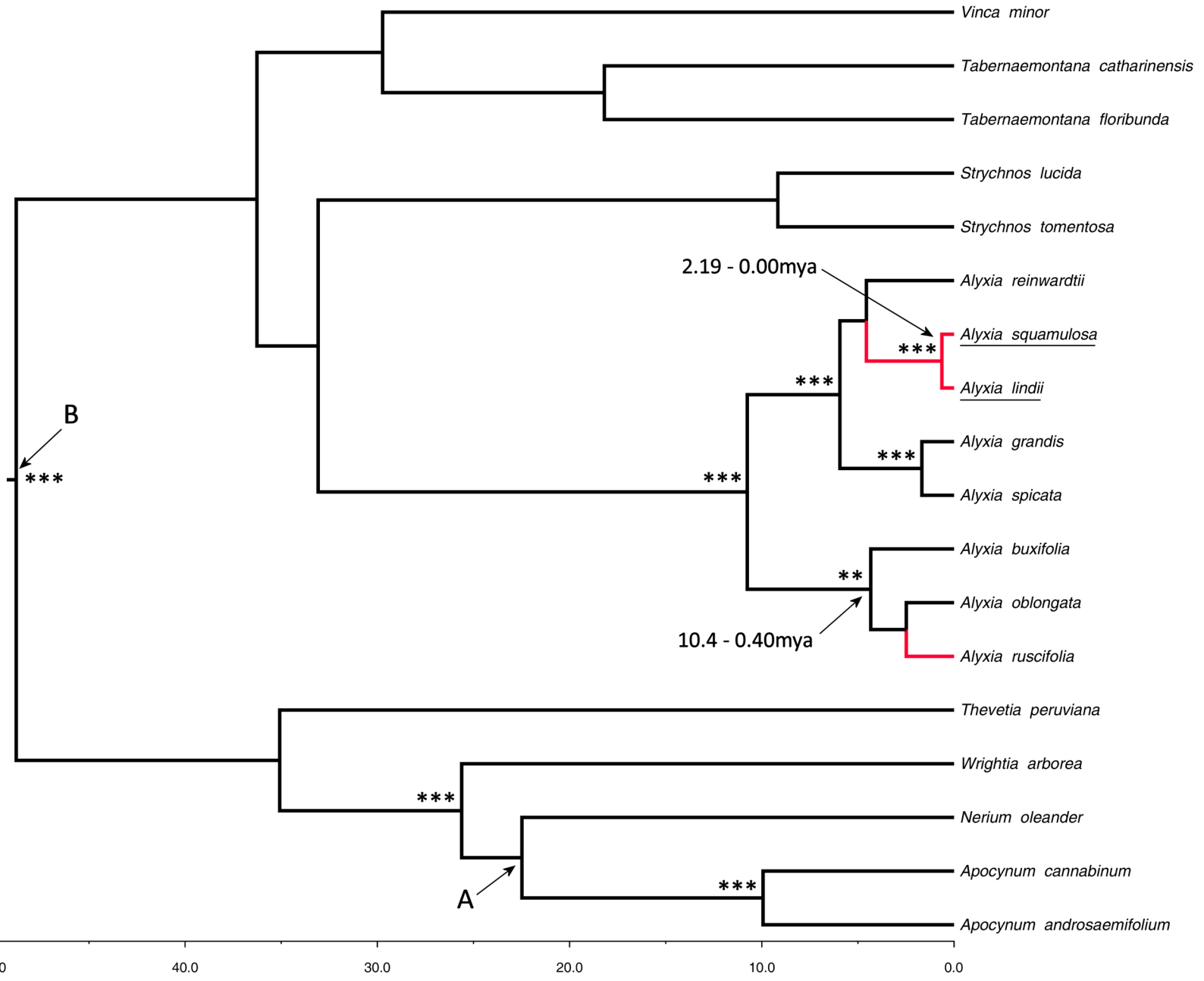


Figure S9 *Alyxia* Bayesian phylogenetic reconstruction

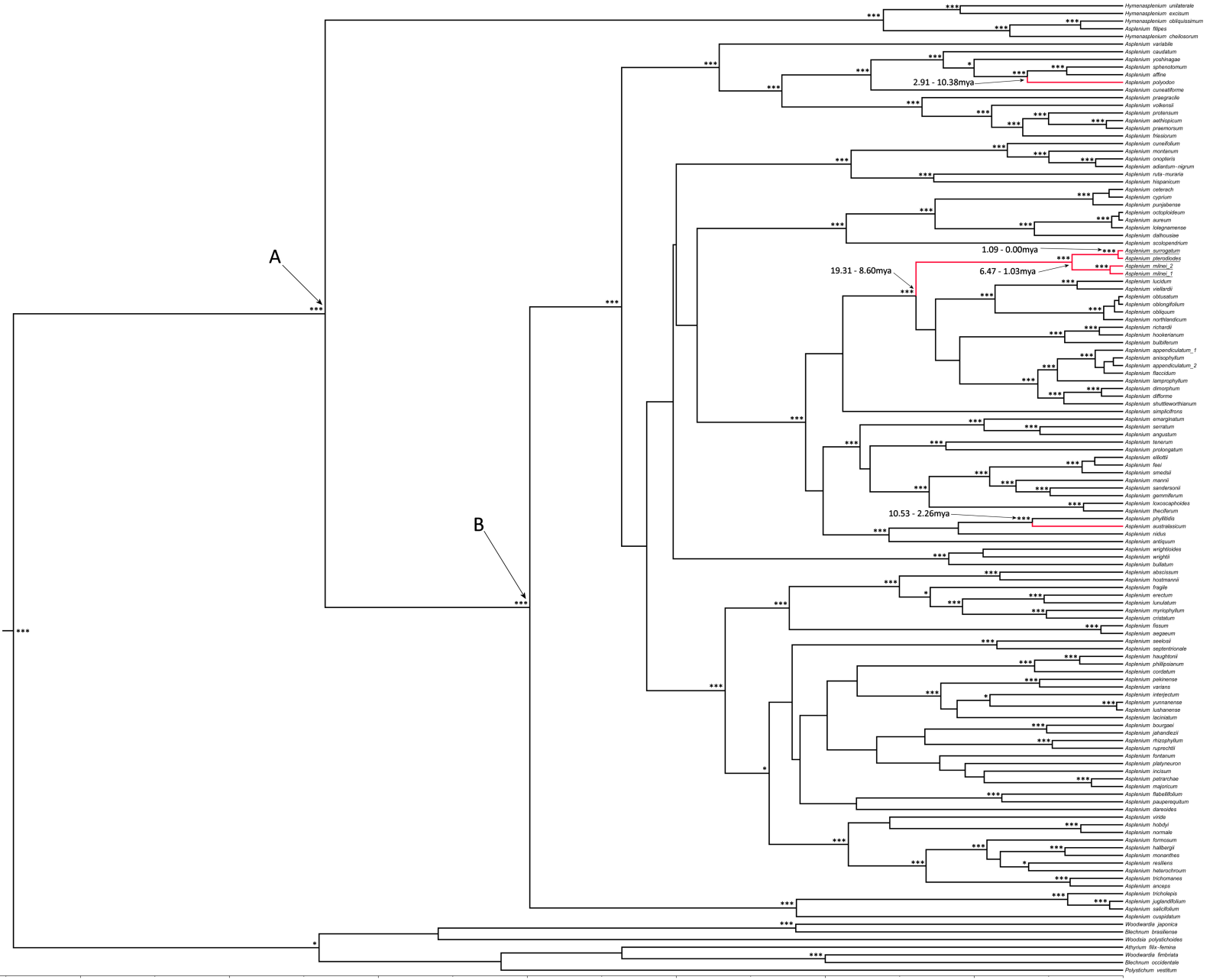


Figure S10. *Asplenium* Bayesian phylogenetic reconstruction

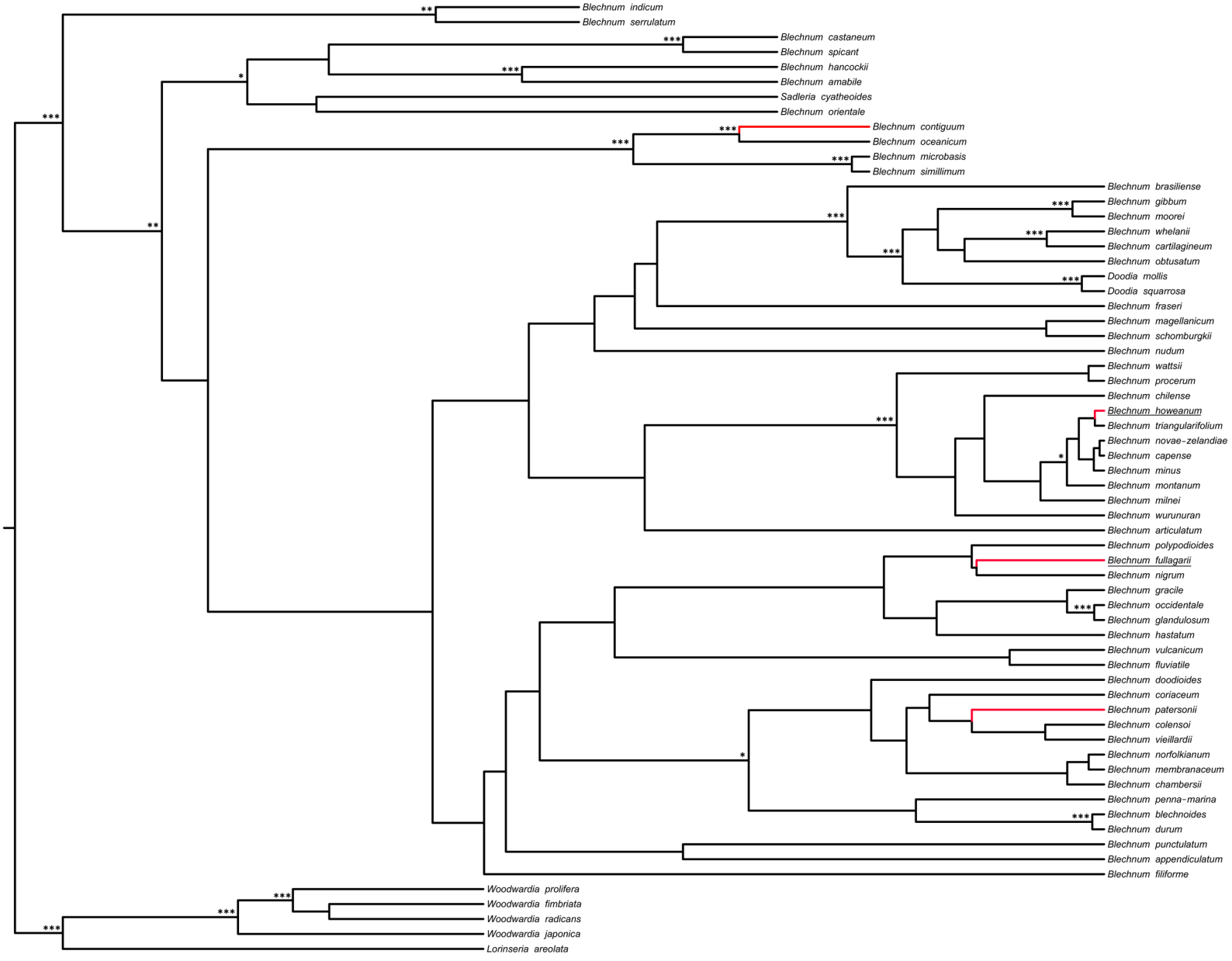


Figure S11. *Blechnum* Bayesian phylogenetic reconstruction

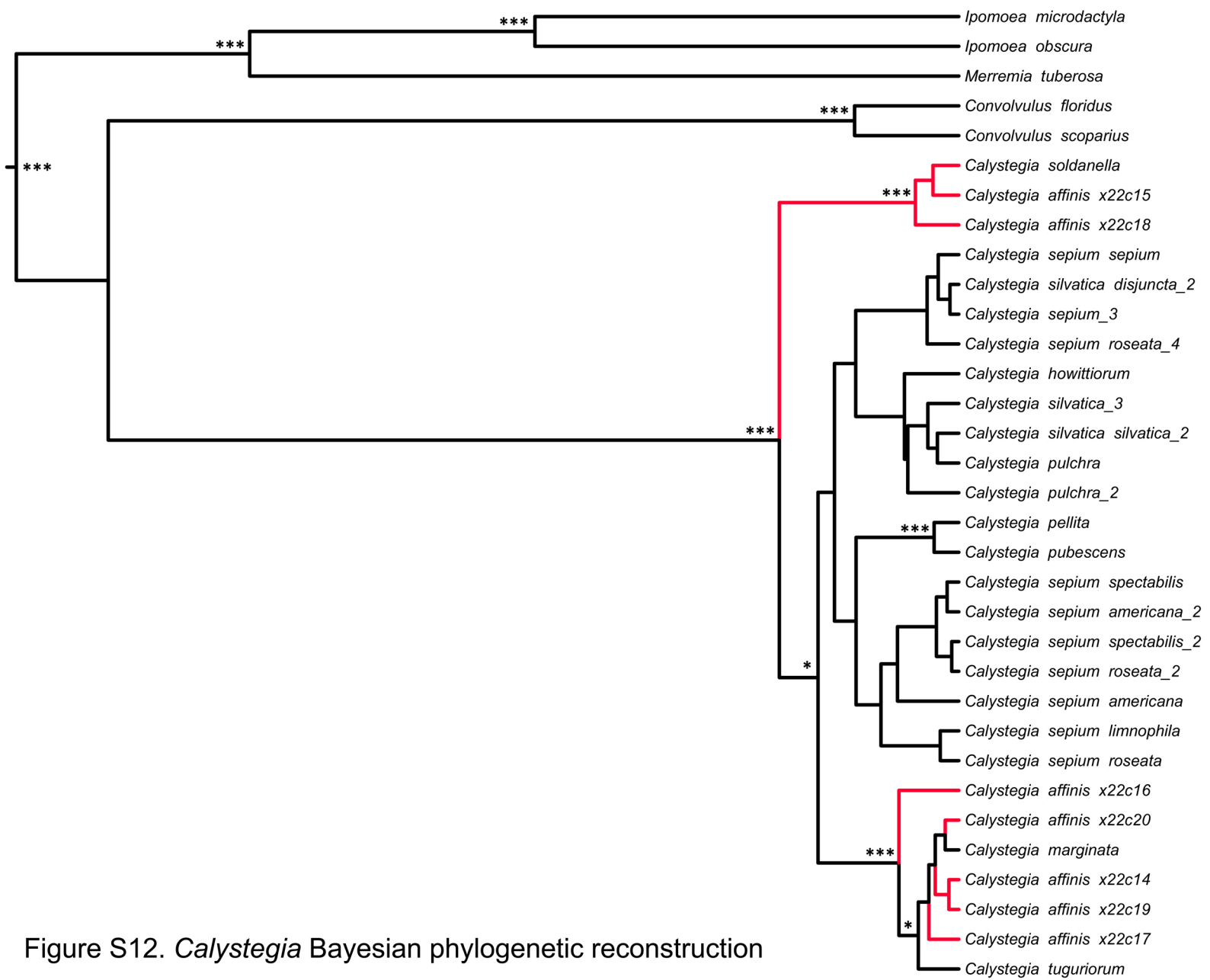
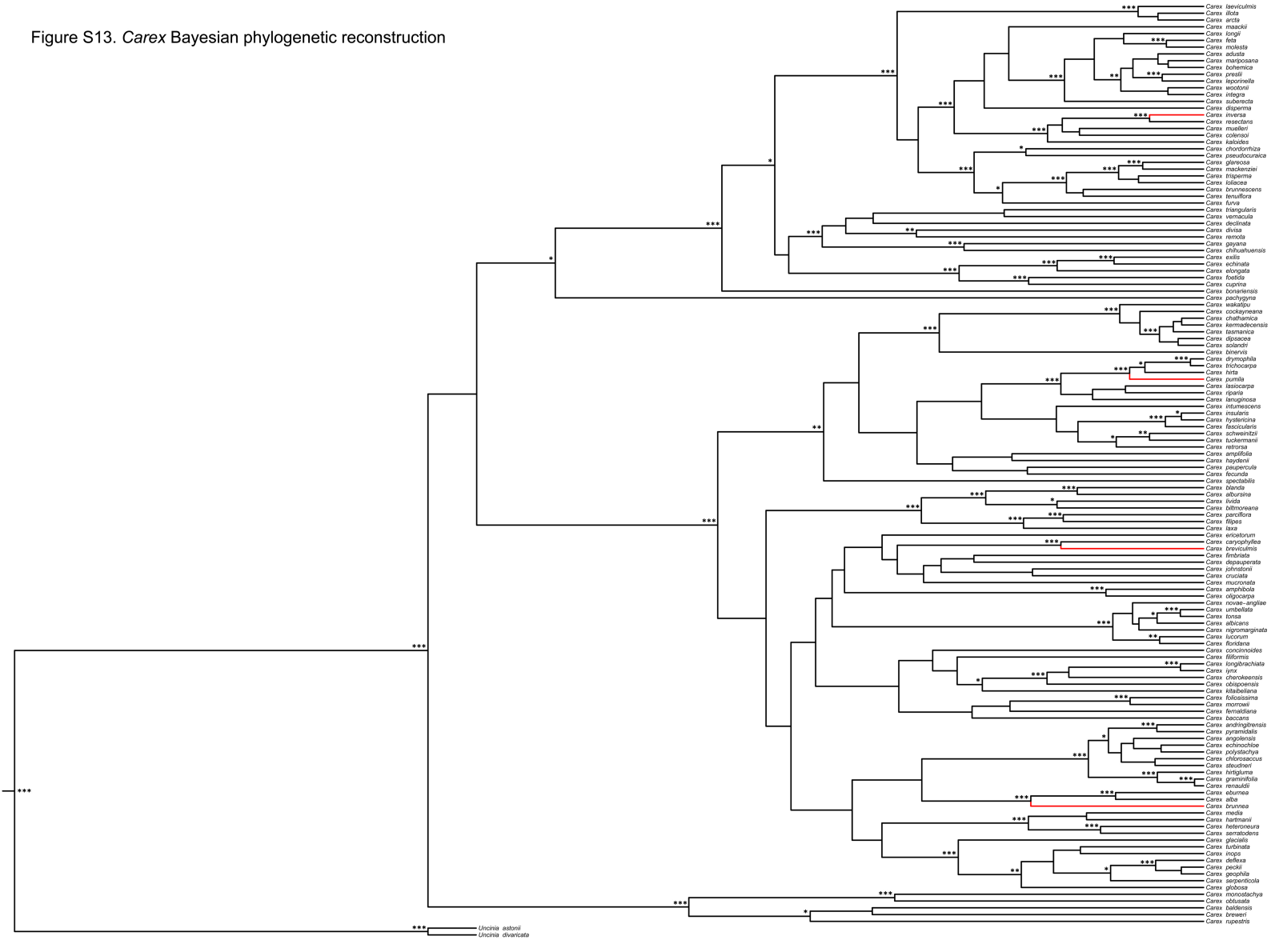


Figure S12. *Calystegia* Bayesian phylogenetic reconstruction

Figure S13. *Carex* Bayesian phylogenetic reconstruction



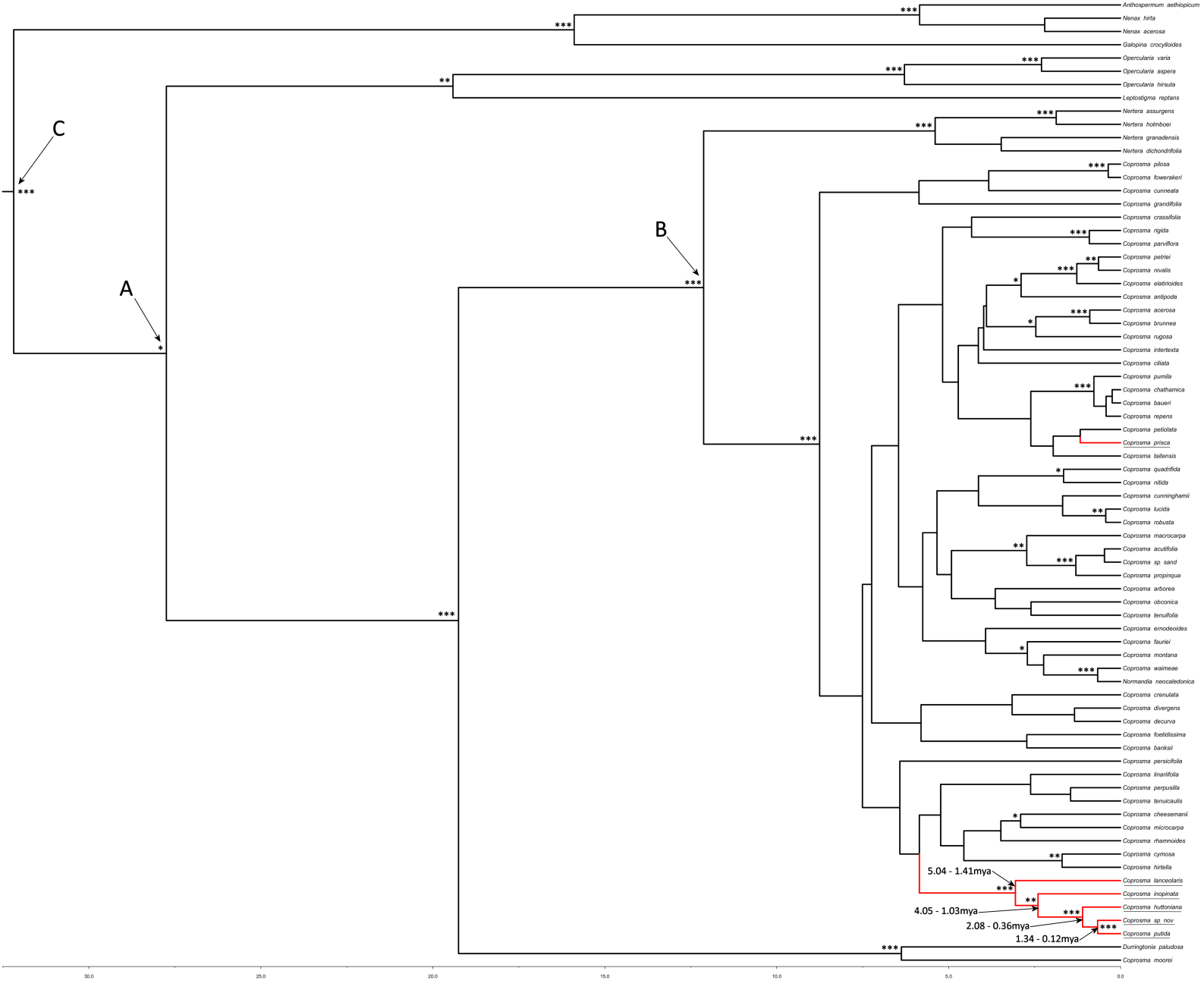


Figure S14. *Coprosma* Bayesian phylogenetic reconstruction

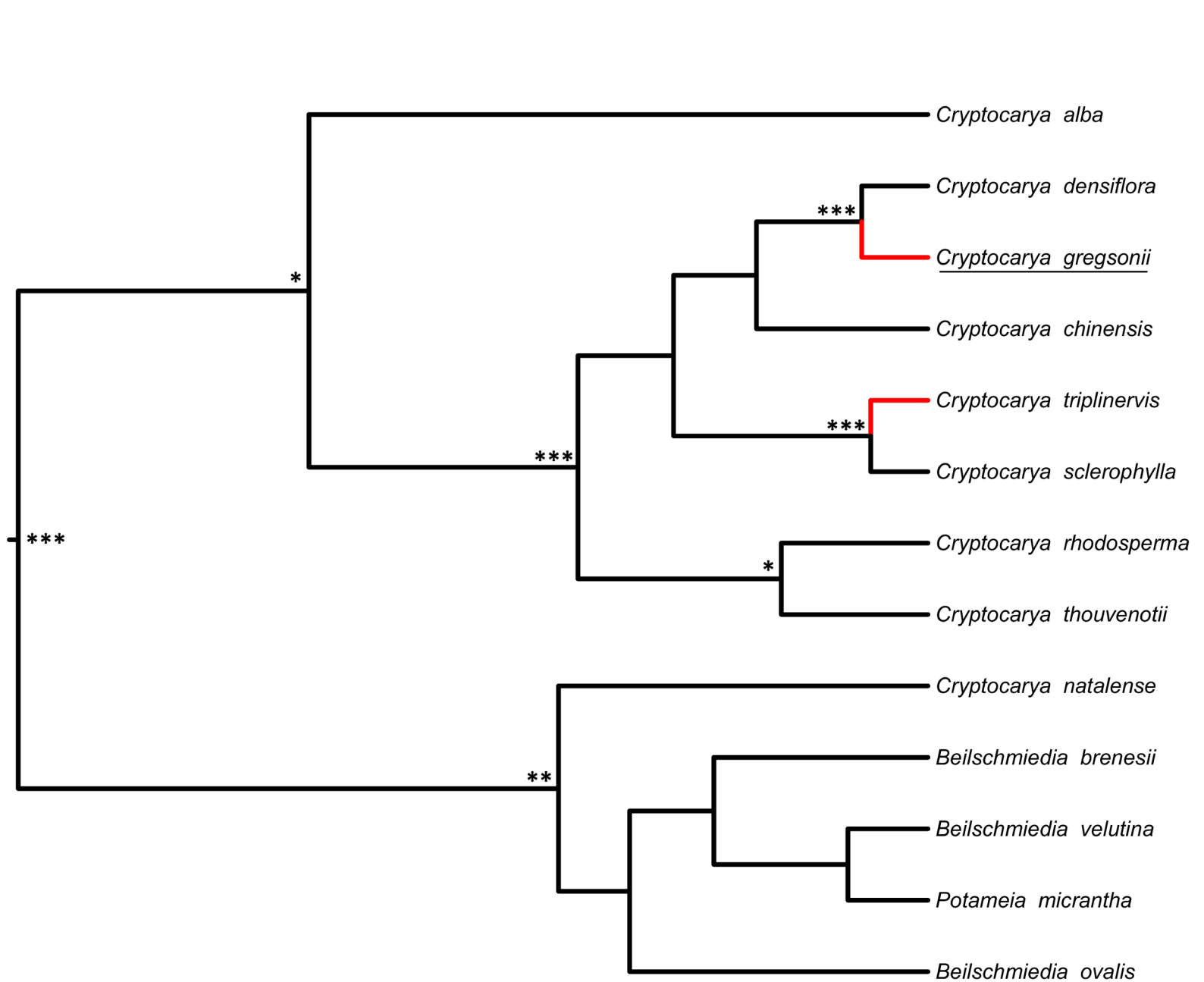


Figure S15. *Cryptocarya* Bayesian phylogenetic reconstruction

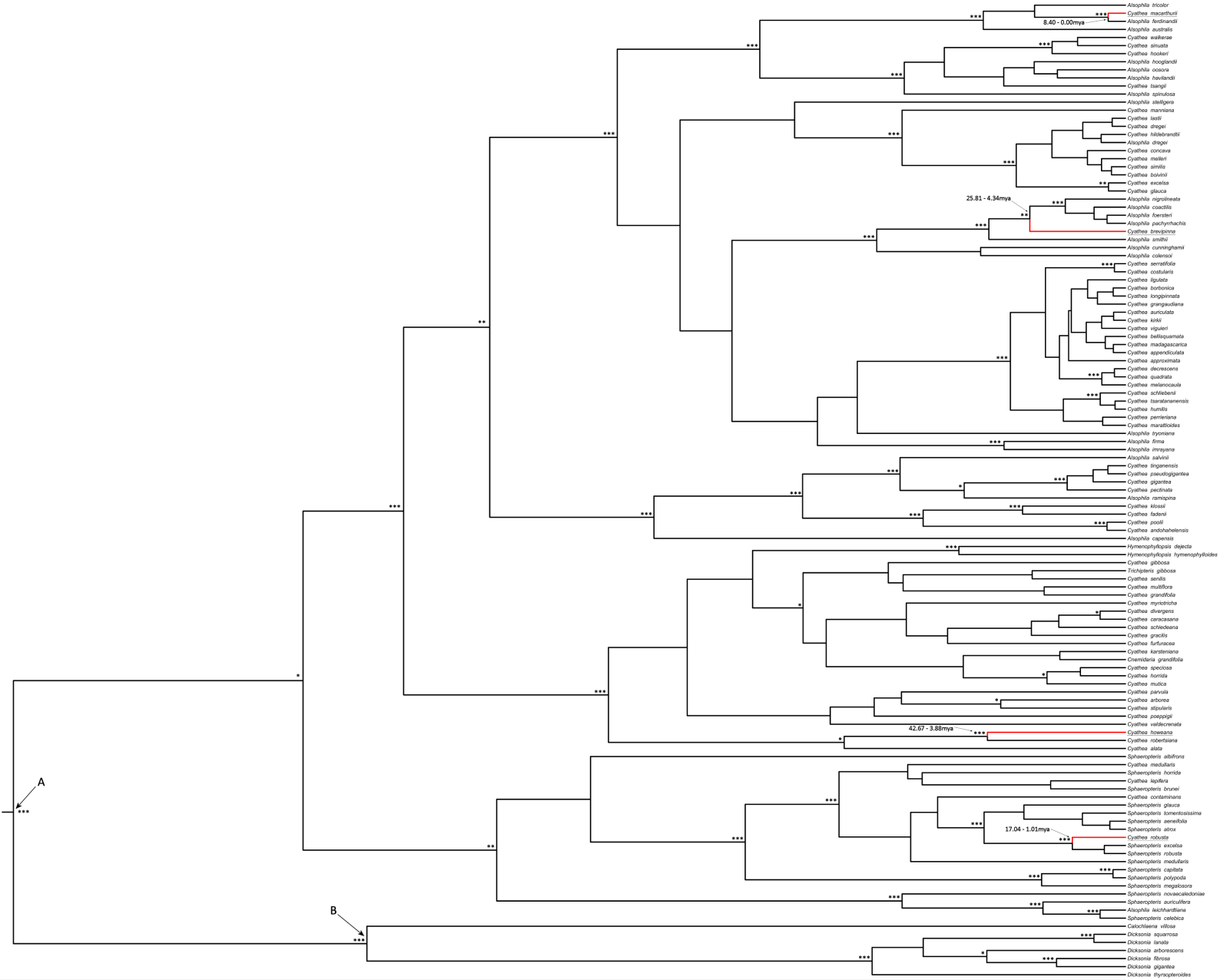


Figure S16. *Cyathea* Bayesian phylogenetic reconstruction

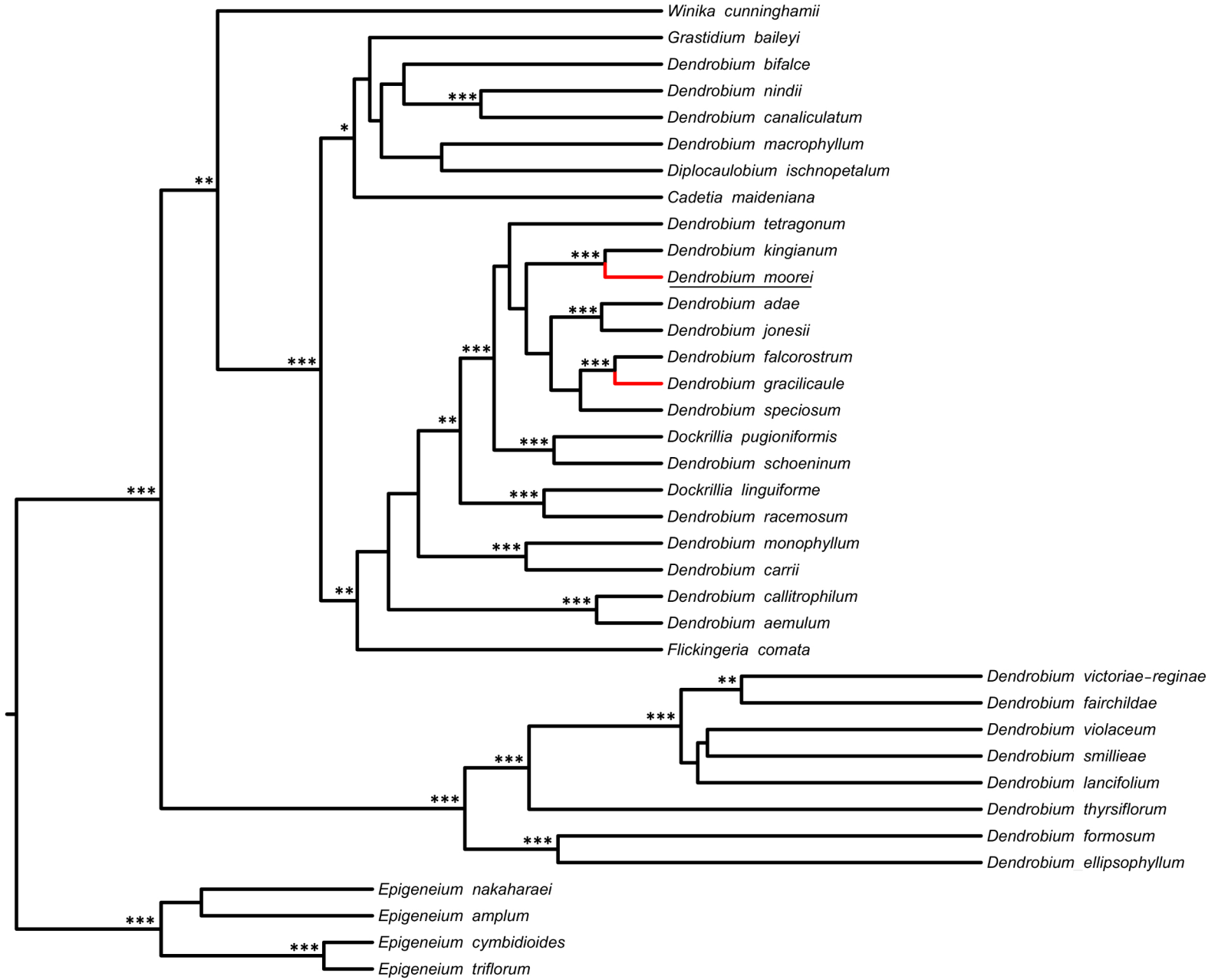


Figure S17. *Dendrobium* Bayesian phylogenetic reconstruction

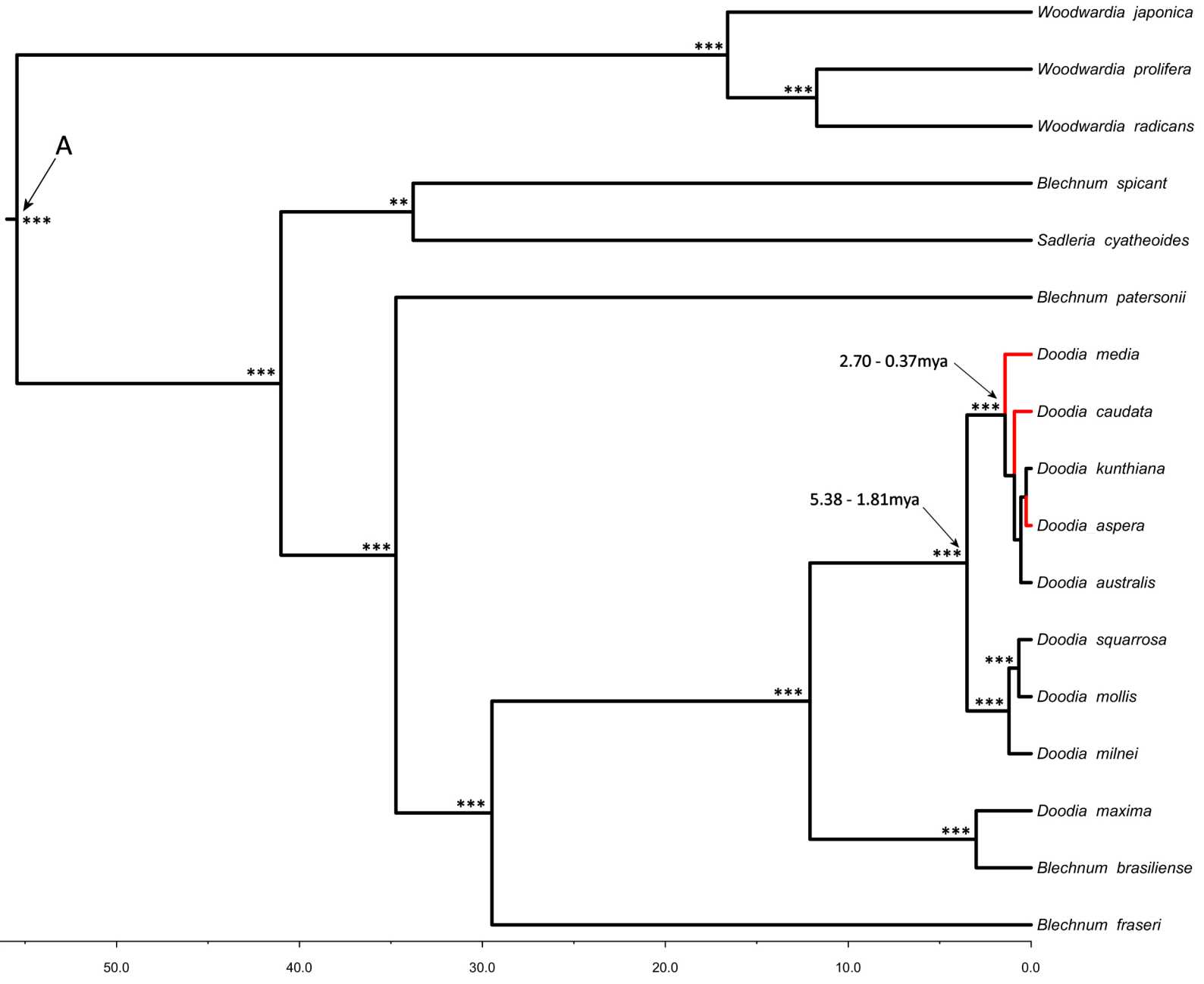


Figure S18. *Doodia* Bayesian phylogenetic reconstruction

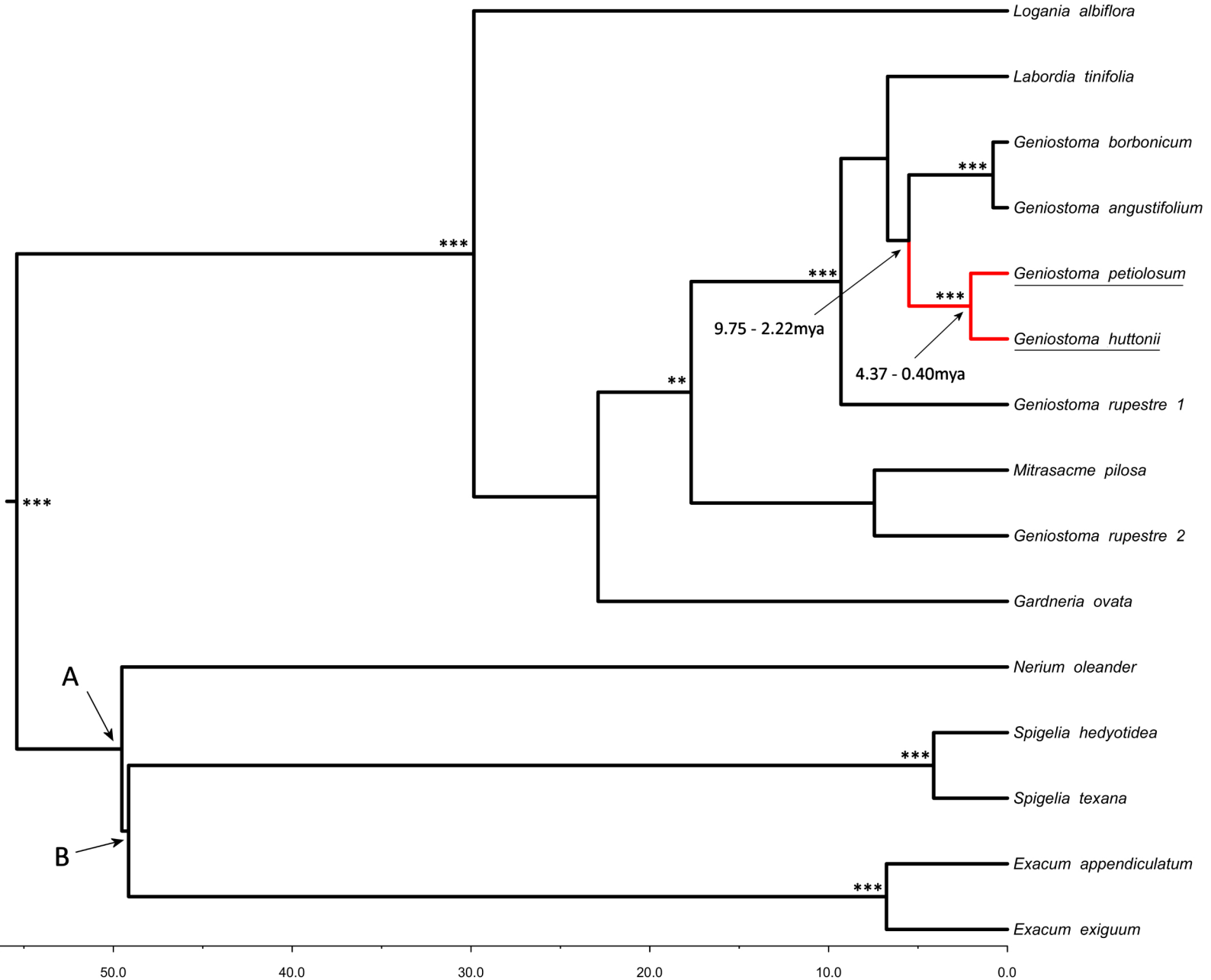


Figure S19. *Geniostoma* Bayesian phylogenetic reconstruction

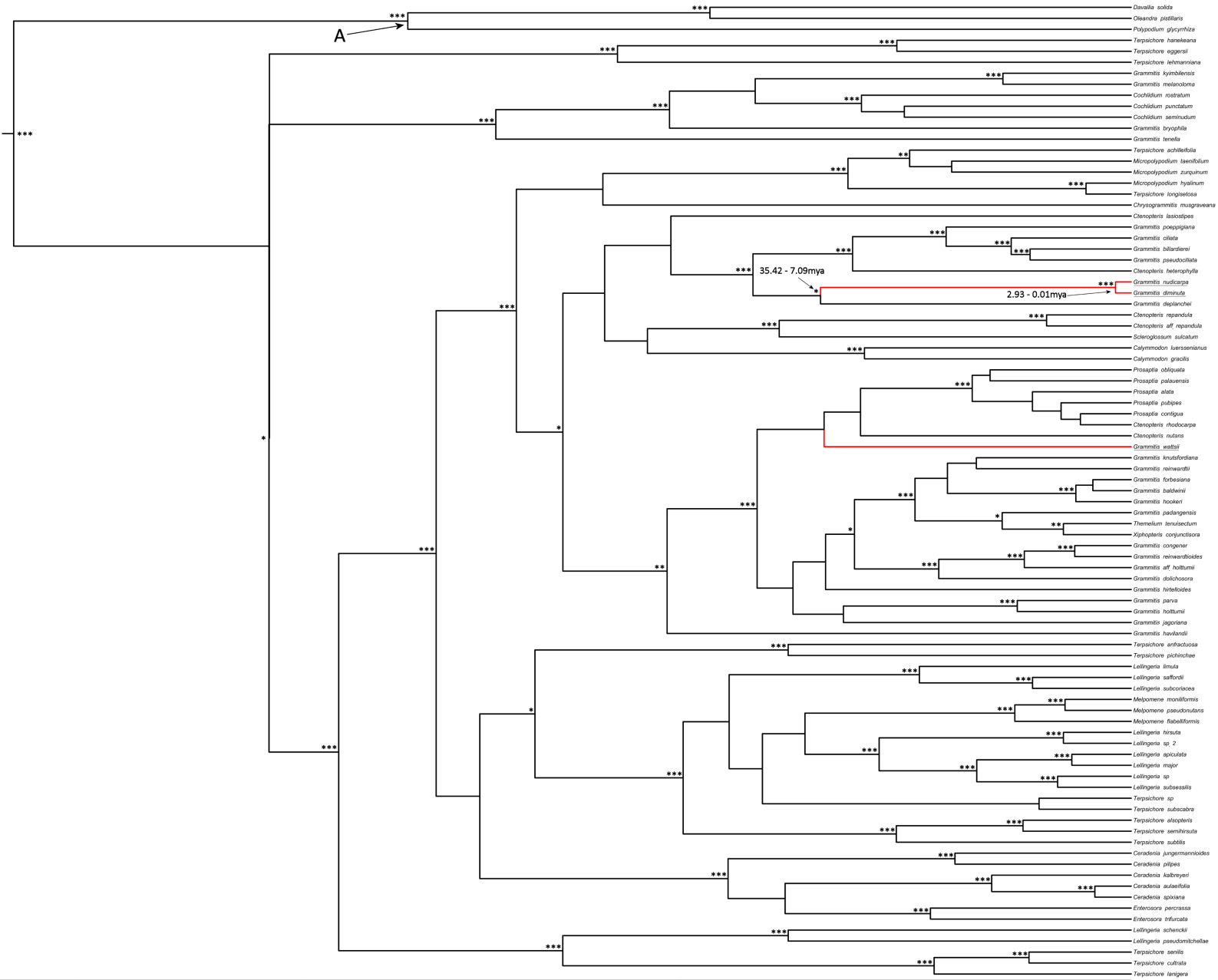


Figure S20. *Grammitis* Bayesian phylogenetic reconstruction

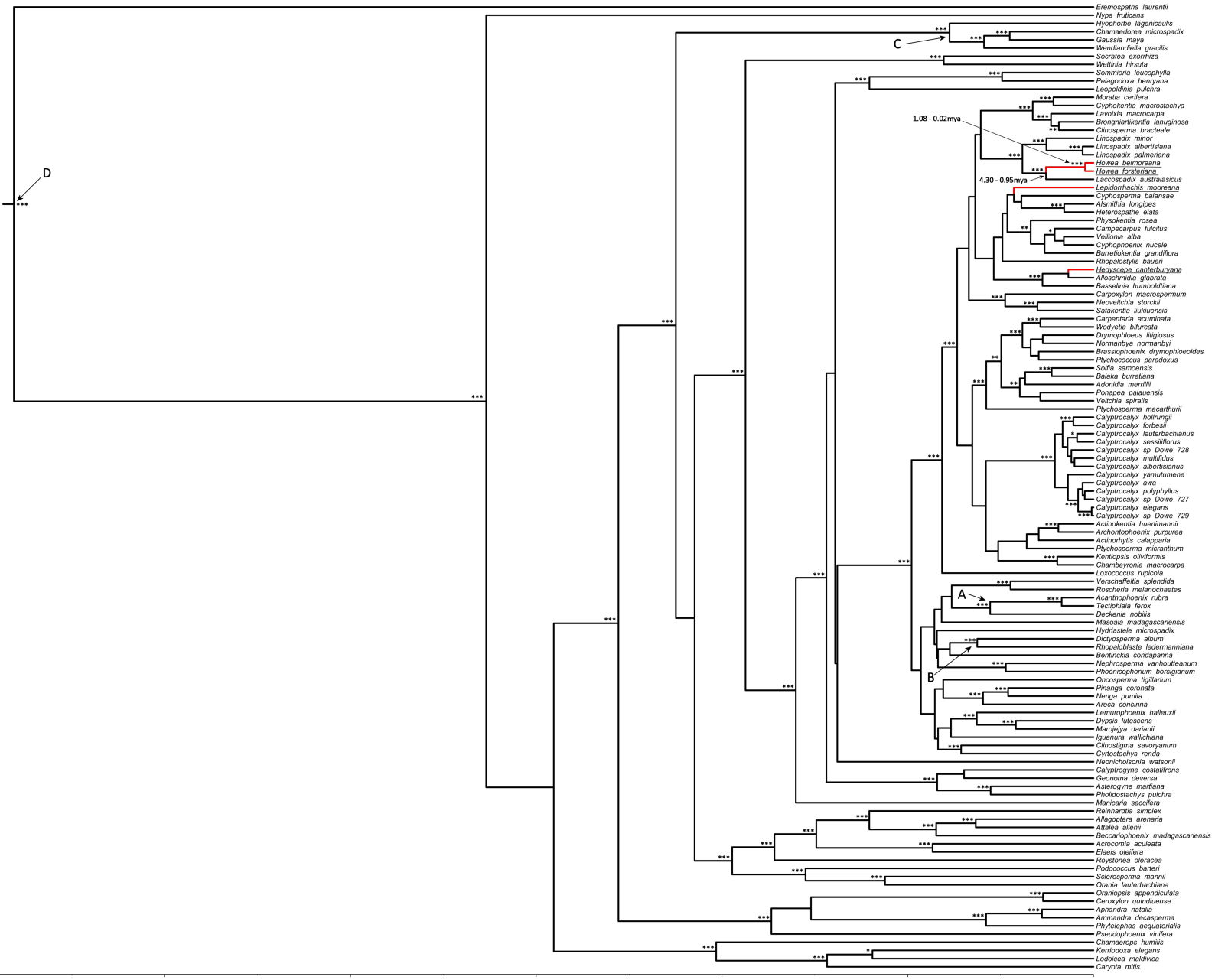


Figure S21. *Howea* Bayesian phylogenetic reconstruction

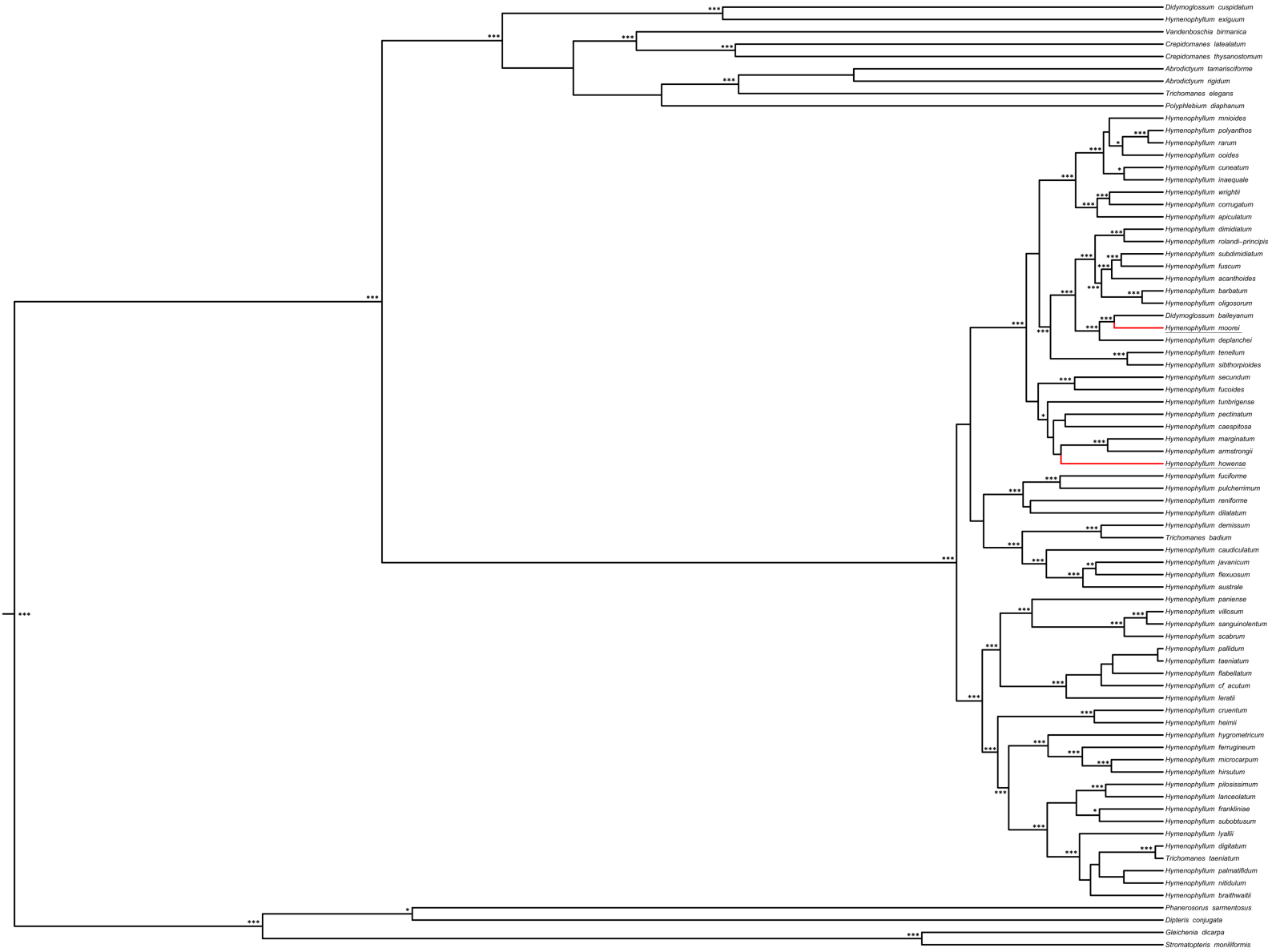


Figure S22. *Hymenophyllum* Bayesian phylogenetic reconstruction

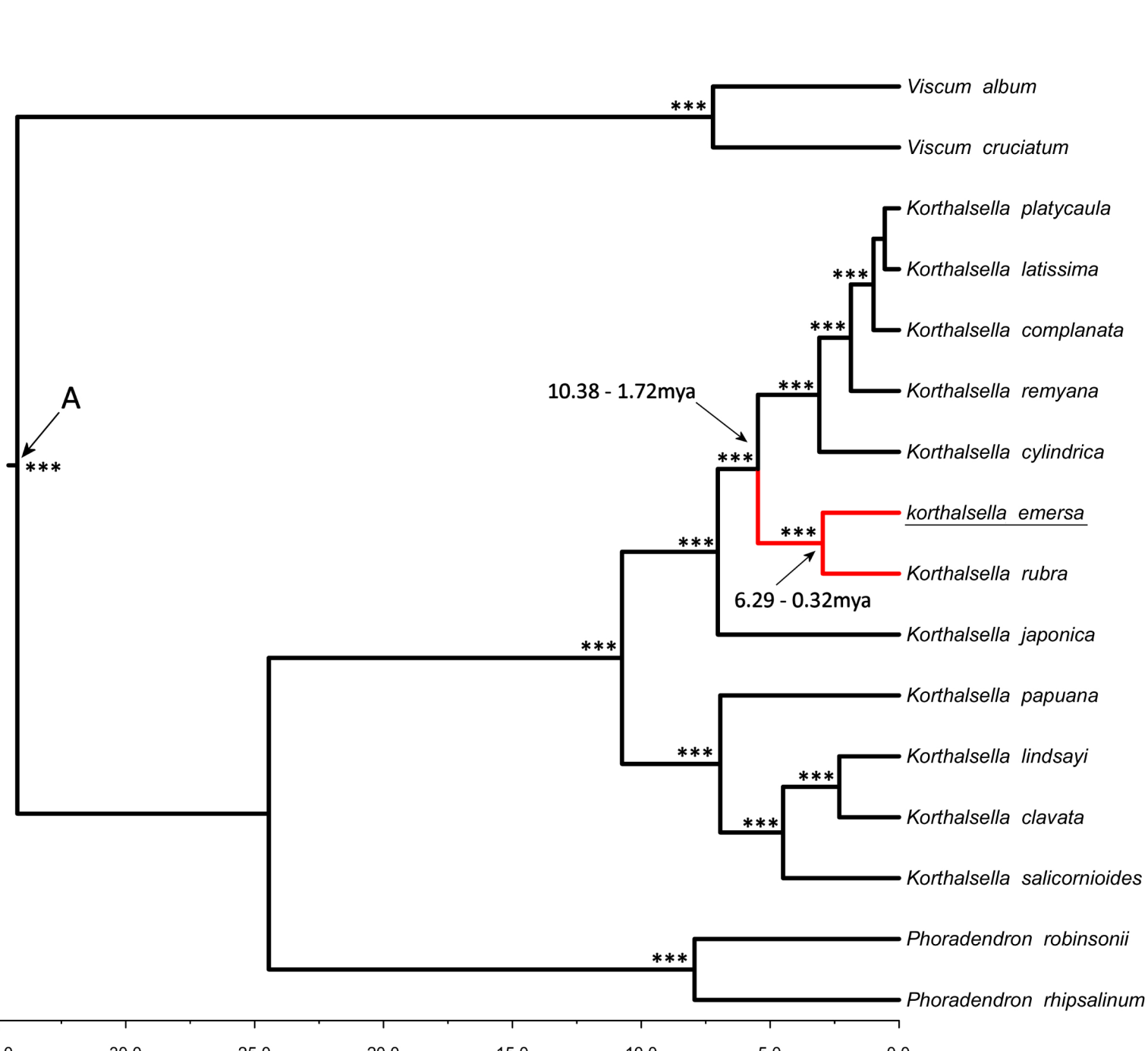


Figure S23. *Korthalsella* Bayesian phylogenetic reconstruction

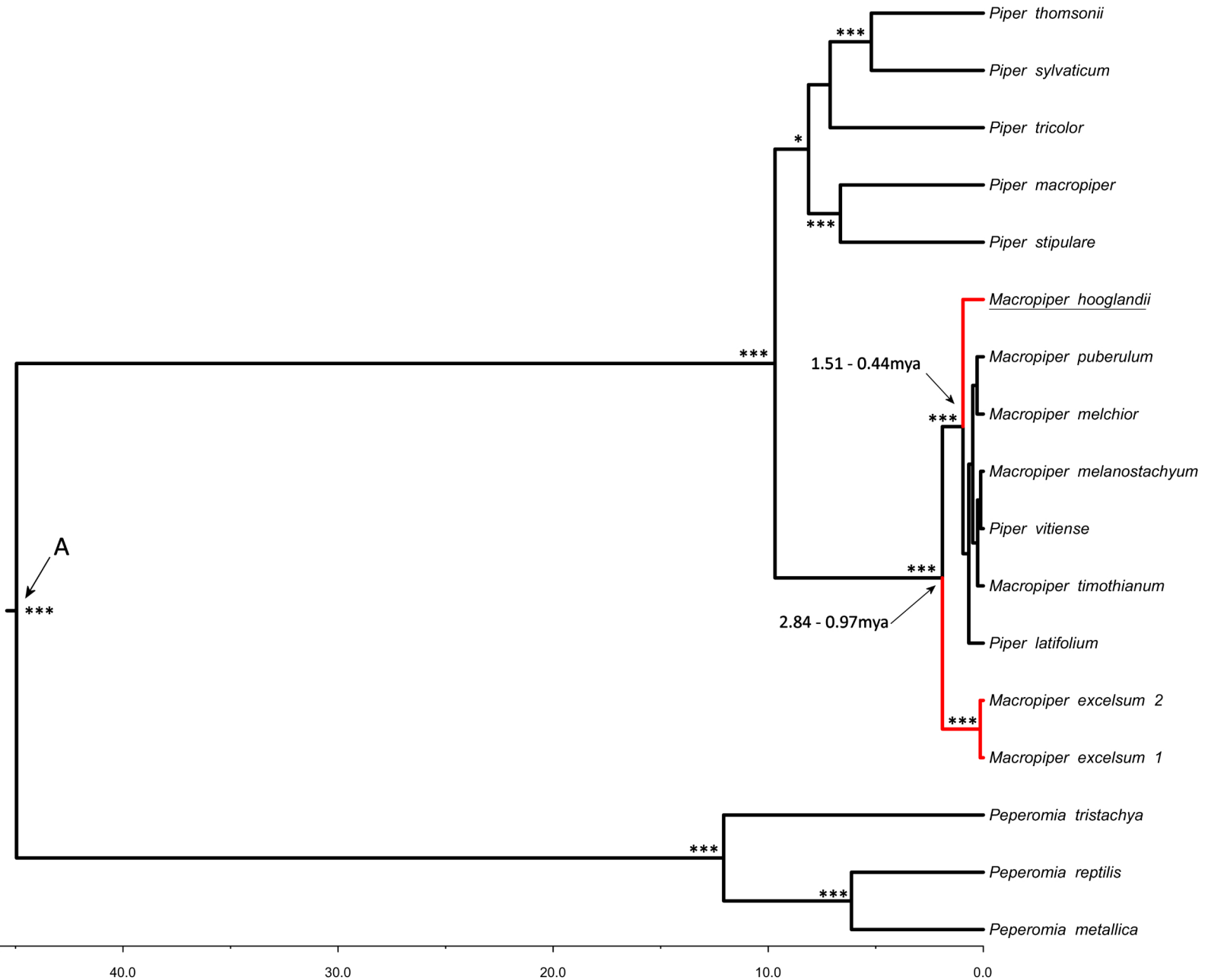


Figure S24. *Macropiper* Bayesian phylogenetic reconstruction

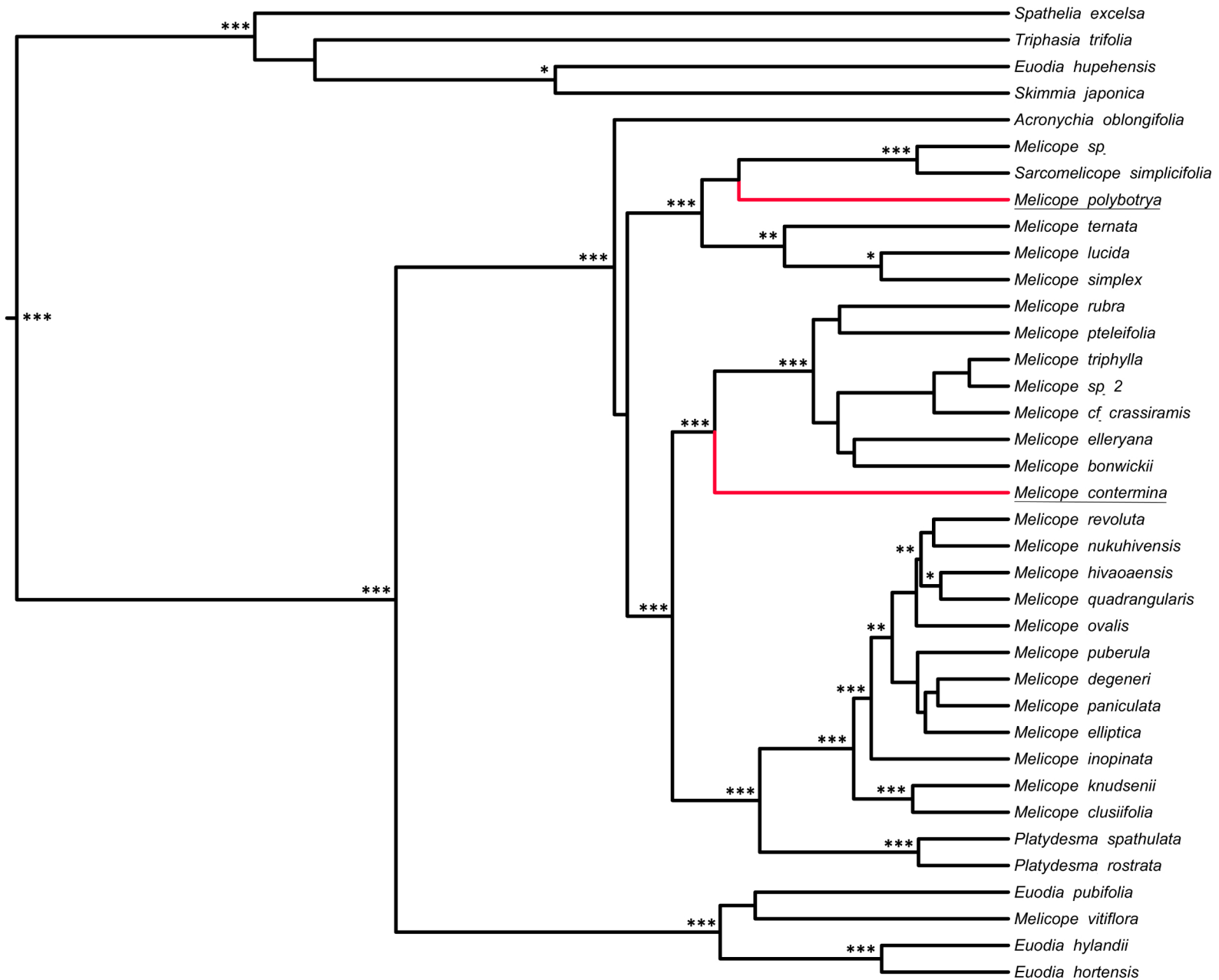


Figure S25. *Melicope* Bayesian phylogenetic reconstruction

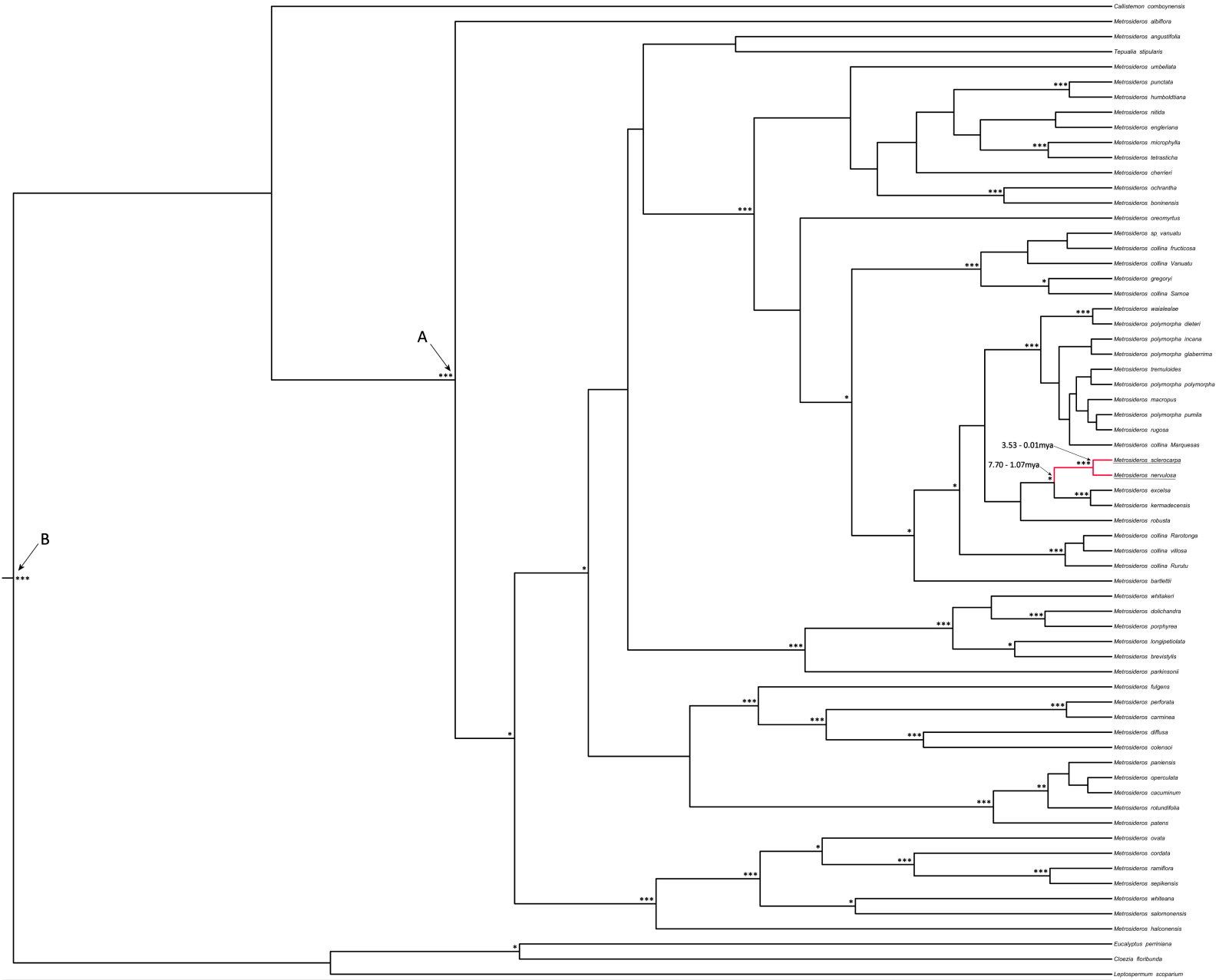


Figure S26. *Metrosideros* Bayesian phylogenetic reconstruction

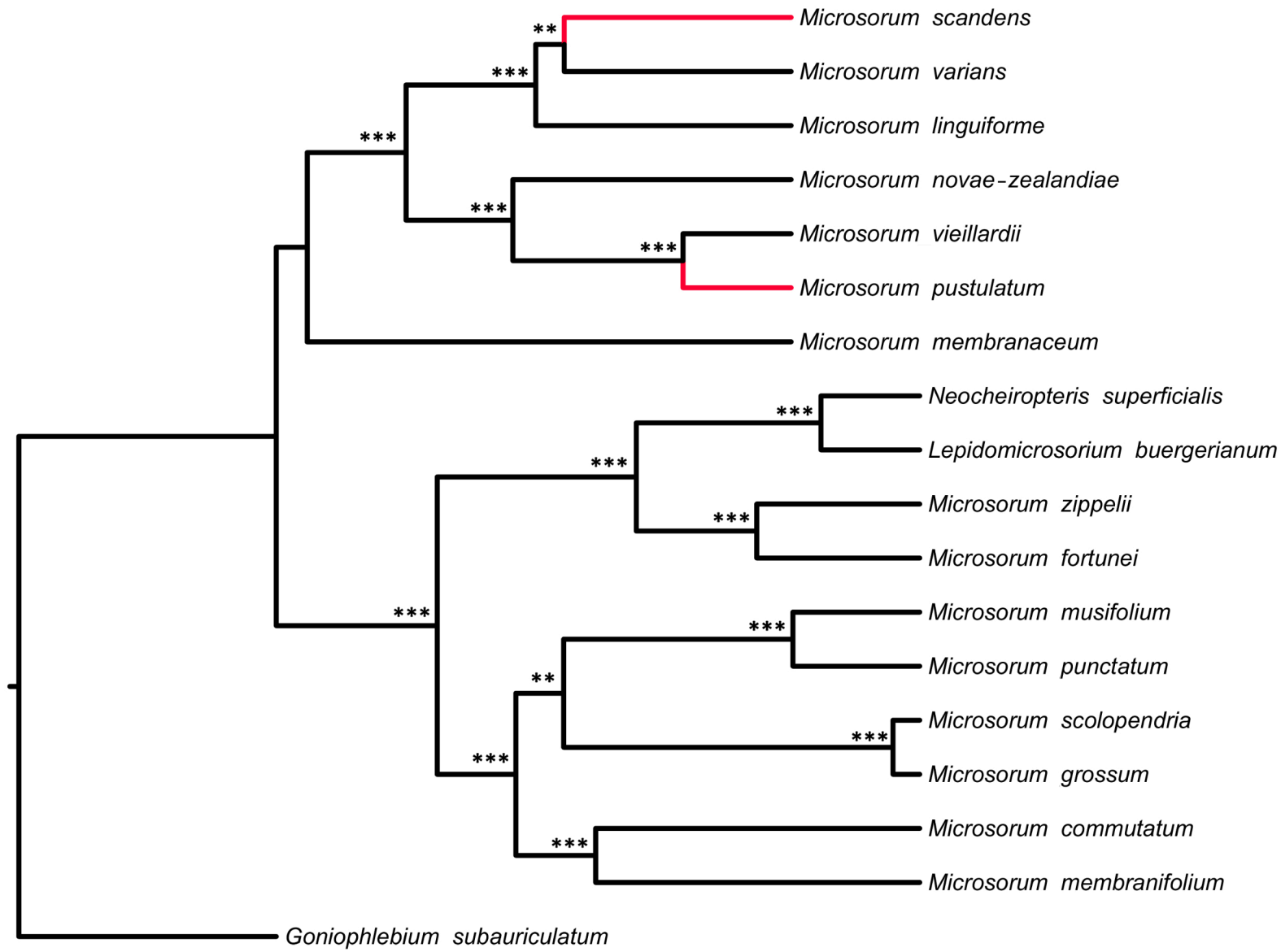


Figure S27. *Microsorum* Bayesian phylogenetic reconstruction

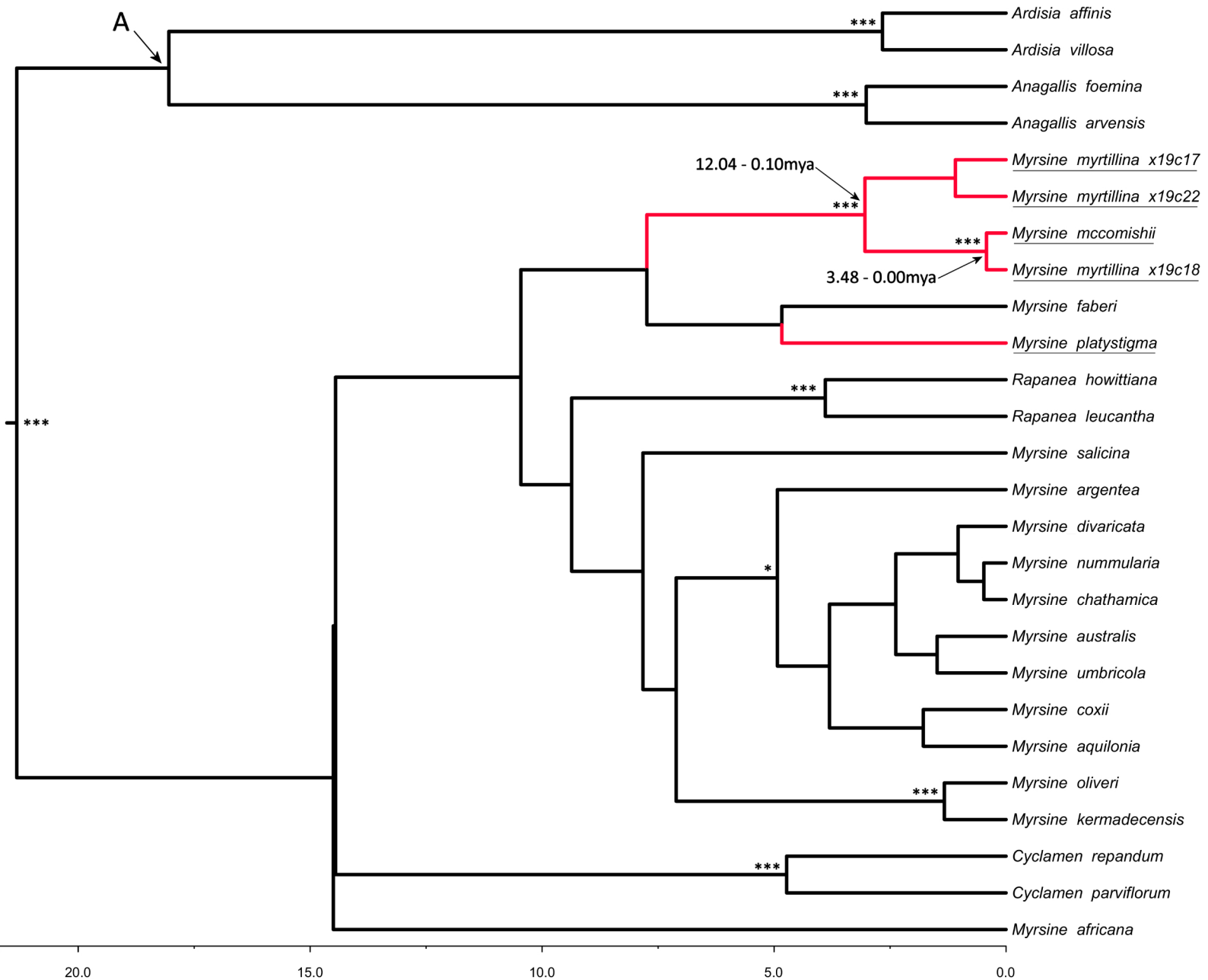


Figure S28. *Myrsine* Bayesian phylogenetic reconstruction

Figure S29. *Olearia* Bayesian phylogenetic reconstruction

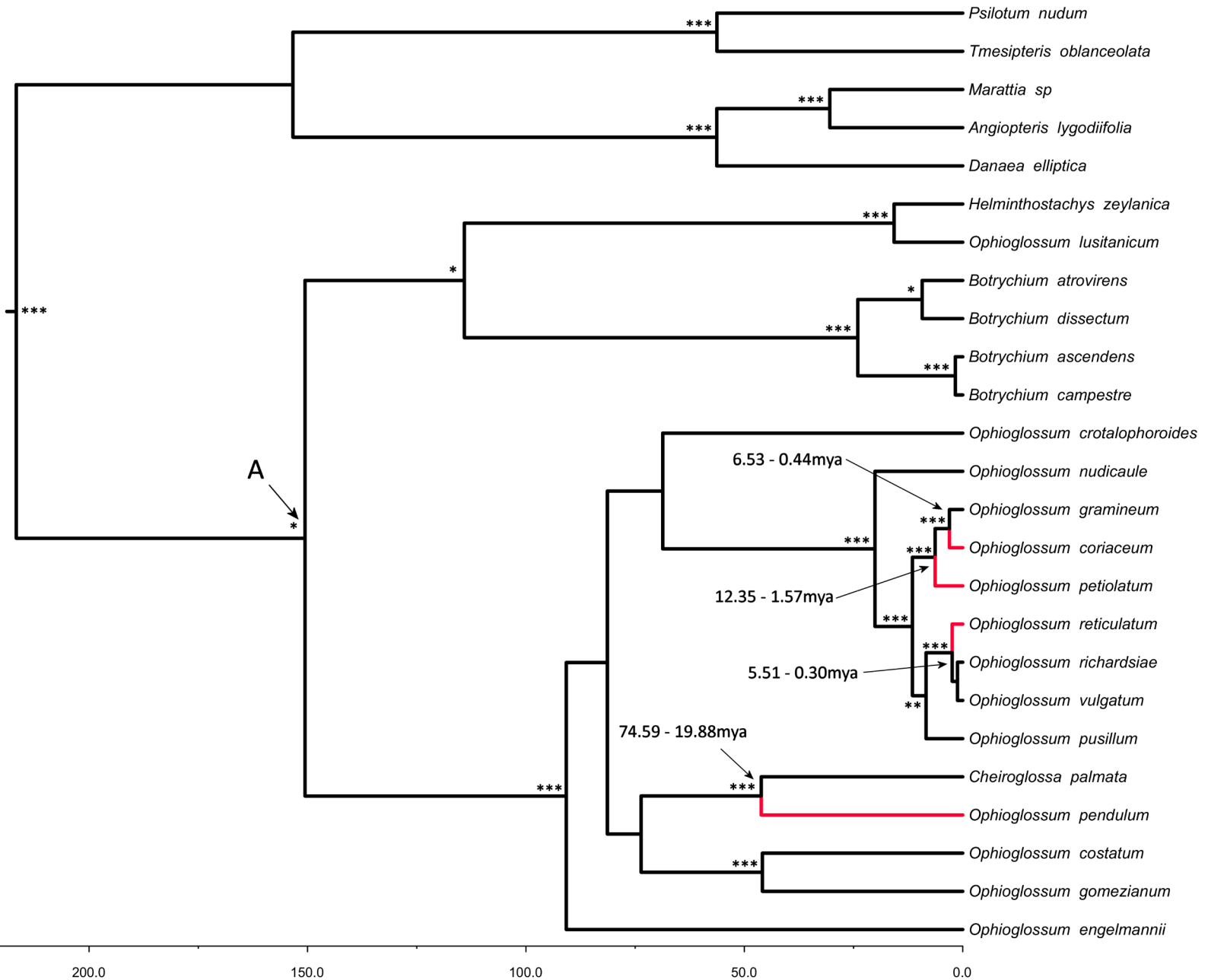
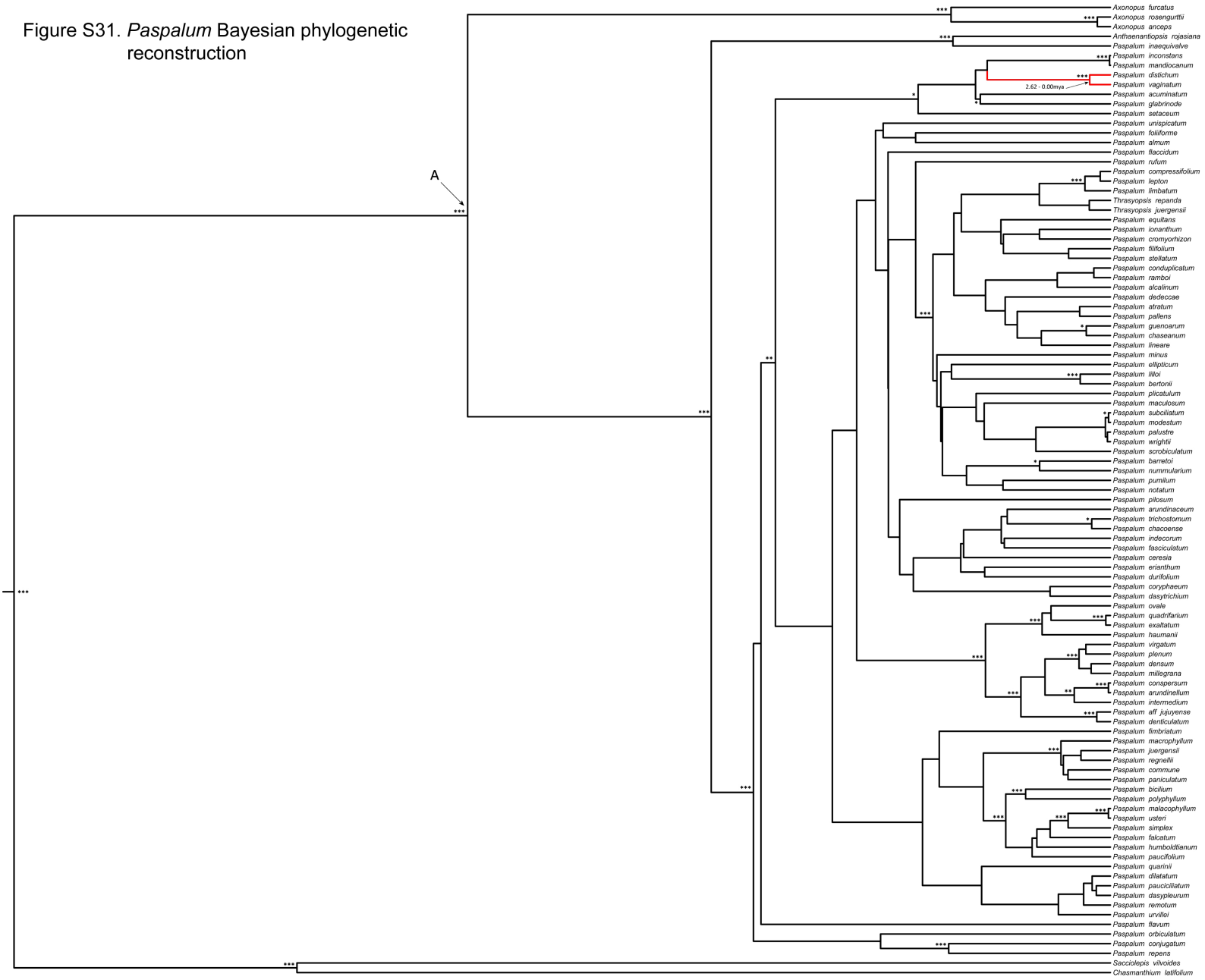


Figure S30. *Ophioglossum* Bayesian phylogenetic reconstruction

Figure S31. *Paspalum* Bayesian phylogenetic reconstruction



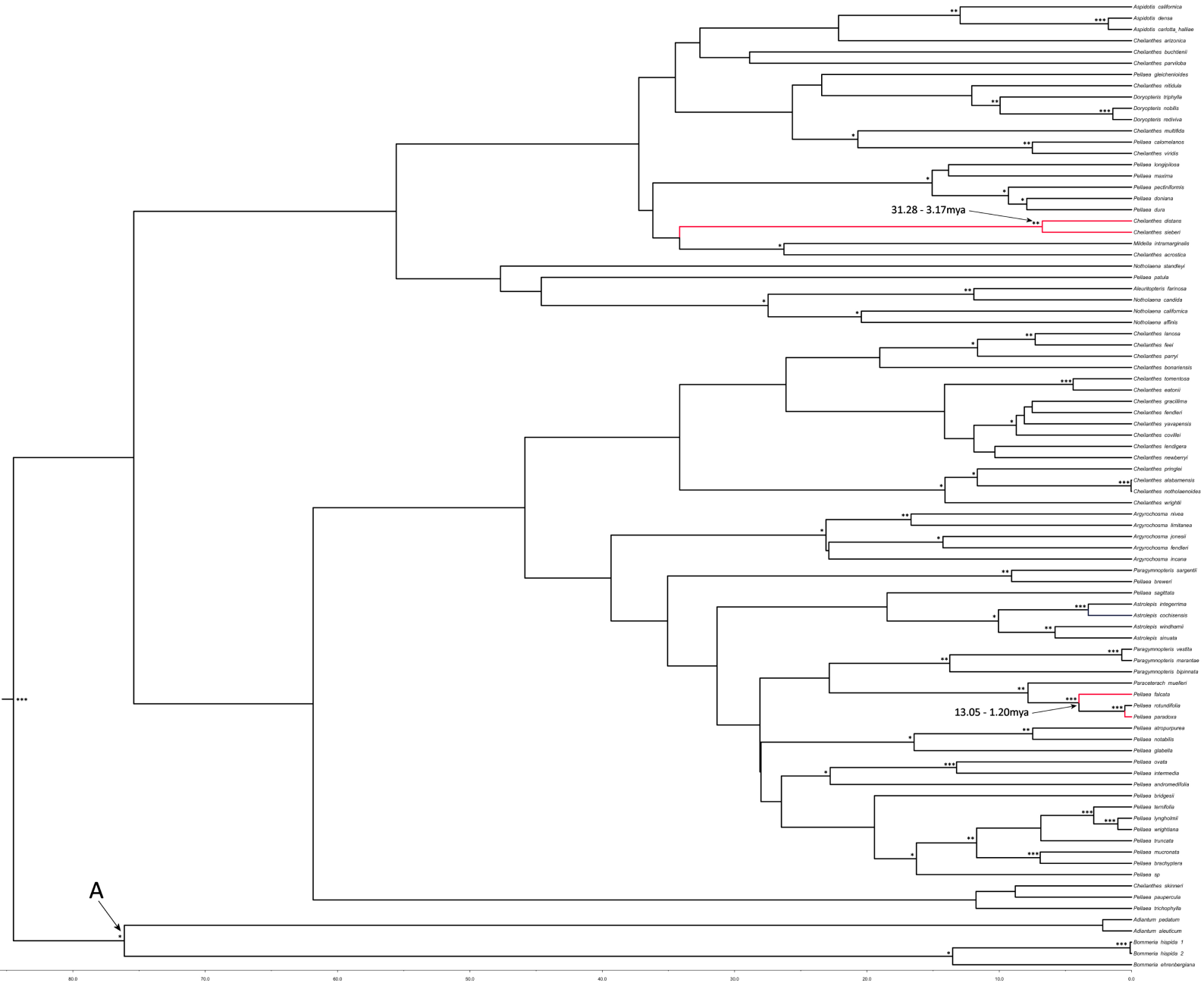


Figure S32. *Pellaea & Cheilanthes* Bayesian phylogenetic reconstruction

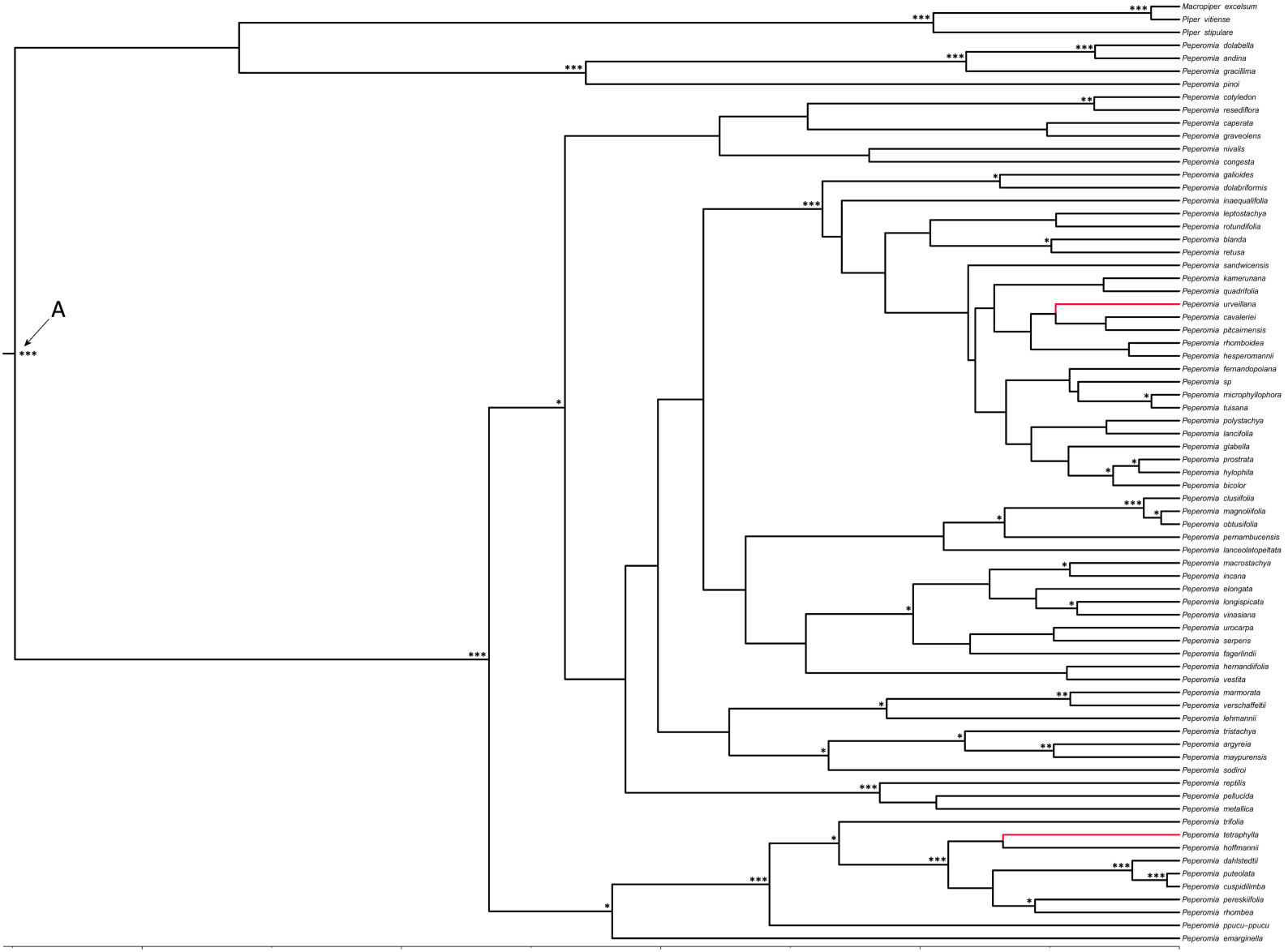


Figure S33. *Peperomia* Bayesian phylogenetic reconstruction

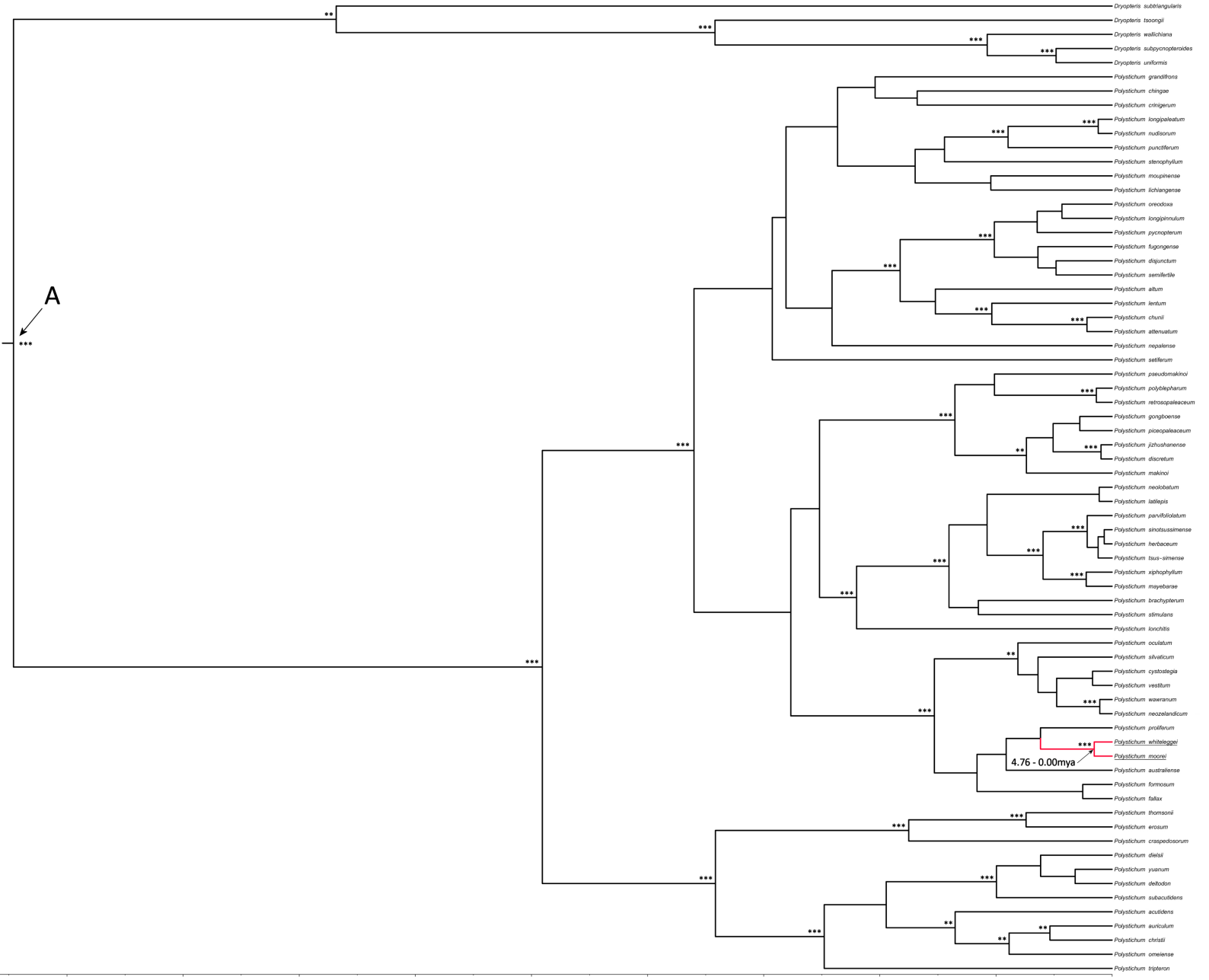


Figure S34. *Polystichum* Bayesian phylogenetic reconstruction

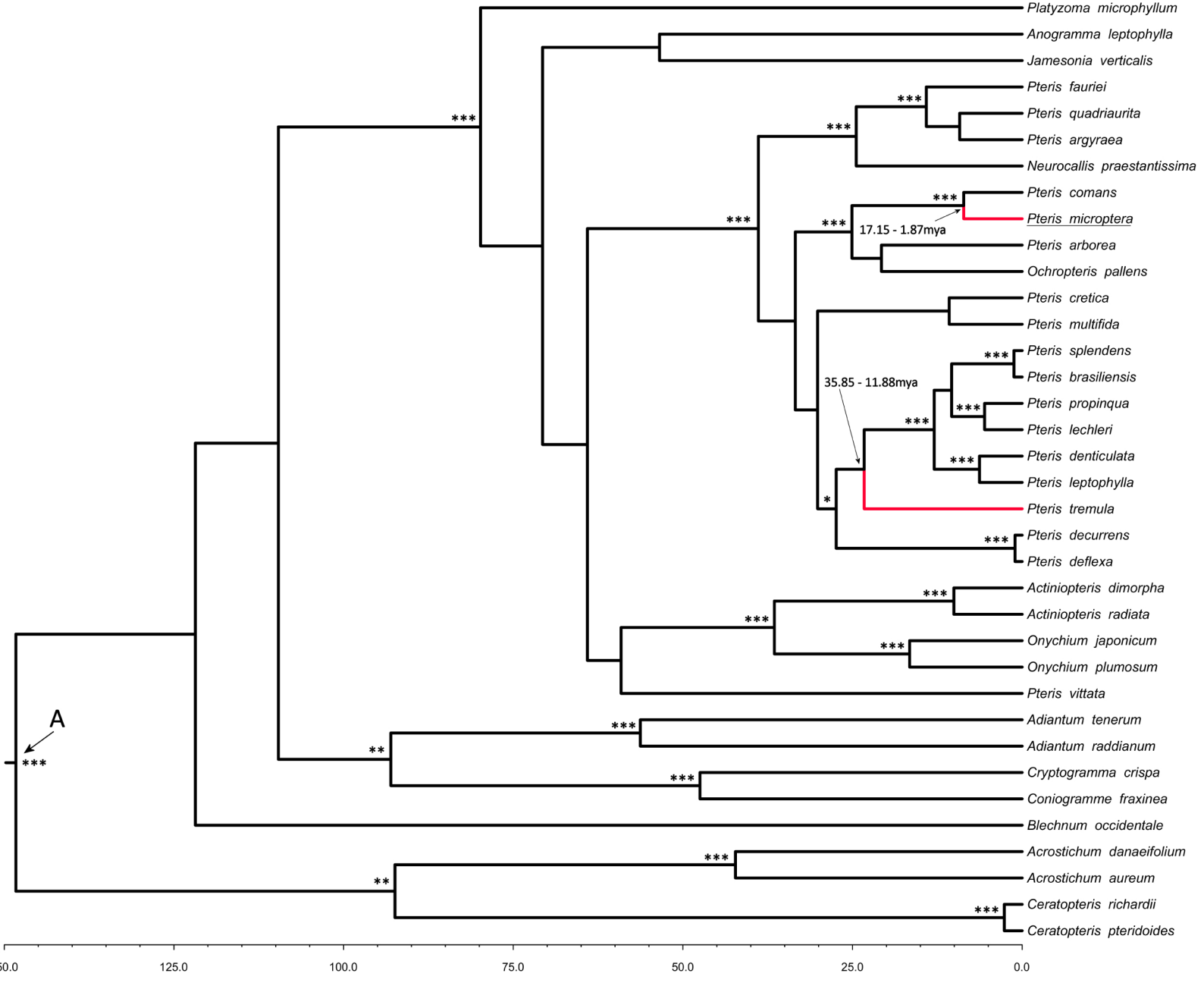


Figure S35. *Pteris* Bayesian phylogenetic reconstruction

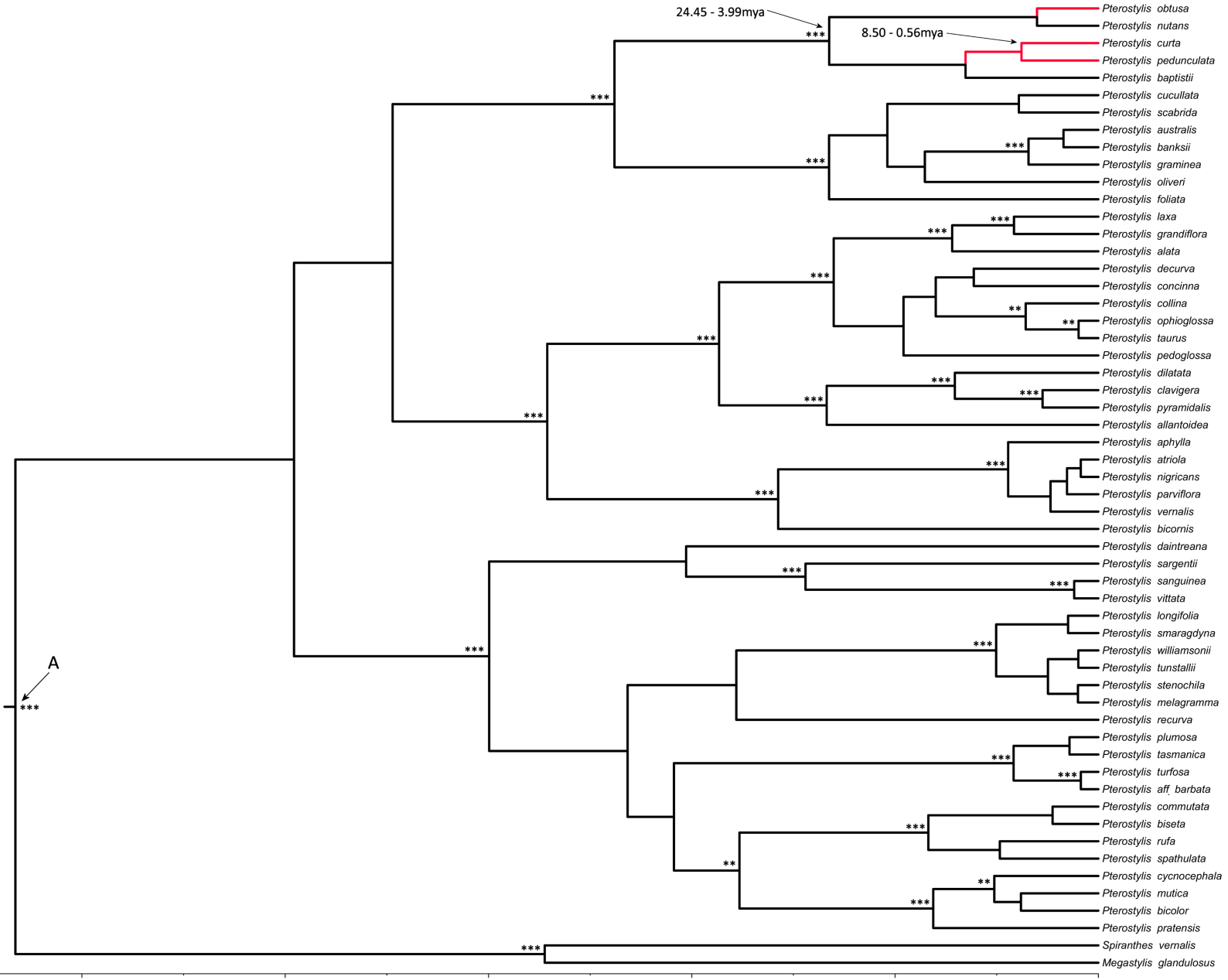
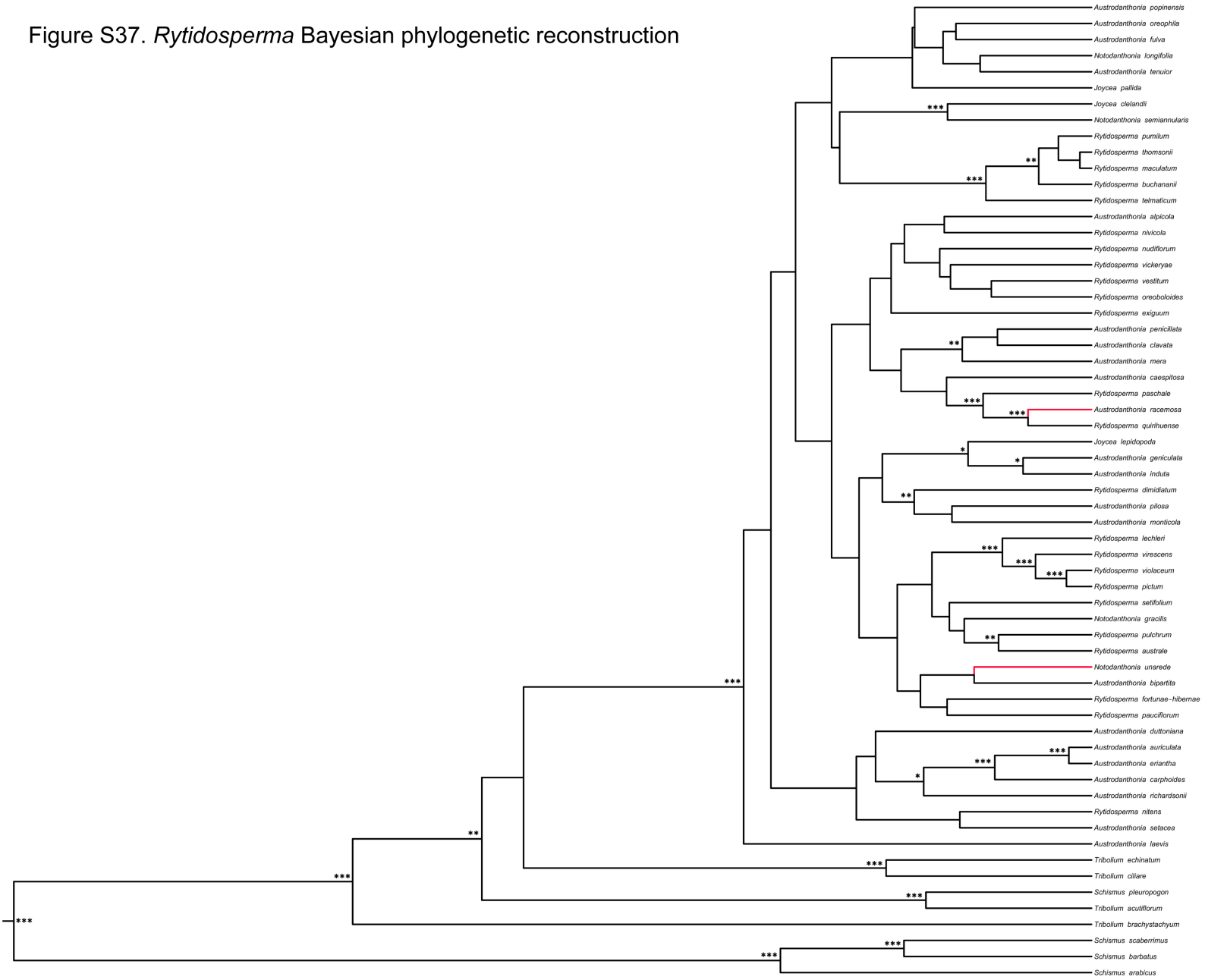


Figure S36. *Pterostylis* Bayesian phylogenetic reconstruction

Figure S37. *Rytidosperma* Bayesian phylogenetic reconstruction



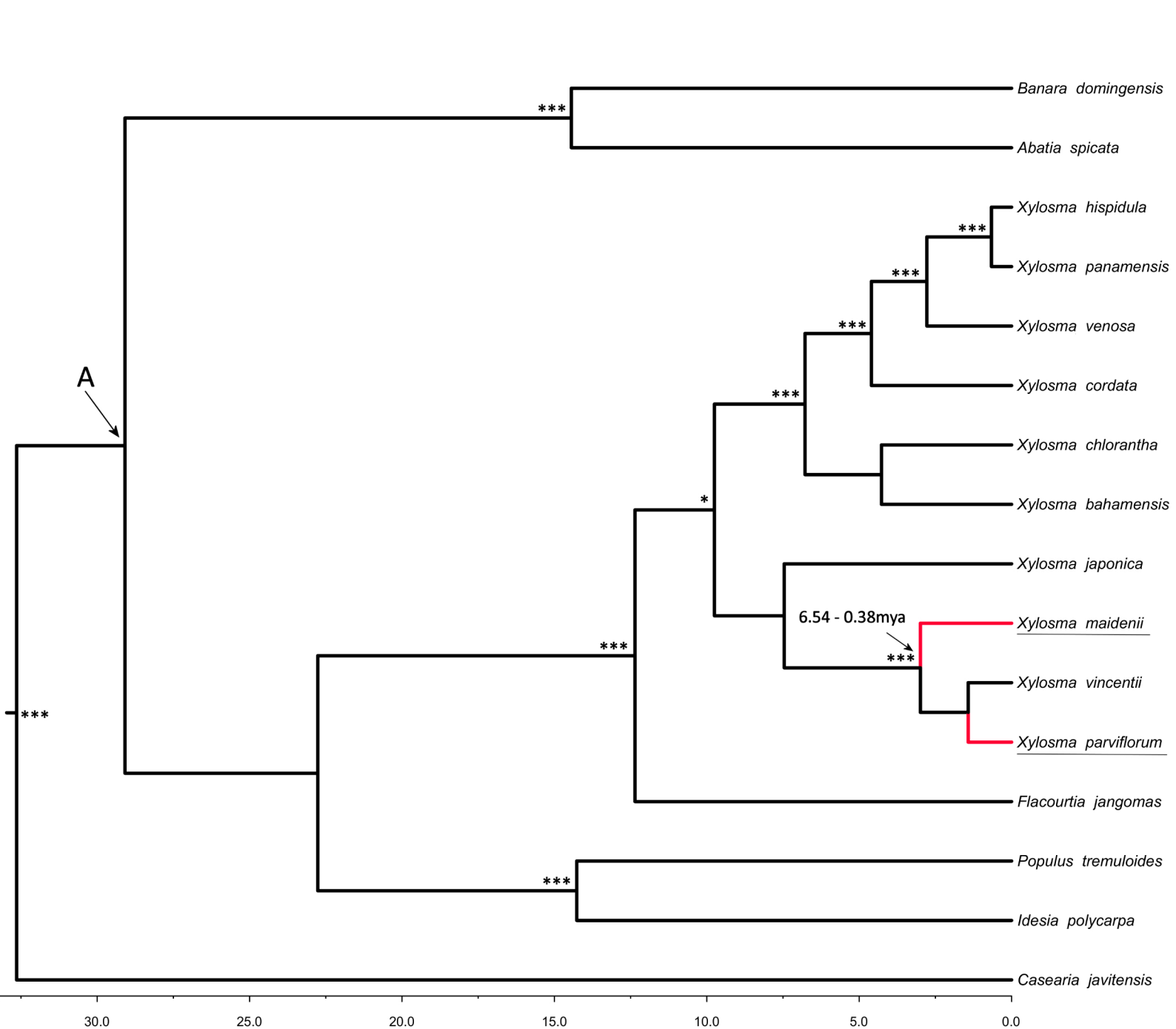


Figure S38. *Xylosma* Bayesian phylogenetic reconstruction

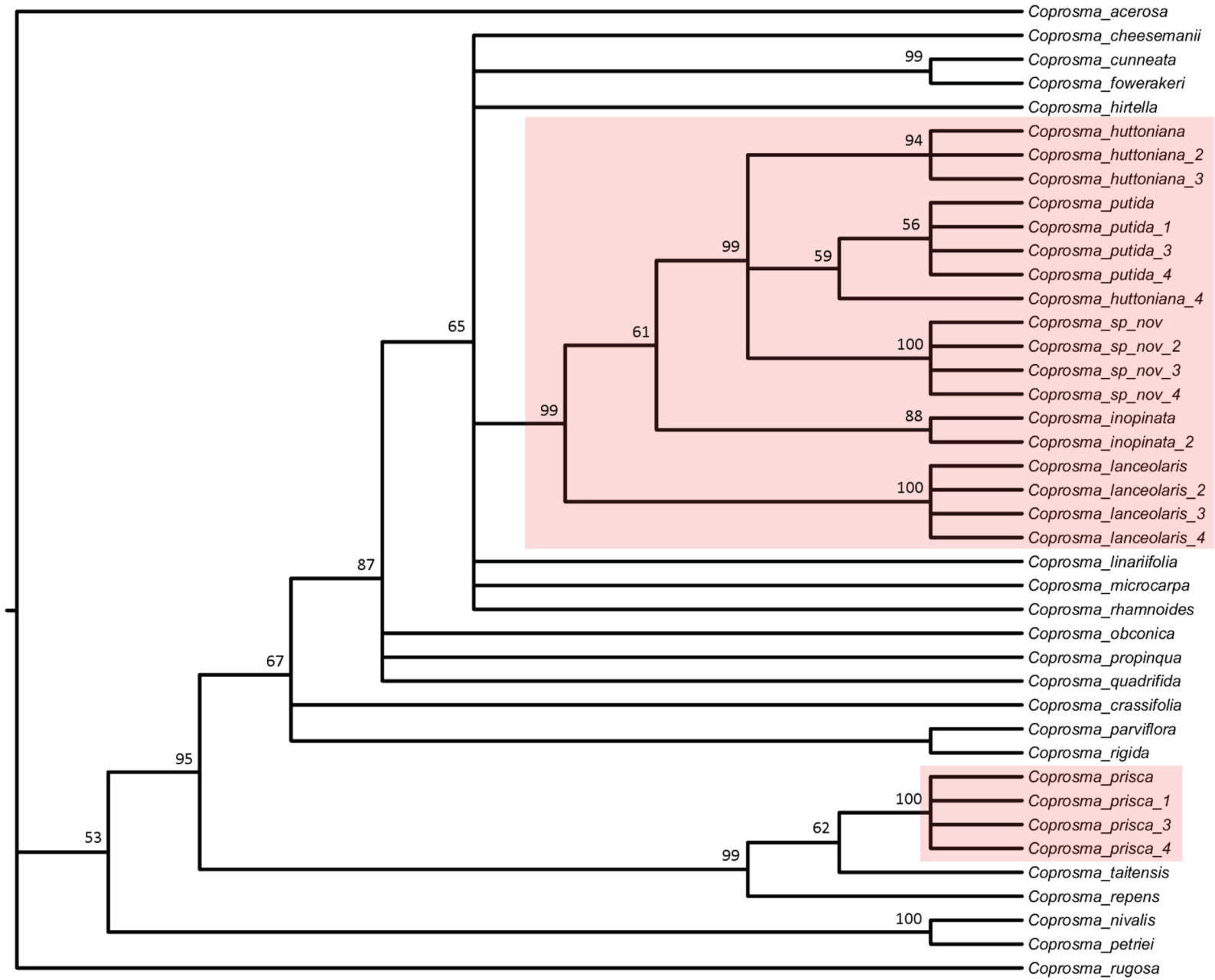


Figure S39. *Coprosma* maximum parsimony phylogenetic recostruction

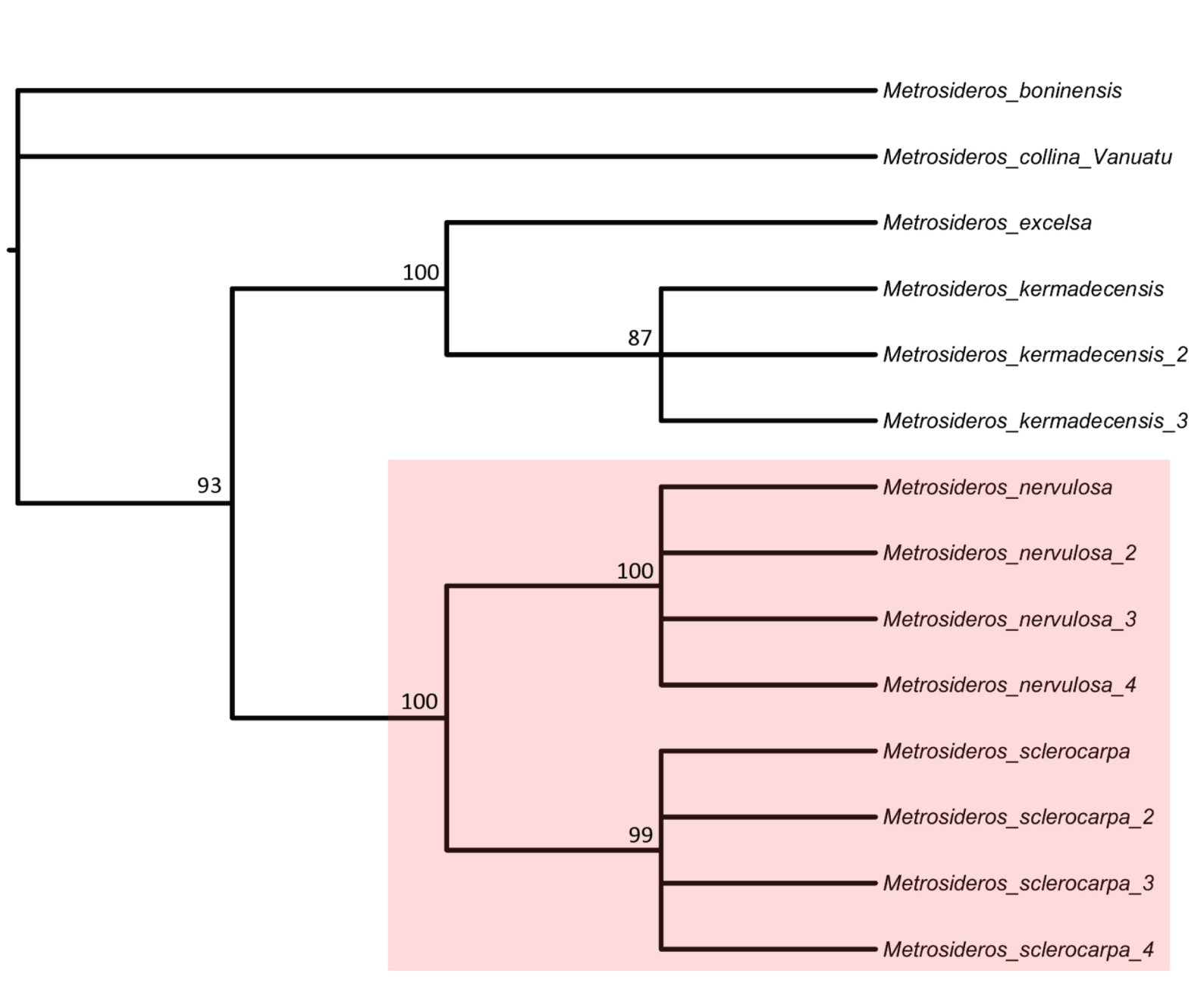


Figure S40. *Metrosideros* maximum parsimony phylogenetic recostruction

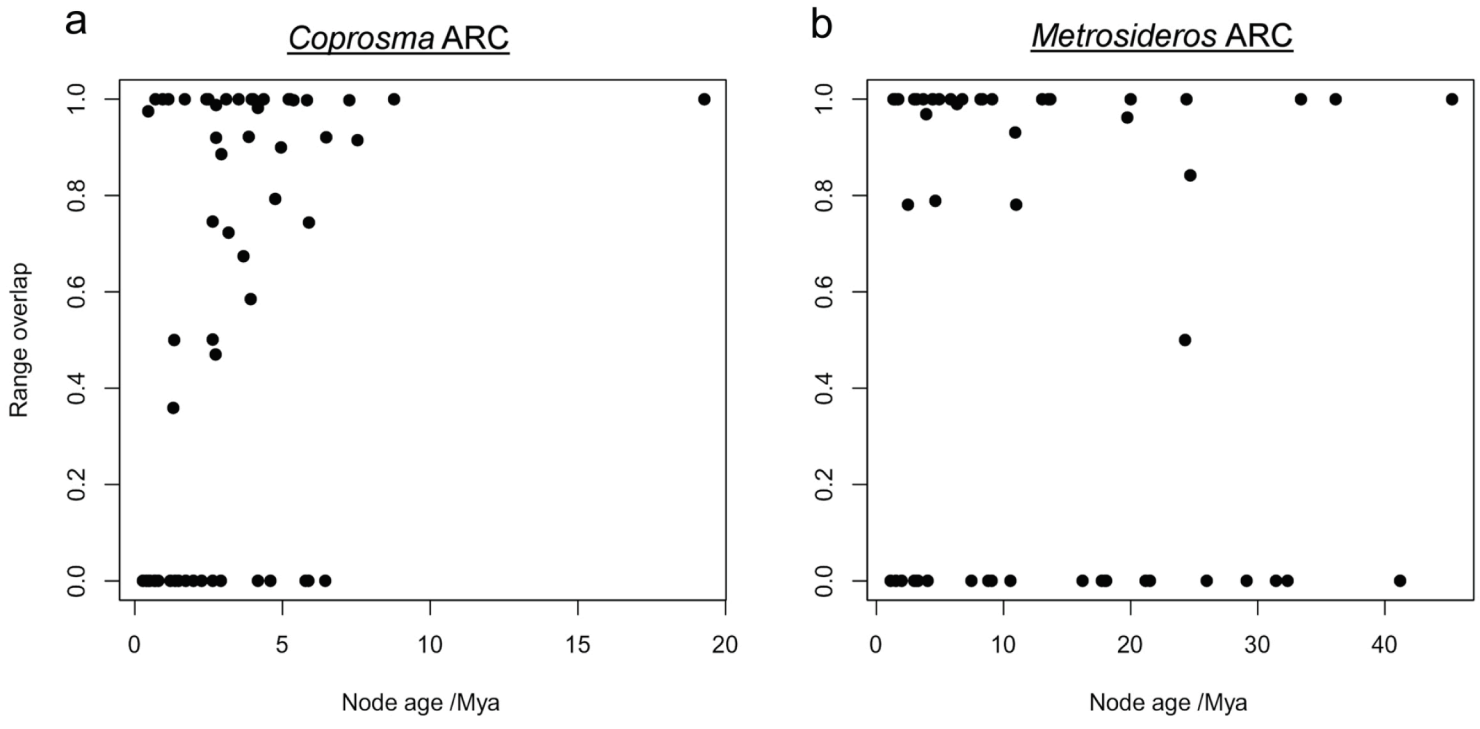


Figure S41. Age-range correlation graphs for (a) *Coprosma* and (b) *Metrosideros*

Table S1 Number of species within each genus on LHI and each of the 5 focal regions. Values in brackets are the number of local species included in phylogenetic analysis.

Genus	LHI	Australia	New Zealand	New Caledonia	Norfolk Island	Kermadec Islands	Species in region	Regional species sampled	Regional species unavailable	Total species sampled	Proportion of region sampled
Adiantum	3 (3)	8 (3)	6 (2)	7 (3)	2 (1)	3 (1)	14	4	10	19	0.29
Alyxia	3 (3)	13 (5)	0 (0)	31 (0)	1 (0)	0 (0)	44	7	37	8	0.16
Asplenium	5 (5)	30 (17)	12 (11)	14 (3)	4 (4)	5 (5)	48	26	22	41	0.54
Blechnum	5 (4)	18 (15)	14 (12)	17 (8)	1 (1)	2 (2)	45	31	14	55	0.69
Calystegia	2 (2)	3 (3)	4 (4)	0 (0)	2 (2)	1 (1)	5	5	0	17	1.00
Carex	4 (4)	44 (17)	72 (46)	6 (2)	3 (2)	2 (2)	118	61	57	610	0.52
Cephalomanes	2 (1)	4 (0)	0 (0)	0 (0)	1 (1)	0 (0)	5	1	4	-	0.20
Cheilanthes	2 (2)	15 (2)	3 (2)	4 (2)	2 (2)	0 (0)	16	2	14	25	0.13
Coprosma	6 (6)	10 (8)	48 (36)	0 (0)	2 (2)	3 (3)	60	48	12	60	0.80
Cryptocarya	2 (2)	47 (4)	0 (0)	19 (0)	0 (0)	0 (0)	67	5	62	9	0.07
Cyathea	4 (4)	12 (7)	5 (4)	7 (3)	2 (2)	2 (0)	30	18	12	111	0.60
Dendrobium	2 (2)	19 (9)	1 (1)	33 (5)	1 (0)	0 (0)	52	13	39	26	0.25
Doodia	3 (3)	8 (5)	2 (2)	2 (2)	2 (2)	2 (2)	9	6	3	8	0.67
Geniostoma	2 (2)	1 (1)	1 (1)	9 (1)	0 (0)	0 (0)	11	3	8	5	0.27
Grammitis	3 (3)	12 (4)	5 (3)	3 (1)	0 (0)	0 (0)	21	10	11	26	0.48
Hibiscus	2 (1)	35 (-)	2 (-)	9 (-)	1 (-)	0 (-)	47	-	-	-	-
Howea	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2	2	0	2	1.00
Hymenophyllum	2 (2)	19 (8)	20 (12)	14 (8)	0 (0)	2 (1)	43	29	14	58	0.67
Jasminum	2 (1)	11 (2)	0 (0)	7 (0)	2 (1)	0 (0)	18	2	16	-	0.11
Korthalsella	2 (2)	7 (3)	2 (2)	2 (1)	1 (0)	0 (0)	11	6	5	12	0.55
Lepidium	2 (0)	35 (20)	9 (6)	3 (0)	0 (0)	1 (1)	43	25	18	-	0.58
Macropiper	2 (2)	0 (0)	1 (1)	0 (0)	1 (1)	1 (1)	3	3	0	7	1.00
Marsdenia	2 (1)	33 (0)	0 (0)	8 (0)	0 (0)	0 (0)	34	1	33	-	0.03
Melicope	2 (2)	16 (5)	3 (2)	13 (1)	2 (1)	1 (1)	35	10	25	24	0.29
Metrosideros	2 (2)	0 (0)	11 (11)	18 (18)	0 (0)	1 (1)	32	32	0	54	1.00
Microsorum	2 (2)	8 (6)	4 (3)	1 (1)	3 (3)	1 (0)	11	8	3	14	0.73
Myrsine	3 (3)	20 (1)	8 (8)	11 (0)	0 (0)	1 (1)	43	13	30	18	0.30
Olearia	3 (3)	47 (24)	33 (14)	0 (0)	0 (0)	0 (0)	83	41	42	64	0.49
Ophioglossum	4 (4)	7 (5)	2 (1)	2 (2)	1 (1)	1 (1)	10	7	3	14	0.70
Paspalum	2 (2)	21 (15)	0 (0)	1 (1)	1 (1)	1 (1)	22	15	7	90	0.68
Pellaea	2 (2)	5 (4)	2 (2)	1 (1)	1 (1)	1 (1)	6	5	1	29	0.83
Peperomia	2 (2)	5 (2)	2 (2)	8 (1)	0 (0)	2 (2)	16	4	12	70	0.25
Polystichum	2 (2)	4 (4)	6 (6)	0 (0)	0 (0)	0 (0)	12	12	0	67	1.00
Pteris	2 (2)	10 (4)	3 (2)	8 (2)	3 (1)	2 (2)	20	6	14	18	0.30
Pterostylis	3 (3)	60 (26)	19 (9)	3 (2)	0 (0)	0 (0)	104	44	60	54	0.42
Rytidosperm	2 (2)	33 (29)	17 (9)	0 (0)	0 (0)	1 (1)	50	39	11	50	0.78
Senecio	2 (1)	34 (-)	39 (-)	1 (-)	3 (-)	2 (-)	81	-	-	-	-
Tetragonia	2 (1)	5 (1)	2 (1)	1 (1)	2 (1)	3 (1)	6	1	5	-	0.17
Wahlenbergia	2 (1)	24 (1)	10 (0)	1 (0)	0 (0)	1 (0)	34	2	32	-	0.06
Xylosma	2 (2)	2 (0)	0 (0)	20 (1)	0 (0)	0 (0)	25	3	22	8	0.12

Table S2 Accession numbers for sequences included in the *Adiantum* phylogenetic tree

Genus	Species	rbcL
Adiantum	*aethiopicum*	EF469955
Adiantum	*cajennense*	EF473675
Adiantum	*capillus-veneris*	DQ432659
Adiantum	*cuneatum*	EF473676
Adiantum	*hispidulum*	EF590493
Adiantum	*latifolium*	EF473677
Adiantum	*malesianum*	EF452132
Adiantum	*obliquum*	EF473678
Adiantum	*pedatum*	U05602
Adiantum	*pentadactylon*	EF473679
Adiantum	*peruvianum*	EF452133
Adiantum	*pubescens*	JF950800
Adiantum	*raddianum*	EF473680
Adiantum	*reniforme*	AY573519
Adiantum	*serratodentatum*	EF473681
Adiantum	*subcordatum*	EF473682
Adiantum	*tenerum*	EF452134
Adiantum	*terminatum*	EF473683
Adiantum	*tetraphyllum*	EF452135
Adiantum	*venustum*	EF452136
Anetium	*citrifolium*	ACU21284
Antrophyum	*latifolium*	EF452138
Haplopteris	*elongata*	EF452153
Hecistopteris	*pumila*	HPU21286
Monogramma	*graminea*	EF452157
Polytaenium	*cajenense*	PCU20934
Rheopteris	*cheesmaniae*	EF452176
Vittaria	*graminifolia*	VGU21295
Vittaria	*gardneriana*	VGU21294

Table S3 Accession numbers for sequences included in the *Alyxia* phylogenetic tree

Genus	Species	rps16	trnL-trnF	trnL
Alyxia	*buxifolia*	-	AF214152	AF214306
Alyxia	*grandis*	EF456518	EF456089	EF456089
Alyxia	*lindii*	JF950818	JF950898	JF950879
Alyxia	*oblongata*	EF456519	EF456090	EF456090
Alyxia	*reinwardtii*	DQ660559	EF456091	EF456091
Alyxia	*ruscifolia*	JF950819	JF950899	JF950880
Alyxia	*spicata*	EF456521	EF456092	EF456092
Alyxia	*squamulosa*	JF950820	JF950900	JF950881
Apocynum	*androsaemifolium*	EF456546	-	-
Apocynum	*cannabinum*	DQ660563	-	-
nerium	*oleander*	EF456596	-	-
Strychnos	*lucida*	DQ660614	-	-
Strychnos	*tomentosa*	-	AF102484	AF102484
Tabernaemontana	*catharinensis*	DQ660618	-	-
Tabernaemontana	*floribunda*	-	AF214197	AF214351
Thevetia	*peruviana*	DQ660621	EF456088	EF456088
Vinca	*minor*	DQ660623	FJ490766	FJ490766
Wrightia	*arborea*	DQ660625	EF456164	EF456164

Table S4 Accession numbers for sequences included in the *Asplenium* phylogenetic tree

Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF
Asplenium	*abscissum*	AY300102	-	*Asplenium*	*hispanicum*	AY300119	-	*Asplenium*	*rhizophyllum*	AY300136	-
Asplenium	*adiantum-nigrum*	AF318600	-	*Asplenium*	*hobdyi*	AY549736	-	*Asplenium*	*richardii*	AY300138	EF418413
Asplenium	*aegaeum*	AY300103	-	*Asplenium*	*hookerianum*	AY283229	AY538184	*Asplenium*	*ruprechtii*	U30606	-
Asplenium	*aethiopicum*	AF240654	AF525233	*Asplenium*	*hostmannii*	AY300120	-	*Asplenium*	*ruta-muraria*	AF525273	-
Asplenium	*affine*	AY300104	-	*Asplenium*	*incisum*	AY549748	-	*Asplenium*	*salicifolium*	AY300139	-
Asplenium	*anceps*	AY300105	-	*Asplenium*	*interjectum*	AY545480	-	*Asplenium*	*sandersonii*	AF525274	AF525247
Asplenium	*angustum*	AY300106	AY300053	*Asplenium*	*jahandiezii*	AY300121	-	*Asplenium*	*scolopendrium*	AF240645	AF525262
Asplenium	*anisophyllum*	AY300107	-	*Asplenium*	*juglandifolium*	AF525269	-	*Asplenium*	*seelosii*	AY300140	-
Asplenium	*antiquum*	EU240033	EU240028	*Asplenium*	*laciniatum*	AY549747	-	*Asplenium*	*septentrionale*	AF525275	-
Asplenium	*appendiculatum*	-	AY283202	*Asplenium*	*lamprophyllum*	AY283230	AY538185	*Asplenium*	*serratum*	AY300141	-
Asplenium	*appendiculatum*	-	AY283203	*Asplenium*	*lolegnamense*	AF538315	-	*Asplenium*	*shuttleworthianum*	AY283235	AY283223
Asplenium	*aureum*	AF538311	-	*Asplenium*	*loxoscaphoides*	AY300122	-	*Asplenium*	*simplicifrons*	AY300142	AY300089
Asplenium	*australasicum*	AY283237	AY641792	*Asplenium*	*lucidum*	AY549749	AY549853	*Asplenium*	*smedsii*	AY300143	-
Asplenium	*bourgaei*	AY300108	-	*Asplenium*	*lunulatum*	AY549732	-	*Asplenium*	*sphenotomum*	AY300144	-
Asplenium	*bulbiferum*	AY283226	AY538182	*Asplenium*	*lushanense*	AY545481	-	*Asplenium*	*surrogatum*	EU240034	EU240029
Asplenium	*bullatum*	AY300109	-	*Asplenium*	*majoricum*	AF318587	-	*Asplenium*	*tenerum*	AY300145	AY300092
Asplenium	*caudatum*	AY300110	-	*Asplenium*	*mannii*	AY300124	-	*Asplenium*	*theciferum*	AY300123	AY300070
Asplenium	*ceterach*	AF538313	-	*Asplenium*	*milnei*	EU240032	EU240030	*Asplenium*	*tricholepis*	AY549729	-
Asplenium	*cordatum*	AF538319	-	*Asplenium*	*milnei*	JF950801	JF950901	*Asplenium*	*trichomanes*	EF463157	EF645613
Asplenium	*cristatum*	AY549731	-	*Asplenium*	*monanthes*	AY300125	-	*Asplenium*	*variabile*	AY300146	-
Asplenium	*cuneatiforme*	AY549755	-	*Asplenium*	*montanum*	AY300126	-	*Asplenium*	*varians*	AY545478	-
Asplenium	*cuneifolium*	AF525265	-	*Asplenium*	*myriophyllum*	AY300127	-	*Asplenium*	*viellardii*	AY549750	AY549854
Asplenium	*cuspidatum*	AY300111	-	*Asplenium*	*nidus*	AF525270	AF425118	*Asplenium*	*viride*	AY549734	-
Asplenium	*cyprium*	AF538314	-	*Asplenium*	*normale*	EF463152	AY549838	*Asplenium*	*volkensii*	AY300148	-
Asplenium	*dalhousiae*	AF538317	-	*Asplenium*	*northlandicum*	EU240031	AY538178	*Asplenium*	*wrightii*	AY549730	-
Asplenium	*dareoides*	AY300112	-	*Asplenium*	*obliquum*	AY300129	-	*Asplenium*	*wrightioides*	AY725031	-
Asplenium	*difforme*	AY641801	AY641794	*Asplenium*	*oblongifolium*	AY283231	AY538175	*Asplenium*	*yoshinagae*	AY725030	-
Asplenium	*dimorphum*	-	AY641808	*Asplenium*	*obtusatum*	AY300130	AY300076	*Asplenium*	*yunnanense*	AY545482	-
Asplenium	*elliottii*	AY549753	-	*Asplenium*	*octoploideum*	AF538316	-	*Athyrium*	*filix-femina*	AY818676	AY540046
Asplenium	*emarginatum*	AF525266	-	*Asplenium*	*onopteris*	AY300131	-	*Blechnum*	*brasiliense*	-	DQ683436
Asplenium	*erectum*	AY300113	-	*Asplenium*	*pauperequitum*	AY283233	-	*Blechnum*	*occidentale*	AY137670	-
Asplenium	*feei*	AF525267	AF525244	*Asplenium*	*pekinense*	AY545479	-	*Hymenasplenium*	*cheilosorum*	AB014704	AY549830
Asplenium	*filipes*	U30605	-	*Asplenium*	*petrarchae*	AF525271	-	*Hymenasplenium*	*excisum*	AY549728	AY549831
Asplenium	*fissum*	AY300114	-	*Asplenium*	*phillipsianum*	AF538320	-	*Hymenasplenium*	*obliquissimum*	AB016187	-
Asplenium	*flabellifolium*	AY283227	AY283209	*Asplenium*	*phyllitidis*	AY300132	-	*Hymenasplenium*	*unilaterale*	AF240652	AF240668
Asplenium	*flaccidum*	AY283228	AY283210	*Asplenium*	*platyneuron*	AF525272	-	*Polystichum*	*vestitum*	AY300099	AY300046
Asplenium	*fontanum*	AF525268	-	*Asplenium*	*polyodon*	AY300133	AY300080	*Woodsia*	*polystichoides*	U05657	DQ480129
Asplenium	*formosum*	AY300116	-	*Asplenium*	*praegracile*	AY300134	-	*Woodwardia*	*fimbriata*	AY137662	-
Asplenium	*fragile*	AY549733	-	*Asplenium*	*praemorsum*	AY549754	-	*Woodwardia*	*japonica*	-	DQ683432
Asplenium	*friesiorum*	AY549756	-	*Asplenium*	*prolongatum*	AY549752	AY549856				
Asplenium	*gemmiferum*	AY300117	AY300064	*Asplenium*	*protensum*	AY300135	-				
Asplenium	*hallbergii*	AY300118	-	*Asplenium*	*pterodiodes*	JF950802	JF950902				
Asplenium	*haughtonii*	AF538321	-	*Asplenium*	*punjabense*	AF538318	-				
Asplenium	*heterochroum*	AY549745	-	*Asplenium*	*resiliens*	AY549746	-				

Table S5 Accession numbers for sequences included in the *Blechnum* phylogenetic tree

Genus	Species	rbcL	trnL + trnL-trnF	Genus	Species	rbcL	trnL + trnL-trnF
Blechnum	*amabile*	AB040544	-	*Blechnum*	*moorei*	AB040562	-
Blechnum	*appendiculatum*	-	DQ683373	*Blechnum*	*nigrum*	-	DQ683400
Blechnum	*articulatum*	AB040546	-	*Blechnum*	*norfolkianum*	-	DQ683402
Blechnum	*blechnoides*	-	DQ683375	*Blechnum*	*novae-zelandiae*	EF469957	DQ683404
Blechnum	*brasiliense*	AB040545	DQ683436	*Blechnum*	*nudum*	-	DQ683405
Blechnum	*capense*	AB040547	-	*Blechnum*	*obtusatum*	AB040564	-
Blechnum	*cartilagineum*	AB040548	-	*Blechnum*	*occidentale*	EU352296	-
Blechnum	*castaneum*	AB040549	-	*Blechnum*	*oceanicum*	AB040566	-
Blechnum	*chambersii*	-	DQ683378	*Blechnum*	*orientale*	U05606	-
Blechnum	*chilense*	AB040550	-	*Blechnum*	*patersonii*	AB040569	DQ683406
Blechnum	*colensoi*	-	DQ683380	*Blechnum*	*penna-marina*	-	DQ683409
Blechnum	*contiguum*	JF950803	JF950938	*Blechnum*	*polypodioides*	EF463159	-
Blechnum	*coriaceum*	AB040551	-	*Blechnum*	*procerum*	-	DQ683411
Blechnum	*doodioides*	AB040552	-	*Blechnum*	*punctulatum*	-	DQ683412
Blechnum	*durum*	-	DQ683384	*Blechnum*	*schomburgkii*	EF463160	-
Blechnum	*filiforme*	-	DQ683386	*Blechnum*	*serrulatum*	AY137671	-
Blechnum	*fluviatile*	-	DQ683389	*Blechnum*	*simillimum*	AB040570	-
Blechnum	*fraseri*	AB040553	DQ683391	*Blechnum*	*spicant*	AB040571	DQ683413
Blechnum	*fullagarii*	-	JF950939	*Blechnum*	*triangularifolium*	-	DQ683415
Blechnum	*gibbum*	AB040554	-	*Blechnum*	*vieillardii*	AB040573	-
Blechnum	*glandulosum*	AB040555	-	*Blechnum*	*vulcanicum*	-	DQ683417
Blechnum	*gracile*	EF463158	-	*Blechnum*	*wattsii*	-	DQ683418
Blechnum	*hancockii*	AB040556	-	*Blechnum*	*whelanii*	AB040607	-
Blechnum	*hastatum*	AB040557	-	*Blechnum*	*wurunuran*	AB040575	-
Blechnum	*howeanum*	JF950804	JF950940	*Doodia*	*mollis*	AB040579	DQ683428
Blechnum	*indicum*	AB040558	-	*Doodia*	*squarrosa*	AB040580	DQ683430
Blechnum	*magellanicum*	AB040560	-	*Lorinseria*	*areolata*	AF425102	-
Blechnum	*membranaceum*	-	DQ683393	*Sadleria*	*cyatheoides*	AF425103	DQ683431
Blechnum	*microbasis*	AB040561	-	*Woodwardia*	*fimbriata*	AY137662	-
Blechnum	*milnei*	-	DQ683394	*Woodwardia*	*japonica*	AY137664	DQ683432
Blechnum	*minus*	-	DQ683396	*Woodwardia*	*prolifera*	AY137666	DQ683433
Blechnum	*montanum*	-	DQ683398	*Woodwardia*	*radicans*	AY137667	DQ683434

Table S6 Accession numbers for sequences included in the *Calystegia* phylogenetic tree

Genus	Species	clone/subsp.	ITS
Calystegia	*affinis*	x22c14	JF950719
Calystegia	*affinis*	x22c15	JF950720
Calystegia	*affinis*	x22c16	JF950721
Calystegia	*affinis*	x22c17	JF950722
Calystegia	*affinis*	x22c18	JF950723
Calystegia	*affinis*	x22c19	JF950724
Calystegia	*affinis*	x22c20	JF950725
Calystegia	*howittiorum*		GQ119530
Calystegia	*marginata*		EU812827
Calystegia	*pellita*		GQ119509
Calystegia	*pubescens*		GQ119508
Calystegia	*pulchra*		GQ119540
Calystegia	*pulchra*		GQ119539
Calystegia	*sepium*		AY560267
Calystegia	*sepium*	subsp_*americana*	GQ119513
Calystegia	*sepium*	subsp_*americana*_2	GQ119512
Calystegia	*sepium*	subsp_*limnophila*	GQ119510
Calystegia	*sepium*	subsp_*roseata*	EU812829
Calystegia	*sepium*	subsp_*roseata*_2	EU812828
Calystegia	*sepium*	subsp_*roseata*_4	GQ119519
Calystegia	*sepium*	subsp_*sepium*	GQ119556
Calystegia	*sepium*	subsp_*spectabilis*	GQ119584
Calystegia	*sepium*	subsp_*spectabilis*_2	GQ119583
Calystegia	*silvatica*		AY560269
Calystegia	*silvatica*	subsp_*disjuncta*	GQ119570
Calystegia	*silvatica*	subsp_*silvatica*	GQ119548
Calystegia	*soldanella*		EU812833
Calystegia	*tuguriorum*		EU812835
Convolvulus	*floridus*		EF371754
Convolvulus	*scoparius*		EF371762
Ipomoea	*microdactyla*		EF029037
Ipomoea	*obscura*		GQ478092
Merremia	*tuberosa*		AF110909

Table S7 Accession numbers for sequences included in the *Carex* phylogenetic tree

Genus	Species	ITS	Genus	Species	ITS	Genus	Species	ITS	Genus	Species	ITS
Carex	*concinnoides*	AF284965	*Carex*	*cockayneana*	EU352221	*Carex*	*hirtigluma*	EU288596	*Carex*	*peckii*	DQ998940
Carex	*eburnea*	AF285000	*Carex*	*colensoi*	EU352222	*Carex*	*hystericina*	AY757574	*Carex*	*polystachya*	AF027487
Carex	*brunnea*	AF285003	*Carex*	*cruciata*	AF027489	*Carex*	*illota*	AY779110	*Carex*	*preslii*	AY779146
Carex	*lanuginosa*	AF285031	*Carex*	*cuprina*	FJ694688	*Carex*	*inops*	AY686721	*Carex*	*pseudocuraica*	AY779148
Carex	*mucronata*	AY278257	*Carex*	*declinata*	EU000960	*Carex*	*insularis*	EU812738	*Carex*	*pyramidalis*	EU288616
Carex	*kitaibeliana*	AY278258	*Carex*	*deflexa*	AY686720	*Carex*	*integra*	AY779111	*Carex*	*remota*	AY779150
Carex	*alba*	AY278259	*Carex*	*depauperata*	AY757621	*Carex*	*intumescens*	AY757579	*Carex*	*renauldii*	EU288617
Carex	*ericetorum*	AY278281	*Carex*	*dipsacea*	EU352223	*Carex*	*iynx*	EU812734	*Carex*	*resectans*	EU352231
Carex	*hirta*	AY278296	*Carex*	*disperma*	EU000976	*Carex*	*johnstonii*	EU288600	*Carex*	*retrorsa*	AY757577
Carex	*lasiocarpa*	AY278297	*Carex*	*divisa*	DQ115154	*Carex*	*kaloides*	AY699638	*Carex*	*riparia*	AY757571
Carex	*inversa*	AY699625	*Carex*	*drymophila*	DQ998911	*Carex*	*kermadecensis*	AY699617	*Carex*	*rupestris*	FJ694751
Carex	*breviculmis*	AY699627	*Carex*	*echinata*	EU352224	*Carex*	*laeviculmis*	DQ115196	*Carex*	*schweinitzii*	AY757572
Carex	*adusta*	AY779065	*Carex*	*echinochloe*	EU812737	*Carex*	*laxa*	DQ998928	*Carex*	*serpenticola*	AY325476
Carex	*albicans*	AY325479	*Carex*	*elongata*	DQ115166	*Carex*	*leporinella*	AY779114	*Carex*	*serratodens*	DQ384183
Carex	*albursina*	AY757626	*Carex*	*exilis*	DQ115168	*Carex*	*livida*	AY757628	*Carex*	*solandri*	EU331116
Carex	*amphibola*	DQ006000	*Carex*	*fascicularis*	EU352234	*Carex*	*loliacea*	DQ115206	*Carex*	*spectabilis*	GQ223637
Carex	*amplifolia*	AY757584	*Carex*	*fecunda*	DQ115170	*Carex*	*longibrachiata*	EU812735	*Carex*	*steudneri*	EU288637
Carex	*andringitrensis*	EU288568	*Carex*	*fernaldiana*	DQ998913	*Carex*	*longii*	AY779115	*Carex*	*suberecta*	AY779166
Carex	*angolensis*	EU288569	*Carex*	*feta*	AY779099	*Carex*	*lucorum*	AY325464	*Carex*	*tasmanica*	DQ384185
Carex	*arcta*	DQ115098	*Carex*	*filiformis*	FJ694727	*Carex*	*maackii*	AY779116	*Carex*	*tenuiflora*	AY757427
Carex	*baccans*	AF027488	*Carex*	*filipes*	DQ998914	*Carex*	*mackenziei*	DQ115208	*Carex*	*tonsa*	AY686723
Carex	*baldensis*	EU288543	*Carex*	*fimbriata*	EU288551	*Carex*	*mariposana*	AY779118	*Carex*	*triangularis*	EU001073
Carex	*biltmoreana*	DQ998902	*Carex*	*floridana*	AY325482	*Carex*	*media*	DQ998932	*Carex*	*trichocarpa*	AY757570
Carex	*binervis*	DQ384112	*Carex*	*foetida*	AY280544	*Carex*	*molesta*	DQ461143	*Carex*	*trisperma*	DQ115298
Carex	*blanda*	AF027484	*Carex*	*foliosissima*	DQ998916	*Carex*	*monostachya*	EU288608	*Carex*	*tuckermanii*	AY757573
Carex	*bohemica*	AY779073	*Carex*	*furva*	EU541868	*Carex*	*morrowii*	EU288558	*Carex*	*turbinata*	AY325465
Carex	*bonariensis*	DQ115106	*Carex*	*gayana*	EU000982	*Carex*	*muelleri*	AY699643	*Carex*	*umbellata*	AY325486
Carex	*breweri*	AF285012	*Carex*	*geophila*	AY325481	*Carex*	*nigromarginata*	AY325478	*Carex*	*vernacula*	DQ115306
Carex	*brunnescens*	EU541872	*Carex*	*glacialis*	AY757625	*Carex*	*novae-angliae*	AY325475	*Carex*	*wakatipu*	EU352238
Carex	*caryophyllea*	EU288547	*Carex*	*glareosa*	EU541871	*Carex*	*obispoensis*	AY757620	*Carex*	*wootonii*	AY779181
Carex	*chathamica*	AY699641	*Carex*	*globosa*	AY325487	*Carex*	*obtusata*	AY241981	*Carex*	*pumila*	EU352230
Carex	*cherokeensis*	AY757619	*Carex*	*graminifolia*	EU288594	*Carex*	*oligocarpa*	EF590759	*Uncinia*	*astonii*	EU812836
Carex	*chihuahuensis*	EU000953	*Carex*	*hartmanii*	EU288552	*Carex*	*pachygyna*	DQ998936	*Uncinia*	*divaricata*	EU812837
Carex	*chlorosaccus*	EU288577	*Carex*	*haydenii*	AY779106	*Carex*	*parciflora*	DQ998939			
Carex	*chordorrhiza*	DQ115126	*Carex*	*heteroneura*	DQ998921	*Carex*	*paupercula*	FJ694731			

Table S8 Accession numbers for sequences included in the *Coprosma* phylogenetic tree

Genus	Species	rps16	ITS	5S	Genus	Species	rps16	ITS	5S
Anthospermum	*aethiopicum*	AF257897	AF257896	-	*Coprosma*	*parviflora*	JF950847	JF950745	JF950672
Coprosma	*acerosa*	JF950821	AY273190	JF950649	*Coprosma*	*perpusilla*	-	JF950746	-
Coprosma	*acutifolia*	-	EF660535	-	*Coprosma*	*persicifolia*	AF257910	AF257909	-
Coprosma	*antipoda*	AF257902	AF257901	-	*Coprosma*	*petiolata*	-	EF635455	-
Coprosma	*arborea*	-	EU169116	-	*Coprosma*	*petriei*	JF950848	AY191804	JF950673
Coprosma	*banksii*	JF950822	-	JF950650	*Coprosma*	*pilosa*	-	EF660530	-
Coprosma	*baueri*	-	EF660529	-	*Coprosma*	*prisca*	JF950849	JF950747	JF950674
Coprosma	*brunnea*	-	AY189124	-	*Coprosma*	*prisca*	JF950850	JF950748	JF950675
Coprosma	*chathamica*	-	EF635443	-	*Coprosma*	*prisca*	JF950851	JF950749	JF950676
Coprosma	*cheesemanii*	JF950823	AF257903	JF950651	*Coprosma*	*prisca*	JF950852	JF950750	JF950677
Coprosma	*ciliata*	JF950824	-	-	*Coprosma*	*propinqua*	JF950853	JF950751	JF950678
Coprosma	*crassifolia*	JF950825	AF257905	JF950652	*Coprosma*	*pumila*	-	FJ695439	-
Coprosma	*crenulata*	-	AY191801	-	*Coprosma*	*putida*	JF950854	JF950752	JF950679
Coprosma	*cunneata*	JF950826	JF950726	JF950653	*Coprosma*	*putida*	JF950855	JF950753	JF950680
Coprosma	*cunninghamii*	-	-	JF950654	*Coprosma*	*putida*	JF950856	JF950754	JF950681
Coprosma	*cymosa*	JF950827	-	-	*Coprosma*	*putida*	JF950857	JF950755	JF950682
Coprosma	*decurva*	JF950828	-	-	*Coprosma*	*quadrifida*	JF950858	JF950756	JF950683
Coprosma	*divergens*	-	JF950727	-	*Coprosma*	*repens*	JF950859	JF950757	JF950684
Coprosma	*elatirioides*	-	AY189122	-	*Coprosma*	*rhamnoides*	JF950860	JF950758	JF950685
Coprosma	*ernodeoides*	-	GQ885142	-	*Coprosma*	*rigida*	JF950861	JF950759	JF950686
Coprosma	*fauriei*	AF257908	AF257907	-	*Coprosma*	*robusta*	AF002735	JF950760	-
Coprosma	*foetidissima*	JF950829	JF950728	-	*Coprosma*	*rugosa*	JF950862	JF950761	JF950687
Coprosma	*fowerakeri*	JF950830	JF950729	JF950655	*Coprosma*	sp. nov	JF950863	JF950762	JF950688
Coprosma	*grandifolia*	-	GQ130328	JF950656	*Coprosma*	sp. nov	JF950864	JF950763	JF950689
Coprosma	*hirtella*	JF950831	JF950730	JF950657	*Coprosma*	sp. nov	JF950865	JF950764	JF950690
Coprosma	*huttoniana*	JF950832	JF950731	JF950658	*Coprosma*	sp. nov	JF950866	JF950765	JF950691
Coprosma	*huttoniana*	JF950833	JF950732	JF950659	*Coprosma*	sp. sand	-	EU886827	-
Coprosma	*huttoniana*	JF950834	JF950733	JF950660	*Coprosma*	*taitensis*	JF950867	DQ501277	JF950692
Coprosma	*huttoniana*	JF950835	JF950734	JF950661	*Coprosma*	*tenuicaulis*	-	JF950766	-
Coprosma	*inopinata*	JF950836	JF950735	JF950662	*Coprosma*	*tenuifolia*	-	DQ501278	-
Coprosma	*inopinata*	JF950837	JF950736	JF950663	*Coprosma*	*waimeae*	AF257915	AF257914	-
Coprosma	*intertexta*	-	AY191802	-	*Durringtonia*	*paludosa*	AF257917	AF257916	-
Coprosma	*lanceolaris*	JF950838	JF950737	JF950664	*Galopina*	*crocylloides*	AF002764	AF257918	-
Coprosma	*lanceolaris*	JF950839	JF950738	JF950665	*Leptostigma*	*reptans*	AF257921	AF257920	-
Coprosma	*lanceolaris*	JF950840	JF950739	JF950666	*Nenax*	*acerosa*	AF003606	-	-
Coprosma	*lanceolaris*	JF950841	JF950740	JF950667	*Nenax*	*hirta*	-	AF257922	-
Coprosma	*linariifolia*	JF950842	JF950741	JF950668	*Nertera*	*assurgens*	AF257924	AF257923	-
Coprosma	*lucida*	-	GQ130330	-	*Nertera*	*dichondrifolia*	AF257926	DQ501279	-
Coprosma	*macrocarpa*	-	EU169114	-	*Nertera*	*granadensis*	AF002741	AF257927	-
Coprosma	*microcarpa*	JF950843	JF950742	JF950669	*Nertera*	*holmboei*	AF257929	AF257928	-
Coprosma	*montana*	-	GQ885143	-	*Normandia*	*neocaledonica*	-	AF257930	-
Coprosma	*moorei*	JF950844	-	-	*Opercularia*	*aspera*	AF257933	AF257932	-
Coprosma	*nitida*	-	JF950743	-	*Opercularia*	*hirsuta*	AF003610	AF257934	-
Coprosma	*nivalis*	JF950845	AY191803	JF950670	*Opercularia*	*varia*	AF257938	AF257937	-
Coprosma	*obconica*	JF950846	JF950744	JF950671					

Table S9 Accession numbers for sequences included in the *Cyathea* phylogenetic tree

Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF
Alsophila	*australis*	-	AM410314	*Cyathea*	*dregei*	-	AM689659	*Cyathea*	*schiedeana*	AM410218	AM410346
Alsophila	*capensis*	-	AM410316	*Cyathea*	*excelsa*	AM495767	AM689665	*Cyathea*	*schliebenii*	AM495792	AM689690
Alsophila	*coactilis*	AM410205	AM410336	*Cyathea*	*fadenii*	AM495768	AM689666	*Cyathea*	*senilis*	AM410203	AM410332
Alsophila	*colensoi*	-	AM410318	*Cyathea*	*furfuracea*	AM410224	AM410352	*Cyathea*	*serratifolia*	AM495793	AM689692
Alsophila	*cunninghamii*	AM410211	AM410339	*Cyathea*	*gibbosa*	-	AM410330	*Cyathea*	*similis*	AM495794	AM689693
Alsophila	*dregei*	AM410194	-	*Cyathea*	*gigantea*	-	AY304439	*Cyathea*	*sinuata*	AM495795	AM689694
Alsophila	*ferdinandii*	AM410204	AM410335	*Cyathea*	*glauca*	AM495772	AM689670	*Cyathea*	*speciosa*	AM177339	AM410331
Alsophila	*firma*	AM410207	-	*Cyathea*	*gracilis*	AM410217	AM410345	*Cyathea*	*stipularis*	AM410219	AM410347
Alsophila	*foersteri*	-	AM410324	*Cyathea*	*grandifolia*	-	AM410302	*Cyathea*	*tinganensis*	-	AY304443
Alsophila	*havilandii*	AM410189	-	*Cyathea*	*grangaudiana*	AM495774	AM689672	*Cyathea*	*tsangii*	-	AJ505925
Alsophila	*hooglandii*	-	AM410306	*Cyathea*	*hildebrandtii*	AM495798	AM689697	*Cyathea*	*tsaratananensis*	AM495802	AM689701
Alsophila	*imrayana*	AM410202	AM410329	*Cyathea*	*hookeri*	AM495777	AM689675	*Cyathea*	*valdecrenata*	AM410222	AM410350
Alsophila	*leichhardtiana*	AM410215	AM410343	*Cyathea*	*horrida*	AM410196	AM410320	*Cyathea*	*viguieri*	AM495803	AM689702
Alsophila	*nigrolineata*	AM410206	AM410337	*Cyathea*	*howeana*	AM410188	AM410308	*Cyathea*	*walkerae*	AM495805	AM689704
Alsophila	*oosora*	AM410209	-	*Cyathea*	*humilis*	AM495778	AM689676	*Dicksonia*	*arborescens*	AM177340	AM410356
Alsophila	*pachyrrhachis*	AM410186	AM410305	*Cyathea*	*karsteniana*	AM410221	AM410349	*Dicksonia*	*fibrosa*	AM177341	-
Alsophila	*ramispina*	-	AM410323	*Cyathea*	*kirkii*	AM495781	AM689679	*Dicksonia*	*gigantea*	AM177342	AM410357
Alsophila	*salvinii*	AM410184	AM410300	*Cyathea*	*klossii*	EU352299	-	*Dicksonia*	*lanata*	AM177343	AM410358
Alsophila	*smithii*	AM410210	AM410338	*Cyathea*	*lastii*	AM495782	AM689680	*Dicksonia*	*squarrosa*	AM177344	AM410359
Alsophila	*spinulosa*	AM410212	AM410340	*Cyathea*	*lepifera*	U05616	AM689681	*Dicksonia*	*thyrsopteroides*	AM177345	AM410360
Alsophila	*stelligera*	AM410198	AM410325	*Cyathea*	*ligulata*	AM495783	AM689683	*Hymenophyllopsis*	*dejecta*	AF101301	-
Alsophila	*tricolor*	AM410199	AM410326	*Cyathea*	*longipinnata*	AM495785	-	*Hymenophyllopsis*	*hymenophylloides*	AF101302	-
Alsophila	*tryoniana*	AM410208	-	*Cyathea*	*macarthurii*	JF950806	JF950908	*Sphaeropteris*	*aeneifolia*	AM410185	AM410303
Calochlaena	*villosa*	AM177327	AM410354	*Cyathea*	*madagascarica*	AM495786	AM689684	*Sphaeropteris*	*albifrons*	AM410214	AM410342
Cnemidaria	*grandifolia*	AM177332	-	*Cyathea*	*manniana*	AM495787	AM689685	*Sphaeropteris*	*atrox*	AM410225	AM410353
Cyathea	*alata*	EF463164	-	*Cyathea*	*marattioides*	AM495788	AM689686	*Sphaeropteris*	*auriculifera*	-	AM410334
Cyathea	*andohahelensis*	AM495727	AM689623	*Cyathea*	*medullaris*	EF469952	AM689687	*Sphaeropteris*	*brunei*	-	AM410301
Cyathea	*appendiculata*	AM495728	AM689624	*Cyathea*	*melanocaula*	AM495789	-	*Sphaeropteris*	*capitata*	AM410192	AM410311
Cyathea	*approximata*	AM495729	AM689625	*Cyathea*	*melleri*	AM495790	AM689688	*Sphaeropteris*	*celebica*	AM410195	AM410317
Cyathea	*arborea*	AM177336	AM689626	*Cyathea*	*multiflora*	AM410197	AM410322	*Sphaeropteris*	*excelsa*	AM410213	AM410341
Cyathea	*auriculata*	AM495730	-	*Cyathea*	*mutica*	AM410220	AM410348	*Sphaeropteris*	*glauca*	AM410193	AM410312
Cyathea	*bellisquamata*	AM495733	AM689629	*Cyathea*	*myriotricha*	EU751604	-	*Sphaeropteris*	*horrida*	AM410200	AM410327
Cyathea	*boivinii*	AM495738	AM689634	*Cyathea*	*parvula*	AM177338	AM410319	*Sphaeropteris*	*medullaris*	-	AM410313
Cyathea	*borbonica*	AM495742	AM689638	*Cyathea*	*pectinata*	-	AY304446	*Sphaeropteris*	*megalosora*	AM410190	AM410309
Cyathea	*brevipinna*	JF950805	JF950907	*Cyathea*	*perrieriana*	AM495791	AM689689	*Sphaeropteris*	*novaecaledoniae*	-	AM410333
Cyathea	*caracasana*	AM410223	AM410351	*Cyathea*	*poeppigii*	AM410201	AM410328	*Sphaeropteris*	*polypoda*	AM410191	AM410310
Cyathea	*concava*	AM495751	AM689647	*Cyathea*	*poolii*	AM495754	AM689650	*Sphaeropteris*	*robusta*	-	AM410307
Cyathea	*contaminans*	-	AY304440	*Cyathea*	*pseudogigantea*	-	AY304441	*Sphaeropteris*	*tomentosissima*	-	AM410304
Cyathea	*costularis*	AM495752	AM689648	*Cyathea*	*quadrata*	-	AM689653	*Trichipteris*	*gibbosa*	AM177354	-
Cyathea	*decrescens*	-	AM689654	*Cyathea*	*robertsiana*	AM410216	AM410344				
Cyathea	*divergens*	AM177337	AM410321	*Cyathea*	*robusta*	JF950807	JF950909				

Table S10 Accession numbers for sequences included in the *Cryptocarya* phylogenetic tree

Genus	Species	trnL- trnF	trnL
Beilschmiedia	*brenesii*	AF268702	-
Beilschmiedia	*ovalis*	AF268703	-
Beilschmiedia	*velutina*	AF268704	-
Cryptocarya	*alba*	JF950904	JF950883
Cryptocarya	*chinensis*	AF268710	-
Cryptocarya	*densiflora*	JF950903	JF950882
Cryptocarya	*gregsonii*	JF950906	JF950885
Cryptocarya	*natalense*	-	JF950886
Cryptocarya	*rhodosperma*	AF268711	-
Cryptocarya	*sclerophylla*	AF268712	-
Cryptocarya	*thouvenotii*	AF232035	-
Cryptocarya	*triplinervis*	JF950905	JF950884
Potameia	*micrantha*	AF268749	-

Table S11 Accession numbers for sequences included in the *Dendrobium* phylogenetic tree

Genus	Species	ITS Acc.
Cadetia	*maideniana*	AY239948
Dendrobium	*adae*	EU430371
Dendrobium	*aemulum*	EU430372
Dendrobium	*bifalce*	EU430373
Dendrobium	*callitrophilum*	EU430374
Dendrobium	*canaliculatum*	EU430375
Dendrobium	*carrii*	EU430376
Dendrobium	*ellipsophyllum*	AY239965
Dendrobium	*fairchildae*	AY239966
Dendrobium	*falcorostrum*	EU430377
Dendrobium	*formosum*	AY239967
Dendrobium	*gracilicaule*	EU430382
Dendrobium	*jonesii*	EU430383
Dendrobium	*kingianum*	EU430385
Dendrobium	*lancifolium*	AY239976
Dendrobium	*macrophyllum*	AY239979
Dendrobium	*monophyllum*	EU430387
Dendrobium	*moorei*	EU430388
Dendrobium	*nindii*	AY239985
Dendrobium	*racemosum*	EU430389
Dendrobium	*schoeninum*	EU430390
Dendrobium	*smillieae*	AY239996
Dendrobium	*speciosum*	EU430397
Dendrobium	*tetragonum*	EU430402
Dendrobium	*thyrsiflorum*	AY240001
Dendrobium	*victoriae-reginae*	AY240004
Dendrobium	*violaceum*	AY240005
Diplocaulobium	*ischnopetalum*	AY240007
Dockrillia	*linguiforme*	AF321593
Dockrillia	*pugioniformis*	AF321594
Epigeneium	*amplum*	AY240010
Epigeneium	*cymbidioides*	AY240011
Epigeneium	*nakaharaei*	AY240012
Epigeneium	*triflorum*	AY240013
Flickingeria	*comata*	AY240015
Grastidium	*baileyi*	AY240016
Winika	*cunninghamii*	AY240019

Table S12 Accession numbers for sequences included in the *Grammitis* phylogenetic tree

Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF	Genus	Species	rbcL	trnL-trnF
Calymmodon	*gracilis*	AY362341	-	*Grammitis*	*havilandii*	EF178619	EF178652	*Melpomene*	*pseudonutans*	AY460657	-
Calymmodon	*luerssenianus*	AY460618	-	*Grammitis*	*hirtelloides*	AY460641	-	*Micropolypodium*	*hyalinum*	AY362344	-
Ceradenia	*aulaeifolia*	AY460619	-	*Grammitis*	*holttumii*	EF178620	EF178653	*Micropolypodium*	*taenifolium*	AY460658	-
Ceradenia	*jungermannioides*	AY460620	-	*Grammitis*	*hookeri*	AY460642	EF178655	*Micropolypodium*	*zurquinum*	AY460659	-
Ceradenia	*kalbreyeri*	AY460621	-	*Grammitis*	*jagoriana*	EF178622	EF178656	*Oleandra*	*pistillaris*	U05639	-
Ceradenia	*pilipes*	AY460622	-	*Grammitis*	*knutsfordiana*	AY362342	EF178658	*Polypodium*	*glycyrrhiza*	U21146	-
Ceradenia	*spixiana*	AY460623	-	*Grammitis*	*kyimbilensis*	EF178624	EF178659	*Prosaptia*	*alata*	AY460660	-
Chrysogrammitis	*musgraveana*	AY460624	-	*Grammitis*	*melanoloma*	AY460643	-	*Prosaptia*	*contigua*	AY362345	EF178663
Cochlidium	*punctatum*	AY460625	-	*Grammitis*	*nudicarpa*	JF950810	JF950911	*Prosaptia*	*obliquata*	AY460661	-
Cochlidium	*rostratum*	AY460626	-	*Grammitis*	*padangensis*	EF178625	EF178660	*Prosaptia*	*palauensis*	AY460662	-
Cochlidium	*seminudum*	AY460627	-	*Grammitis*	*parva*	AY460644	-	*Prosaptia*	*pubipes*	AY460663	EF178664
Ctenopteris	aff.*repandula*	AY460632	-	*Grammitis*	*poeppigiana*	AY460646	-	*Scleroglossum*	*sulcatum*	AY460664	-
Ctenopteris	*heterophylla*	AY460628	-	*Grammitis*	*pseudociliata*	AY460645	-	*Terpsichore*	*achilleifolia*	AY460666	-
Ctenopteris	*lasiostipes*	AY460630	-	*Grammitis*	*reinwardtii*	AB232398	-	*Terpsichore*	*alsopteris*	AY460667	-
Ctenopteris	*nutans*	AY460631	-	*Grammitis*	*reinwardtioides*	EF178626	EF178661	*Terpsichore*	*anfractuosa*	AY460668	-
Ctenopteris	*repandula*	AY460633	-	*Grammitis*	*tenella*	AF468198	AF469786	*Terpsichore*	*cultrata*	AY460669	-
Ctenopteris	*rhodocarpa*	AY460634	-	*Grammitis*	*wattsii*	-	JF950912	*Terpsichore*	*eggersii*	AF468209	AF469798
Davallia	*solida*	AY096193	-	*Lellingeria*	*apiculata*	AY362343	-	*Terpsichore*	*hanekeana*	AY460670	-
Enterosora	*percrassa*	AY460635	-	*Lellingeria*	*hirsuta*	AY460649	-	*Terpsichore*	*lanigera*	AY460671	-
Enterosora	*trifurcata*	AY460636	-	*Lellingeria*	*limula*	AY460650	-	*Terpsichore*	*lehmanniana*	AY460673	-
Grammitis	aff.*holttumii*	EF178621	EF178654	*Lellingeria*	*major*	EF178627	-	*Terpsichore*	*longisetosa*	AY460674	-
Grammitis	*baldwinii*	EF178616	EF178649	*Lellingeria*	*pseudomitchellae*	AY460652	-	*Terpsichore*	*pichinchae*	AY460675	-
Grammitis	*billardieri*	AY460637	-	*Lellingeria*	*saffordii*	EF178628	EF178662	*Terpsichore*	*semihirsuta*	AY460676	-
Grammitis	*bryophila*	AF468208	AF469797	*Lellingeria*	*schenckei*	AY460651	-	*Terpsichore*	*senilis*	AY096208	-
Grammitis	*ciliata*	AY460638	-	*Lellingeria*	sp.	EF178630	-	*Terpsichore*	sp.	AY460679	-
Grammitis	*congener*	EF178617	EF178650	*Lellingeria*	sp.	EF178631	-	*Terpsichore*	*subscabra*	AY460677	-
Grammitis	*deplanchei*	AY460639	-	*Lellingeria*	*subcoriacea*	EF178629	-	*Terpsichore*	*subtilis*	AY460678	-
Grammitis	*diminuta*	JF950809	JF950910	*Lellingeria*	*subsessilis*	AY460653	-	*Themelium*	*tenuisectum*	AY362346	-
Grammitis	*dolichosora*	EF178618	-	*Melpomene*	*flabelliformis*	AY460656	-	*Xiphopteris*	*conjunctisora*	AY460680	-
Grammitis	*forbesiana*	AY460640	EF178651	*Melpomene*	*moniliformis*	AY460654	-				

Table S13 Accession numbers for sequences included in the *Doodia* phylogenetic tree

Genus	Species	rbcL	trnL+trnL-trnF
Blechnum	*brasiliense*	AB040545	DQ683436
Blechnum	*fraseri*	AB040553	DQ683390
Blechnum	*patersonii*	AB040569	DQ683406
Blechnum	*spicant*	AB040571	EF427640
Doodia	*aspera*	AB040577	DQ683420
Doodia	*australis*	-	DQ683423
Doodia	*kunthiana*	AB040578	DQ683424
Doodia	*maxima*	DMU05921	-
Doodia	*media*	DMU05922	-
Doodia	*milnei*	-	DQ683426
Doodia	*mollis*	AB040579	DQ683428
Doodia	*squarrosa*	AB040580	DQ683430
Sadleria	*cyatheoides*	AF425103	DQ683431
Woodwardia	*japonica*	AY137664	DQ683432
Woodwardia	*prolifera*	AY137666	DQ683433
Woodwardia	*radicans*	AY137667	DQ683434
Doodia	*caudata*	JF950808	JF950941

Table S14 Accession numbers for sequences included in the *Geniostoma* phylogenetic tree

Genus	Species	ITS	trnL	trnL-trnF
Exacum	*appendiculatum*	FJ666036	FJ014140	FJ013957
Exacum	*exiguum*	FJ666037	FJ014142	FJ013960
Gardneria	*ovata*	-	AF102427	AF102427
Geniostoma	*rupestre*	DQ499096	AF102430	-
Geniostoma	*rupestre*	DQ499095	-	-
Geniostoma	*angustifolium*	JF950767	JF950887	JF950913
Geniostoma	*petiolosum*	JF950768	JF950888	JF950914
Geniostoma	*borbonicum*	JF950769	JF950889	JF950915
Geniostoma	*huttonii*	JF950770	JF950890	JF950916
Labordia	*tinifolia*	-	AF102447	-
Logania	*albiflora*	DQ358879	AF102451	-
Mitrasacme	*pilosa*	-	AF102459	-
Nerium	*oleander*	-	DQ221125	DQ221167
Spigelia	*hedyotidea*	AF178007	-	-
Spigelia	*texana*	AF178006	-	-

Table S15 Accession numbers for sequences included in the *Hymenophyllum* phylogenetic tree

Genus	Species	rbcL	rps4	Genus	Species	rbcL	rps4
Abrodictyum	*rigidum*	AY095108	AY095137	*Hymenophyllum*	*leratii*	AB191448	AY775421
Crepidomanes	*latealatum*	AB083291	-	*Hymenophyllum*	*lyallii*	AB162684	-
Crepidomanes	*thysanostomum*	AB083294	-	*Hymenophyllum*	*marginatum*	AB162692	AY775409
Didymoglossum	*baileyanum*	AF275643	AY095129	*Hymenophyllum*	*microcarpum*	AB083289	-
Didymoglossum	*cuspidatum*	AF537122	AY095144	*Hymenophyllum*	*mnioides*	AB217849	DQ077944
Dipteris	*conjugata*	U05620	-	*Hymenophyllum*	*moorei*	JF950812	JF950816
Gleichenia	*dicarpa*	AF313584	-	*Hymenophyllum*	*nitidulum*	AB162683	-
Hymenophyllum	*acanthoides*	AB083282	AY775434	*Hymenophyllum*	*oligosorum*	AB083280	AY775422
Hymenophyllum	*apiculatum*	AF275642	AY095131	*Hymenophyllum*	*ooides*	AB191449	-
Hymenophyllum	*armstrongii*	AB162691	AY095128	*Hymenophyllum*	*pallidum*	EU338467	AY775431
Hymenophyllum	*australe*	AB191439	AY775412	*Hymenophyllum*	*palmatifidum*	AB162682	-
Hymenophyllum	*barbatum*	AB083283	AY095124	*Hymenophyllum*	*paniense*	AB083275	AY775410
Hymenophyllum	*braithwaitii*	AB162686	-	*Hymenophyllum*	*pectinatum*	AB191450	AY095134
Hymenophyllum	*caespitosa*	AB191456	AY095130	*Hymenophyllum*	*pilosissimum*	AB083287	-
Hymenophyllum	*caudiculatum*	AB191442	AY775414	*Hymenophyllum*	*polyanthos*	EU122986	AY775425
Hymenophyllum	*cf_acutum*	AB257473	-	*Hymenophyllum*	*pulcherrimum*	AB191451	AY775426
Hymenophyllum	*corrugatum*	AB191443	-	*Hymenophyllum*	*rarum*	AB217845	-
Hymenophyllum	*cruentum*	AB191455	AY095133	*Hymenophyllum*	*reniforme*	AB083290	AY095132
Hymenophyllum	*cuneatum*	AY775401	AY775415	*Hymenophyllum*	*rolandi-principis*	AB083286	AY095143
Hymenophyllum	*demissum*	AY775402	AY775416	*Hymenophyllum*	*sanguinolentum*	AB191452	AY775427
Hymenophyllum	*deplanchei*	AB083284	AY095136	*Hymenophyllum*	*scabrum*	AB083278	AY775428
Hymenophyllum	*digitatum*	EU122980	-	*Hymenophyllum*	*secundum*	AF275648	AY095125
Hymenophyllum	*dilatatum*	AB191444	AY095138	*Hymenophyllum*	*sibthorpioides*	AB162688	AY095127
Hymenophyllum	*dimidiatum*	AB064289	AY775433	*Hymenophyllum*	*subdimidiatum*	AB083281	AY095140
Hymenophyllum	*exiguum*	AB257488	-	*Hymenophyllum*	*subobtusum*	AB083288	-
Hymenophyllum	*ferrugineum*	AB191445	AF537124	*Hymenophyllum*	*taeniatum*	EU122987	-
Hymenophyllum	*flabellatum*	EU122981	AY775417	*Hymenophyllum*	*tenellum*	AB191453	AY095126
Hymenophyllum	*flexuosum*	AB217850	DQ077943	*Hymenophyllum*	*tunbrigense*	EU553547	AY095123
Hymenophyllum	*frankliniae*	AB162690	-	*Hymenophyllum*	*villosum*	AB191454	AY775429
Hymenophyllum	*fuciforme*	AB191446	AY775418	*Hymenophyllum*	*wrightii*	AB083277	AY775430
Hymenophyllum	*fucoides*	U20933	AY095142	*Phanerosorus*	*sarmentosus*	AF313583	-
Hymenophyllum	*fuscum*	AB083285	AY775408	*Polyphlebium*	*diaphanum*	AB083292	AY775413
Hymenophyllum	*heimii*	AY775404	AY775419	*Stromatopteris*	*moniliformis*	AY612685	AY095120
Hymenophyllum	*hirsutum*	AY775407	AY775432	*Trichomanes*	*badium*	AB191440	AY095141
Hymenophyllum	*howense*	JF950811	JF950815	*Trichomanes*	*elegans*	AB083295	-
Hymenophyllum	*hygrometricum*	AY095113	AY095118	*Trichomanes*	*taeniatum*	AF275651	AY095121
Hymenophyllum	*inaequale*	AY095112	AY095122	*Vandenboschia*	*birmanica*	AB083293	-
Hymenophyllum	*javanicum*	AB191447	DQ077945	*Abrodictyum*	*tamarisciforme*	-	AY095135
Hymenophyllum	*lanceolatum*	AF275646	AY095119				

Table S16 Accession numbers for sequences included in the *Korthalsella* phylogenetic tree

Genus	Species	ITS	trnL + trnL-trnF
Korthalsella	*clavata*	-	AF055680
Korthalsella	*complanata*	AF051966	AF055688
Korthalsella	*cylindrica*	AF051959	-
Korthalsella	*emersa*	JF950771	JF950942
Korthalsella	*japonica*	AF051971	AF055696
Korthalsella	*latissima*	AF051965	AF055687
Korthalsella	*lindsayi*	AF051954	AF055676
Korthalsella	*papuana*	AF051951	AF055673
Korthalsella	*platycaula*	AF051963	AF055685
Korthalsella	*remyana*	AF051961	AF055681
Korthalsella	*rubra*	JF950772	JF950891
Korthalsella	*salicornioides*	AF051952	AF055674
Phoradendron	*rhipsalinum*	AF178719	-
Phoradendron	*robinsonii*	AF178718	-
Viscum	*album*	EU796892	-
Viscum	*cruciatum*	AF180532	-

Table S17 Accession numbers for sequences included in the *Macropiper* phylogenetic tree

Genus	Species	ITS Acc.
Macropiper	*excelsum*	AF275193
Macropiper	*excelsum*	JF950773
Macropiper	*hooglandii*	AF275192
Macropiper	*melanostachyum*	EF635465
Macropiper	*melchior*	DQ868759
Macropiper	*puberulum*	AF275191
Macropiper	*timothianum*	DQ868761
Peperomia	*metallica*	DQ868762
Peperomia	*reptilis*	FJ424438
Peperomia	*tristachya*	FJ424439
Macropiper	*latifolium*	FJ424440
Piper	*macropiper*	EF060074
Piper	*stipulare*	DQ868746
Piper	*sylvaticum*	DQ868748
Piper	*thomsonii*	DQ868749
Piper	*tricolor*	DQ868750
Piper	*vitiense*	DQ868752

Table S18 Accession numbers for sequences included in the *Melicope* phylogenetic tree

Genus	Species	trnL	trnL-trnF	ITS
Acronychia	*oblongifolia*	EU493242	EU493242	EU493185
Euodia	*hortensis*	DQ225966	DQ225898	DQ225812
Euodia	*hupehensis*	EF489253	EF489253	DQ225814
Euodia	*hylandii*	DQ225964	DQ225964	EU493186
Euodia	*pubifolia*	EU493243	EU493243	-
Melicope	*bonwickii*	DQ225958	-	DQ225809
Melicope	*cf_crassiramis*	-	-	DQ499138
Melicope	*clusiifolia*	EU493235	EU493235	EU493178
Melicope	*contermina*	JF950892	JF950892	JF950774
Melicope	*degeneri*	EU493236	EU493236	EU493179
Melicope	*elleryana*	EU493241	EU493241	EU493184
Melicope	*elliptica*	EU493237	EU493237	EU493180
Melicope	*hivaoaensis*	EU493230	EU493230	EU493173
Melicope	*inopinata*	EU493233	EU493233	EU493176
Melicope	*knudsenii*	EU493225	EU493225	EU493168
Melicope	*lucida*	EU493234	EU493234	EU493177
Melicope	*nukuhivensis*	EU493232	EU493232	EU493175
Melicope	*ovalis*	EU493226	EU493226	EU493169
Melicope	*paniculata*	EU493228	EU493228	EU493171
Melicope	*polybotrya*	JF950893	JF950893	JF950775
Melicope	*pteleifolia*	DQ225960	-	DQ225806
Melicope	*puberula*	EU493229	EU493229	EU493172
Melicope	*quadrangularis*	EU493227	EU493227	EU493170
Melicope	*revoluta*	EU493231	EU493231	EU493174
Melicope	*rubra*	DQ225957	DQ225893	DQ225807
Melicope	*simplex*	-	-	DQ499137
Melicope	*sp.*	EF489255	EF489255	-
Melicope	*sp. Chase*	EU853807	EU853807	-
Melicope	*ternata*	EU853808	EU853808	DQ225805
Melicope	*triphylla*	DQ225961	DQ225894	-
Melicope	*vitiflora*	DQ225962	DQ225895	DQ225811
Platydesma	*rostrata*	EU493238	EU493238	EU493181
Platydesma	*spathulata*	EU493239	EU493239	EU493182
Sarcomelicope	*simplicifolia*	EU853816	EU853816	-
Skimmia	*japonica*	EU853819	EU853819	-
Spathelia	*excelsa*	EU853820	EU853820	-
Triphasia	*trifolia*	EU853822	EU853822	-

Table S19 Accession numbers for sequences included in the *Metrosideros* phylogenetic tree

Genus	Species	ETS	ITS	5S	rps16	trnL-trnF	Genus	Species	ETS	ITS	5S	rps16	trnL-trnF
Callistemon	*comboynensis*	AM489897	AM234140	-	-	-	*Metrosideros*	*nervulosa*	JF950713	JF950783	JF950701	JF950873	JF950928
Cloezia	*floribunda*	AY606255	AF172767	-	-	-	*Metrosideros*	*nervulosa*	JF950714	JF950784	JF950702	JF950874	JF950929
Eucalyptus	*perriniana*	AM489907	AM234139	-	-	-	*Metrosideros*	*nitida*	-	AF172770	-	-	-
Leptospermum	*scoparium*	AM489922	AM234142	-	-	-	*Metrosideros*	*ochrantha*	-	AF172748	-	-	-
Metrosideros	*albiflora*	AY606241	DQ328799	-	-	-	*Metrosideros*	*operculata*	AY606246	AF172733	-	-	-
Metrosideros	*angustifolia*	AY606231	DQ328795	-	-	-	*Metrosideros*	*oreomyrtus*	-	AF172749	-	-	-
Metrosideros	*bartlettii*	AF328046	AF172740	-	-	-	*Metrosideros*	*ovata*	AY606232	DQ328793	-	-	-
Metrosideros	*boninensis*	-	AF172734	JF950693	-	JF950917	*Metrosideros*	*paniensis*	AY606247	AF211503	-	-	-
Metrosideros	*brevistylis*	AY606237	AF211496	-	-	-	*Metrosideros*	*parkinsonii*	AY606248	DQ328796	-	-	-
Metrosideros	*cacuminum*	AY606238	AF211497	-	-	-	*Metrosideros*	*patens*	AY606249	AF211504	-	-	-
Metrosideros	*carminea*	AY606243	AF211498	-	-	JF950918	*Metrosideros*	*perforata*	AM489931	AM234141	-	-	-
Metrosideros	*cherrieri*	-	AF172768	-	-	-	*Metrosideros*	*polymorpha dieteri*	AF328057	AF172750	-	EU605432	-
Metrosideros	*colensoi*	AY606242	AF211499	-	-	-	*Metrosideros*	*polymorpha glaberrima*	AF328059	AF172751	-	EU605472	-
Metrosideros	*collina fruticosa*	AF328066	AF172756	-	EU605373	-	*Metrosideros*	*polymorpha incana*	AF328058	AF172752	-	EU605448	-
Metrosideros	*collina collina*	AF328068	AF328069	-	EU605473	-	*Metrosideros*	*polymorpha polymorpha*	AF328055	AF172753	-	EU605456	-
Metrosideros	*collina collina*	AF328063	AF172741	-	-	-	*Metrosideros*	*polymorpha pumila*	AF328056	AF172754	-	EU605470	-
Metrosideros	*collina collina*	AF328067	AF328070	-	EU605372	-	*Metrosideros*	*porphyrea*	AY606251	AF211505	-	-	-
Metrosideros	*collina collina*	AF328064	AF172737	-	-	-	*Metrosideros*	*punctata*	-	AF172755	-	-	-
Metrosideros	*collina collina*	AF328065	AF172735	JF950694	-	JF950919	*Metrosideros*	*ramiflora*	AY606235	DQ328798	-	-	-
Metrosideros	*collina villosa*	AF328061	AF172742	-	-	-	*Metrosideros*	*robusta*	AF328048	AF172758	-	-	-
Metrosideros	*cordata*	AY606240	JF950776	-	-	-	*Metrosideros*	*rotundifolia*	AY606253	AF211507	-	-	-
Metrosideros	*diffusa*	AY606236	AF211500	-	-	JF950920	*Metrosideros*	*rugosa*	AF328060	AF172759	-	EU605460	-
Metrosideros	*dolichandra*	AY606239	AF211501	-	-	-	*Metrosideros*	*cf_salomonensis*	AY606254	DQ328801	-	-	-
Metrosideros	*engleriana*	-	AF172736	-	-	-	*Metrosideros*	*sclerocarpa*	JF950715	JF950785	JF950703	JF950875	JF950930
Metrosideros	*excelsa*	JF950707	JF950777	JF950695	JF950868	JF950921	*Metrosideros*	*sclerocarpa*	JF950716	JF950786	JF950704	JF950876	JF950931
Metrosideros	*fulgens*	AY606244	DQ328800	-	-	-	*Metrosideros*	*sclerocarpa*	JF950717	JF950787	JF950705	JF950877	JF950932
Metrosideros	*gregoryi*	-	AF172769	-	-	-	*Metrosideros*	*sclerocarpa*	JF950718	JF950788	JF950706	JF950878	JF950933
Metrosideros	*halconensis*	AY606234	DQ328797	-	-	-	*Metrosideros*	*sepikensis*	-	JF950789	-	-	JF950934
Metrosideros	*humboldtiana*	-	AF172744	-	-	-	*Metrosideros*	*sp.*	-	AF172761	-	-	-
Metrosideros	*kermadecensis*	JF950708	JF950778	JF950696	JF950869	JF950922	*Metrosideros*	*tetrasticha*	-	AF172762	-	-	-
Metrosideros	*kermadecensis*	JF950709	JF950779	JF950697	JF950870	JF950923	*Metrosideros*	*tremuloides*	AF328053	AF172763	-	EU605400	-
Metrosideros	*kermadecensis*	JF950710	JF950780	JF950698	-	JF950924	*Metrosideros*	*umbellata*	-	AF172764	-	-	-
Metrosideros	*longipetiolata*	AY606245	AF211502	-	-	-	*Metrosideros*	*waialealae*	AF328054	AF172765	-	EU605440	-
Metrosideros	*macropus*	AF328052	AF172745	-	EU605396	JF950925	*Metrosideros*	*whitakeri*	AY606252	AF211506	-	-	-
Metrosideros	*microphylla*	-	AF172746	-	-	-	*Metrosideros*	*whiteana*	AY606233	DQ328794	-	-	-
Metrosideros	*nervulosa*	JF950711	JF950781	JF950699	JF950871	JF950926	*Tepualia*	*stipularis*	AM489969	AM234071	-	-	-
Metrosideros	*nervulosa*	JF950712	JF950782	JF950700	JF950872	JF950927							

Table S20 Accession numbers for sequences included in the *Olearia* phylogenetic tree

Genus	Species	ITS	Genus	Species	ITS
Achillea	*millefolium*	AF046939	*Olearia*	*cordata*	AF497668
Achnophora	*tatei*	AF497656	*Olearia*	*covenyi*	AF497711
Artemisia	*rupestris*	AJ297261	*Olearia*	*elliptica_1*	JF950796
Aster	*novi-belgii*	AF497657	*Olearia*	*elliptica_2*	AF497669
Brachyscome	*heterodonta*	AF046955	*Olearia*	*ferresii*	AF497676
Brachyscome	*humilis*	AF422113	*Olearia*	*flocktoniae*	AF497679
Brachyscome	*multifida*	AF497658	*Olearia*	*floribunda*	AF497680
Calotis	*cuneifolia*	AF497647	*Olearia*	*furfuracea*	AF497690
Camptacra	*barbata*	AF247070	*Olearia*	*glulosa*	AF497682
Camptacra	*gracilis*	AF247069	*Olearia*	*lasiophylla*	AF497652
Celmisia	*asteliifolia*	AF497702	*Olearia*	*ledifolia*	AF497686
Celmisia	*mackaui*	AF422115	*Olearia*	*magniflora*	AF497665
Celmisia	*tomentella*	AF497704	*Olearia*	*megalophylla*	AF497707
Chiliotrichum	*diffusum*	AF046945	*Olearia*	*microphylla*	AF497671
Chrysanthemum	*nankingense*	AF314604	*Olearia*	*mooneyi*	JF950797
Cotula	*coronopifolia*	AF422118	*Olearia*	*muellerii*	AF497666
Damnamenia	*vernicosa*	AF422119	*Olearia*	*myrsinoides*	AF497708
Dendranthema	*xgriflorum*	AF116239	*Olearia*	*nernstii*	AF497654
Erigeron	*byei*	AF046974	*Olearia*	*nummularifolia*	AF497688
Erigeron	*nitidus*	AF497659	*Olearia*	*oppositifolia*	AF497709
Felicia	*aethiopica*	AF046941	*Olearia*	*paniculata*	AF497689
Grangea	*maderaspatana*	AF046951	*Olearia*	*pannosa*	AF247065
Kippistia	*suaedifolia*	AF497660	*Olearia*	*passerinoides*	AF497672
Lagenifera	*panamensis*	AF046965	*Olearia*	*phlogopappa*	AF497655
Lagenifera	*pumila*	AF422124	*Olearia*	*picridifolia*	AF497683
Minuria	*cunninghamii*	AF247072	*Olearia*	*pimeleoides*	AF497673
Minuria	*integerrima*	AF247074	*Olearia*	*ramosissima*	AF497674
Minuria	*sp.*	AF247077	*Olearia*	*ramulosa*	DQ479033
Olearia	*albida*	AF497687	*Olearia*	*rani*	AF497692
Olearia	*angustifolia*	EU169118	*Olearia*	*rosmarinifolia*	AF497706
Olearia	*arborescens*	AF497691	*Olearia*	*rudis*	AF497677
Olearia	*argophylla*	AF247064	*Olearia*	*semidentata*	EF660541
Olearia	*arguta*	AF497661	*Olearia*	*solri*	EF635483
Olearia	*astroloba*	AF497646	*Olearia*	*sp.*	AF497693
Olearia	*ballii*	JF950795	*Olearia*	*stellulata*	AF497653
Olearia	*calcarea*	AF497663	*Olearia*	*stuartii*	AF497678
Olearia	*chathamica*	EF660540	*Olearia*	*teretifolia*	AF497675
Olearia	*cheesmanii*	AF422130	*Olearia*	*tomentosa*	AF497650
Olearia	*chrysophylla*	AF497710	*Olearia*	*traversii*	AF497695
Olearia	*ciliata*	AF497667	*Olearia*	*virgata*	EF635481
Olearia	*colensoi*	EF635482			

Table S21 Accession numbers for sequences included in the *Microsorum* phylogenetic tree

Genus	Species	rps4
Microsorum	*scolopendria*	GQ256395
Microsorum	*punctatum*	GQ256394
Microsorum	*fortunei*	GQ256393
Lepidomicrosorium	*buergerianum*	EU363260
Microsorum	*zippelii*	DQ642203
Microsorum	*membranifolium*	DQ642200
Microsorum	*scandens*	DQ401128
Microsorum	*pustulatum*	DQ401127
Microsorum	*novae-zealandiae*	DQ401126
Goniophlebium	*subauriculatum*	DQ168812
Microsorum	*vieillardii*	DQ179637
Microsorum	*grossum*	AY362695
Microsorum	*commutatum*	AY362644
Microsorum	*varians*	AY362638
Microsorum	*musifolium*	AY362636
Microsorum	*linguiforme*	AY362635
Neocheiropteris	*superficialis*	AY725048
Microsorum	*membranaceum*	AY725047

Table S22 Accession numbers for sequences included in the *Myrsine* phylogenetic tree

Genus	Species	clone	ITS
Anagallis	*arvensis*		EF436994
Anagallis	*foemina*		EF436999
Ardisia	*affinis*		FJ482148
Ardisia	*villosa*		FJ482150
Cyclamen	*parviflorum*		AM990480
Cyclamen	*repandum*		AM990481
Myrsine	*africana*		EU886863
Myrsine	*aquilonia*		EU886864
Myrsine	*argentea*		EU886865
Myrsine	*australis*		EU886866
Myrsine	*chathamica*		EU886867
Myrsine	*coxii*		EU886868
Myrsine	*divaricata*		EU886870
Myrsine	*faberi*		AF547731
Myrsine	*kermadecensis*		EU886874
Myrsine	*mccomishii*		JF950790
Myrsine	*myrtillina*	x19c17	JF950791
Myrsine	*myrtillina*	x19c18	JF950792
Myrsine	*myrtillina*	x19c22	JF950793
Myrsine	*nummularia*		EU886875
Myrsine	*oliveri*		EU886876
Myrsine	*platystigma*		JF950794
Myrsine	*salicina*		EU886877
Myrsine	*umbricola*		EU886878
Rapanea	*howittiana*		DQ499108
Rapanea	*leucantha*		DQ499107

Table S23 Accession numbers for sequences included in the *Ophioglossum* phylogenetic tree

Genus	Species	rbcL	trnL-trnF
Angiopteris	*lygodiifolia*	AY138397	-
Botrychium	*ascendens*	L40982	-
Botrychium	*atrovirens*	AY138402	-
Botrychium	*campestre*	L40961	-
Botrychium	*dissectum*	AY138401	-
Cheiroglossa	*palmata*	AY138421	-
Danaea	*elliptica*	AY138398	-
Helminthostachys	*zeylanica*	AY138409	-
Marattia	*sp.*	AY138399	-
Ophioglossum	*coriaceum*	JF950813	JF950935
Ophioglossum	*costatum*	AY138418	AY138453
Ophioglossum	*crotalophoroides*	AY138417	AY138452
Ophioglossum	*engelmanii*	L11058	-
Ophioglossum	*gomezianum*	AY138419	AY138454
Ophioglossum	*gramineum*	AY138412	AY138448
Ophioglossum	*lusitanicum*	DQ646002	-
Ophioglossum	*nudicaule*	AY138416	-
Ophioglossum	*pendulum*	AY138420	-
Ophioglossum	*petiolatum*	AY138411	AY138447
Ophioglossum	*pusillum*	AY138413	AY138449
Ophioglossum	*reticulatum*	AY138410	AY138446
Ophioglossum	*richardsiae*	AY138415	AY138451
Ophioglossum	*vulgatum*	AY138414	AY138450
Psilotum	*nudum*	L11059	-
Tmesipteris	*oblanceolata*	U30836	-

Table S24 Accession numbers for sequences included in the *Paspalum* phylogenetic tree

Genus	Species	trnL	atpB-rbcL	trnG	trnL-trnF
Anthaenantiopsis	*rojasiana*	EU627361	EU627205	EU627283	EU627439
Axonopus	*anceps*	EU871111	-	-	-
Axonopus	*furcatus*	EU627358	EU627202	EU627280	EU627436
Axonopus	*rosengurttii*	EU627362	EU627206	EU627284	EU627440
Chasmanthium	*latifolium*	EU871113	-	-	-
Paspalum	*acuminatum*	EU627356	EU627200	EU627278	EU627434
Paspalum	*aff_jujuyense*	EU627357	EU627201	EU627279	EU627435
Paspalum	*alcalinum*	EU627359	EU627203	EU627281	EU627437
Paspalum	*almum*	EU627360	EU627204	EU627282	EU627438
Paspalum	*arundinaceum*	EU871120	EU627207	EU627285	EU627441
Paspalum	*arundinellum*	EU871115	-	-	-
Paspalum	*atratum*	EU627364	EU627208	EU627286	EU627442
Paspalum	*barretoi*	DQ100083	-	-	-
Paspalum	*bertonii*	EU627365	EU627209	EU627287	EU627443
Paspalum	*bicilium*	EU627366	EU627210	EU627288	EU627444
Paspalum	*ceresia*	EU627367	EU627211	EU627289	EU627445
Paspalum	*chacoense*	EU627368	EU627212	EU627290	EU627446
Paspalum	*chaseanum*	EU871136	EU627213	EU627291	EU627447
Paspalum	*commune*	EU871144	EU627214	EU627292	EU627448
Paspalum	*compressifolium*	EU627371	EU627215	EU627293	EU627449
Paspalum	*conduplicatum*	AY769158	-	-	-
Paspalum	*conjugatum*	EU627372	EU627216	EU627294	EU627450
Paspalum	*conspersum*	EU627374	EU627218	EU627296	EU627452
Paspalum	*coryphaeum*	EU871145	-	-	-
Paspalum	*cromyorhizon*	AY769159	EU627219	EU627297	EU627453
Paspalum	*dasypleurum*	DQ104311	-	DQ104291	DQ104321
Paspalum	*dasytrichium*	EU871117	-	-	-
Paspalum	*dedeccae*	AY769161	-	-	-
Paspalum	*densum*	EU871108	-	-	-
Paspalum	*denticulatum*	EU627376	EU627220	EU627298	EU627454
Paspalum	*dilatatum*	DQ104303	EU627221	EU627299	EU627455
Paspalum	*distichum*	EU871100	EU627222	EU627300	EU627456
Paspalum	*durifolium*	EU871140	EU627223	EU627301	EU627457
Paspalum	*ellipticum*	EU627380	EU627224	EU627302	EU627458
Paspalum	*equitans*	AY769164	EU627225	EU627303	EU627459
Paspalum	*erianthum*	EU871116	EU627226	EU627304	EU627460
Paspalum	*exaltatum*	EU871127	EU627227	EU627305	EU627461
Paspalum	*falcatum*	EU627384	EU627228	EU627306	EU627462
Paspalum	*fasciculatum*	EU627385	EU627229	EU627307	EU627463
Paspalum	*filifolium*	AY769165	-	-	-
Paspalum	*fimbriatum*	EU871114	-	-	-
Paspalum	*flaccidum*	AY769166	-	-	-
Paspalum	*flavum*	EU627386	EU627230	EU627308	EU627464
Paspalum	*foliiforme*	EU627387	EU627231	EU627309	EU627465
Paspalum	*glabrinode*	EU871106	EU627232	EU627310	EU627466
Paspalum	*guenoarum*	EU627389	EU627233	EU627311	EU627467
Paspalum	*haumanii*	EU871129	EU627234	EU627312	EU627468
Paspalum	*humboldtianum*	EU627391	EU627235	EU627313	EU627469
Paspalum	*inaequivalve*	EU627392	EU627236	EU627314	EU627470
Paspalum	*inconstans*	EU871123	EU627237	EU627315	EU627471
Paspalum	*indecorum*	EU627394	EU627238	EU627316	EU627472
Paspalum	*intermedium*	EU871103	EU627239	EU627317	EU627473
Paspalum	*ionanthum*	EU627396	EU627240	EU627318	EU627474
Paspalum	*juergensii*	AY769169	EU627241	EU627319	EU627475
Paspalum	*lepton*	EU627398	EU627242	EU627320	EU627476
Paspalum	*lilloi*	EU627399	EU627243	EU627321	EU627477
Paspalum	*limbatum*	EU627400	EU627244	EU627322	EU627478
Paspalum	*lineare*	EU627401	EU627245	EU627323	EU627479
Paspalum	*macrophyllum*	EU871122	-	-	-
Paspalum	*maculosum*	AY769172	EU627246	EU627324	EU627480
Paspalum	*malacophyllum*	EU871099	EU627247	EU627325	EU627481
Paspalum	*mandiocanum*	EU627404	EU627248	EU627326	EU627482
Paspalum	*millegrana*	EU871109	-	-	-
Paspalum	*minus*	AY769173	-	-	-
Paspalum	*modestum*	EU627405	EU627249	EU627327	EU627483
Paspalum	*notatum*	AY769174	EU627250	EU627328	EU627484
Paspalum	*nummularium*	DQ100082	-	-	-

Table S24 cont. Accession numbers for sequences included in the *Paspalum* phylogenetic tree

Genus	Species	trnL	atpB-rbcL	trnG	trnL-trnF
Paspalum	*orbiculatum*	EU627407	EU627251	EU627329	EU627485
Paspalum	*ovale*	EU627408	EU627252	EU627330	EU627486
Paspalum	*pallens*	AY769176	-	-	-
Paspalum	*palustre*	EU871119	EU627253	EU627331	EU627487
Paspalum	*paniculatum*	EU627410	EU627254	EU627332	-
Paspalum	*pauciciliatum*	AY769177	-	DQ104292	DQ104322
Paspalum	*paucifolium*	EU627411	EU627255	EU627333	EU627489
Paspalum	*pilosum*	EU627412	EU627256	EU627334	EU627490
Paspalum	*plenum*	EU871133	-	-	-
Paspalum	*plicatulum*	EU871125	EU627257	EU627335	EU627491
Paspalum	*polyphyllum*	EU627414	EU627258	EU627336	EU627492
Paspalum	*pumilum*	AY769178	EU627259	EU627337	EU627493
Paspalum	*quadrifarium*	AY941151	AY941143	AY941131	AY941159
Paspalum	*quarinii*	EU871132	EU627261	EU627339	EU627495
Paspalum	*ramboi*	AY769179	-	-	-
Paspalum	*regnellii*	EU871139	-	-	-
Paspalum	*remotum*	EU627418	EU627262	EU627340	EU627496
Paspalum	*repens*	EU627419	EU627263	EU627341	EU627497
Paspalum	*rufum*	EU871126	EU627264	EU627342	EU627498
Paspalum	*scrobiculatum*	EU627421	EU627266	EU627344	EU627500
Paspalum	*setaceum*	EU627423	EU627267	EU627345	EU627501
Paspalum	*simplex*	EU627424	EU627268	EU627346	EU627502
Paspalum	*stellatum*	EU627425	EU627269	EU627347	EU627503
Paspalum	*subciliatum*	AY769180	-	-	-
Paspalum	*trichostomum*	EU627428	EU627272	EU627350	EU627506
Paspalum	*unispicatum*	EU627429	EU627273	EU627351	EU627507
Paspalum	*urvillei*	AY769181	-	DQ104290	DQ104320
Paspalum	*usteri*	EU627430	EU627274	EU627352	EU627508
Paspalum	*vaginatum*	EU627431	EU627275	EU627353	EU627509
Paspalum	*virgatum*	EU871137	EU627276	EU627354	EU627510
Paspalum	*wrightii*	EU627433	EU627277	EU627355	EU627511
Sacciolepis	*vilvoides*	EU871142	-	-	-
Thrasyopsis	*juergensii*	EU627426	EU627270	EU627348	EU627504
Thrasyopsis	*repanda*	EU627427	EU627271	EU627349	EU627505

Table S25 Accession numbers for sequences included in the *Cheilanthes* and *Pellaea* phylogenetic tree

Genus	Species	rps4	trnL-trnF	Genus	Species	rps4	trnL-trnF
Adiantum	*aleuticum*	DQ915577	-	*Doryopteris*	*rediviva*	DQ914141	-
Adiantum	*pedatum*	DQ915578	-	*Doryopteris*	*triphylla*	DQ914139	-
Aleuritopteris	*farinosa*	DQ914165	-	*Mildella*	*intramarginalis*	DQ914164	-
Argyrochosma	*fendleri*	DQ914125	DQ914209	*Notholaena*	*affinis*	DQ914166	-
Argyrochosma	*incana*	EU831145	EU831181	*Notholaena*	*californica*	DQ914167	-
Argyrochosma	*jonesii*	DQ914126	DQ914210	*Notholaena*	*candida*	DQ914168	-
Argyrochosma	*limitanea*	DQ914127	DQ914211	*Notholaena*	*standleyi*	DQ914169	-
Argyrochosma	*nivea*	DQ914128	DQ914212	*Paraceterach*	*muelleri*	DQ914112	DQ914203
Aspidotis	*californica*	DQ914129	DQ914213	*Paragymnopteris*	*bipinnata*	DQ914113	DQ914204
Aspidotis	*carlotta-halliae*	DQ914130	DQ914214	*Paragymnopteris*	*marantae*	EU831143	EU831179
Aspidotis	*densa*	DQ914131	DQ914215	*Paragymnopteris*	*sargentii*	DQ914117	DQ914207
Astrolepis	*cochisensis*	DQ914132	EU831184	*Paragymnopteris*	*vestita*	EU831144	EU831180
Astrolepis	*integerrima*	EU831148	-	*Pellaea*	*andromedifolia*	DQ914073	DQ914174
Astrolepis	*sinuata*	DQ914137	DQ914218	*Pellaea*	*atropurpurea*	DQ914074	DQ914176
Astrolepis	*windhamii*	DQ914134	EU831185	*Pellaea*	*brachyptera*	DQ914076	DQ914177
Cheilanthes	*acrostica*	DQ914142	-	*Pellaea*	*breweri*	DQ914077	DQ914179
Cheilanthes	*alabamensis*	DQ914144	DQ914220	*Pellaea*	*bridgesii*	EU831118	EU831163
Cheilanthes	*arizonica*	DQ914143	DQ914219	*Pellaea*	*calomelanos*	DQ914119	-
Cheilanthes	*bonariensis*	EU831150	EU831186	*Pellaea*	*doniana*	DQ914120	-
Cheilanthes	*buchtienii*	DQ914145	-	*Pellaea*	*dura*	DQ914121	-
Cheilanthes	*covillei*	DQ914146	DQ914221	*Pellaea*	*falcata*	DQ914085	DQ914182
Cheilanthes	*distans*	DQ914147	-	*Pellaea*	*glabella*	DQ914087	DQ914184
Cheilanthes	*eatonii*	DQ914148	DQ914222	*Pellaea*	*gleichenioides*	DQ914138	-
Cheilanthes	*feei*	EU831151	EU831187	*Pellaea*	*intermedia*	DQ914089	DQ914186
Cheilanthes	*fendleri*	DQ914151	DQ914225	*Pellaea*	*longipilosa*	DQ914122	-
Cheilanthes	*gracillima*	DQ914152	DQ914226	*Pellaea*	*lyngholmii*	EU831121	EU831166
Cheilanthes	*lanosa*	DQ914153	DQ914227	*Pellaea*	*maxima*	DQ914123	-
Cheilanthes	*lendigera*	DQ914154	DQ914228	*Pellaea*	*mucronata*	DQ914094	DQ914191
Cheilanthes	*multifida*	DQ914155	-	*Pellaea*	*notabilis*	DQ914099	DQ914194
Cheilanthes	*newberryi*	EU831152	EU831188	*Pellaea*	*ovata*	EU831125	EU831170
Pellaea	*nitidula*	-	DQ432662	*Pellaea*	*paradoxa*	JF950817	JF950936
Cheilanthes	*notholaenoides*	DQ914156	DQ914229	*Pellaea*	*patula*	-	DQ432663
Cheilanthes	*parryi*	DQ914157	DQ914230	*Pellaea*	*paupercula*	-	DQ432664
Cheilanthes	*parviloba*	DQ914158	-	*Pellaea*	*pectiniformis*	DQ914124	-
Cheilanthes	*pringlei*	EU831153	EU831189	*Pellaea*	*rotundifolia*	DQ914084	DQ914181
Cheilanthes	*sieberi*	EU831154	EU831190	*Pellaea*	*sagittata*	EU831126	EU831171
Cheilanthes	*skinneri*	DQ914159	DQ914231	*Pellaea*	*sp UC1788706*	DQ914098	DQ914192
Cheilanthes	*tomentosa*	DQ914160	DQ914232	*Pellaea*	*ternifolia*	EU831130	EU831174
Cheilanthes	*viridis*	DQ914162	-	*Pellaea*	*trichophylla*	-	DQ432661
Cheilanthes	*wrightii*	DQ914163	DQ914233	*Pellaea*	*truncata*	DQ914107	DQ914199
Cheilanthes	*yavapensis*	EU831155	EU831191	*Pellaea*	*wrightiana*	EU831136	EU831178
Doryopteris	*nobilis*	DQ914140	-	*Adiantum*	*capillus-veneris*	AY178864	DQ432689

Table S26 Accession numbers for sequences included in the *Peperomia* phylogenetic tree

Genus	Species	ITS	trnL-trnF	Genus	Species	ITS	trnL-trnF
Macropiper	*excelsum*	JF950773	-	*Peperomia*	*maypurensis*	FJ424436	-
Peperomia	*andina*	FJ424416	-	*Peperomia*	*metallica*	FJ424438	-
Peperomia	*argyreia*	FJ424434	-	*Peperomia*	*microphyllophora*	DQ868696	-
Peperomia	*bicolor*	FJ424465	-	*Peperomia*	*nivalis*	FJ424422	-
Peperomia	*blanda*	FJ424455	EU519561	*Peperomia*	*obtusifolia*	DQ868697	-
Peperomia	*caperata*	-	EU519556	*Peperomia*	*pellucida*	FJ424437	EU519566
Peperomia	*cavaleriei*	-	EU519562	*Peperomia*	*pereskiifolia*	FJ424427	-
Peperomia	*clusiifolia*	FJ424450	-	*Peperomia*	*pernambucensis*	FJ424451	-
Peperomia	*congesta*	DQ868692	-	*Peperomia*	*pinoi*	FJ424417	-
Peperomia	*cotyledon*	FJ424418	-	*Peperomia*	*pitcairnensis*	FJ424459	-
Peperomia	*cuspidilimba*	FJ424430	-	*Peperomia*	*polystachya*	FJ424458	-
Peperomia	*dahlstedtii*	FJ424432	-	*Peperomia*	*ppucu-ppucu*	FJ424435	-
Peperomia	*dolabella*	FJ424415	-	*Peperomia*	*prostrata*	FJ424462	-
Peperomia	*dolabriformis*	FJ424421	-	*Peperomia*	*puteolata*	DQ868698	-
Peperomia	*elongata*	AF275213	-	*Peperomia*	*quadrifolia*	DQ868699	-
Peperomia	*emarginella*	FJ424426	EU519576	*Peperomia*	*reptilis*	FJ424439	-
Peperomia	*fagerlindii*	FJ424442	-	*Peperomia*	*resediflora*	FJ424419	-
Peperomia	*fernandopoiana*	-	EU519565	*Peperomia*	*retusa*	-	EU519564
Peperomia	*galioides*	FJ424452	-	*Peperomia*	*rhombea*	FJ424429	-
Peperomia	*glabella*	FJ424454	EU519574	*Peperomia*	*rhomboidea*	DQ868700	-
Peperomia	*gracillima*	FJ424414	-	*Peperomia*	*rotundifolia*	FJ424460	-
Peperomia	*graveolens*	FJ424420	-	*Peperomia*	*sandwicensis*	-	EU519572
Peperomia	*hernandiifolia*	-	EU519569	*Peperomia*	*serpens*	FJ424446	EU519577
Peperomia	*hesperomannii*	-	EU519571	*Peperomia*	*sodiroi*	FJ424441	-
Peperomia	*hoffmannii*	FJ424431	-	*Peperomia*	*sp.*	FJ424463	-
Peperomia	*hylophila*	FJ424456	-	*Peperomia*	*tetraphylla*	FJ424428	EU519557
Peperomia	*inaequalifolia*	FJ424453	-	*Peperomia*	*trifolia*	FJ424433	-
Peperomia	*incana*	FJ424443	-	*Peperomia*	*tristachya*	FJ424440	-
Peperomia	*kamerunana*	-	EU519570	*Peperomia*	*tuisana*	FJ424464	-
Peperomia	*lanceolatopeltata*	FJ424448	-	*Peperomia*	*urocarpa*	-	EU519575
Peperomia	*lancifolia*	FJ424457	-	*Peperomia*	*urveillana*	JF950798	JF950937
Peperomia	*lehmannii*	FJ424423	-	*Peperomia*	*verschaffeltii*	FJ424425	-
Peperomia	*leptostachya*	-	EU519573	*Peperomia*	*vestita*	FJ424461	-
Peperomia	*longispicata*	FJ424444	-	*Peperomia*	*vinasiana*	FJ424445	-
Peperomia	*macrostachya*	FJ424447	-	*Piper*	*stipulare*	DQ868746	-
Peperomia	*magnoliifolia*	FJ424449	-	*Piper*	*vitiense*	DQ868752	-
Peperomia	*marmorata*	FJ424424	-				

Table S27 Accession numbers for sequences included in the *Polystichum* phylogenetic tree

Genus	Species	rps4	Genus	Species	rps4
Dryopteris	*subpycnopteroides*	DQ191880	*Polystichum*	*makinoi*	DQ202462
Dryopteris	*subtriangularis*	DQ191881	*Polystichum*	*mayebarae*	DQ153079
Dryopteris	*tsoongii*	DQ191882	*Polystichum*	*moorei*	AY164628
Dryopteris	*uniformis*	DQ191883	*Polystichum*	*moupinense*	DQ151871
Dryopteris	*wallichiana*	DQ191884	*Polystichum*	*neolobatum*	DQ202463
Polystichum	*acutidens*	DQ202451	*Polystichum*	*neozelandicum*	AY164631
Polystichum	*altum*	DQ151858	*Polystichum*	*nepalense*	DQ202465
Polystichum	*attenuatum*	DQ151859	*Polystichum*	*nudisorum*	DQ151872
Polystichum	*auriculum*	DQ151860	*Polystichum*	*oculatum*	AY164633
Polystichum	*australiense*	AY164624	*Polystichum*	*omeiense*	DQ202466
Polystichum	*brachypterum*	DQ202452	*Polystichum*	*oreodoxa*	DQ202467
Polystichum	*chingae*	DQ151861	*Polystichum*	*parvifoliolatum*	DQ151873
Polystichum	*christii*	DQ151862	*Polystichum*	*piceopaleaceum*	DQ151874
Polystichum	*chunii*	DQ202453	*Polystichum*	*polyblepharum*	DQ202468
Polystichum	*craspedosorum*	DQ202454	*Polystichum*	*proliferum*	AY164627
Polystichum	*crinigerum*	DQ202455	*Polystichum*	*pseudomakinoi*	DQ202469
Polystichum	*cystostegia*	AY164630	*Polystichum*	*punctiferum*	DQ151875
Polystichum	*deltodon*	DQ202456	*Polystichum*	*pycnopterum*	DQ151876
Polystichum	*dielsii*	DQ151863	*Polystichum*	*retrosopaleaceum*	DQ202470
Polystichum	*discretum*	DQ151864	*Polystichum*	*semifertile*	DQ151877
Polystichum	*disjunctum*	DQ151865	*Polystichum*	*setiferum*	AY164638
Polystichum	*erosum*	DQ151866	*Polystichum*	*silvaticum*	AY164634
Polystichum	*fallax*	AY164625	*Polystichum*	*sinotsussimense*	DQ151878
Polystichum	*formosum*	AY164626	*Polystichum*	*stenophyllum*	DQ202471
Polystichum	*fugongense*	DQ202458	*Polystichum*	*stimulans*	DQ151879
Polystichum	*gongboense*	DQ151867	*Polystichum*	*subacutidens*	DQ151880
Polystichum	*grandifrons*	DQ202459	*Polystichum*	*thomsonii*	EU106598
Polystichum	*herbaceum*	DQ151868	*Polystichum*	*tripteron*	EU109280
Polystichum	*jizhushanense*	DQ151869	*Polystichum*	*tsus-simense*	DQ151881
Polystichum	*latilepis*	DQ202460	*Polystichum*	*vestitum*	AY164635
Polystichum	*lentum*	AY164637	*Polystichum*	*wawranum*	AY164636
Polystichum	*lichiangense*	EU106599	*Polystichum*	*whiteleggei*	AY164629
Polystichum	*lonchitis*	EU031781	*Polystichum*	*xiphophyllum*	DQ151882
Polystichum	*longipaleatum*	DQ202461	*Polystichum*	*yuanum*	DQ151883
Polystichum	*longipinnulum*	DQ151870			

Table S28 Accession numbers for sequences included in the *Pteris* phylogenetic tree

Genus	Species	rbcL			
Acrostichum	*aureum*	AB059586	*Pteris*	*arborea*	EF452168
Acrostichum	*danaeifolium*	EF452129	*Pteris*	*argyraea*	EF452169
Actiniopteris	*dimorpha*	EF452130	*Pteris*	*brasiliensis*	EF473702
Actiniopteris	*radiata*	AF336100	*Pteris*	*comans*	EF469954
Adiantum	*raddianum*	U05906	*Pteris*	*cretica*	EF452170
Adiantum	*tenerum*	EF452134	*Pteris*	*decurrens*	EF473703
Anogramma	*leptophylla*	AY168715	*Pteris*	*deflexa*	EF473704
Blechnum	*occidentale*	U05910	*Pteris*	*denticulata*	EF473705
Ceratopteris	*pteridoides*	AB059584	*Pteris*	*fauriei*	U05647
Ceratopteris	*richardii*	AB059585	*Pteris*	*lechleri*	EF473706
Coniogramme	*fraxinea*	AM177359	*Pteris*	*leptophylla*	EF473707
Cryptogramma	*crispa*	EF452148	*Pteris*	*microptera*	JF950814
Jamesonia	*verticalis*	EF452155	*Pteris*	*multifida*	EF452171
Neurocallis	*praestantissima*	EF452158	*Pteris*	*propinqua*	EF452172
Ochropteris	*pallens*	EF452160	*Pteris*	*quadriaurita*	EF452173
Onychium	*japonicum*	U05641	*Pteris*	*splendens*	EF473708
Onychium	*plumosum*	AY266408	*Pteris*	*tremula*	EF452174
Platyzoma	*microphyllum*	AY168721	*Pteris*	*vittata*	U05941

Table S29 Accession numbers for sequences included in the *Pterostylis* phylogenetic tree

Genus	Species	ITS	Genus	Species	ITS
Megastylis	*glandulosus*	AF348042	*Pterostylis*	*mutica*	AY134640
Pterostylis	*aff_barbata*	AY134625	*Pterostylis*	*nigricans*	AY134641
Pterostylis	*alata*	AY134620	*Pterostylis*	*nutans*	EU681223
Pterostylis	*allantoidea*	AY134621	*Pterostylis*	*obtusa*	JF950799
Pterostylis	*aphylla*	EU681195	*Pterostylis*	*oliveri*	FJ473348
Pterostylis	*atriola*	EU681197	*Pterostylis*	*ophioglossa*	AY134642
Pterostylis	*australis*	AY134622	*Pterostylis*	*parviflora*	AY134643
Pterostylis	*banksii*	AY134623	*Pterostylis*	*pedoglossa*	AY134644
Pterostylis	*baptistii*	AY134624	*Pterostylis*	*pedunculata*	AY134645
Pterostylis	*bicolor*	AY134626	*Pterostylis*	*plumosa*	AY134646
Pterostylis	*bicornis*	AY134627	*Pterostylis*	*pratensis*	EU681239
Pterostylis	*biseta*	AY134628	*Pterostylis*	*pyramidalis*	AY134647
Pterostylis	*clavigera*	AY134629	*Pterostylis*	*recurva*	AY134648
Pterostylis	*collina*	AY134630	*Pterostylis*	*rufa*	AF348056
Pterostylis	*commutata*	EU681199	*Pterostylis*	*sanguinea*	AY134649
Pterostylis	*concinna*	AY134631	*Pterostylis*	*sargentii*	AY134651
Pterostylis	*cucullata*	AY134632	*Pterostylis*	*scabrida*	EU681240
Pterostylis	*curta*	AF348054	*Pterostylis*	*smaragdyna*	AY134652
Pterostylis	*cycnocephala*	AY134633	*Pterostylis*	*spathulata*	AY134653
Pterostylis	*daintreana*	AF348055	*Pterostylis*	*stenochila*	EU681242
Pterostylis	*decurva*	AY134634	*Pterostylis*	*tasmanica*	EU681245
Pterostylis	*dilatata*	AY134635	*Pterostylis*	*taurus*	AY134654
Pterostylis	*foliata*	AY134636	*Pterostylis*	*tunstallii*	EU681248
Pterostylis	*graminea*	AY134637	*Pterostylis*	*turfosa*	AY134655
Pterostylis	*grandiflora*	EU681211	*Pterostylis*	*vernalis*	AY134656
Pterostylis	*laxa*	AY134638	*Pterostylis*	*vittata*	AY134657
Pterostylis	*longifolia*	AY134639	*Pterostylis*	*williamsonii*	EU681252
Pterostylis	*melagramma*	EU681220	*Spiranthes*	*vernalis*	EU384876

Table S30 Accession numbers for sequences included in the *Xylosma* phylogenetic tree

Genus	Species	trnL Acc.	trnL-trnF Acc.
Flacourtia	*jangomas*	AY756946	AY757021
Abatia	*spicata*	AY756977	AY756983
Idesia	*polycarpa*	AY756922	AY757030
Populus	*tremuloides*	AY756927	AY757054
Banara	*domingensis*	AY756936	AY756990
Casearia	*javitensis*	AY756899	AY757015
Xylosma	*maidenii*	JF950894	JF950894
Xylosma	*parviflorum*	JF950895	JF950895
Xylosma	*cordata*	AY756969	AY757079
Xylosma	*hispidula*	AY756970	AY757080
Xylosma	*bahamensis*	AY756968	AY757078
Xylosma	*vincentii*	AY756973	AY757083
Xylosma	*venosa*	AY756972	AY757082
Xylosma	*panamensis*	AY756971	AY757081
Xylosma	*japonica*	JF950896	JF950896
Xylosma	*chlorantha*	JF950897	JF950897

Table S31 Accession numbers for sequences included in the *Rytidosperma* phylogenetic tree

Genus	Species	atpB-rbcL	ITS	rpl16	trnL	trnL-trnF
Austrodanthonia	*alpicola*	EU400825	EU401260	EU400961	EU401113	EU401113
Austrodanthonia	*auriculata*	EU400826	-	EU400962	EU401114	EU401114
Austrodanthonia	*bipartita*	EU400827	EU401261	EU400963	EU401115	EU401115
Austrodanthonia	*caespitosa*	EU400829	EU401262	EU400964	EU401116	EU401116
Austrodanthonia	*carphoides*	-	EU401264	EU400966	EU401118	EU401118
Austrodanthonia	*clavata*	EU400830	EU401265	EU400967	EU401119	EU401119
Austrodanthonia	*duttoniana*	EU400831	EU401266	EU400968	EU401120	EU401120
Austrodanthonia	*eriantha*	EU400832	EU401267	EU400969	EU401121	EU401121
Austrodanthonia	*fulva*	EU400834	EU401268	EU400971	EU401123	EU401123
Austrodanthonia	*geniculata*	EU400835	-	EU400972	EU401124	EU401124
Austrodanthonia	*induta*	EU400836	EU401269	EU400973	EU401125	EU401125
Austrodanthonia	*laevis*	EU400837	AF019875	EU400974	EU401126	EU401126
Austrodanthonia	*mera*	EU400838	EU401270	EU400975	EU401127	EU401127
Austrodanthonia	*monticola*	EU400839	EU401271	EU400976	EU401128	EU401128
Austrodanthonia	*oreophila*	EU400840	EU401272	EU400977	EU401129	EU401129
Austrodanthonia	*penicillata*	EU400841	EU401273	EU400978	EU401130	EU401130
Austrodanthonia	*pilosa*	EU400842	EU401274	EU400979	EU401131	EU401131
Austrodanthonia	*popinensis*	EU400843	EU401275	EU400980	EU401132	EU401132
Austrodanthonia	*racemosa*	EU400844	EU401276	EU400981	EU401133	EU401133
Austrodanthonia	*richardsonii*	EU400845	EU401277	-	EU401134	EU401134
Austrodanthonia	*setacea*	EU400846	EU401278	EU400982	EU401135	EU401135
Austrodanthonia	*tenuior*	EU400847	EU401279	EU400983	EU401136	EU401136
Joycea	*clelandii*	EU400887	EU401314	EU401039	EU401201	EU401201
Joycea	*lepidopoda*	EU400888	EU401315	EU401040	-	-
Joycea	*pallida*	EU400889	-	-	-	-
Notodanthonia	*gracilis*	EU400909	EU401322	EU401062	EU401221	EU401221
Notodanthonia	*longifolia*	EU400911	EU401323	EU401064	EU401222	EU401222
Notodanthonia	*semiannularis*	EU400912	EU401324	EU401065	EU401223	EU401223
Notodanthonia	*unarede*	EU400913	EU401325	EU401066	EU401224	EU401224
Rytidosperma	*australe*	EU400921	EU401384	EU401077	EU401234	EU401234
Rytidosperma	*buchananii*	EU400923	EU401386	EU401078	EU401236	EU401236
Rytidosperma	*dimidiatum*	EU400924	EU401387	EU401079	EU401237	EU401237
Rytidosperma	*exiguum*	EU400925	EU401388	EU401080	EU401238	EU401238
Rytidosperma	*fortunae*	EU400926	EU401389	EU401081	EU401239	EU401239
Rytidosperma	*lechleri*	EU400927	EU401390	EU401082	EU401240	EU401240
Rytidosperma	*maculatum*	EU400928	EU401391	EU401083	EU401241	EU401241
Rytidosperma	*nitens*	EU400929	EU401392	EU401084	EU401242	EU401242
Rytidosperma	*nivicola*	EU400930	EU401393	EU401085	EU401243	EU401243
Rytidosperma	*nudiflorum*	EU400931	-	EU401086	DQ218159	DQ218159
Rytidosperma	*oreoboloides*	EU400932	DQ887179	EU401087	EU401244	EU401244
Rytidosperma	*paschale*	EU400933	EU401394	EU401088	EU401245	EU401245
Rytidosperma	*pauciflorum*	EU400934	EU401395	EU401089	EU401246	EU401246
Rytidosperma	*pictum*	EU400935	EU401396	EU401090	EU401247	EU401247
Rytidosperma	*pulchrum*	EU400936	EU401397	EU401091	EU401248	EU401248
Rytidosperma	*pumilum*	EU400937	AF019878	EU401092	EU401249	EU401249
Rytidosperma	*quirihuense*	EU400939	EU401399	EU401093	EU401251	EU401251
Rytidosperma	*setifolium*	EU400940	EU401400	EU401094	EU401252	EU401252
Rytidosperma	*telmaticum*	EU400941	EU401401	EU401095	EU401253	EU401253
Rytidosperma	*thomsonii*	EU400942	EU401402	EU401096	EU401254	EU401254
Rytidosperma	*vestitum*	EU400943	DQ887180	EU401097	EU401255	EU401255
Rytidosperma	*vickeryae*	EU400944	EU401403	EU401098	EU401256	EU401256
Rytidosperma	*violaceum*	EU400945	EU401404	EU401099	EU401257	EU401257
Rytidosperma	*virescens*	EU400946	EU401405	EU401100	EU401258	EU401258
Schismus	*arabicus*	EU400947	-	-	EU401259	EU401259
Schismus	*barbatus*	EU400948	DQ218204	EU401101	DQ218167	DQ218167
Schismus	*pleuropogon*	EU400949	DQ218222	EU401102	DQ218187	DQ218187
Schismus	*scaberrimus*	EU400950	DQ218206	EU401103	DQ218169	DQ218169
Tribolium	*acutiflorum*	EU400951	DQ218221	EU401104	DQ218186	DQ218186
Tribolium	*brachystachyum*	EU400952	DQ218209	EU401105	DQ218172	DQ218172
Tribolium	*ciliare*	EU400953	DQ218211	EU401106	DQ218175	DQ218175
Tribolium	*echinatum*	EU400954	DQ218213	EU401107	DQ218177	DQ218177

Table S32 24 biogeographic regions included in this study.		
No.	Region name	Region description
1	Africa	African continent, Macronesian Islands (Canaries, Madeira, Cape Verdes), Madagascar, Mascarenes and Seychelles.
2	Eurasia	The whole of Europe and Asia excluding the south and south-eastern parts of Asia.
3	E. Asia	China, Japan, Korea and Taiwan.
4	S. E. Asia	India, Burma, Indo-China, Sri lanka and the Maldives.
5	Malesia	Malaysia, Sumatra, Indonesia (excluding new Guinea),Timor and Borneo.
6	Philippines	The Philippine Islands.
7	New Guinea	New Guinea and the Bismarck Islands, excluding Bougainville.
8	Australia	Australia, including Tasmania.
9	Antarctica	The Antarctic continent.
10	N. America	The North American continent .
11	S. America	Central and South America, the Revilla Gigedo Islands, Clipperton Islands, Galapagos Islands, Cocos Islands, Desventaduras Islands and the Juan Fernandez Islands.
12	Norfolk Island	Norfolk Island.
13	New Zealand	New Zealand, including the Auckland and Chatham Islands.
14	Kermadec Islands	The Kermadec Islands.
15	New Caledonia	New Caledonia.
16	Fiji	The Fijian Islands (Viti Levu, Vana Levu etc.).
17	Samoa	The Samoan Islands.
18	Tonga	The Tongan Islands.
19	Solomon Islands	The Solomon Islands and Bougainville.
20	The Loyalties	The Loyalty Islands.
21	New Hebrides	From St.Cruz and the Banks group in the north extending to but not including the Loyalty Islands in the south.
22	N. W. Pacific	Micronesia, Guam, Mariana Island. Bonin Islands and the Carolines Islands.
23	Central Pacific	The Cook Islands (Rarotonga), Society Islands (Tahiti, Moorea and Raiatea etc.), French Polynesia (Tubuai Islands, Tuamotus Islands, Rapa Island, the Pitcairn Islands, Marquesas Islands), west and east central Polynesia (Marshall Island, Tuvalu, Tokelau) and Easter Island.
24	Hawaii	The Hawaiian Islands.

Table S33 Constraints used for molecular dating of phylogenetic reconstructions

Genus	Node	Age conatrained at common ancestor of:	Type	Reference	Distribution	Min age / Mean age	Max age / 95%CI	Clock type
Adiantum	A	*Adiantum, Hecisopteris*	estimate	Schneider *et al.* 2004a (3), Schuettpelz *et al.* 2007 (4)	normal	76.92	+/-6.29	relaxed lognormal
Alyxia	A	*Apocynum, Nerium*	estimate	Wikstrom *et al.* 2001 (5)	uniform	18	29	relaxed lognormal
Alyxia	B	Root	fossil (min)	Wikstrom *et al.* 2001 (5)	uniform	45	53	relaxed lognormal
Asplenium	A	*Hymenasplenium, Asplenium scloopendrium, Asplenium juglandifolium*	estimate	Schneider *et al.* 2004a (3)	normal	55.22	+/-5.69	relaxed lognormal
Asplenium	B	*Asplenium scloopendrium, Asplenium juglandifolium*	estimate	Schneider *et al.* 2004a (3)	normal	40.21	+/-4.55	relaxed lognormal
Coprosma	A	*Coprosma, Opercularia*	fossil pollen (min)	Dessein *et al.* 2005 (6)	uniform	23.8	33.7	relaxed lognormal
Coprosma	B	*Coprosma, Nertera*	fossil polen (min)	Graham 2009 (7)	uniform	5.3	31.8	relaxed lognormal
Coprosma	C	Root of Anthospermae	estimate	Bremer & Eriksson 2009 (8)	normal	31.8	+/-9	relaxed lognormal
Cyathea	A	*Cyathea, Dicksonia, Calocheana*	fossil (constraint)	Pryer *et al.* 2004 (9), Schneider *et al.*2004a (3)	normal	161.56	+/-13.6	relaxed lognormal
Cyathea	B	*Dicksoina, Colocheana*	estimate	Pryer *et al.* 2004 (9)	normal	129.47	+/-15.54	relaxed lognormal
Doodia	A	*Blechnum , Woodwardia*	fossil (min)	Schneider *et al.* 2004a (3)	normal	58.17	+/-6.99	strict
Geniostoma	A	*Spigelia, Nerum, Exacum*	estimate	Wikstrom *et al.* 2001 (5)	uniform	54	57	relaxed lognormal
Geniostoma	B	*Spigelia, Exacum*	estimate	Wikstrom *et al.* 2001 (5)	uniform	46	52	relaxed lognormal
Grammitis	A	*Oleadra, Davalia, Polypodium*	estimate	Schneider *et al.* 2004a (3), 2004b (10)	normal	49.57	+/-4.84	relaxed lognormal
Howea	A	*Acanthophoenix rubra, Tectiphiala ferox, Deckenia nobilis*	estimate	Savolainen *et al.* 2006 (11)	normal	7.61	+/-1.7	relaxed lognormal
Howea	B	*Dictyosperma album,Rhopaloblaste ledermanniana*	estimate	Savolainen *et al.* 2006 (11)	normal	7.75	+/-1.83	relaxed lognormal
Howea	C	*Chamaedorea microspadix, Gaussia maya, Wendlandiella gracilis, Hyophorbe lagenicaulis*	estimate	Savolainen *et al.* 2006 (11)	normal	7.75	+/-0.02	relaxed lognormal
Howea	D	Root	estimate	Savolainen *et al.* 2006 (11)	normal	88.93	+/-9.38	relaxed lognormal
Korthalsella	A	*Viscum, Korthalsella*	estimate	Wikstrom *et al.* 2001 (5), Molvray *et al.* 1999 (12)	uniform	26	44	relaxed lognormal
Macropiper	A	*Peperomia, Piper*	estimate	Wikstrom *et al.* 2001 (5)	uniform	43	47	relaxed lognormal
Metrosideros	A	Subg.*Mearnsia, Metrosideros*	fossil seed capsules (min)	Pole 2008 (13), Sytsma *et al.* 2004 (14)	uniform	23.03	80	relaxed lognormal
Metrosideros	B	*Tepualia, Metrosideros, Cleozia*	fossil pollen (min)	Pole 1994 (15), Sytsma *et al.* 2004 (14)	uniform	65.5	80	relaxed lognormal
Myrsine	A	*Anagallis, Ardesia*	estimate	Wikstrom *et al.* 2001 (5)	uniform	15	24	relaxed lognormal
Ophioglossum	A	*Ophioglossum, Botrychum*	estimate	Pryer *et al.* 2004 (9)	normal	153.45	+/-11.98	relaxed lognormal
Paspalum	A	*Axonopus furcatus, Paspalum distichum*	estimate	Vicentini *et al.* 2008 (16)	normal	18.5	+/-4.1	strict
Pellaea and *Cheilanthes*	A	*Bommeria, Adiantum*	fossil (min)	Schneider *et al.* 2004a (3)	normal	83.4	+/-16.18	relaxed lognormal
Peperomia	A	*Peperomia, Piper*	estimate	Wikstrom *et al.* 2001 (5)	normal	43	47	relaxed lognormal
Polystichum	A	*Polystichum, Dryopteris*	estimate	Schneider *et al.* 2004a (3)	normal	96.7	+/-7.96	relaxed lognormal
Pteris	A	*Adiantum, Ceratopsis, Blechnum*	fossil (min)	Schneider *et al.* 2004a (3)	normal	148.56	+/-9.44	relaxed lognormal
Pterostylis	A	*Megastylis, Pterostylis, Spiranthes*	estimate	Ramirez *et al.* 2007 (17)	uniform	45	65	relaxed lognormal
Xylosma	A	*Idesia, Flacourtia, Populus, Abatia, Xylosma*	estimate	Wikstrom *et al.* 2001 (5)	uniform	26	33	relaxed lognormal

Table S34 Run parameters for Bayesian phylogenetic reconstructions

Genus	Chain length	Burnin	Tree Prior	Base Frequecies	Substitution models (Gene region)
Adiantum	20million	2million	speciation:yule process	empirical	GTR+G(rbcL)
Alyxia	40million	4million	speciation:yule process	empirical	GTR+G(rps16), GTR (trnL+trnL-trnF)
Asplenium	40million	4million	speciation:yule process	empirical	GTR+I+G(rbcL), GTR+G(trnL-trnF)
Blechnum	120million	12million	speciation:yule process	empirical	GTR+I+G(rbcL), GTR+G(trnL+trnL-trnF)
Calystegia	20million	2million	speciation:yule process	empirical	HKY+I (ITS)
Carex	20million	2million	speciation:yule process	empirical	GTR+I+G(ITS)
Coprosma	40million	5million	speciation:yule process	empirical	GTR+G(5S), GTR+I+G(ITS),GTR+G(rps16)
Cryptocarya	40million	4million	speciation:yule process	empirical	HKY+G(trnL) GTR+G(trnL-trnF)
Cyathea	60million	16million	speciation:yule process	empirical	GTR+I+G(rbcL), GTR+G(trnL-trnF)
Dendrobium	20million	2million	speciation:yule process	empirical	GTR+G(ITS)
Doodia	280million	32million	speciation:yule process	empirical	GTR+G(trnL+trnL-trnF), HKY+I(rbcL)
Geniostoma	500million	50million	speciation:yule process	empirical	GTR+G(ITS), GTR+G(trnL), GTR(trnL-trnF)
Grammitis	40million	4million	speciation:yule process	empirical	GTR+I+G(rbcL), HKY+G(trnL-trnF)
Howea	400million	86million	speciation:yule process	empirical	GTR+G(PRK), GTR + G(rpb2)
Hymenophyllum	40million	4million	speciation:yule process	empirical	GTR+I+G(rbcL), GTR+I+G(rps4)
Korthalsella	80million	8million	speciation:yule process	empirical	GTR+I+G(trnL + trnL-trnF), GTR+I+G(ITS)
Macropiper	20million	2million	speciation:yule process	empirical	HKY+G(ITS)
Melicope	20million	2million	speciation:yule process	empirical	GTR+I(ITS),GTR+G(trnL + trnL-trnF)
Metrosideros	180million	18million	speciation:yule process	empirical	HKY+G(ETS),GTR+I+G(ITS),GTR(5S),GTR(rps16),HKY(trnL-trnF)
Microsorum	20million	2million	speciation:yule process	empirical	GTR+G(rps4)
Myrsine	60million	16million	speciation:yule process	empirical	GTR+G(ITS)
Olearia	20million	2million	speciation:yule process	empirical	GTR+I+G(ITS)
Ophioglossum	100million	10million	speciation:yule process	empirical	GTR+I+G(rbcL),HKY+G(trnL-trnF)
Paspalum	80million	8million	speciation:yule process	empirical	GTR+G(atpB-rbcL),HKY+I+G(trnG),GTR+I+G(trnL),HKY+I+G(trnL-trnF)
Pellaea and *Cheilanthes*	20million	2million	speciation:yule process	empirical	GTR+I+G(rps4),GTR+G(trnL-trnF)
Peperomia	40million	4million	speciation:yule process	empirical	GTR+I+G(ITS),GTR+G(trnL-trnF)
Polystichum	20million	2million	speciation:yule process	empirical	GTR+G(rps4)
Pteris	20million	2million	speciation:yule process	empirical	GTR+I+G(rbcL)
Pterostylis	20million	2 million	speciation:yule process	empirical	GTR+G(ITS)
Rytidosperma	120million	12million	speciation:yule process	empirical	HKY+G(atpB-rbcL), GTR+I+G(ITS), GTR+G(rpl16), HKY+G(trnL), GTR+G(trnL-trnF)
Xylosma	220 million	22 million	speciation:yule process	empirical	HKY+G(trnL), GTR+G(trnL-trnF)

Table S35 Gene regions included in Chapter 2

Gene	Type	Description
rbcL	cpDNA	ribulose 1,5-bisphosphate carboxylase/oxygenase large subunit (rbcL) gene
rps16	cpDNA	ribosomal protein S16 (rps16) gene
trnL	cpDNA	tRNA-Leu (trnL) gene
trnL-trnF	cpDNA	trnL-trnF intergenic spacer
ITS	nrDNA	internal transcribed spacer 1, 5.8S ribosomal RNA gene and internal transcribed spacer 2
atpB-rbcL	cpDNA	atpB-rbcL intergenic spacer
5S	nrDNA	5S nontrannscribed spacer
rps4	cpDNA	small ribosomal protein 4-like gene and rps4-trnS intergenic spacer region
ETS	nrDNA	external transcribed spacer
trnG	cpDNA	tRNA-Gly (trnG) gene, intron

Table S36 Primers used for DNA amplification and sequencing

Region	Genus	Primers	Source
rbcL	*Adiantum* *Asplenium* *Blechnum* *Doodia* *Grammitis* *Pteris*	[RBCL1379R*] TCACAAGCAGCAGCTAGTTCAGGACTC [RBCLF1F*] ATGTCACCACAAACAGAAACTAAAGCAAGT	Pryer *et al*. 2001 (18) Wolf *et al*. 1994 (19)
rbcL	*Hymenophyllum* *Ophioglossum*	[rbcL_1-1(aF)_1] ATGTCACCACAAACAGAGACTAAAGC [rbcL_M1390R] CTTTCCAWAYTTCACAAGCAGCAG	Hasebe *et al.* 1994 (20) Lewis *et al.* 1997 (21)
rbcL	*Cyathea*	[ESRBCL1F] ATGTCACCACAAACGGAGACTAAAGC [ES645F] AGAYCGTTTCYTATTYGTAGCAGAAGC [ES663R] TACRAATARGAAACGRTCTCTCCAACG [ESRBCL1361R] TCAGGACTCCACTTACTAGCTTCACG	Korall *et al.* (22) Korall *et al.* (22) Korall *et al.* (22) Korall *et al.* (22)
rps16	*Alyxia* *Coprosma* *Metrosideros*	[rps16 2R] TCGGGATCGAACATCAATTGCAAC [rps16 F] GTGGTAGAAAGCAACGTGCGACTT	Oxelman *et al.* 1997 (23) Oxelman *et al.* 1997 (23)
trnL and trnL-F	*Alyxia* *Asplenium* *Blechnum* *Cryptocarya* *Cyathea* *Doodia* *Grammitis* *Geniostoma* *Korthalsella* *Melicope* *Metrosideros* *Ophioglossum* *Pellaea* *Peperomia* *Xylosma*	[trnL-c] CGAAATCGGTAGACGCTACG [trnL-d] GGGGATAGAGGGACTTGAAC [trnL-e] GGTTCAAGTCCCTCTATCCC [trnL-f] ATTTGAACTGGTGACACGAG	Taberlet *et al.* 1991 (24) Taberlet *et al.* 1991 (24) Taberlet *et al.* 1991 (24) Taberlet *et al.* 1991 (24)
ITS	*Calystegia* *Coprosma* *Geniostoma* *Korthalsella* *Macropiper* *Melicope* *Metrosideros* *Myrsine* *Olearia* *Peperomia* *Pterostylis*	[ITS 4] TCCTCCGCTTATTGATATGC [ITS 5] GGAAGTAAAAGTCGTAACAAGG	White *et al.* 1990 (25) White *et al.* 1990 (25)
5S	*Coprosma* *Metrosideros*	[5S-nts F] TGGGAAGTCCTYGTGTTGCA [5S-nts R] KTMGYGCTGGTATGATCGCA	Cox *et al.* 1992 (26) Cox *et al.* 1992 (26)
ETS	*Metrosideros*	[ETS_Metrosideros_18S] GAGCCATTCGCAGTTTCACAG [ETS_Metrosideros_9bp] CATGGGCGTGTGAGTGGTGA	Wright *et al.* 2000 (27) Wright *et al.* 2000 (27)
rps4	*Hymenophyllum* *Pellaea*	[rps4-trnS_rps5] ATGTCCCGTTATCGAGGACCT [rps4-trnS_trnS] TACCGAGGGTTCGAATC	Nadot *et al.* 1994 (28) Nadot *et al.* 1994 (28)

Supporting Information: Supplemental References

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