

Supplementary Material 1. Paleobiogeographical results of BioGeoBEARS.

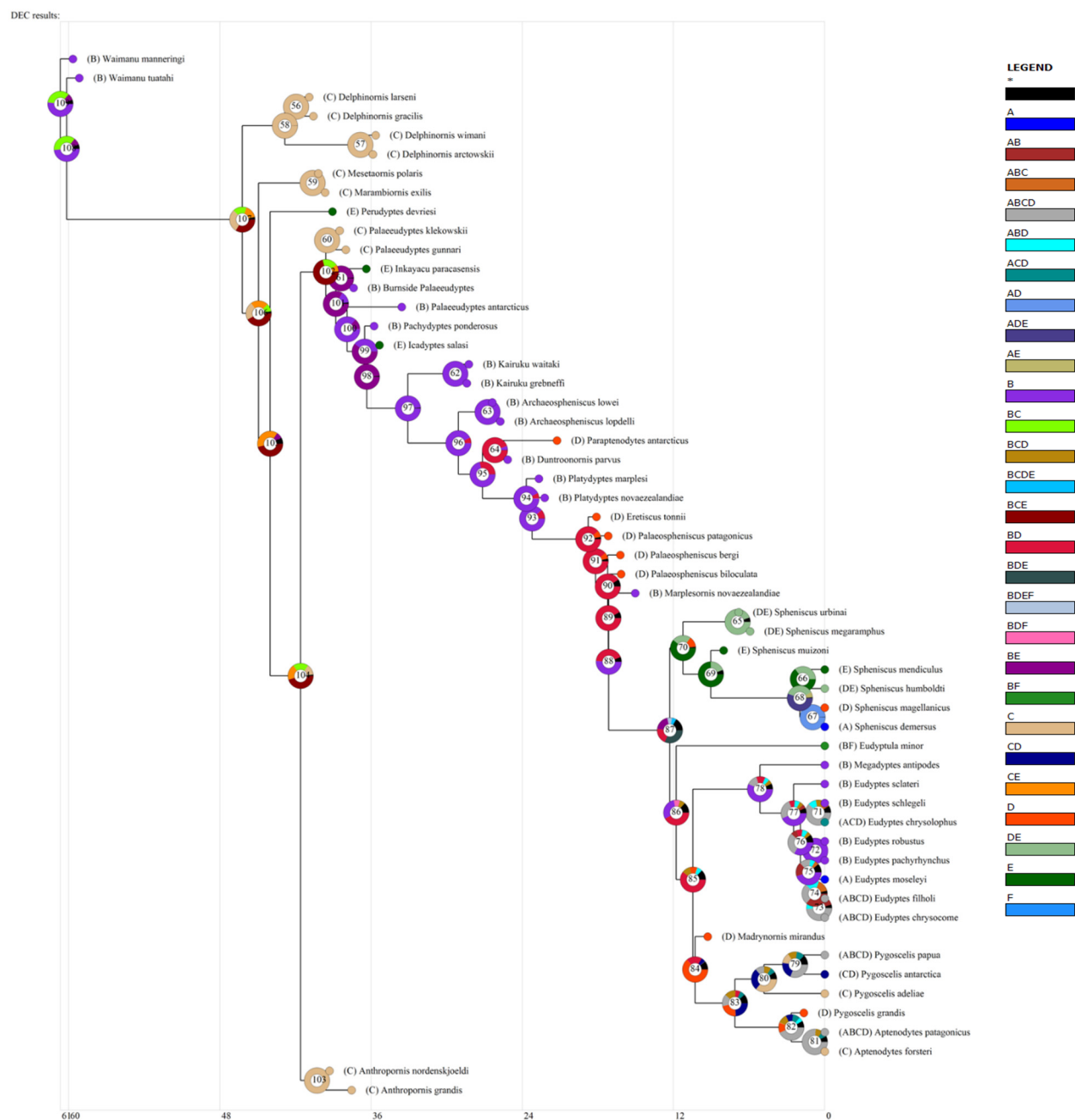


Figure S1. Biogeographical results of BioGeoBEARS under DEC model. Areas: A: Africa. B: New Zealand. C: Antarctica. D: Southern South America. E: Central South America. F: Australia. *No area estimated.

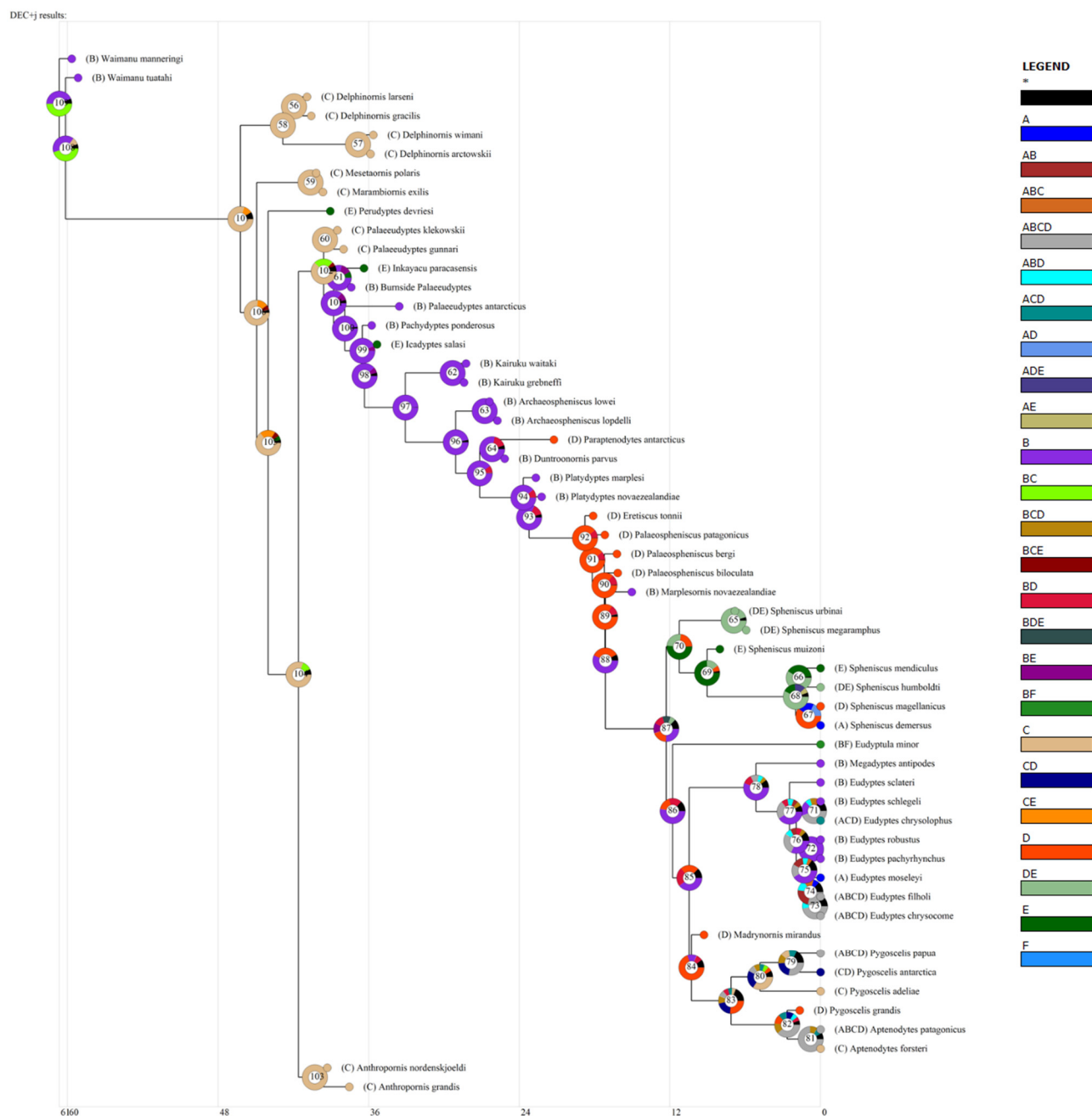


Figure S2. Biogeographical results of BioGeoBEARS under DEC+J model. Areas: A: Africa. B: New Zealand. C: Antarctica. D: Southern South America. E: Central South America. F: Australia. *No area estimated.

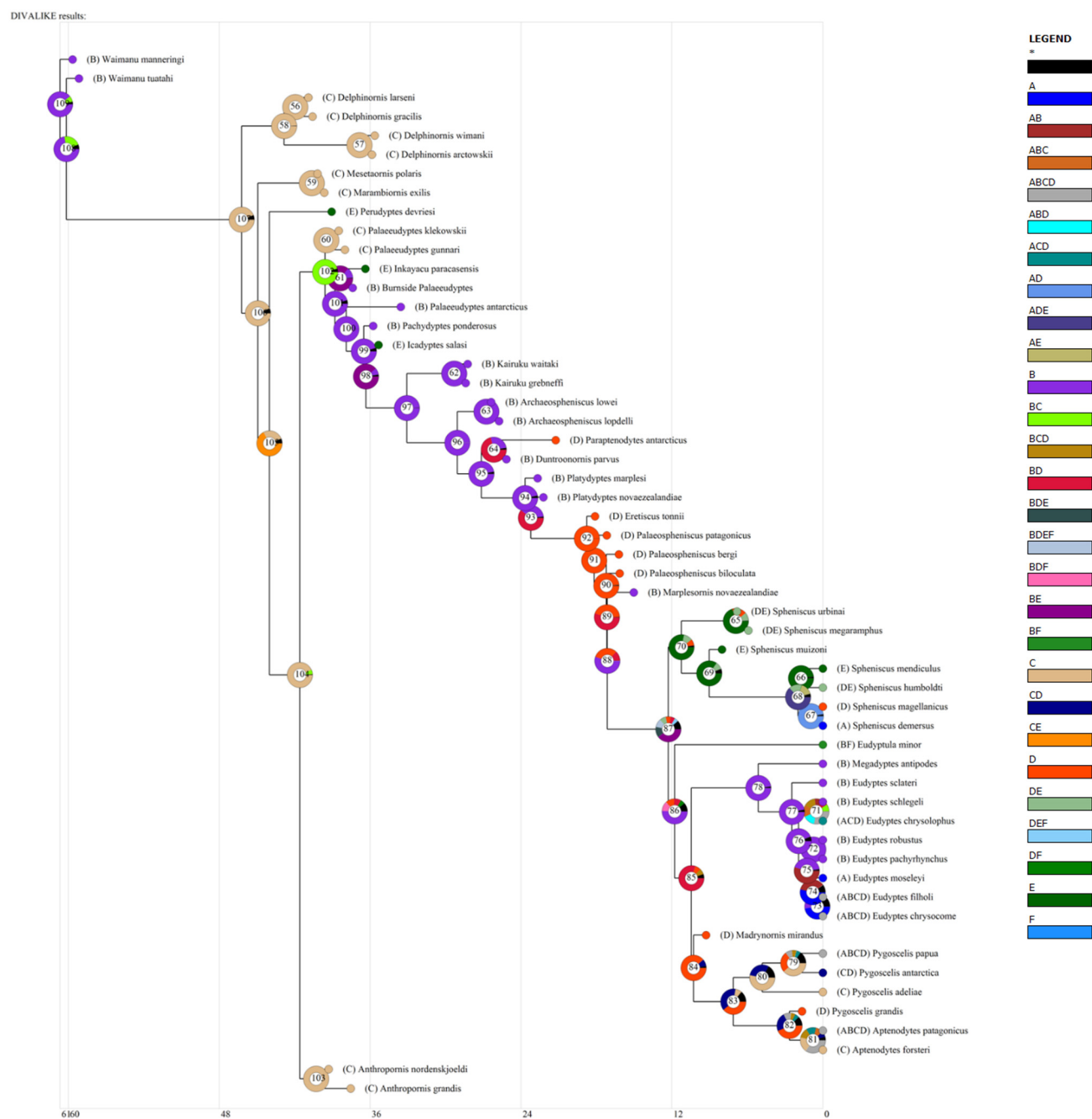


Figure S3. Biogeographical results of BioGeoBEARS under DIVALIKE model. Areas: A: Africa. B: New Zealand. C: Antarctica. D: South of South America. E: Central South America. F: Australia. *No area estimated.

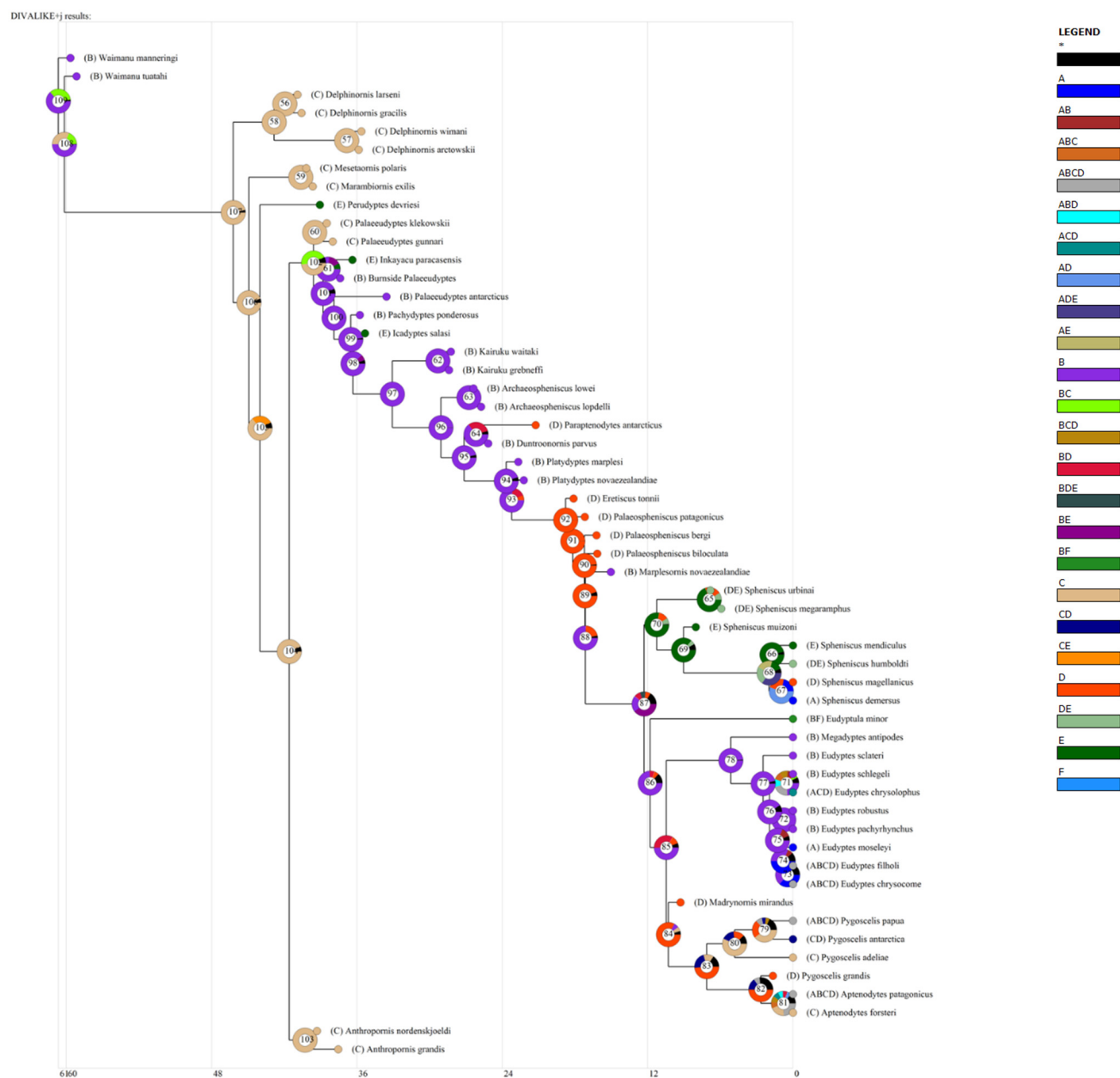


Figure S4. Biogeographical results of BioGeoBEARS under DIVALIKE+J model. Areas: A: Africa. B: New Zealand. C: Antarctica. D: South of South America. E: Central South America. F: Australia. *No area estimated.

BAYAREALIKE results:

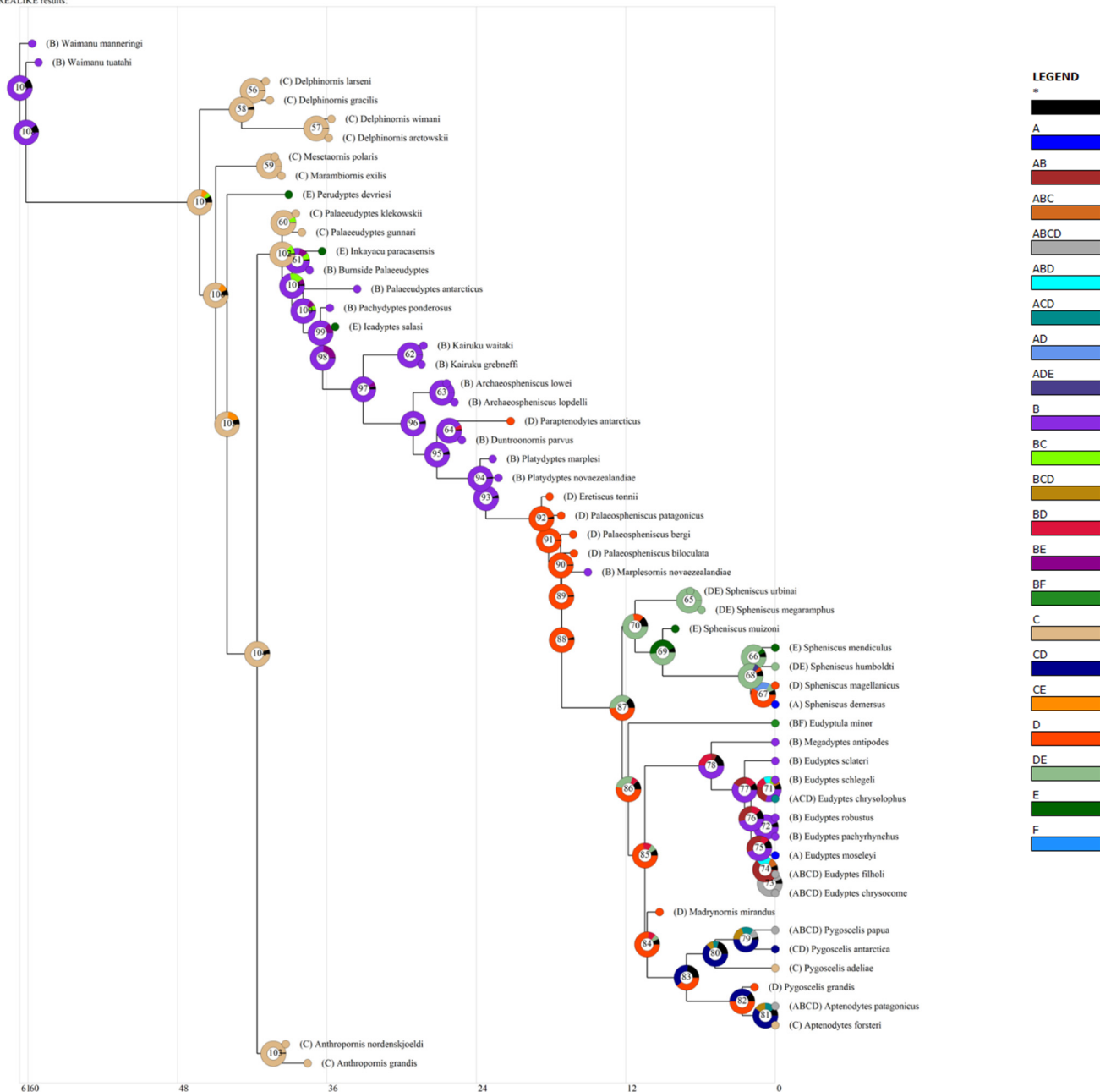


Figure S5. Biogeographical results of BioGeoBEARS under **BAYAREALIKE** model. Areas: A: Africa. B: New Zealand. C: Antarctica. D: South of South America. E: Central South America. F: Australia. *No area estimated.

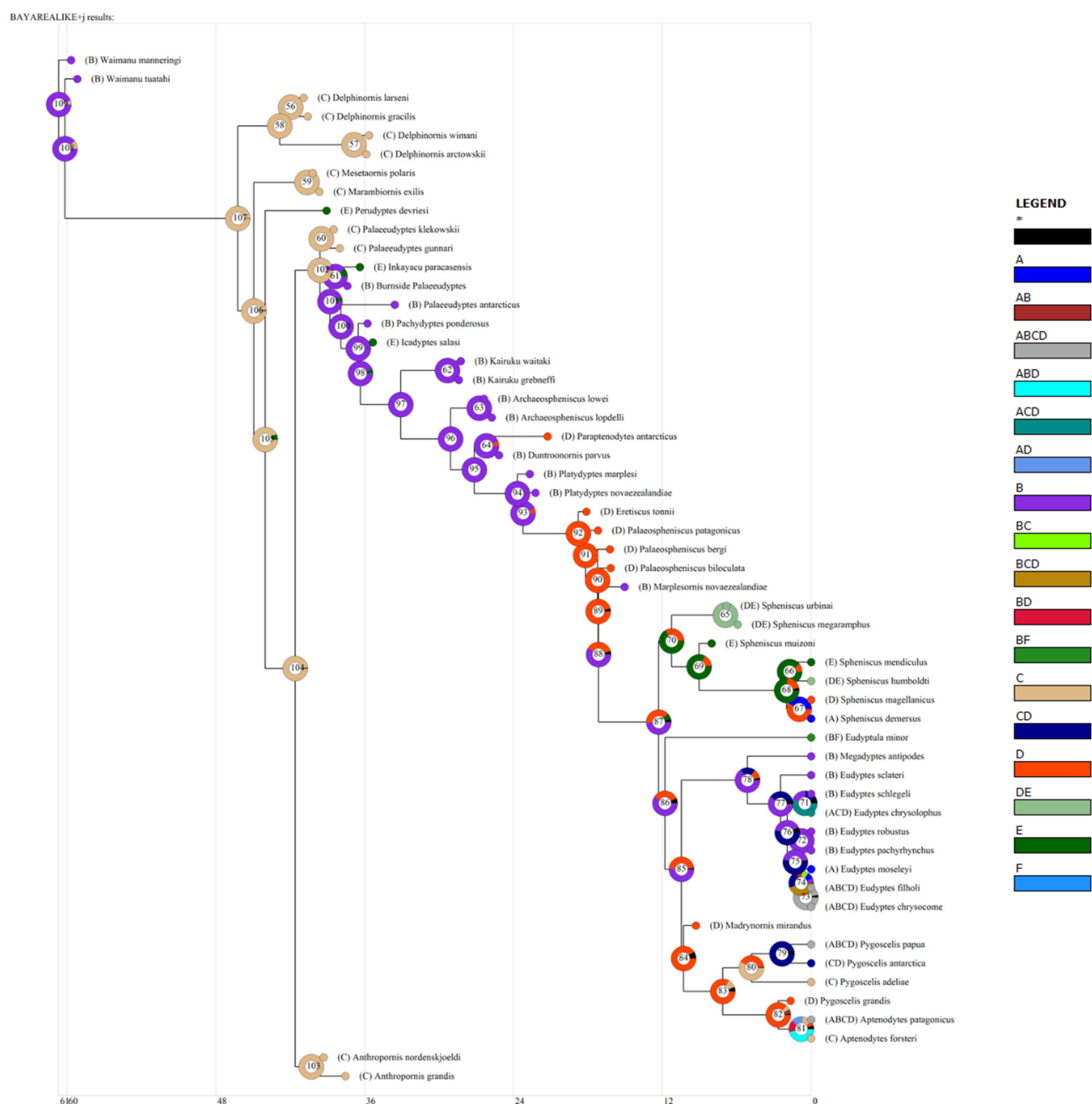


Figure S6. Biogeographical results of BioGeoBEARS under **BAYAREALIKE+J** model (the better model according to AIC value). Areas: A: Africa. B: New Zealand. C: Antarctica. D: South of South America. E: Central South America. F: Australia. *No area estimated.

Supplementary Material 2. Complementary statistical information

Table S1. Results of model test with statistical support of BioGeoBEARS analyses for all models (in blue the best model).

Model	LnL	numparams	d	e	j	AICc	AICc_wt
DEC	-139.9	2	0.026	0.0011	0	284	2.6×10^{-6}
DEC+J	-133	3	0.021	1.0×10^{-12}	0.033	272.5	8×10^{-4}
DIVALIKE	-151.4	2	0.035	0.017	0	307.1	2.5×10^{-11}
DIVALIKE+J	-143.7	3	0.025	9.9×10^{-9}	0.030	294	1.8×10^{-8}
BAYAREALIKE	-150.2	2	0.027	0.12	0	304.6	8.9×10^{-11}
BAYAREALIKE+J	-125.9	3	0.013	1.0×10^{-7}	0.055	258.3	1.00

Note: Use the highest AICc_wt to select the best model

Table S2. Complementary results of model test with statistical support of BioGeoBEARS analyses comparing all models according to +J parameter.

Alternative (A)	Null (N)	LnLA	LnLN	DFA	DFN	DF	Dstatistic	p-value	test	tail	AIC1	AIC2	AICwt1	AICwt2
DEC+J	DEC	-133	-139.9	3	2	1	13.73	0.0002	chi-squared	one-tailed	272	283.8	1.00	0.0028
DIVALIKE+J	DIVALIKE	-143.7	-151.4	3	2	1	15.38	8.8×10^{-5}	chi-squared	one-tailed	293.5	306.9	1.00	0.0012
BAYAREALIKE+J	BAYAREALIKE	-125.9	-150.2	3	2	1	48.51	3.3×10^{-12}	chi-squared	one-tailed	257.8	304.3	1.00	7.9×10^{-11}

Note: The p -value of the LRT (Likelihood Ratio Test) tells you whether or not you can reject the null hypothesis that without J and +J confer equal likelihoods on the data.