

Supporting Information Table S1

Table S1 Test statistics of the relationship between breeding system and 19 climate variables in the *Anogra + Kleinia* clade (*Oenothera*, Onagraceae)

Climate variable	Code	t	p	# trees	pL	pQ
Mean T, coldest quarter	BS1	2.768	0.02	797	0.29	0.06
	BS2	2.324	0.03	854	0.33	0.07
P, driest month	BS1	2.552	0.02	956	0.02	0.03
	BS2	2.920	0.01	302	0.07	0.09
Min T, coldest month	BS1	2.450	0.03	707	0.04	0.06
	BS2	3.491	0.01	904	0.06	0.09
P, driest quarter	BS1	2.333	0.03	854	0.03	0.04
	BS2	3.907	0.01	351	0.09	0.12
P, coldest quarter	BS1	-1.917	0.05	583	0.17	0.21
	BS2	-1.089	0.16	0	0.10	0.13
Mean annual T	BS1	1.804	0.06	318	0.10	0.10
	BS2	0.796	0.23	0	0.27	0.22
Max T, warmest month	BS1	1.530	0.09	59	0.06	0.06
	BS2	0.574	0.29	0	0.15	0.15
Mean T, wettest quarter	BS1	-0.976	0.18	0	0.33	0.41
	BS2	-1.823	0.06	0	0.64	0.79
Mean T, driest quarter	BS1	0.961	0.19	2	0.29	0.16
	BS2	0.814	0.22	0	0.17	0.11
Annual T range	BS1	-0.855	0.21	124	0.76	0.83
	BS2	0.145	0.45	0	0.65	0.72
P seasonality	BS1	-0.783	0.23	3	0.30	0.41
	BS2	-0.675	0.26	0	0.32	0.34
P, warmest quarter	BS1	0.744	0.24	0	0.33	0.34
	BS2	0.686	0.26	0	0.12	0.10
Mean T, warmest quarter	BS1	0.659	0.27	46	0.13	0.13
	BS2	0.087	0.47	0	0.38	0.37
P, wettest month	BS1	-0.445	0.34	0	0.92	0.87
	BS2	-1.061	0.17	0	0.96	0.83
P, wettest quarter	BS1	-0.387	0.36	0	0.83	0.77
	BS2	-0.947	0.19	0	0.95	0.82
Annual P	BS1	0.347	0.37	0	0.41	0.41
	BS2	0.299	0.39	1	0.51	0.48
Isothermality	BS1	-0.242	0.41	13	0.06	0.06
	BS2	0.365	0.36	0	0.05	0.05
T seasonality	BS1	-0.203	0.42	4	0.29	0.32
	BS2	-0.489	0.32	0	0.29	0.33
Mean diurnal range	BS1	0.169	0.44	0	0.94	0.92
	BS2	0.369	0.36	0	0.84	0.84

We show t- and p-values for phylogenetically-independent contrasts on the maximum *a posteriori* tree (6 degrees of freedom), and the number of trees on which contrasts were significantly different from zero (out of a posterior sample of 1000 trees), given two alternative coding schemes for breeding system (BS1, BS2). We also report the significance of linear and quadratic terms from logistic regressions that do not correct for relatedness (pL and pQ, respectively).