

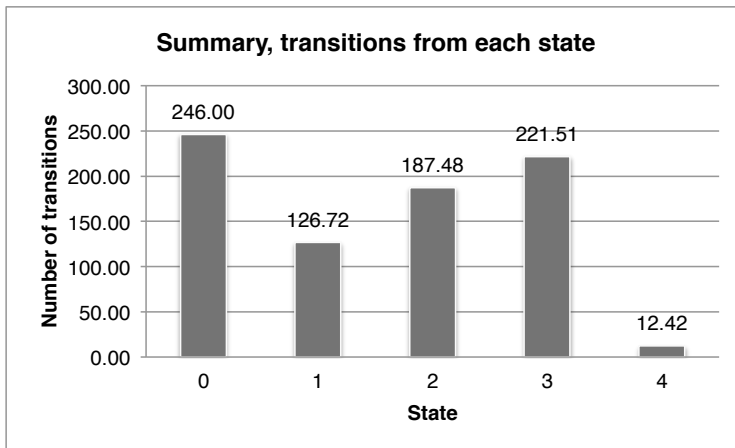
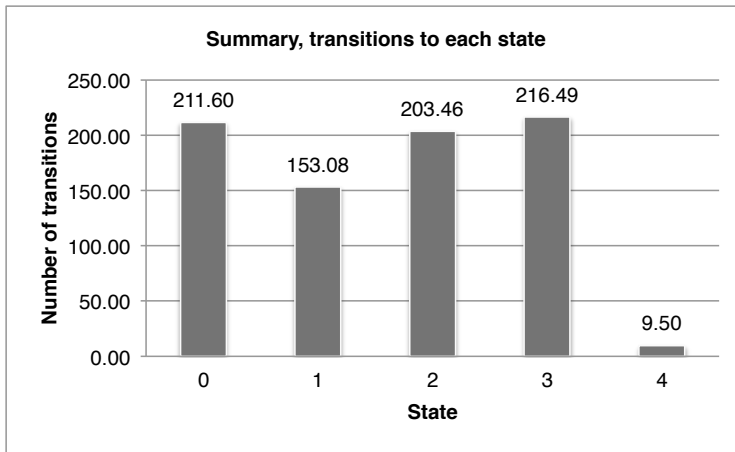
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

A. Primary flower color in the Gesneriaceae. 0, white, 1, yellow, 2, red, 3, purple, 4, green.

States	to 0	1	2	3	4	Total
0	-	42.20	68.15	98.53	2.72	211.60
1	52.89	-	52.02	46.91	1.26	153.08
2	80.58	44.76	-	73.26	4.86	203.46
3	109.34	38.61	64.96	-	3.58	216.49
4	3.19	1.15	2.35	2.81	-	9.50
Total	246.00	126.72	187.48	221.51	12.42	

Proportion of transitions from one state to the others.

0, white	1, yellow	2, red	3, purple	4, green
<i>to purple</i>	0.47	<i>to white</i> 0.35	<i>to white</i> 0.40	<i>to white</i> 0.51
<i>to red</i>	0.32	<i>to red</i> 0.34	<i>to purple</i> 0.36	<i>to red</i> 0.30
<i>to yellow</i>	0.20	<i>to purple</i> 0.31	<i>to yellow</i> 0.22	<i>to yellow</i> 0.18
<i>to green</i>	0.01	<i>to green</i> 0.01	<i>to green</i> 0.02	<i>to yellow</i> 0.12



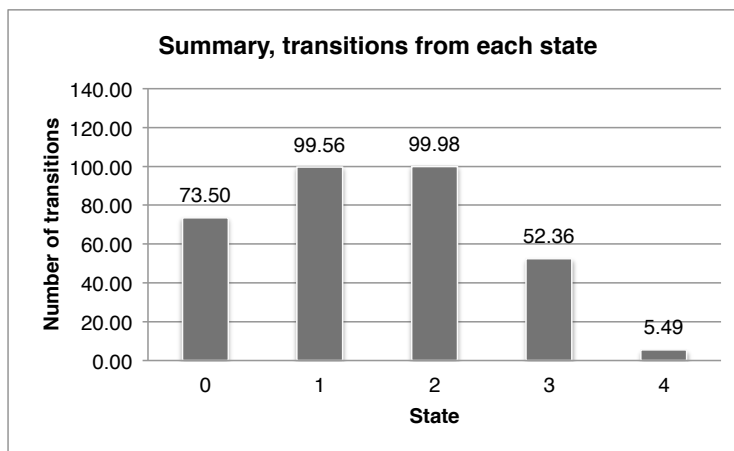
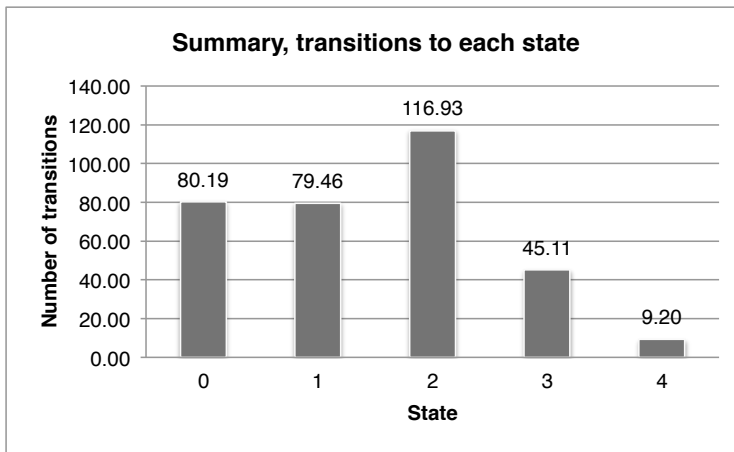
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

B. Primary flower color in the Gesnerioideae. 0, white; 1, yellow; 2, red; 3, purple; 4, green.

States	to 0	1	2	3	4	Total
0	-	23.18	35.20	13.45	1.68	73.50
1	26.80	-	58.88	12.61	1.27	99.56
2	35.00	41.89	-	18.23	4.86	99.98
3	17.09	13.31	20.57	-	1.39	52.36
4	1.31	1.08	2.28	0.82	-	5.49
Total	80.19	79.46	116.93	45.11	9.20	

Proportion of transitions from one state to the others.

0, white	1, yellow	2, red	3, purple	4, green					
<i>to red</i>	0.48	<i>to red</i>	0.59	<i>to yellow</i>	0.42	<i>to red</i>	0.39	<i>to red</i>	0.42
<i>to yellow</i>	0.32	<i>to white</i>	0.27	<i>to white</i>	0.35	<i>to white</i>	0.33	<i>to white</i>	0.24
<i>to purple</i>	0.18	<i>to purple</i>	0.13	<i>to purple</i>	0.18	<i>to yellow</i>	0.25	<i>to yellow</i>	0.20
<i>to green</i>	0.02	<i>to green</i>	0.01	<i>to green</i>	0.05	<i>to green</i>	0.03	<i>to purple</i>	0.15



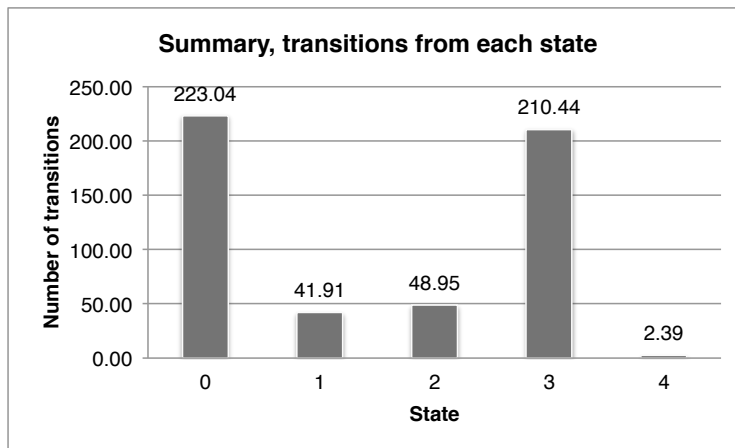
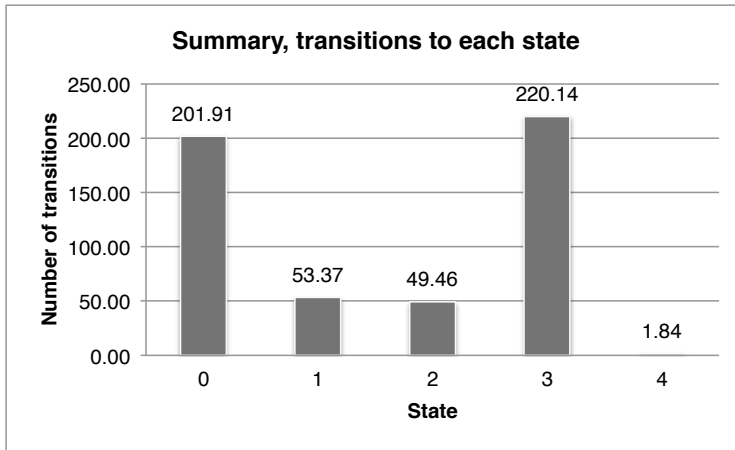
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C. Primary flower color in the Didymocarpoideae. 0, white; 1, yellow; 2, red; 3, purple; 4, green.

States	to 0	1	2	3	4	Total
0	-	19.15	21.39	160.70	0.66	201.91
1	24.23	-	3.74	25.31	0.10	53.37
2	22.84	2.94	-	23.59	0.09	49.46
3	175.17	19.72	23.71	-	1.54	220.14
4	0.80	0.10	0.11	0.83	-	1.84
Total	223.04	41.91	48.95	210.44	2.39	

Proportion of transitions from one state to the others.

0, white	1, yellow	2, red	3, purple	4, green
<i>to purple</i>	0.80	<i>to purple</i> 0.47	<i>to purple</i> 0.48	<i>to white</i> 0.80
<i>to red</i>	0.11	<i>to white</i> 0.45	<i>to white</i> 0.46	<i>to red</i> 0.11
<i>to yellow</i>	0.09	<i>to red</i> 0.07	<i>to yellow</i> 0.06	<i>to yellow</i> 0.09
<i>to green</i>	0.00	<i>to green</i> 0.00	<i>to green</i> 0.00	<i>to green</i> 0.01
				<i>to purple</i> 0.45
				<i>to white</i> 0.44
				<i>to red</i> 0.06
				<i>to yellow</i> 0.05



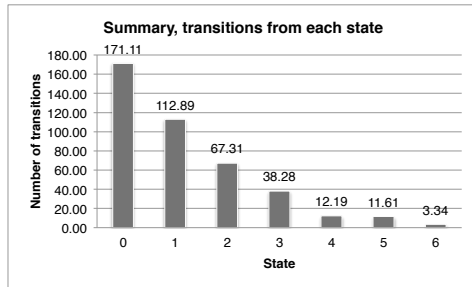
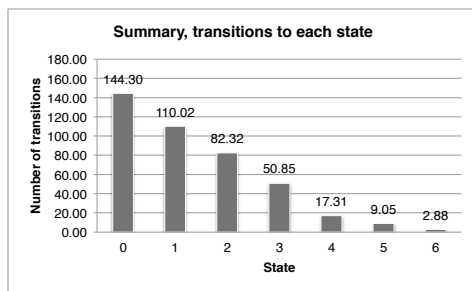
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

D. Corolla shape in the Gesneriaceae. 0, tubular; 1, funnellform; 2, campanulate; 3, gibbous ; 4, salverform; 5, rotate; 6, personate.

States	to 0	1	2	3	4	5	6	Total
0	-	70.95	43.06	19.63	5.00	4.21	1.46	144.30
1	75.60	-	15.22	11.04	4.65	2.36	1.16	110.02
2	54.56	15.83	-	5.88	1.51	4.26	0.29	82.32
3	28.11	16.44	4.74	-	0.90	0.50	0.16	50.85
4	7.00	7.75	1.13	1.24	-	0.13	0.06	17.31
5	4.03	1.42	2.92	0.38	0.10	-	0.21	9.05
6	1.81	0.51	0.23	0.12	0.04	0.17	-	2.88
Total	171.11	112.89	67.31	38.28	12.19	11.61	3.34	

Proportion of transitions from one state to the others.

0, tubular	1, funnellform	2, campanulate	3, gibbous	4, salverform	5, rotate	6, personate
<i>to funnellform</i> 0.49	<i>to tubular</i> 0.69	<i>to tubular</i> 0.66	<i>to tubular</i> 0.55	<i>to funnellform</i> 0.45	<i>to tubular</i> 0.44	<i>to tubular</i> 0.63
<i>to campanulate</i> 0.30	<i>to campanulate</i> 0.14	<i>to funnellform</i> 0.19	<i>to funnellform</i> 0.32	<i>to tubular</i> 0.40	<i>to campanulate</i> 0.32	<i>to funnellform</i> 0.18
<i>to gibbous</i> 0.14	<i>to gibbous</i> 0.10	<i>to gibbous</i> 0.07	<i>to campanulate</i> 0.09	<i>to gibbous</i> 0.07	<i>to funnellform</i> 0.16	<i>to campanulate</i> 0.08
<i>to salverform</i> 0.03	<i>to salverform</i> 0.04	<i>to rotate</i> 0.05	<i>to salverform</i> 0.02	<i>to campanulate</i> 0.07	<i>to gibbous</i> 0.04	<i>to rotate</i> 0.06
<i>to rotate</i> 0.03	<i>to rotate</i> 0.02	<i>to salverform</i> 0.02	<i>to rotate</i> 0.01	<i>to rotate</i> 0.01	<i>to personate</i> 0.02	<i>to gibbous</i> 0.04
<i>to personate</i> 0.01	<i>to personate</i> 0.01	<i>to personate</i> 0.00	<i>to personate</i> 0.00	<i>to personate</i> 0.00	<i>to salverform</i> 0.01	<i>to salverform</i> 0.01



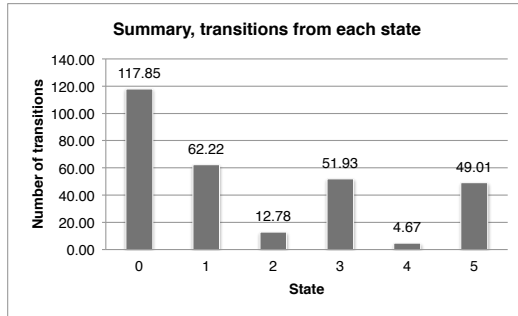
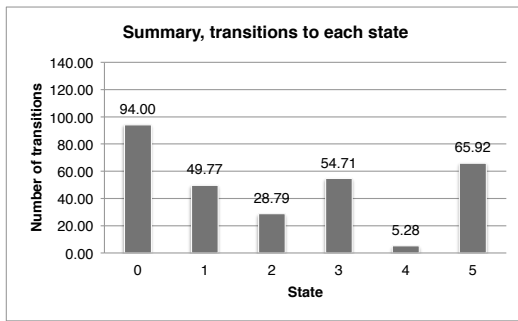
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

E. Corolla shape in the Gesnerioideae. 0, tubular; 1, funnellform; 2, salverform; 3, campanulate; 4, rotate; 5, gibbous.

States	to 0	1	2	3	4	5	Total
0	-	29.92	6.17	29.60	1.58	26.73	94.00
1	27.89	-	2.17	7.64	0.46	11.62	49.77
2	13.29	7.01	-	4.72	0.21	3.57	28.79
3	36.55	7.53	2.10	-	1.91	6.61	54.71
4	1.64	0.52	0.14	2.51	-	0.48	5.28
5	38.48	17.24	2.21	7.47	0.51	-	65.92
Total	117.85	62.22	12.78	51.93	4.67	49.01	

Proportion of transitions from one state to the others.

0, tubular	1, funnellform	2, salverform	3, campanulate	4, rotate	5, gibbous						
<i>to funnellform</i>	0.32	<i>to tubular</i>	0.56	<i>to tubular</i>	0.46	<i>to tubular</i>	0.67	<i>to campanulate</i>	0.47	<i>to tubular</i>	0.58
<i>to campanulate</i>	0.31	<i>to gibbous</i>	0.23	<i>to funnellform</i>	0.24	<i>to funnellform</i>	0.14	<i>to tubular</i>	0.31	<i>to funnellform</i>	0.26
<i>to gibbous</i>	0.28	<i>to campanulate</i>	0.15	<i>to campanulate</i>	0.16	<i>to gibbous</i>	0.12	<i>to funnellform</i>	0.10	<i>to campanulate</i>	0.11
<i>to salverform</i>	0.07	<i>to salverform</i>	0.04	<i>to gibbous</i>	0.12	<i>to salverform</i>	0.04	<i>to gibbous</i>	0.09	<i>to salverform</i>	0.03
<i>to rotate</i>	0.02	<i>to rotate</i>	0.01	<i>to rotate</i>	0.01	<i>to rotate</i>	0.03	<i>to salverform</i>	0.03	<i>to rotate</i>	0.01



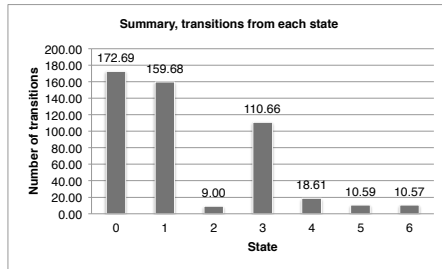
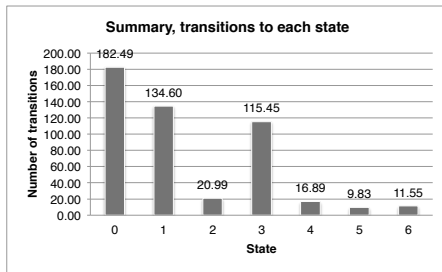
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

F. Corolla shape in the Didymocarpoideae. 0, tubular; 1, funnellform; 2, salverform; 3, campanulate; 4, rotate; 5, gibbous; 6, personate.

States	to 0	1	2	3	4	5	6	Total
0	-	99.30	4.04	61.78	8.10	4.56	4.71	182.49
1	83.86	-	2.62	37.57	5.12	2.66	2.77	134.60
2	8.42	7.91	-	3.36	0.49	0.27	0.54	20.99
3	63.03	41.60	1.80	-	4.26	2.69	2.07	115.45
4	7.42	4.95	0.23	3.70	-	0.26	0.33	16.89
5	4.28	2.83	0.13	2.15	0.29	-	0.15	9.83
6	5.68	3.09	0.18	2.10	0.35	0.15	-	11.55
Total	172.69	159.68	9.00	110.66	18.61	10.59	10.57	

Proportion of transitions from one state to the others.

0, tubular	1, funnellform	2, salverform	3, campanulate	4, rotate	5, gibbous	6, personate							
<i>to funnellform</i>	0.54	<i>to tubular</i>	0.62	<i>to tubular</i>	0.40	<i>to tubular</i>	0.55	<i>to tubular</i>	0.44	<i>to tubular</i>	0.44	<i>to tubular</i>	0.49
<i>to campanulate</i>	0.34	<i>to campanulate</i>	0.28	<i>to funnellform</i>	0.38	<i>to funnellform</i>	0.36	<i>to funnellform</i>	0.29	<i>to funnellform</i>	0.29	<i>to funnellform</i>	0.27
<i>to rotate</i>	0.04	<i>to rotate</i>	0.04	<i>to campanulate</i>	0.16	<i>to rotate</i>	0.04	<i>to campanulate</i>	0.22	<i>to campanulate</i>	0.22	<i>to campanulate</i>	0.18
<i>to personate</i>	0.03	<i>to personate</i>	0.02	<i>to personate</i>	0.03	<i>to gibbous</i>	0.02	<i>to personate</i>	0.02	<i>to rotate</i>	0.03	<i>to rotate</i>	0.03
<i>to gibbous</i>	0.02	<i>to gibbous</i>	0.02	<i>to rotate</i>	0.02	<i>to personate</i>	0.02	<i>to gibbous</i>	0.02	<i>to personate</i>	0.02	<i>to salverform</i>	0.02
<i>to salverform</i>	0.02	<i>to salverform</i>	0.02	<i>to gibbous</i>	0.01	<i>to salverform</i>	0.02	<i>to salverform</i>	0.01	<i>to salverform</i>	0.01	<i>to gibbous</i>	0.01



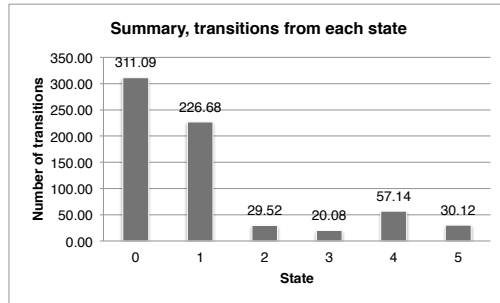
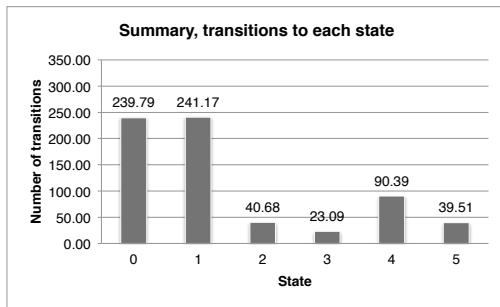
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G. Pollination syndrome in the Gesneriaceae. 0, melittophily/generalist; 1, ornithophily; 2, psychophily; 3, chiropterophily; 4, euglossophily; 5, myophily.

States	to 0	1	2	3	4	5	Total
0	-	163.47	16.74	9.16	32.24	18.17	239.79
1	197.50	-	8.37	8.29	18.79	8.22	241.17
2	24.43	11.55	-	0.62	3.04	1.04	40.68
3	11.60	9.49	0.47	-	1.03	0.50	23.09
4	51.62	32.65	2.52	1.42	-	2.18	90.39
5	25.93	9.53	1.42	0.58	2.05	-	39.51
Total	311.09	226.68	29.52	20.08	57.14	30.12	

Proportion of transitions from one state to the others.

0, melittophily	1, ornithophily	2, psychophily	3, chiropterophily	4, euglossophily	5, myophily
<i>to ornithophily</i> 0.68	<i>to melittophily</i> 0.82	<i>to melittophily</i> 0.60	<i>to melittophily</i> 0.50	<i>to melittophily</i> 0.57	<i>to melittophily</i> 0.66
<i>to euglossophily</i> 0.13	<i>to euglossophily</i> 0.08	<i>to ornithophily</i> 0.28	<i>to ornithophily</i> 0.40	<i>to ornithophily</i> 0.36	<i>to ornithophily</i> 0.24
<i>to myophily</i> 0.08	<i>to psychophily</i> 0.04	<i>to euglossophily</i> 0.08	<i>to euglossophily</i> 0.05	<i>to psychophily</i> 0.03	<i>to euglossophily</i> 0.05
<i>to psychophily</i> 0.07	<i>to chiropterophily</i> 0.03	<i>to myophily</i> 0.03	<i>to myophily</i> 0.02	<i>to myophily</i> 0.02	<i>to psychophily</i> 0.04
<i>to chiropterophily</i> 0.04	<i>to myophily</i> 0.03	<i>to chiropterophily</i> 0.02	<i>to psychophily</i> 0.02	<i>to chiropterophily</i> 0.02	<i>to chiropterophily</i> 0.02



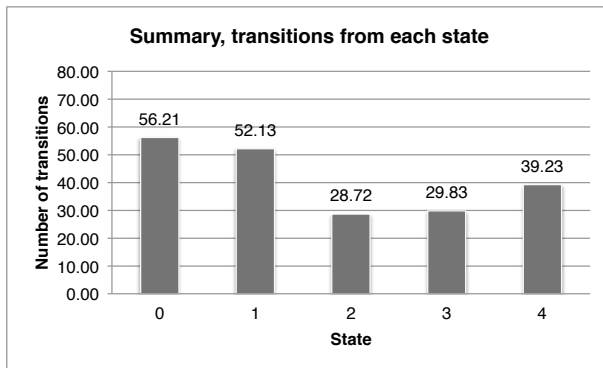
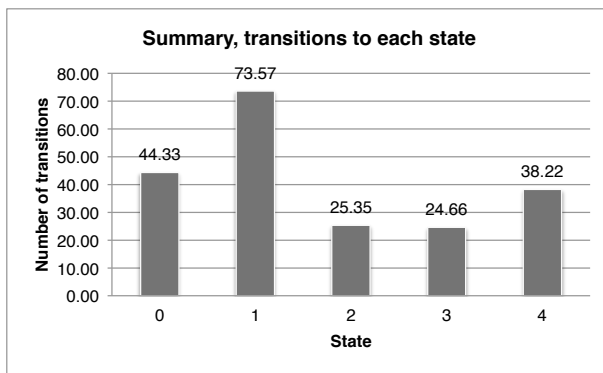
Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

H. Pollination syndrome in the Gesnerioideae. 0, melittophily/generalist; 1, ornithophily; 2, psychophily; 3, chiropterophily; 4, euglossophily.

States	to 0	1	2	3	4	Total
0	-	18.18	9.22	6.77	10.16	44.33
1	27.63	-	11.22	15.46	19.27	73.57
2	8.43	8.89	-	2.90	5.12	25.35
3	7.54	9.46	2.98	-	4.68	24.66
4	12.62	15.61	5.30	4.70	-	38.22
Total	56.21	52.13	28.72	29.83	39.23	

Proportion of transitions from one state to the others.

0, melittophily	1, ornithophily	2, psychophily	3, chiropterophily	4, euglossophily					
<i>to ornithophily</i>	0.41	<i>to melittophily</i>	0.38	<i>to ornithophily</i>	0.35	<i>to ornithophily</i>	0.38	<i>to ornithophily</i>	0.41
<i>to euglossophily</i>	0.23	<i>to euglossophily</i>	0.26	<i>to melittophily</i>	0.33	<i>to melittophily</i>	0.31	<i>to melittophily</i>	0.33
<i>to psychophily</i>	0.21	<i>to chiropterophily</i>	0.21	<i>to euglossophily</i>	0.20	<i>to euglossophily</i>	0.19	<i>to psychophily</i>	0.14
<i>to chiropterophily</i>	0.15	<i>to psychophily</i>	0.15	<i>to chiropterophily</i>	0.12	<i>to psychophily</i>	0.12	<i>to chiropterophily</i>	0.12



Suppl. Appendix 8. SIMMAP ancestral character estimation of flower characters.

I. Pollination syndrome in the Didymocarpoideae. 0, melittophily/generalist; 1, ornithophily; 2, psychophily; 3, myophily.

States	to 0	1	2	3	Total
0	-	43.93	43.16	46.71	133.81
1	52.82	-	17.76	20.23	90.81
2	51.66	18.54	-	19.14	89.34
3	56.46	20.31	18.81	-	95.58
Total	160.94	82.78	79.73	86.08	

Proportion of transitions from one state to the others.

0, melittophily	1, ornithophily	2, psychophily	3, myophily				
<i>to myophily</i>	0.35	<i>to melittophily</i>	0.58	<i>to melittophily</i>	0.58	<i>to melittophily</i>	0.59
<i>to ornithophily</i>	0.33	<i>to myophily</i>	0.22	<i>to myophily</i>	0.21	<i>to ornithophily</i>	0.21
<i>to psychophily</i>	0.32	<i>to psychophily</i>	0.20	<i>to ornithophily</i>	0.21	<i>to psychophily</i>	0.20

