

Appendix 1. Results of the nested clade distance analysis for cytochrome *b* haplotypes of *G. bimaculatus* from South Africa for (a) the 2-step cladogram and (b) the 3-step cladogram (see results in Chapter 4). Interior vs. tip contrasts for *Dc* and *Dn* are indicated with 'I-T' for nested clades where the interior/tip status is known. 'L' Superscript indicates the distance is significantly large at the 5% level, while 'S' superscript indicates that it is significantly small. Inferences from the nested clade distance analysis are given following the inference key of Templeton (2004)

a

2-step cladogram											
Clade	Haplotypes		1-step clades			2-step clades			Inference		
	<i>Dc</i>	<i>Dn</i>	Clade	<i>Dc</i>	<i>Dn</i>	Clade	<i>Dc</i>	<i>Dn</i>			
h2	490.68 ^S	496.95 ^S	1-1	528.00	530.09	2-1	533.68	536.42	1-19-20-2-3-5-6-7		
h16	0	711.95									
h18	0	920.05									
h22	0	920.05									
h24	0	367.40									
h25	0	382.85									
h28	717.28 ^L	728.14 ^L									
h30	0	515.20									
I-T	509.57	-120.03	1-2	408.98	634.92	I-T	119.01	-104.83	1-19-20		
h8	0	410.49 ^L									
h19	0	407.47 ^S									
I-T	0	-3.02 ^S	1-3	224.08	363.23	2-2	457.56	476.02	1-19-20-2-3-4		
h7	166.36	184.03									
h10	0	72.50									
h14	0	575.95									
I-T	166.36	-140.20	1-4	126.39	297.28	1-5	0	327.11	1-6	0	516.92
h4	159.49	150.64									
h26	0	85.16	1-7	0	394.88	1-6	0	516.92	1-7	0	394.88
I-T	159.49	65.48									
			1-8	0	387.12	1-7	0	394.88	1-8	0	387.12
h1	484.79	479.96	1-9	488.96 ^L	480.77 ^L	I-T	329.89	93.46	1-19-20-2-3-5-6-7-8		
h6	114.32 ^S	422.87									
h9	0	354.50									
h11	0	361.56									
h12	0	361.56									
h13	0	361.56									
h15	0	594.67									
h17	0	594.67									
h20	0	1015.71									
h21	0	1015.71									
h27	0	594.67									
I-T	442.30	-45.35									

b

3-step cladogram																					
Haplotypes			1-step clades			2-step clades			3-step clades												
Clade	<i>D_c</i>	<i>D_n</i>	Clade	<i>D_c</i>	<i>D_n</i>	Clade	<i>D_c</i>	<i>D_n</i>	Clade	<i>D_c</i>	<i>D_n</i>	Inference									
h2	490.68 ^S	496.951 ^S	1-1	528.00	530.10	2-1	533.68	533.82	3-1	525.78	523.73	1-19-2-3-5-6-7	1-19-20-2-11-17								
h16	0	711.95																			
h18	0	920.05																			
h22	0	920.05																			
h24	0	367.40																			
h25	0	382.85																			
h28	717.28 ^L	728.14 ^L																			
h30		515.20																			
I-T	509.57	-120.03																			
h8	0	410.49 ^L												1-2	408.98	634.92	2-2	224.08 ^S	458.57	3-2	471.61
h19	0	407.47 ^S																			
I-T	0	-3.019 ^S	I-T	None																	
h7	166.36	185.41	1-3	251.35	249.35 ^L	I-T	309.60 ^L	75.26	I-T	None	None										
h14	0	581.04																			
I-T	166.36	-395.63																			
h10	0	72.50																			
I-T	-251.35	-176.85 ^S																			

Appendix 1b (Continued)

h4	159.49	150.64	}	1-4	126.39	307.31 ^s	}	2-3		
h26	0	85.16		1-5	0	331.8				
I-T	159.49	65.48		1-6	0	493.69				
			1-7	0	383.74					
			1-8	0	409.81					
h1	484.80	479.96	}	1-9	488.96	486.12 ^t			}	1-19-20-2-3-5-6-7-8
h6	114.32 ^s	422.87		I-T	472.48	73.23				
h9	0	354.50								
h11	0	361.56								
h12	0	361.56								
h13	0	361.56								
h15	0	594.67								
h17	0	594.67								
h20	0	1015.71								
h21	0	1015.71								
h27	0	594.67								
I-T	442.30	-45.35								
