These are electronic appendices to the paper by Matthee *et al*. 2004 A phylogenetic review of the African leaf chameleons *Rhampholeon* (Chamaeleonidae): the role of vicariance and climate change in speciation. (*Proc. R. Soc. Lond.* B **271**, pp. 1967-1975. (DOI 10.1098/rspb.2004.2806.)

Electronic appendices are refereed with the text. However, no attempt is made to impose a uniform editorial style on the electronic appendices.

Electronic Appendix A. Taxonomic designation, museum accession numbers and localities of specimens included in the present study. The number of base pairs sequenced for each fragment for each individual is also given as a superscript followed by the Genbank accession number for each sequence.

Species	**Museum Accession Numbers**	**Locality**	**ND2**	**16S rRNA**	**RAG 1**
1. *R. temporalis*	PEM-R 16254	East Usambara Mtns, Tanzania	^{914} AY524	^{421} AY524866	^{2781} AY524942
2. *R. temporalis*	PEM-R 16255	East Usambara Mtns, Tanzania	^{914} AY524	^{421} AY524867	^{2781} AY524943
3. *R. sp. nova*	PEM-R 16259	South Pare Mtns, Tanzania	^{914} AY524	^{422} AY524869	^{2781} AY524945
4. *R. sp. nova*	PEM-R 16260	South Pare Mtns, Tanzania	^{914} AY524	^{422} AY524868	^{2781} AY524944
5. *R. brevicaudatus*	PEM-R 16257	East Usambara Mtns, Tanzania	^{914} AY524	^{420} AY524888	^{2781} AY524963
6. *R. brevicaudatus*	PEM-R 16258	Udzungwa Mtns, Tanzania	^{914} AY524	^{420} AY524889	^{2781} AY524964
7. *R. brevicaudatus*	PEM-R 16256	East Usambara Mtns, Tanzania	^{914} AY524	^{420} AY524887	^{2781} AY524962
8. *R. nchisiensis*	PEM-R 16242	Nchisi Mtn, Malawi	^{914} AY524	^{423} AY524883	^{2781} AY524958
9. *R. nchisiensis*	PEM-R 16247	Nyika Plateau, Malawi	^{914} AY524	^{422} AY524885	^{2781} AY524960
10. *R. nchisiensis*	PEM-R 16241	Nchisi Mtn, Malawi	^{914} AY524	^{423} AY524882	^{2781} AY524957
11. *R. nchisiensis*	PEM-R 16248	Nyika Plateau, Malawi	^{914} AY524	^{422} AY524884	^{2781} AY524959
12. *R. nchisiensis*	PEM-R 16249	Nyika Plateau, Zambia	^{914} AY524	^{423} AY524886	^{2781} AY524961
13. *R. chapmanorum*	PEM-R 16245	Malawi Hill, Malawi	^{914} AY524	^{421} AY524881	^{2728} AY524956
14. *R. marshalli*	PEM-R 16243	Vumba Mtns, Zimbabwe	^{914} AY524	^{422} AY524870	^{2764} AY524946
15. *R. marshalli*	PEM-R 16244	Vumba Mtns, Zimbabwe	^{914} AY524	^{422} AY524871	^{2781} AY524947
16. *R. marshalli*	Not Available	Unknown	^{914} AY524	^{422} AY524872	^{2747} AY524948
17. *R. platyceps*	PEM-R 16251	Mount Mlanje, Malawi	^{914} AY524	^{422} AY524879	^{2781} AY524954
18. *R. platyceps*	PEM-R 16250	Mount Mlanje, Malawi	^{914} AY524	^{422} AY524880	^{2781} AY524955
19. *R. gorongosae*	PEM-R 16252	Gorongosa Mtn, Mozambique	^{770} AY524	^{423} AY524873	^{2747} AY524949
20. *R. gorongosae*	PEM-R 16253	Gorongosa Mtn, Mozambique	^{727} AY524	^{423} AY524874	^{2679} AY524950
21. *R. spectrum*	CAS 207683	Bioko Island, Equatorial Guinea	^{914} AY524	^{421} AY524863	^{2781} AY524938
22. *R. spectrum*	CAS 207682	Bioko Island, Equatorial Guinea	^{914} AY524	^{421} AY524864	^{2781} AY524939
23. *R. spectrum*	CAS 207688	Unknown	^{914} AY524	--------	^{2781} AY524940
24. *R. spectrum*	PEM-R 16262	Mekambo, Gabon	^{914} AY524	^{421} AY524865	^{1480} AY524941

25. *R. kerstenii*	169939	Kilifi, Kenya	[914] AY5249 [421] AY524890	[335] AY524965
26. *R. kerstenii*	214834	Kilifi, Kenya	[914] AY5249 [421] AY524891	[2721] AY524966
27. *R. kerstenii*	Not Available	Unknown	[914] AY5249 [421] AY524892	[2781] AY524967
28. *R. kerstenii*	Not Available	Mnt Handeni, Tanzania	[914] AY5249 [421] AY524893	--------
29. *R. kerstenii*	Not Available	Mnt Handeni, Tanzania	[914] AY5249 [421] AY524894	--------
30. *R. boulengeri*	CAS 201682	Bwindi Forest Reserve, Uganda	[551] AY5249 [421] AY524877	--------
31. *R. boulengeri*	CAS 201681	Bwindi Forest Reserve, Uganda	[564] AY5249 [422] AY524878	[2781] AY524953
32. *R. moyeri*	MTSN002TA	Udzungwa Mtns, Tanzania	[914] AY5249 [422] AY524875	[2781] AY524951
33. *R. moyeri*	MTSN001TA	Udzungwa Mtns, Tanzania	[914] AY5249 [423] AY524876	[2781] AY524952
34. *R. cf. moyeri*	NMZB16934	Rubeho Mtns, Tanzania	[914] AY5249 [421] AY524895	--------
35. *R. uluguruensis*	ZMB 48421	Uluguru Mtns, Tanzania	[554] AY5249 [422] AY524896	--------
36. *R. uluguruensis*	ZMB 48431	Uluguru Mtns, Tanzania	[542] AY5249 [422] AY524897	--------
37. *R brachyurus*	PEM-R 16263	Near Tamota, Tanzania	[914] AY5249 [421] AY524898	[1892] AY524968
38. *R brachyurus*	PEM-R 16264	Near Tamota, Tanzania	[914] AY5249 [421] AY524899	[1892] AY524969

Electronic Appendix B

Custom made internal forward and reverse RAG1 primers with numbers referring to the position of the 3' end of the primer with respect to the corresponding nucleotide in the published *Gallus gallus* sequence (Carlson *et al.* 1991)

Primer Name	Primer Sequence
F83b	TCnGAATGGAArTTyAArCTnTT
F118	TTGGAAAACTACTTCCTGAA
F624	GAGTGGCTTCCCCATTCAYC
R638	CAYGGAAGGAAGTGGYAC
F964	AAATGCATCAAAGTGATGGG
F1457a	TGTAGCCArTACCATAAAATGTA
R1067	AAAATGACCTCCTCCTGGCAA
F1989	TGCCTTATGCTGGCTGATGAA
R2165	ACAAATGTAAGTAGATCCTG
F2568a	GGATGAATGGrAATTTTGCCAGA
R2911	TTGTTCCCAGATTCATTTCCC

Electronic Appendix C

(A) Mophological characterization and diagnosis of *Rhampholeon and Rieppeleon,* (B) Mophological characterization and diagnosis of subgenera *Rhampholeon, Bicuspis* and *Rhinodigitum.*

A) Type I *Rieppeleon*	Type II *Rhampholeon*
The hemipenes are acalyculate but have a quadruple apical ornamentation (*R. kerstenii* (Klaver & Böhme 1986) and *R. brachyurus* (Tilbury pers obs) or none at all (*R. brevicaudatus*). Parietal bone trigonal, tapering posteriorly into a thin posterior saggital crest. Parietal peritoneum unpigmented. The snout is smooth with no rostral process. Supra-optic peak bony. Plantar surface covered with acuminate spines, claws weakly bicuspid. No accessory plantar spines present. A thin lateral flank ridge of tubercles is present and body pattern of horizontal stripes. The tail may be very truncated as in *Ri. brachyurus* (average of 14% of total length), to relatively long in *Ri. kerstenii* (up to 40% of total length).	*Rhampholeon* are characterised by the possession of variably developed soft, scaly rostral processes, variably developed plantar accessory spines , smooth "cobblestoned" plantar surfaces, claws either strongly bicuspid or simple, a soft (or absent) supra-optic peak, and a leaf-vein pattern of two to three oblique side-stripes. The hemipenes are acalyculate in most of the taxa except for two of the described species (*R. spectrum* and *R. temporalis*) where truncal calyces are present. The hemipenal apex has dual ornamentation in all, although in those with truncal calyces the ornamentation is rather more complex than simple curved papillate horns. In a representative from each of the three Type II sub-genera as discussed below (*spectrum*, *nchisiensis* and *marshalli*), the parietal bone is trigonal but without the posterior saggital extension (Rieppel 1987).

(B)

Rhampholeon	*Bicuspis*	*Rhinodigitum*
Parietal peritoneum unpigmented, hemipenal truncus with prominent calyces, apex with dual papillate horns or rotulae, claws either simple or strongly bicuspid, rostral process rudimentary to prominent, tail relatively long averaging >30% of the total length in adult males.	Loveridge (1956) proposed the mono-typic sub-genus *Chamaeleo* (*Bicuspis)* for *marshalli* based on its morphological peculiarities believing the species to bridge the morphological gap between *Chamaeleo* and *Rhampholeon*. Broadley (1971) suppressed *Bicuspis* after an objective assessment that placed *marshalli* unequivocally as a species of *Rhampholeon*. The two species in this sub-genus have densely pigmented parietal peritoneum, an acalyculate hemipenal truncus with dual bifid apical horns, strongly bicuspid claws, a variably developed rostral process, and a tail averaging >35% of total length in adult males.	The hemipenis is short, almost bag-like, acalyculate and adorned with a pair of simple apical "horns" with a variable number of thorn-like papillae arranged on the outer aspect of the horn. Parietal peritoneum unpigmented, claws strongly bicuspid, plantar surfaces smooth, rostral process variably developed, and tail short averaging <27% of total length in adult males.