Supplementary Materials for **"On the Taxonomic History and True Identity of the Collared Titi, *Cheracebus torquatus* (Hoffmannsegg, 1807) (Platyrrhini, Callicebinae)"** by Hazel Byrne, Anthony B. Rylands, Stephen D. Nash and Jean Philippe Boubli

Molecular Dataset and Phylogenetic Analyses

We collected all currently available sequence data for *Cheracebus* for three mitochondrial regions including the complete cytochrome *b* (CYTB) locus, partial cytochrome oxidase I (COI) locus, and the non-coding D-Loop region. Some of these sequences were unpublished but all were generated previously for other studies/projects following the protocol described in Byrne *et al*. (2018). References for the primer sequences are as follows: CYTB (Byrne *et al.* 2016); COI (Ward *et al*. 2005); and D-Loop (Oliveira *et al*. 2011). For the highly variable D-Loop region, we included sequences from only *Cheracebus* taxa in our data matrix. For COI and CYTB, we also included published sequences for *Plecturocebus grovesi* and *Plecturocebus donacophilus*, as well as one representative from each of the genera of Pitheciinae (*Pithecia, Cacajao, Chiropotes*). GenBank accession numbers for all sequences are presented below in Table S2.

Each locus was aligned independently using the MUSCLE algorithm in Geneious R7.1 (Biomatters) and subsequently combined in a matrix with a total alignment length of 2,517 bp (Dataset B). A matrix comprised of only CYTB and COI was also generated with a total alignment length of 1,800 bp (Dataset A). Thirty *Cheracebus* individuals are represented in these alignments. We used the GTR + G (gamma) substitution model for each COI + CYTB codon position partition, and for a D-Loop partition. Phylogenetic inference was conducted using maximum-likelihood and Bayesian methods. For maximum-likelihood inferences, we used the program RAxML v.8.2.12 and estimated support using the rapid-bootstrapping algorithm (−f a -x option) for 1000 non-parametric bootstrap replicates (Stamatakis *et al*. 2008; Stamatakis, 2014). Bayesian analyses were performed using MrBayes 3.2.7 (Ronquist *et al*. 2012). MCMC (Markov Chain Monte Carlo) convergence was checked after two independent four-chain runs of 2 million generations after a burn-in of 10%.

Table S1. Detailed information on all museum specimens assessed for this study including taxon assignments, collection locality and locality number in Figure 3.

Museum or Field ID	Alt. Museum or Field IDs	Museum code	Photos or in Person	Species (from label / catalogue)	Assigned taxon by Hershkovitz, 1990	Assigned species here (*sensu* Hershkovitz)	Assigned species here (updated)	Phenotype, type, & specimen notes	Region, Country	Locality (with notes in brackets)	Latitutude, longitude (source)	Locality # (Fig. 3)	Collection year	Sex	Juvenile or sub-adult	Molecular Studies
ZMB-265	--	MNB	Photos	*torquatus*	Not viewed	*C. purinus*	*C. torquatus*	Holotype; *torquatus* Hoffmannsegg, 1807	Unknown	Unknown	NA	NA	Pre-1806	Male		
38885	106	FMNH	In person	*purinus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Lago Aiapua, west bank, Rio Purus	[-4.4924, -62.1163] (FMNH catalogue)	4	1931	Male		
1851.7.12.7	4071678	BMNH	In person	*torquatus*	*purinus*	*C. purinus*	*C. torquatus*	Partial skin comprised of upper torso only	Amazonas, Brazil	Ega (=Tefé)	[-3.3670, -64.6825] (estimated)	5	Pre-1851	--	Y	
1926.5.5.21	4269871/4078220	BMNH	In person	*purinus*	*purinus*	*C. purinus*	*C. torquatus*	Holotype; *purinus* Thomas, 1927	Amazonas, Brazil	Ayapuá, Rio Purus	[-4.4924, -62.1163] (estimated)	4	1925	Male		
CTGAM154	SISPUR-M154	INPA	In person	*purinus*	Not viewed	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Rebio Abufari, Turiaçu, Left (west) bank of the Rio Purus, 73 Km NW Tapauá	[-4.9845, -62.9602] (Field collection db)	3	2008	Female	Y	Here; 1,2,3
CTGAM195	SISPUR-M195	INPA	In person	*purinus*	Not viewed	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Rebio Abufari, Turiaçu, Left (west) bank of the Rio Purus, 73 Km NW Tapauá	[-4.9845, -62.9602] (Field collection db)	3	2012	Male		Here; 1,2
CTGAM209	SISPUR-M209	INPA	In person	*purinus*	Not viewed	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Rebio Abufari, Turiaçu, Left (west) bank of the Rio Purus, 73 Km NW Tapauá	[-4.9845, -62.9602] (Field collection db)	3	2012	Male		Here; 1,2
MN-2464	--	MNRJ	In person	*purinus*	*purinus*	*C. purinus*	*C. torquatus*	Viewed in person while at FMNH	Amazonas, Brazil	Lago Ayapuá, Rio Purus	[-4.4924, -62.1163] (estimated)	4	1932	Female		
MN-2461	--	MNRJ	Photos	*purinus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Lago Tauariá Grande, Rio Purus	[-5.5901, -63.9298] (estimated)	2	1931	Male		
631211	--	NRM	Photos	*torquatus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Jaburu, Rio Purus	[-5.6083, -64.0644] (estimated)	2	1935	Female		
631214	--	NRM	Photos	*torquatus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Jaburu, Rio Purus	[-5.6083, -64.0644] (estimated)	2	1935	Female		
USNM-518222	--	USNM	Photos	*torquatus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Teffe [sic], Mata Patrimonio (Teffe = Tefé)	[-3.5158, -64.9986] (estimated)	5	1948	Female		
USNM-105539	--	USNM	Photos	*purinus*	*purinus*	*C. purinus*	*C. torquatus*		Amazonas, Brazil	Purus River, Rio Marmorea Miru [sic] (Rio Mamoriá-mirim / Rio Mamoriazinho)	[-7.5024, -66.3808] (estimated)	1	1901	--		
M-78961	--	AMNH	Photos	*purinus*	*purinus*	*C. purinus*	*C. torquatus*	No ventral image received	Tefé, Amazonas, Brazil	Amazon River, mouth of the Tefé Lake	[-3.3670, -64.6825] (estimated)	5	1938	Female		
35076	7597	FMNH	In person	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C. Open partial skin	Unknown (Likely Brazil)	Unknown -- Purchased in Manaus (FMNH catalogue)	NA	NA	1923	--		
1926.5.5.22	4078224	BMNH	In person	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Lago do Arara, Solimões	[-3.4709, -61.3586] (estimated)	7	1925	Female		
1925.12.11.8	4078110	BMNH	In person	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Manacapuru, Rio Solimões	[-3.2903, -60.6317] (estimated)	6	1925	Female		
1842.4.29.15	4070772	BMNH	In person	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Rio Negro	NA	NA	Pre-1842	Male		
MN-23865	--	MNRJ	In person	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C. Viewed while at FMNH	Amazonas, Brazil	Codajás / Mata de Codajás	[-3.8380, -62.0600] (estimated)	8	1958	--		
612103	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Female		
621045	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Male		
621046	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Female		
621104	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Female		
622023	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Male		
631039	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Male		
641040	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus*	*C.* cf. *lugens*	*lugens* Phenotype C	Amazonas, Brazil	Codajás, Rio Solimões	[-3.8380, -62.0600] (estimated)	8	1935	Male		
620501	--	NRM	Photos	*torquatus*	*torquatus*	*C. torquatus?*	*C.* cf. *lugens?*	Anomalous. Assigned based on collection locality	Amazonas, Brazil	Manacapuru, Rio Solimões	[-3.2903, -60.6317] (estimated)	6	1926	Male		
88246	7	FMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*	Open partial skin	Guaviare, Colombia	Rio Guaviare, "la Maria" near Laguna Grande	[2.6333, -72.8667] (FMNH catalogue)	16	1957	Female		
88247	8	FMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*	Open partial skin	Guaviare, Colombia	Rio Guaviare, "la Maria" near Laguna Grande	[2.6333, -72.8667] (FMNH catalogue)	16	1957	Male		
89479	11	FMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*	Open partial skin	Guaviare, Colombia	Laguna de Espejo, Lagoes El Dorado	[1.0171, -70.45] (FMNH catalogue)	14	1958	Female		
88248	13	FMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*	Open partial skin	Guaviare, Colombia	Upper Cano Grande	[2.1, -72.2333] (FMNH catalogue)	15	1957	Male		
35144	--	FMNH	In person	*torquatus*	*torquatus*	*C. lugens*	*C. lugens*		Amazonas, Brazil	Rio Negro, upper Rio Amazonas (label has "?" after Rio Negro)	NA	NA	1926	--		
1933.10.11.1	4080630	BMNH	In person	*torquatus*	*torquatus*	*C. lugens*	*C. lugens*	Mounted	Amazonas, Brazil	Rio Negro	NA	NA	Pre-1933	Female		
1928.7.9.1	4079634	BMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*		Amazonas, Brazil	Rio Alegria, Rio Negro, Brazil [485ft] (apparently a tributary of Rio Cuiuni)	[-0.8325, -63.2448] (estimated - Rio Cuiuni)	10	Pre-1928	Female		
1928.11.3.1	4079788	BMNH	In person	*torquatus*	*lugens*	*C. lugens*	*C. lugens*		Amazonas, Brazil	Rio Araçá, Rio Negro (left/north Rio Negro)	[-0.3481, -62.9912] (estimated)	23	Pre-1928	--		
1928.11.3.2	4079791	BMNH	In person	*torquatus*	*lugens*	*C. lugens*	*C. lugens*		Amazonas, Brazil	Rio Araçá, Rio Negro (left/north Rio Negro)	[-0.3481, -62.9912] (estimated)	23	Pre-1928	--		
1951.714	4083080	BMNH	In person	*lugens*	? / Not viewed	*C. lugens*	*C. lugens*		Amazonas, Venezuela	Rio Yatua, Left of Rio Casiquiare (left/north Rio Negro)	[1.4839, -66.5269] (estimated)	18	1933	Female		
1855.12.24.44	4071915	BMNH	In person	*lugens*	*lugens?* (see note)	*C. lugens*	*C. lugens*	No locality *lugens* specimen Hershkovitz (1990)?	Unknown	Unknown (note: label/catalogue says "?Guyana?")	NA	NA	Pre-1855	--		
1899.9.11.1	4073805	BMNH	In person	*lugens*	*lugens*	*C. lugens*	*C. lugens*		Colombia	Rio Orinoco, Maipures (database says Venezuela but Maipures is Colombia)	[5.1940, -67.8339] (estimated)	17	1898	Female	Y	
CTGAM733	SISJAP-M733	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Left (north) bank Rio Japurá	[-1.7091, -69.1093] (Field collection db)	12	2014	Male		Here; 2
CTGAM734	SISJAP-M734	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Left (north) bank Rio Japurá	[-1.7091, -69.1093] (Field collection db)	12	2014	Female		Here
CTGAM753	SISJAP-M753	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Left (north) bank Rio Japurá	[-1.7016, -69.1264] (Field collection db)	12	2014	Female		Here
CCM105	INPA-4066	INPA	In person	*torquatus*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	São Gabriel da Cachoeira, Left (north) bank Rio Negro	[-0.1209, -67.0819] (estimated)	19		Female		Here
JPB123	INPA-5709	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Igarapé Anta, Pé da Serra do Aracá, Left (north) bank Rio Negro	[0.8523, -63.4814] (Field collection db)	21	2005	Female		Here
JPB124	INPA-5710	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Igarapé Anta, Pé da Serra do Aracá, Left (north) bank Rio Negro	[0.8523, -63.4814] (Field collection db)	21	2005	Male		Here; 1
JPB136	INPA-5720	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Igarapé Cuieiras, Left (north) bank Rio Negro	[0.6917, -62.8644] (Field collection db)	22	2005	Male		Here; 1
JPB160	--	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	São Gabriel da Cachoeira, Left (north) bank Rio Negro	[0.0878, -66.8222] (Field collection db)	19	2014	Female		Here; 2
JPB161	--	INPA	In person	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	São Gabriel da Cachoeira, Left (north) bank Rio Negro	[0.0878, -66.8222] (Field collection db)	19	2014	Female	Y	Here; 2
JPB81	MN-68827	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Igarapé Mandiquie, Right (south) bank Rio Negro	[-0.4782, -64.4113] (Field collection db)	11	2001	Female		Here; 1,2
CRB2696	MN-69280	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Igarapé do Bainaiá, near city of Barcelos, Right (south) bank Rio Negro	[-0.9779, -63.1024] (estimated)	10	2003	--		Here; 4

Footnotes Molecular studies column: 1 = Byrne et al. 2016; 2 = Byrne 2017; 3 = Byrne et al. 2018; 4 = Casado et al. 2007; 5 = Bonvicino et al. 2003

Table S1 continued. Detailed information on all museum specimens assessed for this study including taxon assignments and collection locality.

Museum or Field ID	Alt. Museum or Field IDs	Museum code	Photos or in Person	Species (from label / catalogue)	Assigned taxon by Hershkovitz, 1990	Assigned species here (*sensu* Hershkovitz)	Assigned species here (updated)	Phenotype, type, & specimen notes	Region, Country	Locality (with notes in brackets)	Latitutude, longitude (source)	Locality # (Fig. 3)	Collection year	Sex	Juvenile or sub-adult	Molecular Studies
CRB2697	MN-69388	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Igarapé do Bainaiá, near city of Barcelos, Right (south) bank Rio Negro	[-0.9779, -63.1024] (estimated)	10		Female		Here; 4
CRB2698	MN-69389	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Igarapé do Bainaiá, near city of Barcelos, Right (south) bank Rio Negro	[-0.9779, -63.1024] (estimated)	10		--		Here; 4
CRB2667	MN-69365	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Sitio da Mamae, Igarapé Japomeri, L bank of Rio Padauari, Left bank Rio Negro	[0.3475, -64.0078] (Casado et al., 2007)	20		Female		Here; 4
CRB2570	MN-69288	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Sitio da Mamae, Igarapé Japomeri, L bank of Rio Padauari, Left bank Rio Negro	[0.3475, -64.0078] (Casado et al., 2007)	20	2001/2	Female		Here; 4
CRB2205	MN-69142	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Sitio da Mamae, Igarapé Japomeri, L bank of Rio Padauari, Left bank Rio Negro	[0.3475, -64.0078] (Casado et al., 2007)	20	2001/2	Female		Here; 4, 5
CRB2668	MN-69366	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Sitio da Mamae, Igarapé Japomeri, L bank of Rio Padauari, Left bank Rio Negro	[0.3475, -64.0078] (Casado et al., 2007)	20		Male		
CRB2434	MN-69180	MNRJ	Photos	*lugens*	Not viewed	*C. lugens*	*C. lugens*		Barcelos, Amazonas, Brazil	Igarapé Jauari, left bank of Rio Aracá	[0.7639, -63.4444] (Casado et al., 2007)	21	2001/2	Female		5
640403	--	NRM	Photos	*torquatus*	*lugens* (see note)	*C. lugens*	*C. lugens*	Hershkovitz (1990) mislabelled as from MNRJ?	Amazonas, Brazil	Taracuá, Rio Uaupes (left/north bank)	[1.1040, -69.6699] (estimated)	13	1924	Male		
640404	--	NRM	Photos	*torquatus*	*lugens* (see note)	*C. lugens*	*C. lugens*	Hershkovitz (1990) mislabelled as from MNRJ?	Amazonas, Brazil	Taracuá, Rio Uaupes (left/north bank)	[1.1040, -69.6699] (estimated)	13	1924	Male	Y	
36619	--	MPEG	Photos	*torquatus*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Maraã, Boa Esperança Community, Amanã Sustainable Development Reserve	[-2.4030, -64.4470] (estimated - Amanã reserve)	9	2004	Female		
37152	--	MPEG	Photos	*torquatus*	Not viewed	*C. lugens*	*C. lugens*		Amazonas, Brazil	Maraã, Boa Esperança Community, Amanã Sustainable Development Reserve	[-2.4030, -64.4470] (estimated - Amanã reserve)	9	2004	Female		
MO-1997-1573	--	MNHN	Photos	*amictus*	*torquatus*	*C. lugens*	*C. lugens*	Mounted. Discoloured	Unknown	Unknown	NA	NA		--		
70698	6037	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Male		
70699	6144	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*	Holotype; *medemi* Hershkovitz, 1963	San Antonio, Putumayo, Colombia	Rio Mecaya (near mouth) [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70700	6145	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70692	5974	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70693	5980	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70694	5981	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70695	5982	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70696	5986	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female		
70697	5987	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Rio Mecaya [185m]	[0.4667, -75.3333] (FMNH catalogue)	25	1952	Female	Y	
84551	19937	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		San Antonio, Putumayo, Colombia	Puerto Umbria [400m]	[0.8667, -76.55] (FMNH catalogue)	26	1947	Female		
70691	5900	FMNH	In person	*medemi*	*medemi*	*C. medemi*	*C. medemi*		La Tagua, Caquetá, Colombia	Tres Troncos [150m]	[0.1333, -74.6833] (FMNH catalogue)	24	1952	Female		
86978	1980	FMNH	In person	*lucifer*	*lucifer*	*C.* cf. *lucifer*	*C.* cf. *lucifer*	Possibly a distinct taxon (Aquino *et al.* 2008)	Maynas, Loreto, Peru	Rio Nanay, Santa Luisa [160m]	[-3.3333, -74.5833] (FMNH catalogue)	27	1956	Male		
86979	1981	FMNH	In person	*lucifer*	*lucifer*	*C.* cf. *lucifer*	*C.* cf. *lucifer*	Possibly a distinct taxon (Aquino *et al.* 2008)	Maynas, Loreto, Peru	Rio Nanay, Santa Luisa [160m]	[-3.3333, -74.5833] (FMNH catalogue)	27	1956	Female		
1914.3.1.1	4076844	BMNH	In person	*lucifer*	*lucifer*	*C. lucifer*	*C. lucifer*	Paratype; *lucifer* Thomas, 1914	Peru	Loreto, Yahuas Territory [500ft]	[-2.7993, -71.3569] (loosely estimated)	29	Pre-1914	Male		
1914.3.1.2	4269501/4076848	BMNH	In person	*lucifer*	*lucifer*	*C. lucifer*	*C. lucifer*	Holotype; *lucifer* Thomas, 1914	Peru	Loreto, Pebas, Yahuas Territory [500ft]	[-3.3206, -71.8532] (loosely estimated)	28	1913	Male		
1927.3.6.7	4078751	BMNH	In person	*lucifer*	*lucifer*	*C. lucifer*	*C. lucifer*	Paratype; *ignitus* Thomas, 1927	Amazonas, Brazil	Tonantins, Upper Solimões	[-2.8678, -67.7928] (estimated)	34	1926	Male		
1927.8.11.7	4078846	BMNH	In person	*lucifer*	*lucifer*	*C. lucifer*	*C. lucifer*	Paratype; *ignitus* Thomas, 1927	Amazonas, Brazil	Rio Tonantins, Tabatinga, Upper Solimões - (unclear locality)	[-2.8678, -67.7928] (estimated - Tonantins)	34	1926	Female		
1927.8.11.4	4269897/4078834	BMNH	In person	*ignitus*	*lucifer*	*C. lucifer*	*C. lucifer*	Holotype; *ignitus* Thomas, 1927	Amazonas, Brazil	Rio Tonantins, Tabatinga, Upper Solimões - (unclear locality)	[-2.8678, -67.7928] (estimated - Tonantins)	34	1926	Male	Y	
1934.6.14.2	4080723	BMNH	In person	*torquatus*	*lucifer*	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Upper Rio Içá (Putumayo), on Brazilian border	[-2.9432, -69.6719] (loosely estimated)	31	1930	Male		
CTGAM703	SISJAP-M703	INPA	In person	*torquatus*	Not viewed	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Right (south) bank Rio Japurá	[-1.8429, -69.0275] (Field collection db)	32	2014	Female		Here; 2, 3
CTGAM726	SISJAP-M726	INPA	In person	*torquatus*	Not viewed	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Right (south) bank Rio Japurá	[-1.8688, -69.0477] (Field collection db)	32	2014	Female	Y	Here; 2
CTGAM727	SISJAP-M727	INPA	In person	*torquatus*	Not viewed	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Right (south) bank Rio Japurá	[-1.8688, -69.0477] (Field collection db)	32	2014	Male		Here
630127	--	NRM	Photos	*torquatus*	*lucifer*	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Rio Içá	NA	NA	1930	Female		
640219	--	NRM	Photos	*torquatus*	*lucifer*	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Rio Içá	NA	NA	1930	Male		
USNM-307380	--	USNM	Photos	*torquatus*	Not viewed	*C. lucifer*	*C. lucifer*		Amazonas, Colombia	Near Leticia	[-4.1734, -69.9660] (loosely estimated)	30	1958	Female		
ICA0015	FES041	IDSM	Photos	*lucifer*	Not viewed	*C. lucifer*	*C. lucifer*		Amazonas, Brazil	Santo Antônio do Içá, Içá River, left bank, Igarapé Cachoeira, Comunidade Cachoeira	[-2.8912, -68.3552] (Field collection db)	33	2015	Female		
1927.8.11.6	4078842	BMNH	In person	*regulus*	*lucifer*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Santa Rita, Fonte Boa, Upper Solimões	[-2.5569, -66.2379] (estimated)	36	1926	Female	Y	
1927.3.6.8	4269893/4078754	BMNH	In person	*regulus*	*regulus*	*C. regulus*	*C. regulus*	Holotype; *regulus* Thomas, 1927	Amazonas, Brazil	Fonte Boa, Upper Solimões	[-2.5166, -66.0922] (estimated)	36	1926	Female		
1927.8.11.5	4078838	BMNH	In person	*regulus*	*regulus*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Fonte Boa, Upper Solimões	[-2.5166, -66.0922] (estimated)	36	1926	Female		
1928.4.27.7	4079220	BMNH	In person	*regulus*	*regulus*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Fonte Boa	[-2.5166, -66.0922] (estimated)	36	1927	Male		
1928.4.27.8	4079225	BMNH	In person	*regulus*	*regulus*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Fonte Boa	[-2.5166, -66.0922] (estimated)	36	1927	Female		
1927.8.11.63	4078978	BMNH	In person	*regulus*	*regulus*	C. regulus	*C. regulus*		Amazonas, Brazil	Fonte Boa	[-2.5166, -66.0922] (estimated)	36	1926	Female		
JT051	--	IDSM	Photos	*regulus*	Not viewed	*C. regulus*	*C. regulus*		Amazonas, Brazil	Rio Jutaí Extractive Reserve	[-3.2800, -67.3160] (Field collection db)	35	2014	Male		
JT053	--	IDSM	Photos	*regulus*	Not viewed	*C. regulus*	*C. regulus*		Amazonas, Brazil	Rio Jutaí Extractive Reserve	[-3.2887, -67.3247] (Field collection db)	35	2014	Male		
JT054	--	IDSM	Photos	*regulus*	Not viewed	*C. regulus*	*C. regulus*		Amazonas, Brazil	Rio Jutaí Extractive Reserve	[-3.2887, -67.3247] (Field collection db)	35	2014	Female		
JT071	--	IDSM	Photos	*regulus*	Not viewed	*C. regulus*	*C. regulus*		Amazonas, Brazil	Rio Jutaí Extractive Reserve	[-3.2818, -67.3183] (Field collection db)	35	2014	Female		
MN-21047	--	MNRJ	Photos	*regulus*	*regulus*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Fonte Boa, Rio Solimões	[-2.5166, -66.0922] (estimated)	36	1948	Male		
MN-2465	--	MNRJ	Photos	*regulus*	*regulus*	*C. regulus*	*C. regulus*		Amazonas, Brazil	Fonte Boa, Rio Solimões	[-2.5166, -66.0922] (estimated)	36	1927	Female		

Footnotes Molecular studies column: 1 = Byrne et al. 2016; 2 = Byrne 2017; 3 = Byrne et al. 2018; 4 = Casado et al. 2007; 5 = Bonvicino et al. 2003

Table S2 List of the GenBank accession numbers for all sequences. In bold are the newly generated sequences.

Species	**Sample ID**	**COI**	**CYTB**	**D-Loop**
Cheracebus lugens (LJ)	CTGAM733	**MT465106**	**MT461034**	**MT461044**
Cheracebus lugens (LJ)	CTGAM734	**MT465107**	**MT461039**	--
Cheracebus lugens (LJ)	CTGAM753	**MT465108**	**MT461035**	**MT461045**
Cheracebus lugens (RN)	JPB81	KU694203	**MT461029**	**MT461046**
Cheracebus lugens (RN)	CRB2696	--	DQ337710	--
Cheracebus lugens (RN)	CRB2697	--	DQ337709	--
Cheracebus lugens (RN)	CRB2698	--	DQ337708	--
Cheracebus lugens (RN)	CRB2837	--	DQ337707	--
Cheracebus lugens (LN)	CCM105	**MT465105**	**MT461028**	**MT461043**
Cheracebus lugens (LN)	JPB108	**MT465109**	**MT461030**	**MT461047**
Cheracebus lugens (LN)	JPB111	**MT465110**	**MT461040**	**MT461048**
Cheracebus lugens (LN)	JPB119	KU694204	KU694251	**MT461049**
Cheracebus lugens (LN)	JPB121	**MT465111**	**MT461031**	**MT461050**
Cheracebus lugens (LN)	JPB123	**MT465112**	**MT461032**	**MT461051**
Cheracebus lugens (LN)	JPB124	KU694205	KU694252	**MT461052**
Cheracebus lugens (LN)	JPB136	KU694206	KU694253	**MT461053**
Cheracebus lugens (LN)	JPB160	**MT465113**	**MT461036**	**MT461054**
Cheracebus lugens (LN)	JPB161	**MT465114**	**MT461037**	**MT461055**
Cheracebus lugens (LN)	GenBank	KC592393	KC592393	KC592393
Cheracebus lugens (LN)	CRB2205	--	AF524888	--
Cheracebus lugens (LN)	CRB2433	--	AF524889	--
Cheracebus lugens (LN)	CRB2570	--	DQ337711	--
Cheracebus lugens (LN)	CRB2667	--	DQ337712	--
Cheracebus torquatus (fka *purinus)*	CTGAM154	KU694207	KU694254	**MT461056**
Cheracebus torquatus (fka *purinus)*	CTGAM195	KU694208	KU694255	**MT461057**
Cheracebus torquatus (fka *purinus)*	CTGAM209	KU694209	KU694256	**MT461058**
Cheracebus torquatus (fka *purinus)*	GenBank	--	AF524890	--
Cheracebus lucifer	CTGAM726	**MT465103**	**MT461033**	--
Cheracebus lucifer	CTGAM727	**MT465104**	**MT461038**	**MT461042**
Cheracebus lucifer	CTGAM703	MH101708	MH101710	**MT461041**
Plecturocebus grovesi	RVR22	KU694222	KU694272	--
Plecturocebus donacophilus	GenBank	FJ785423	FJ785423	--
Pithecia pithecia	GenBank	JF459229	KR902424	--
Cacajao calvus	GenBank	NC021967	NC021967	--
Chiropotes israelita	GenBank	NC024629	NC024629	--

Supplementary Figure Legends

Figure S1. Phylogenetic trees inferred from the mitochondrial Dataset A based on Bayesian methods

Figure S2. Phylogenetic trees inferred from the mitochondrial Dataset B based on Bayesian methods

Figure S3. Phylogenetic trees inferred from the mitochondrial Dataset A based on maximum likelihood methods

Figure S4. Phylogenetic trees inferred from the mitochondrial Dataset B based on maximum likelihood methods

Figure S1. Dataset A, Bayesian

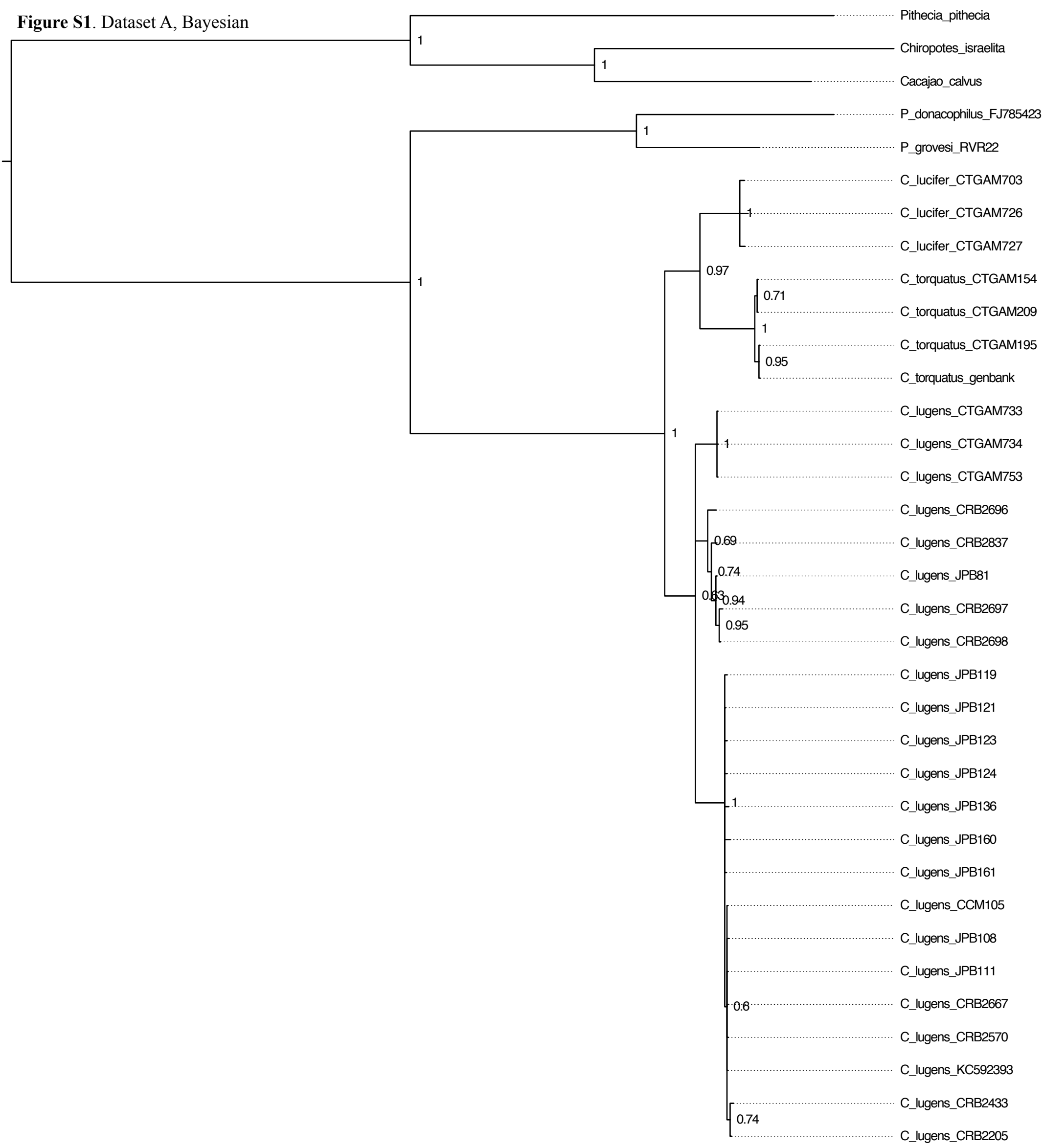


Figure S2. Dataset B, Bayesian

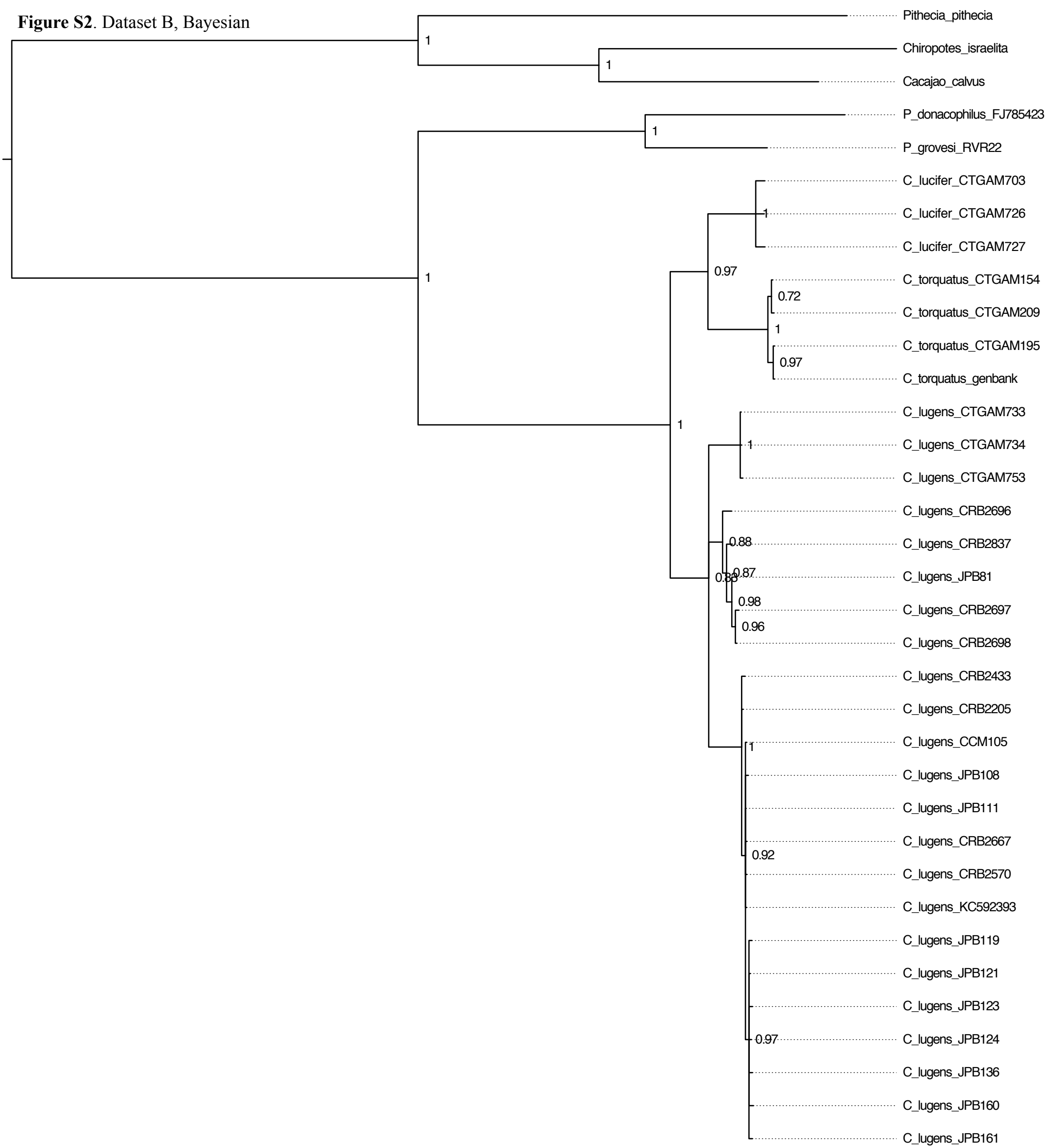


Figure S3. Dataset A, Maximum Likelihood

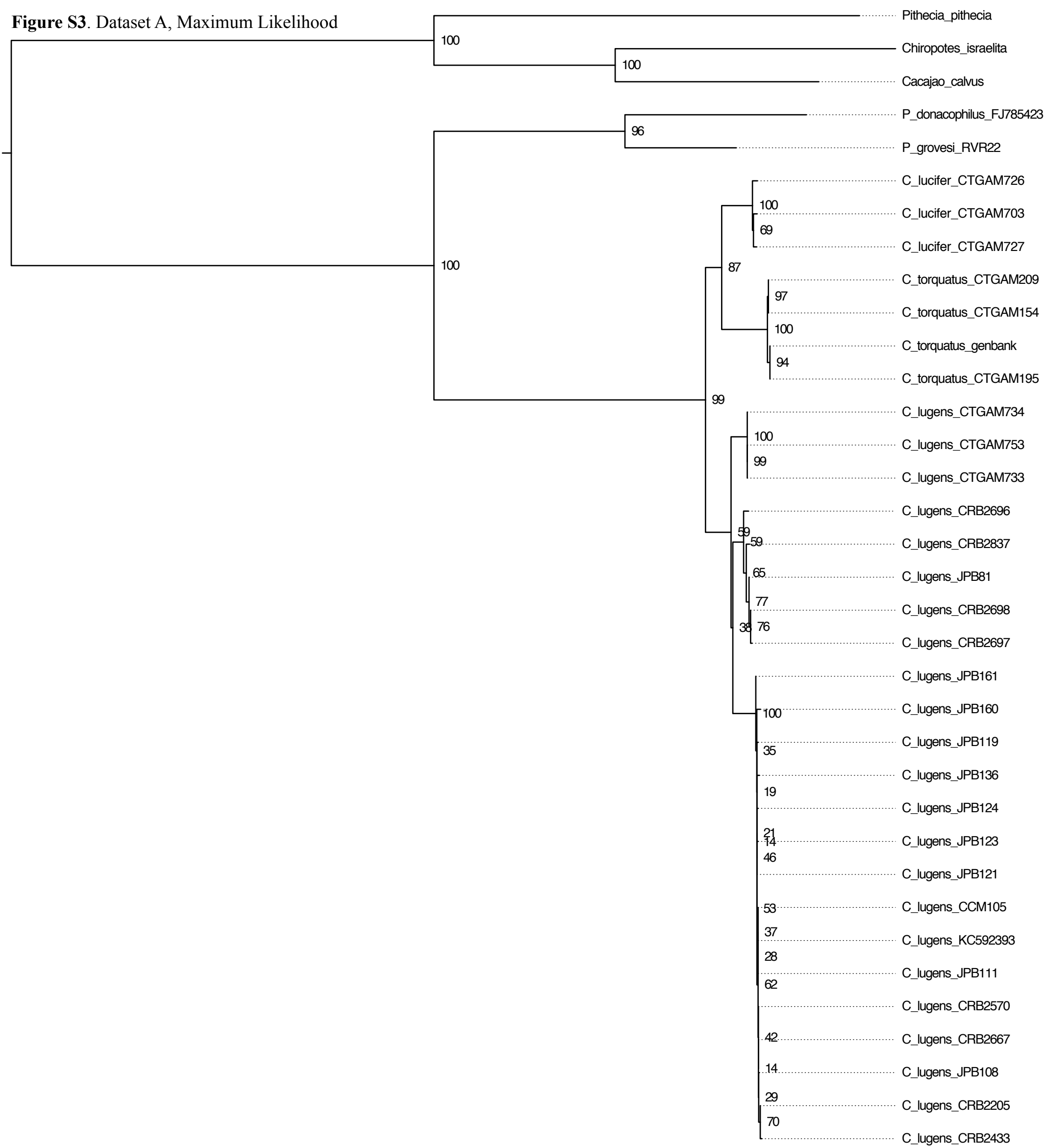
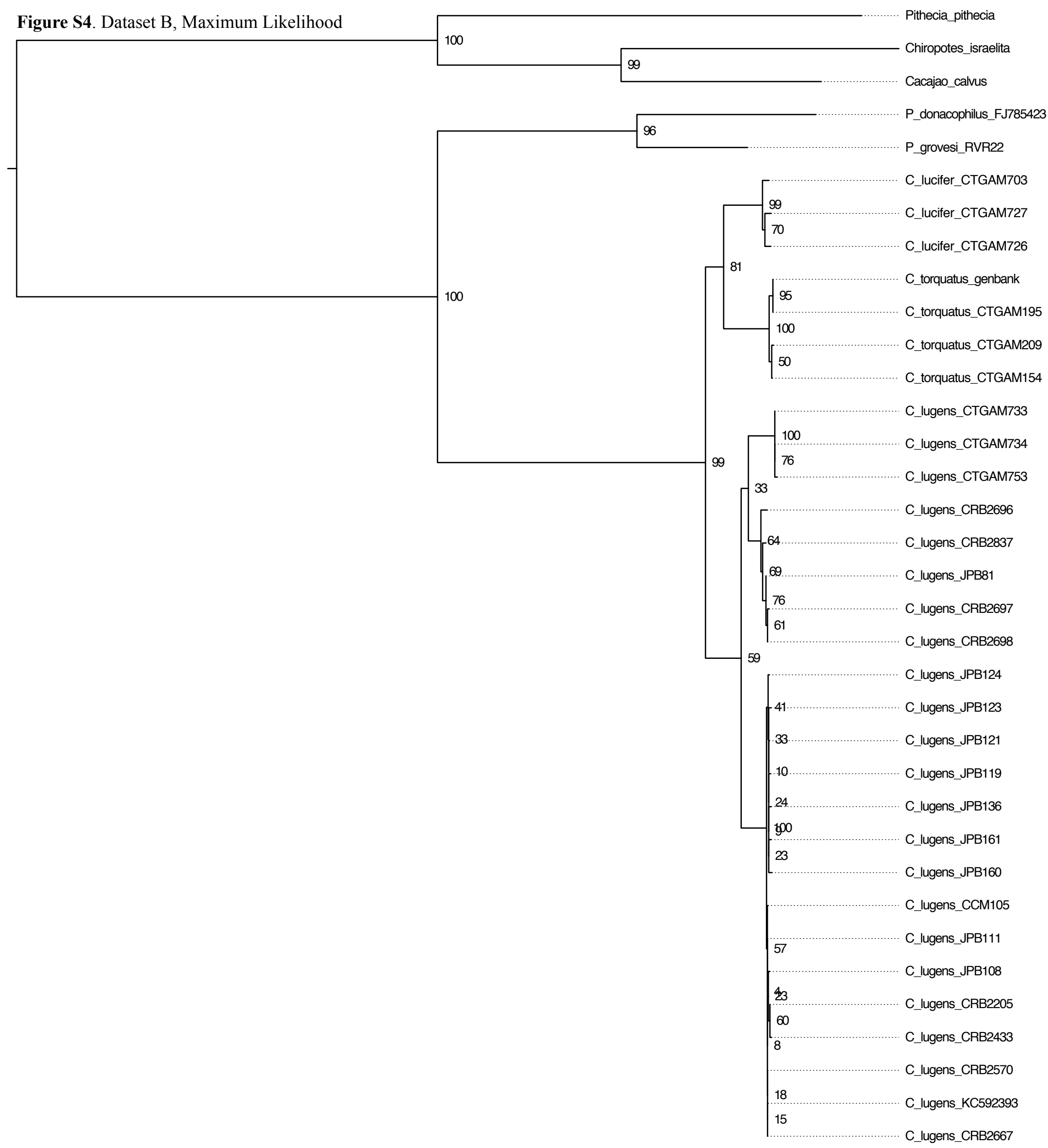


Figure S4. Dataset B, Maximum Likelihood



References

Bonvicino, C. R., V. Penna-Firme, F. F. do Nascimento, B. Lemos, R. Stanyon and H. N. Seuánez. 2003. The lowest diploid number (2n= 16) yet found in any primate: *Callicebus lugens* (Humboldt, 1811). *Folia Primatol*. 74(3): 141–149.

Byrne, H. 2017. Evolutionary History and Taxonomy of the Titi Monkeys. Ph.D. thesis, University Of Salford, Manchester.

Byrne, H., A. B. Rylands, J. Carneiro, J. W. Lynch-Alfaro, F. Bertuol, M. N. F. da Silva, M. Messias, C. P. Groves, R. A. Mittermeier, I. Farias, I., T. Hrbek, H. Schneider, I. Sampaio and J. P. Boubli. 2016. Phylogenetic relationships of the New World titi monkeys (*Callicebus*): first appraisal of taxonomy based on molecular evidence. *Frontiers in Zoology* 13: 10. DOI 10.1186/s12983-016-0142-4.

Byrne, H., J. W. Lynch Alfaro, I. Sampaio, I. Farias, H. Schneider, T. Hrbek and J. P. Boubli. 2018. Titi monkey biogeography: parallel Pleistocene spread by *Plecturocebus* and *Cheracebus* into a post-Pebas western Amazon. *Zool. Scripta* 47: 499–517. DOI: 10.1111/zsc.12300.

Casado, F., C. R. Bonvicino and H. N. Seuánez. 2007. Phylogeographic analyses of *Callicebus lugens* (Platyrrhini, Primates). *J. Hered*. 98(1): 88–92.

Oliveira, C. G., F. A. Gaiotto, M. A. Costa and R. A. Martinez. 2011. Molecular genetic analysis of the yellow-breasted capuchin monkey: recommendations for ex situ conservation. *Genet. Mol. Res.* 10:1471–1478.

Ronquist, F., M. Teslenko, P. van der Mark, D. L. Ayres, A. Darling, S. Höhna, B. Larget, L. Liu, M. A. Suchard and J. P. Huelsenbeck. 2012. MrBayes 3.2: efficient Bayesian phylogenetic inference and model choice across a large model space. *Syst. Biol.* 61(3): 539–542.

Stamatakis, A. 2014. RAxML version 8: a tool for phylogenetic analysis and post-analysis of large phylogenies. *BMC Bioinform*. 30(9): 1312–1313.

Stamatakis, A., P. Hoover and J. Rougemont. 2008 A rapid bootstrap algorithm for the RAxML Web servers. *Syst. Biol*. 57(5): 758–771.

Ward, R. D., T. S. Zemlak, B. H. Innes, P. R. Last and P. D. Hebert. 2005. DNA barcoding Australia's fish species. *Philos. Trans. R. Soc. B* 360(1462): 1847–1857.