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## Appendix 1

Table A1. Taxonomic and geographic sampling *Polioptila plumbea* and *P. dumicola* specimens used in this study and including also the species *P. lactea*, *P. paraensis*, *P. attenboroughi*, *P. caerulea*, *P. californica*, *P. guianensis* and *P. schistaceigula*. Map no.: correspondent to the sample locality in the map from Fig. 1. The samples without Map no. were not included in the map because their sequences were available only for one gene. IPMB no.: voucher number of each sample in the ornithology collection from Institute of Pharmacology and Molecular Biotechnology. \*Accession number to be submitted.

Taxon	Locality	Map no.	IPMB no.	Voucher no.	Source	Accession no.*
<i>P. plumbea atricapilla</i>	Floresta Nacional, Contendas do Sincorá, Bahia, Brazil	1	89569, 89570	T531UFPE5040, T535UFPE5044	UFPE	
<i>P. plumbea atricapilla</i>	Palmas de Monte Alto, Bahia, Brazil	2	87446	119897	ZMUC	
<i>P. plumbea atricapilla</i>	Uruçuí, Fazenda União, Piauí, Brazil.	3	79979, 79980, 79982, 79983	T6904, T8357, T10751, T10777	MPEG	
<i>P. plumbea atricapilla</i>	District José de Freitas; Eco Resort Nazareth, Piauí, Brazil.	4	79981	T9765	MPEG	
<i>P. plumbea atricapilla</i>	Pico do Jabre, Maturéia, Paraíba, Brazil.	5	84743	TCAHZ00363	UFPG	
<i>P. plumbea atricapilla</i>	Fazenda Prezeres, Curaçá, Bahia, Brazil.	6	84737-84740	TCAHZ00116, TCAHZ00122, TCAHZ00140, TCAHZ00141	UFPG	
<i>P. plumbea atricapilla</i>	São João do Tigre, Serra do Paulo Apa das Onças, Paraíba, Brazil.	7	84744	TCAHZ00718	UFPG	
<i>P. plumbea atricapilla</i>	Serra de Santa Catarina, São João da Lagoa Tapada, Paraíba, Brazil.	8	84745, 84750	TCAHZ00801, TCAHZ01218	UFPG	
<i>P. plumbea atricapilla</i>	Rua do Atalho, Canindé de São Francisco, Sergipe	9	89556-89560	392976-392979, 392983	FMNH	
<i>P. plumbea atricapilla</i>	Sítio Carro Quebrado, Triunfo, Pernambuco, Brazil.	10	84741, 84742	TCAHZ00211,	UFPG	

					TCAHZ00212	
<i>P. plumbea atricapilla</i>	Serra Talhada, Pernambuco, Brazil	11	89550, 89551	UAST01, UAST02		UFRPE
<i>P. plumbea atricapilla</i>	Estação Ecológica Raso da Catarina; ca 60 km NNW Jeremoabo; "Limite Norte", Bahia, Brazil.	12	89571, 89572	T300UFPE4851 4838UFPET288		UFPE
<i>P. plumbea atricapilla</i>	Fazenda Tamanduá, Caaporã, Paraíba, Brazil.	13	84748, 84749	TCAHZ01128, TCAHZ01129		UFCEG
<i>P. plumbea atricapilla</i>	Palmeira, Imaculada, Paraíba, Pernambuco	14	84746, 84747	TCAHZ01088, TCAHZ01090		UFCEG
<i>P. plumbea atricapilla</i>	Piranhas, Alagoas, Brazil.	15	89561, 89562	392985, 392986		FMNH
<i>P. plumbea atricapilla</i>	Canto do Buriti, P. N. Serra das Confusões, Piauí, Brazil.	16	79993	T20128		MPEG
<i>P. plumbea atricapilla</i>	São Raimundo Nonato, PN Serra da Capivara, Serra Vermelha (08°52'47.5"S; 42°43'35.7"W), Piauí, Brazil.	17	79994-79996	T20173, T20175, T20183		MPEG
<i>P. plumbea atricapilla</i>	Taquaritinha, Pernambuco, Brazil.	56	89563	427211		FMNH
<i>P. dumicola berschlepsi</i>	Água Fria, Chapada dos Guimarães, Mato Grosso, Brazil.	18	89573, 89574	3891, 3892		UFMT
<i>P. dumicola berschlepsi</i>	Chapada dos Guimarães, Mato Grosso, Brazil	19	89575-89578	1124, BOC54, BOC56, 1122		UFMT
<i>P. dumicola berschlepsi</i>	Retiro Novo, District Pirizal, Nossa Senhora do Livramento, Mato Grosso (16°22'01"S, 56°17'58"W), Brazil	20	79986, 79987	T15258, T15261		MPEG
<i>P. dumicola berschlepsi</i>	Manicoré, Amazonas, Brazil	21	79968, 79969	T522, T613		MPEG
<i>P. dumicola berschlepsi</i>	Fazenda Saloba, Monte Claros de Goiás (16°00'55"S, 51°25'30"W), Goiás, Brazil	22	79989, 79990	T15365, T15366		MPEG
<i>P. dumicola berschlepsi</i>	Mata do Garimpinho, Araguaína (7°37'27.77"S, 49°22'52.77"W), Tocantins, Brazil	23	79997, 79998	T21167, T21279		MPEG
<i>P. dumicola berschlepsi</i>	Fazenda Brejão, Brasilândia de Minas (18°43'01"S, 45°02'46"W), Minas Gerais, Brazil.	24	79988	T15338		MPEG
<i>P. dumicola berschlepsi</i>	Sorriso, Mato Grosso, Brazil	25	89579	3880		UFMT
<i>P. dumicola berschlepsi</i>	Vila Bela da Santíssima trindade, Mato Grosso, Brazil; Mato Grosso, Brazil.	26	89540	4090		PUCRS
<i>P. dumicola saturata</i>	Santa Cruz, Serrania de Huanchaca, 21 Km SE Catarata Arco Íris, Bolívia	27	86909, 86910	B-14443, B-14684		LSUMNS
<i>P. dumicola saturata</i>	San Jose-San Ignacio Rd, Km 69, Chiquitos, Santa Cruz, Bolívia.	28	89552, 89553	334547, 334549		FMNH
<i>P. dumicola saturata</i>	P.N. Defensores Del Chaco, Madrejon, 42km W, Depto. Alto Chaco, Paraguay.	29	89547, 89549	956689, 956666		SMNH
<i>P. dumicola dumicola</i>	Parque Estadual do Espinilho, Barra do Quaraí, Rio Grande do Sul, Brazil:	30	89536, 89538, 89539, 89544, 89545	3885, 3897, 4081, 4542, 4817		PUCRS
<i>P. dumicola saturata</i>	Madrejón, Alto Paraguay (20°40'N, 59°50'W), Paraguay.	31	86912	B-25821		LSUMNS
<i>P. dumicola saturata</i>	Santa Cruz department, Ibanez, 1 km N, 4 km E YPFB Refinery, ca 10 km S Santa Cruz, Bolívia.	32	86908	B-1480		LSUMNS
<i>P. dumicola saturata</i>	Estancia Perforacion, ca 130 km E Charagua, Santa Cruz, Cordellera, Bolívia	33	86911	B-18665		LSUMNS
<i>P. plumbea plumbea</i>	Tailândia, Agropalma, Palma Galiléia 02°27'30.7"S, 48°43'28.5"W), Pará,	34	79999	T22090		MPEG

	Brazil.					
<i>P. plumbea plumbea</i>	Xingu River, Altamira, Ilha da Taboca (UHE Belo Monte 03°22'60"S, 51°56'55"W), Pará, Brazil.	35	79975, 79976	T1747, T1748	MPEG	
<i>P. plumbea plumbea</i>	Ilha do Marajó, Município de Chaves, ca 4 km S (00°12'29.2"S, 49°58'39.2"S), Pará, Brazil.	36	79974	T1268	MPEG	
<i>P. plumbea plumbea</i>	Ilha do Marajó, Ponta de Pedras, Sítio Chapéu Virado (01°20'08.5"S, 48°56'0.06"W), Pará, Brazil.	37	79972, 79973	T1179, T1180	MPEG	
<i>P. plumbea plumbea</i>	Tartarugalzinho; Lago Cujubim, Amapá, Brazil	38	89567	391599	FMNH	
<i>P. plumbea plumbea</i>	Fazenda Itapoa, Amapá, Brazil.	39	89566	391598	FMNH	
<i>P. plumbea plumbea</i>	Monte Alegre, PA-423, km 4, Pará, Brazil	40	89568	392701	FMNH	
<i>P. plumbea plumbea</i>	FLOTA de Faro, ca 70 km NW from Faro (01°42'S, 57°12'W), Pará, Brazil.	41	79977	T6390	MPEG	
<i>P. plumbea parvirostris</i>	Loreto Department, ca 54 km NNW mouth Rio Morona on west bank (4°16'51"S, 77°14'16"W), Peru.	42	86923	B-42998	LSUMNS	
<i>P. plumbea parvirostris</i>	San Martín Department, Quebrada Upaquiua, ca 26 km SSE Tarapoto (6°44'S, 76°23'W)	43	86924-86926	B-46114, B-46147, B-46202	LSUMNS	
<i>Polioptila maior</i>	Cajamarca Department, Las Juntas, junction of Rios Tabaconas and Chinchipe (05°23'S, 78°46.3'W), Peru.	44	86919, 86920, 86921, 86922	B-32884, B-32927, B-32943, B-32966	LSUMNS	
<i>P. maior</i>	Huánuco Department, Nuevas Flores (Culliquish on Rio Marañon), Peru.	45	86914	B-22022	LSUMNS	
<i>P. plumbea innotata</i>	Fazenda Uberaba (03°29'12"N, 60°56'06.6"S), Amajari, Roraima, Brazil	46	79991	T18897	MPEG	
<i>P. plumbea innotata</i>	Fazenda Santa Cecília, E bank Rio Branco, opposite Boa Vista, Roraima, Brazil.	47	89564, 89565	389264, 389265	FMNH	
<i>P. plumbea cinericia</i>	Colón Province, 17 km by road NW Gamboa, Rio Agua Salud, Panama.	48	86915, 86916	B-26495, B-26870	LSUMNS	
<i>P. plumbea cinericia</i>	Panamá Province, 0.5 km SSW mouth Rio Farfan, Panamá.	49	86917, 86918	B-28420, B-28421	LSUMNS	
<i>P. plumbea cinericia</i>	Isla Coiba, Bahía de Juncal, Veraguas Province, Panama.	50	86930	B-46722	LSUMNS	
<i>P. plumbea cinericia</i>	Bocas del Toro Province, ca 7 km NW Changuinola (09°29.3'N, 82°34'W), Panama.	51	86927	B-46470	LSUMNS	
<i>P. plumbea cinericia</i>	Isla Coiba, Veraguas Province, Sendero los Monos (07°35.97'N, 77°43.38'W), Panama.	52	86928, 86929	B-46639, B-46641	LSUMNS	
<i>P. plumbea bilineata</i>	El Tocto, Lambayeque, Lambayeque, Peru.	53	87444	118276	ZMUC	
<i>P. attemboroughi</i>	Carreiro, Br 319 km 158, Tupana Lodge (04°05'0.02"S, 60°39'37.8"W), Amazonas, Brazil.	54	79970, 79971	T630, T637	MPEG	
<i>P. paraensis</i>	Centro Novo, REBIO Gurupi (03°42'12.8"S, 46°45'44"W), Maranhão, Brazil.	55	79992	T20028	MPEG	
<i>P. lactea</i>	Indaial, Ribeirão Quati (26°59'S;49°09'W), Santa Catarina, Brazil.	56	79985	T15149	MPEG	
<i>P. dumicola</i>	Departament Amambay, Paraguay.		89546	947267	SMNH	
<i>P. dumicola</i>	Departament Alto Paraguay, Paraguay.		89548	947167	SMNH	
<i>P. plumbea cinericia</i>	Panama		-	JMD743, 14695,	MBM	FJ176028.1,

			JK06097		FJ176026.1, FJ176027.1
<i>P. plumbea cinericia</i>	Belize	-	ABJ594	UAM	FJ176025.1
<i>P. paraensis</i>	Pará, Jacareacanga, Brazil.	-	1411096	MNS	FJ321788.1
<i>P. schistaceigula</i>	DariEn Province, Panama	-	B-46572	LSUMNS	KF321789.1
<i>P. schistaeceigula</i>	NI	-	ANSP4662	-	KF321795.1
<i>P. guianensis</i>	NI	-	ANSP8307, ANSP8193	-	KF321793.1, KF321792.1
<i>P. guianensis</i>	Amazonas, Brazil.	-	B-20230, B-20266	LSUMNH	KF321791.1, KF321790.1
<i>P. caerulea</i>	NI	-	BMNH X7391, MBM9190	BMNH	JX869865.1, AY329446.1
<i>P. melanura</i>	NI	-	BTGN040	-	KC864498
<i>P. californica</i>	Villa Baja Sur, Baja California, Mexico	-	CAGN020, GAGN019	-	KC864525.1, KC864529.1
<i>P. californica</i>	Villa Insurgentes, Baja California, Mexico	-	CAGN058, CAGN057	-	KC864524.1, KC864511.1
<i>P. californica</i>	Mulege, Baja California, Mexico	-	CAGN064, CAGN068, CAGN065, CAGN067	-	KC864533.1, KC864535.1, KC864513.1, KC864534.1
<i>P. californica</i>	San Ignacio, Baja California, Mexico.	-	CAGN038, CAGN027, CAGN056, CAGN055	-	KC864527.1, KC864532.1, KC864497.1, KC864528.1
<i>P. californica</i>	Lake Skinner, Riverside Co, CA, USA.	-	CAGN041A, CAGN040A	-	KC864494.1, KC864518.1
<i>P. californica</i>	San Diego Co, CA, USA.	-	CAGN044, CAGN043, GAGN046	-	KC864500.1, KC864519.1, KC864495.1
<i>P. californica</i>	Los Angeles Co, CA, USA.	-	CAGN072, CAGN070	-	KC864510.1, KC864496.1
<i>P. californica</i>	El Rosarito, Baja California, Mexico.	-	CAGN053	-	KC864517.1
<i>P. californica</i>	Orange Co, CA, USA.	-	CAGN008, CAGN010, CAGN006, CAGN007, CAGN009	-	KC864506.1, KC864505.1, KC864508.1, KC864501.1, KC864512.1
<i>P. californica</i>	Riverside Co, CA, USA.	-	CAGN042A, CAGN039	-	KC864515.1, KC864522.1
<i>P. californica</i>	Cabo San Lucas, Baja California, Mexico.	-	CAGN063, CAGN059, CAGN062, CAGN060, CAGN061	-	KC864499.1, KC864504.1, KC864516.1, KC864523.1, KC864502.1
<i>P. californica</i>	La Paz, Baja California, Mexico.	-	CAGN021, CAGN022	-	KC864530.1, KC864526.1
<i>P. californica</i>	Ensenada, Baja California, Mexico	-	CAGN051, CAGN047, CAGN048	-	KC864507.1, KC864509.1, KC864503.1
<i>P. californica</i>	Mission San Fernando, Baja California, Mexico.	-	GAGN036	-	KC864520.1
<i>P. californica</i>	San Telmo, Baja California, Mexico	-	CAGN025	-	KC864531.1
<i>P. californica</i>	Lake Hodges, San Diego Co, CA, USA.	-	CAGN045	-	KC864514.1

Table A2. List of primers used to amplify the mitochondrial genes cytochrome B and ND2, and the nuclear gene BF-7.

Gene	Primer	Sequence	Reference
	L14764	5' TGATACAAAAAATAGMCCMGAAAGG 3'	Sorenson et al. 1999
	Mt-C4	5' AGTGTGGGTTGTCTACTGA 3'	Sorenson et al. 1999
Cyt B	Mt-C2	5' TGAGGACAAATATCATTCTGAGG 3'	Sorenson et al. 1999
	Mt-FR	5' CTAAGAAGGGTGGAGTCTTCAGTTTTGGTTTACAAGAC 3'	Sorenson et al. 1999
	CYTF	5'GGCCCTCAATCTTCGTA AAAACAC 3'	This study
	L5216	5' GGCCATACCCCGRAAATG 3'	Sorenson 2003
	H6313	5' ACTCTTRTTTAAGGCTTTGAAGGC 3'	Sorenson 2003
ND2	L5256	5' GGNGGNTGAATRGGNYTNAAYCARAC 3'	Sorenson 2003
	L5215	5' TATCGGGCCCATACCCGAAAAT 3'	Sorenson 2003
	H5766	5' RGAKGAGAARGCYAGGATYTTKCG 3'	Sorenson 2003
	BF7-U	5' GGAGAAAACAGGACAATGACAATTCAC 3'	Brumfield and Edwards 2007
BF7	BF7-L	5' TCCCCAGTAGTATCTGCCATTAGGGTT 3'	Brumfield and Edwards 2007

Table A3. Genetic diversity and demographic population parameters for the species and subspecies of *Polioptila dumicola* and *P. plumbea* based on 2148 nt of cytochrome b and ND2 sequences. \* $p < 0.05$ . n, number of samples; No. Hapls, number of haplotypes; h, haplotypic diversity;  $\pi$ , nucleotide diversity; Tajima's D (Tajima 1989); Fu's FS (Fu 1997). \*Represent significant values.

	n	No. Hapls	h	$\pi$	Tajima's D	Fu's F (Fs)
<i>Polioptila dumicola</i> (all populations)	27	24	0.991 $\pm$ 0.013	0.00636 $\pm$ 0.00001	-1.906*	-12.399*
<i>P. d. berschlepsi</i>	17	16	0.993 $\pm$ 0.023	0.00585 $\pm$ 0.0072	-0.807	-7.079
<i>P. d. saturata</i>	8	8	1.000 $\pm$ 0.063	0.00239 $\pm$ 0.0015	-1.1176	-4.441
<i>P. d. dumicola</i>	2	2	1.000 $\pm$ 0.500	0.02068 $\pm$ 0.0148	-	-
<i>Polioptila plumbea</i> (all populations)	59	48	0.993 $\pm$ 0.004	0.06219 $\pm$ 0.0136	0.2955	-2.081
<i>P. p. plumbea</i>	9	8	0.972 $\pm$ 0.064	0.0042 $\pm$ 0.0021	-0.3052	-2.005
<i>P. p. atricapilla</i>	31	25	0.985 $\pm$ 0.012	0.01124 $\pm$ 0.00606	-1.6540	-5.740*
<i>P. p. bilineata</i>	1	1	-	-	-	-
<i>P. p. parvirostris</i>	4	4	1.000 $\pm$ 0.177	0.01889 $\pm$ 0.01109	-0.7509	1.865
<i>P. p. innotata</i>	2	2	1.000 $\pm$ 0.500	0.00345 $\pm$ 0.00141	-	-
<i>P. p. cinericia</i>	8	7	0.964 $\pm$ 0.077	0.0161 $\pm$ 0.00572	1.2282	1.725
<i>P. maior</i>	4	3	0.833 $\pm$ 0.222	0.00476 $\pm$ 0.00277	-0.1167	2.479

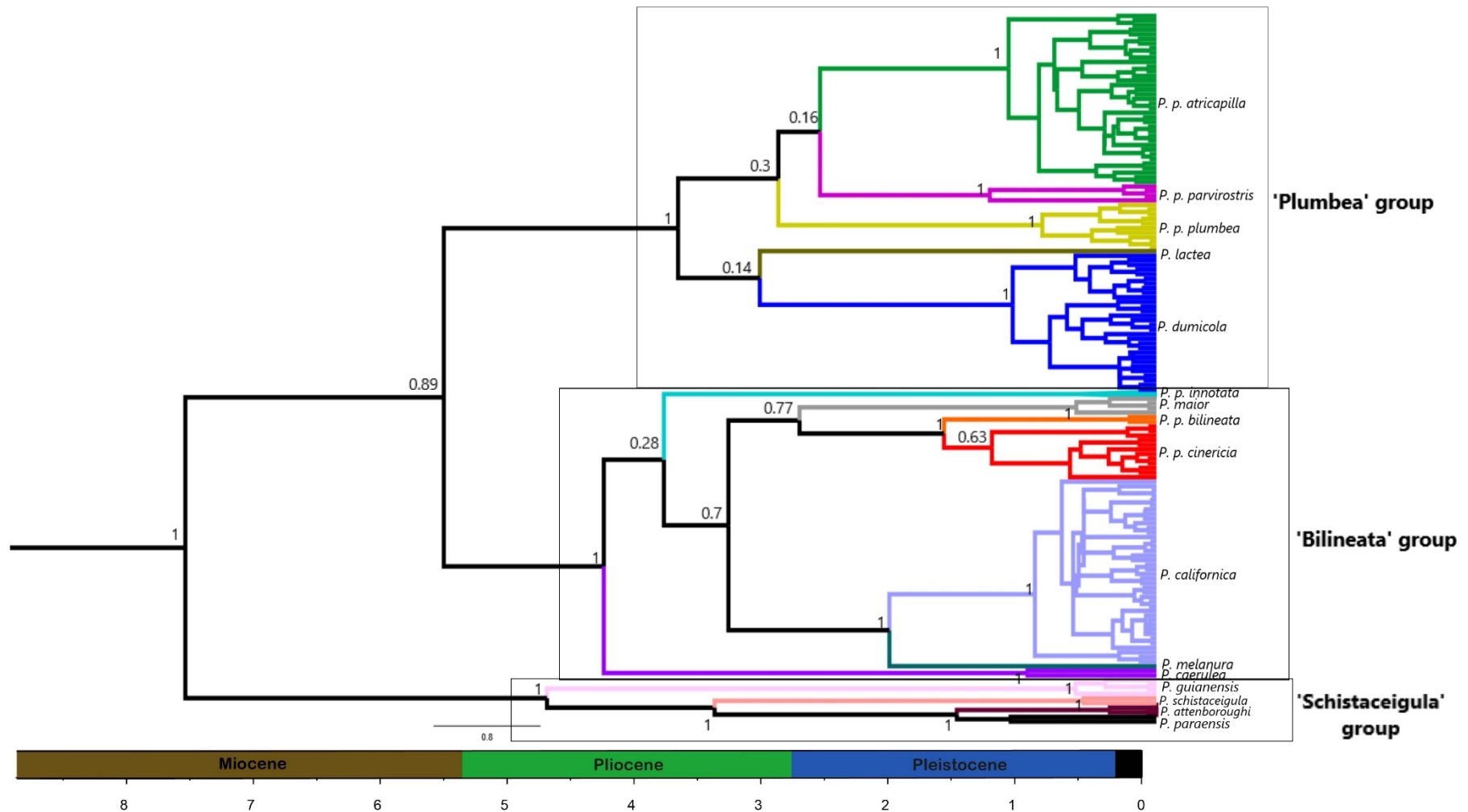


Figure A1. Bayesian inference based on ND2 gene of *Polioptila* genus, including the species and subspecies: *P. p. atricapilla*, *P. p. parvirostris*, *P. p. plumbea*, *P. dumicola*, *P. p. bilineata*, *P. p. cinerica*, *P. maior*, *P. p. innotata*, *P. californica*, *P. lactea*, *P. melanura*, *P. caerulea*, *P. guianensis*, *P. schistaceigula*; *P. paraensis* and *P. attenboroughi*. The scale is estimated in millin years ago, the posterior probability is placed over the nodes and the confidence interval of the molecular time estimate is placed beside the nodes.

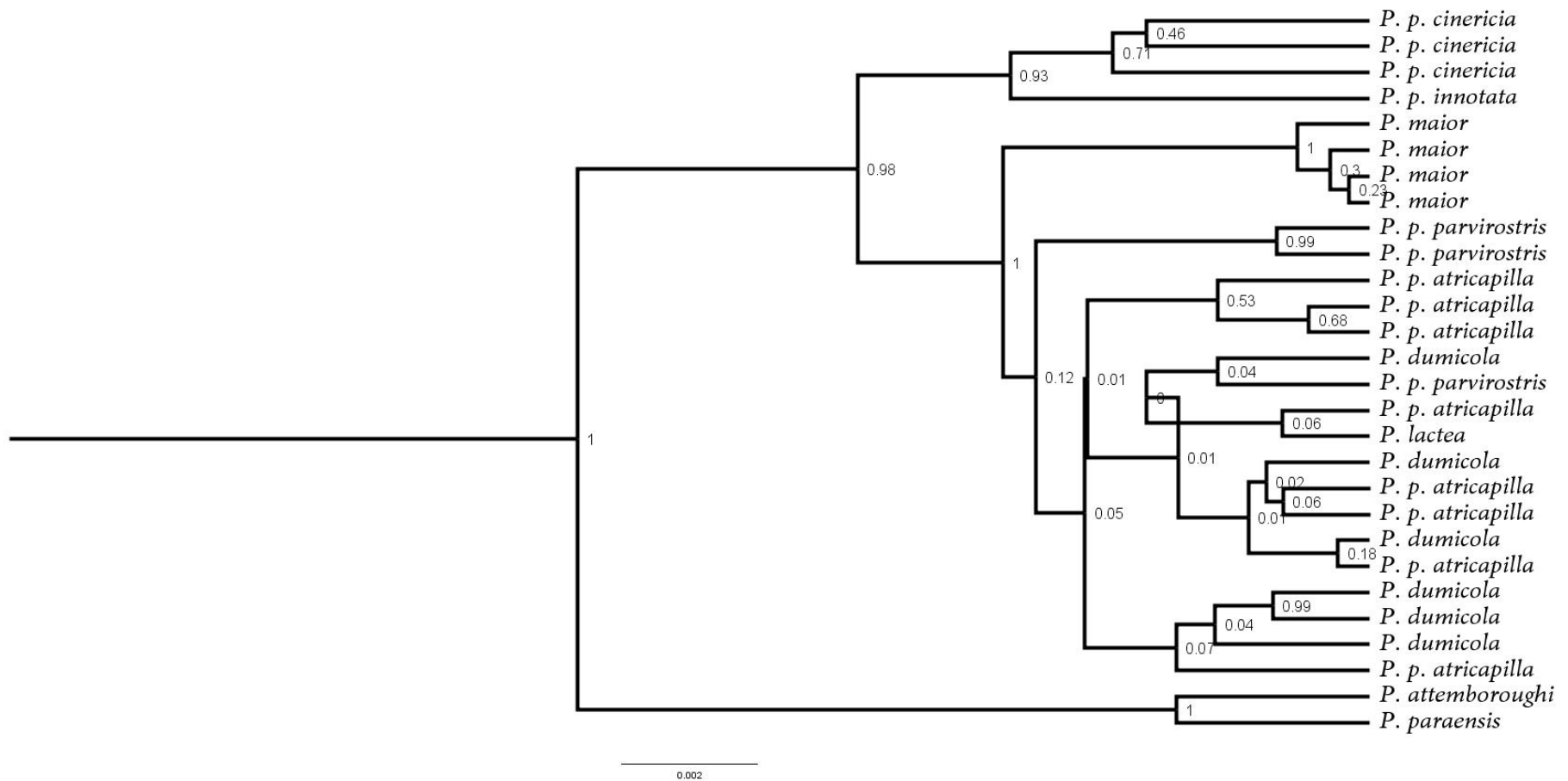


Figure A2. Bayesian inference the *Polioptila* gnatcatchers (*Polioptila plumbea*, *P. dumicola*, *P. lactea* and *P. maior*, tree rooted in *P. attemboroughi* and *P. paraensis*), based on the nuclear gene beta fibrinogen intron 7 of (745 bp). Posterior probabilities values are placed at the nodes.