

## Supplementary Materials

**Supplementary Table S1.** Sample information for *Scutigera bouleengeri*

Site ID	Location	Province	Longitude (°E)	Latitude (°N)	Group
YZ1	Yuzhong	Gansu	104.0101	35.48745	E.A
LX2	Linxia	Gansu	103.1416	35.1359	E.A
JZG3	Jiuzhaigou	Sichuan	103.9255	33.05581	E.B
XH4	Xiahe	Gansu	102.2149	35.01339	E.C
ZK5	Zeku	Qinghai	101.4652	35.11549	E.C
TD6	Tongde	Qinghai	100.3658	35.35801	E.C
GL7	Guoluo	Qinghai	101.0751	32.76463	E.C
REG8	Ruergai	Sichuan	102.6256	34.0827	E.C
KD9	Kangding	Sichuan	101.3691	30.02772	E.D
DC10	Daocheng	Sichuan	100.3512	28.42087	E.F
LT11	Litang	Sichuan	100.1173	30.06709	E.F
ML12	Muli	Sichuan	100.5184	28.3592	E.F
BT13	Batang	Sichuan	99.5467	30.48216	E.F
YSH14	Yushu	Qinghai	96.64868	32.77412	W.a
MK15	Mangkang	Xizang	98.54653	29.94484	W.a
GJ16	Gongjue	Xizang	98.52251	30.87244	W.a
BS17	Basu	Xizang	97.1726	30.45389	W.a
BY18	Baiyu	Sichuan	98.8311	31.21531	E.F
BM19	Bomi	Xizang	95.77211	29.86624	W.a
ZD20	Zaduo	Qinghai	95.30968	33.94162	W.a
LZ21	Luozha	Xizang	91.25706	28.07918	W.a
LKZ22	Langkazi	Xizang	90.54246	28.47704	W.a
RKZ23	Rikeze	Xizang	87.3346	28.82875	W.a
NLM24	Nielamu	Xizang	86.016	28.2593	W.a

**Supplementary Table S2.** Morphological variables measured in *S. bouleengeri*.

Site_ID	Latitude (°N)	Longitude (°E)	SVL	HL	HW	SL	INS	IOS	UEW	ED	LAHL	LAD	HLL	TL	TW	TFL	FL
YZ1	35.48745	104.0101	57.21	19.68	18.24	6.76	5	5.06	4.42	6.94	29.88	8.24	74.6	23.55	7.37	38.01	29.33
YZ1	35.48745	104.0101	56.26	17.4	16.86	6.04	4.83	5.42	4.14	6.06	28.62	7.47	74.41	24.46	6.51	36.57	25.42
YZ1	35.48745	104.0101	54.03	17.81	17.21	5.6	5	5.39	4.46	5.98	26.62	6.26	69.21	23.37	7.04	35.71	24.78
YZ1	35.48745	104.0101	55.54	16.71	17.1	5.4	4.4	4.97	4.25	5.26	26.8	5.84	68.82	21.94	5.6	37	23.34
YZ1	35.48745	104.0101	56.43	17.25	17	5.48	4.24	5.62	4.18	5.93	27.61	6.53	73.1	22.82	5.32	34.3	25.23
YZ1	35.48745	104.0101	52.91	16.66	16.06	5.98	3.81	4.03	4.4	6	26.35	5.6	65.6	20.75	5.09	33.63	22.89
YZ1	35.48745	104.0101	56.7	17.78	18.08	5.8	4.89	4.88	4.4	5.55	27.48	6	74.06	22.98	5.18	37.2	24.17
LX2	35.1359	103.1416	48.66	15.13	15.88	5.74	4.79	5.44	3.97	5.75	24.18	6.57	66.2	21.62	54.33	36.74	27.5
JZG3	33.05581	103.9255	58.91	18.74	17.62	7.11	4.69	4.89	4.19	6.45	23.37	5.51	66.15	20.15	6.03	33.21	23.98
JZG3	33.05581	103.9255	56.64	18.18	17.05	6.12	5.09	4.63	4.07	6.17	27.36	4.64	67.98	21.68	7.22	34.98	24.37
JZG3	33.05581	103.9255	48.91	17.12	16.39	5.64	4.64	5.02	3.8	5.97	26.99	5.53	63.47	19.44	6.22	32.63	20.55
JZG3	33.05581	103.9255	55.48	18.86	18.05	6.16	4.84	5.24	4.37	6.55	26.55	6.72	70.14	21.65	7.1	34.26	24.79
JZG3	33.05581	103.9255	56.66	18.17	17.03	4.98	4.23	5.28	4.34	6.4	26.47	5.22	69.12	20.03	6.25	32.77	25.08
JZG3	33.05581	103.9255	55.18	19.12	17.44	6.72	5.04	5.72	4.92	6.59	25.57	6.27	74.68	24.25	6.17	35.56	24.17
JZG3	33.05581	103.9255	54.58	18.72	18.25	6.41	5.13	6.19	4.66	5.92	27.76	6.63	74.61	23.49	7.14	37.23	26.94
JZG3	33.05581	103.9255	56.23	18.24	18.62	5.87	4.61	5.11	3.95	6.41	27.97	6.66	73.09	24.32	7.66	35.32	26.48

Site_ID	Latitude (°N)	Longitude (°E)	SVL	HL	HW	SL	INS	IOS	UEW	ED	LAHL	LAD	HLL	TL	TW	TFL	FL
JZG3	33.05581	103.9255	53.67	16.55	18	6.25	5.02	5.34	4.16	6.1	24.77	5.9	69	22.62	6.82	33.88	24.05
JZG3	33.05581	103.9255	48.71	15.54	15.49	5.09	4.11	4.68	3.62	5.43	23.4	5.83	62.3	19.21	6.5	30.51	21.62
JZG3	33.05581	103.9255	59.41	17.32	17.52	5.54	4.79	5.7	4.6	6.2	28.72	5.11	73.34	22.49	6.77	33.25	23.67
XH4	35.01339	102.2149	50.63	16.98	17.83	6.03	5.08	5.48	4.51	6.82	24.76	5.19	59.86	19.08	6.62	33.65	24.37
XH4	35.01339	102.2149	45.91	17.44	16.09	5.56	4.4	4.9	3.62	6.08	22.31	6.21	64.86	18.16	5.54	31.34	21.66
XH4	35.01339	102.2149	46.56	17.12	15.64	4.78	4.33	4.7	3.63	6.05	21.59	5.18	54.36	16.99	5.22	27.63	18.81
XH4	35.01339	102.2149	47.71	15.98	15.65	4.91	4.58	5.08	3.98	5.97	21.68	6.12	57.51	18.73	6.67	28.8	24.24
TD5	35.35801	100.3658	48.17	15.64	14.46	4.5	4.75	5.6	23.2	5.58	54.75	18.1	5.72	43.29	19.38	27.81	21.48
TD5	35.35801	100.3658	48.42	18.43	16.79	5.49	4.66	5.22	24.27	6.05	59.18	18.9	7.05	44.16	22.6	37.71	23.21
TD5	35.35801	100.3658	46.82	18.38	16.08	5.34	5.3	5.69	25.39	6.14	66.8	20.47	6.07	45.23	24.28	37.33	25.21
TD5	35.35801	100.3658	43.92	15.85	14.51	5.09	4.69	5.69	22.55	5	54.39	18.72	5.88	39.9	22.86	39.77	29.28
TD5	35.35801	100.3658	49.53	16.36	15.4	5.61	5.08	4.98	20.78	6.2	52.1	19.61	6.41	42.72	21.51	39.77	29.28
TD5	35.35801	100.3658	50.81	15.8	15.8	5.1	5.6	6.14	24.77	7.2	63.22	19.8	7.1	48.68	20.71	42.09	32.54
ZK6	35.11549	101.4652	45.26	14.97	15.4	4.8	5.3	6.2	20.4	5.67	56.69	21.36	6.4	45.42	20.63	25.6	19.92
ZK6	35.11549	101.4652	43.29	13.68	14.03	5.35	4.52	5.14	3.87	5.23	21.53	5.07	54.66	17.51	5.44	27.69	19.74
ZK6	35.11549	101.4652	44.79	14.25	14.31	5.31	4.63	5.12	4.46	5.22	20.56	6.07	56.13	18.06	4.77	28.44	19.86
ZK6	35.11549	101.4652	45.58	14.14	14.44	5.52	4.45	5.09	3.79	5.27	21	5.75	57.79	19.01	5.23	28.47	21.7
ZK6	35.11549	101.4652	49.98	15.58	16.34	5.61	4.56	5.2	4.43	5.07	23.91	6.78	56	19.03	5.91	32.8	20.2
ZK6	35.11549	101.4652	45.76	16.43	16.57	5.68	4.95	5.02	4.4	5.66	23.73	6.92	63.24	20.95	5.56	32.55	21.75
ZK6	35.11549	101.4652	45.41	14.38	13.82	5.39	3.9	5.2	3.49	5.05	21.48	5.28	56.21	17.29	5.16	30.71	21.44
ZK6	35.11549	101.4652	47.57	14.72	14.96	6.15	4.21	5.38	3.89	5.28	23	5.77	57.73	19.49	6.18	29.98	18.44
GL7	32.76463	101.0751	50.76	16.35	15.41	5.42	4.45	5.63	4	5.43	23.92	6.43	62.82	20.07	6.3	29.08	22.14
GL7	32.76463	101.0751	47.86	15.78	15.49	5.75	3.66	4.48	4.34	6.17	22.77	5.16	59.18	18.7	5.86	27.74	22.32
GL7	32.76463	101.0751	45.34	16.58	16.81	5.63	4.46	5.34	4.28	5.67	21.26	6.3	63.65	20.66	5.25	30.46	22.12
GL7	32.76463	101.0751	47.07	16.09	16.61	5.56	4.41	5.76	4.17	5.02	20.8	6.08	65.82	20.02	5.09	30.95	20.67
GL7	32.76463	101.0751	46.84	14.7	14.94	5.46	3.96	4.28	4.18	5.16	21.52	5.95	58.18	18.16	6.2	29.82	20.8
GL7	32.76463	101.0751	39.59	13.87	14.55	5.05	4.21	5.36	3.82	4.98	18.58	4.74	55.01	17.36	5.27	24.6	18.46
GL7	32.76463	101.0751	45.18	15.24	15.33	5.19	4.23	5.03	3.87	5.41	18.93	4.81	58.1	16.96	5.41	25.14	18.32
GL7	32.76463	101.0751	48.75	15.57	16.01	5.82	4.85	4.75	4.09	5.83	22.13	5.7	62.1	19.59	5.46	28.33	21.4
GL7	32.76463	101.0751	47.87	15.47	15.48	5.37	4.82	5.24	4.03	5.23	22.27	5.32	61.67	19.55	5.8	29.96	21.78
GL7	32.76463	101.0751	46.17	15.17	16.18	5.33	4.85	5.3	4.45	5.84	20.87	6.86	52.19	20.54	6.05	30.01	16.38
REG8	34.0827	102.6256	50.63	16.98	17.83	6.03	5.08	5.48	4.51	6.82	24.76	5.19	59.86	19.08	6.62	33.65	24.37
REG8	34.0827	102.6256	45.91	17.44	16.09	5.56	4.4	4.9	3.62	6.08	22.31	6.21	64.86	18.16	5.54	31.34	21.66
REG8	34.0827	102.6256	46.56	17.12	15.64	4.78	4.33	4.7	3.63	6.05	21.59	5.18	54.36	16.99	5.22	27.63	18.81
REG8	34.0827	102.6256	47.71	15.98	15.65	4.91	4.58	5.08	3.98	5.97	21.68	6.12	57.51	18.73	6.67	28.8	24.24
REG8	34.0827	102.6256	48.28	16.85	16.23	5.82	4.36	5.58	3.45	6.16	23.64	6.54	60.96	18.89	6.46	27.81	21.48
REG8	34.0827	102.6256	53.24	17.03	17.18	6.4	4.64	5.45	4.13	6.74	23.36	5.42	61.89	20.64	7.12	37.71	23.21
REG8	34.0827	102.6256	56.22	19.71	19.98	6.47	5.28	5.3	4.87	7.36	27.9	8.23	71.54	21.84	8.24	37.33	25.21
REG8	34.0827	102.6256	61.82	20.82	22.47	6.34	5.19	6.11	5.13	7.64	31.13	9.13	80.1	27.55	8.5	39.77	29.28
REG8	34.0827	102.6256	62.91	20.71	22.34	6.97	5.04	5.62	5.02	7.07	31.55	9.13	80.1	27.55	8.5	39.77	29.28
REG8	34.0827	102.6256	61.35	24.22	21.8	7.44	5.42	6.48	5.27	7.63	33.55	9.94	80.58	27.38	8.2	42.09	32.54
HY9	32.79661	102.5506	45.94	16.84	16.55	5.33	4.13	4.82	4.12	6.04	21.35	6.53	53.36	18.6	5.16	24.75	15.55
HY9	32.79661	102.5506	46.32	15.82	16.01	5.76	4.39	4.88	3.66	6.03	22.98	6.26	63.58	19.07	6.03	30.86	21.42
HY9	32.79661	102.5506	47.22	15.9	16.19	6.24	4.47	4.59	3.92	5.9	23.66	5.51	62.12	17.76	4.79	31.44	21.18
HY9	32.79661	102.5506	45.98	15.11	15.59	5.34	4.49	4.76	4.13	6.26	21.19	5.54	55.21	18.51	5.38	27.08	18.31
HY9	32.79661	102.5506	44.7	14.78	15.44	4.73	4.52	5.01	3.81	5.02	22.09	6.04	62.24	18.5	5.35	29.25	21.72
HY9	32.79661	102.5506	43.45	14.58	14.78	6.09	3.47	4.83	3.7	5.48	20.35	4.85	53.33	17.87	5.8	26.19	19.29
HY9	32.79661	102.5506	45.35	15.05	16.26	5.36	4.59	5.09	3.51	5.47	22.82	5.46	59.73	18.64	6.43	29.92	22.49

Site_ID	Latitude (°N)	Longitude (°E)	SVL	HL	HW	SL	INS	IOS	UEW	ED	LAHL	LAD	HLL	TL	TW	TFL	FL
HY9	32.79661	102.5506	44.34	15.53	14.85	5.76	5.04	5.81	3.83	5.6	21.39	5	53.62	17.27	5.66	26.33	18.92
HY9	32.79661	102.5506	44.5	15.47	15.82	5.18	4.59	5.22	3.79	6.07	19.94	4.9	57.91	17.9	5.73	27.44	19.16
HY9	32.79661	102.5506	46.18	15.57	14.78	5.52	5.71	4.64	5.04	5.93	18.61	5.49	55.43	16.83	5.22	25.86	16.88
HY9	32.79661	102.5506	44.14	15.83	15.37	5.4	4.06	5.43	3.56	5.85	20.42	5.42	55.15	16.85	5.71	26.8	18.44
HY9	32.79661	102.5506	44.73	14.86	15.35	5.33	4.46	4.97	3.66	5.4	20.34	5.37	56.52	17.35	5.19	26.1	19.8
HY9	32.79661	102.5506	42.1	15.85	15.55	5.31	4.21	5.09	3.39	5.75	20.54	5.82	53.62	17.79	5.46	27.42	18.51
HY9	32.79661	102.5506	41.77	15.3	15.43	5.02	4.42	5.08	3.74	5.64	20.36	5.51	56.73	18.22	5.01	27.6	20.77
KD10	30.1438	101.8692	46.86	16.3	15.79	5.15	4.21	4.96	4.03	6.48	25.7	5.82	63.35	19.29	6.39	32.78	23.64
KD10	30.1438	101.8692	48.15	17.17	16.35	5.79	4.57	5.15	4.39	5.72	23.11	5.44	64.1	19.12	5.98	20.9	20.65
KD10	30.1438	101.8692	44.03	15.05	15.66	5.18	4.07	4.48	3.64	5.5	21.62	5.76	57.38	18.22	5.66	26.06	19.28
KD10	30.1438	101.8692	47.62	15.38	16.31	5.03	3.89	4.58	4.11	5.3	23.64	5.39	60.71	18.72	6.52	29.52	21.01
KD10	30.1438	101.8692	47.54	16.67	16.37	6.45	4.4	4.68	3.72	5.84	23.73	5.82	64.93	20.33	6.28	29.92	22.82
KD10	30.1438	101.8692	44.09	15.09	15.89	5.73	4.34	4.6	3.4	6.13	19.76	5.68	56.12	17.5	5.67	24.66	19.92
KD10	30.1438	101.8692	48.03	15.78	16.69	5.64	4.37	4.78	3.97	5.55	24.16	5.63	57.73	18.36	6.23	30.43	22.17
KD10	30.1438	101.8692	45.12	15.31	15.5	5.14	4.05	4.76	4.28	5.32	22.55	5.32	59.62	18.08	6.65	29.28	20.24
KD10	30.1438	101.8692	46.57	16.14	16.48	5.63	4.78	5.15	4.48	6.07	24.38	6.2	60.9	18.25	7.01	28.05	22.77
KD10	30.1438	101.8692	47.51	17.26	17.14	5.66	4.33	4.92	4.43	6.01	23.14	6.4	61	18.41	6.39	28.61	20.31
KD10	30.1438	101.8692	53.31	17.89	18.25	5.42	4.58	5.26	4.52	6.37	24.93	5.5	60.8	19.55	5.89	29.21	21.91
KD10	30.1438	101.8692	48.57	16.71	16.52	5.56	4.41	4.52	3.96	5.73	25.31	5.36	66.01	19.97	6.1	31.86	22.09
KD10	30.1438	101.8692	44.74	15.7	16.31	5.45	4.98	4.48	4.08	6.13	24.04	5.08	59.41	18.62	6.14	30.39	21.96
KD10	30.1438	101.8692	50.37	16.76	16.29	5.59	4.66	5.49	4.67	5.77	23.89	5.1	67.58	20.91	5.8	33.28	21.44
KD10	30.1438	101.8692	49.09	17.33	16.86	6.05	4.8	4.95	4.39	6.2	21.79	5.93	64.02	19.52	6.89	29.43	20.92
KD10	30.1438	101.8692	51.35	17.82	17.17	5.61	4.35	4.93	3.91	6.15	23.19	4.84	58.08	18.28	6.42	28.8	20.65
KD10	30.1438	101.8692	50.9	15.95	16.2	5.47	4.36	4.83	4.11	5.83	23.95	6.21	59.87	19.86	7.34	28.74	22.37
KD10	30.1438	101.8692	45.86	16.55	16.63	5.24	4.5	4.95	4.12	6.06	22.57	6.49	64.22	19.38	6.81	27.54	21.47
KD10	30.1438	101.8692	51.6	17.93	17.25	6.1	4.68	5.01	4.63	6.19	23.56	6.01	62.04	19.28	7.63	28.22	22.03
KD10	30.1438	101.8692	47.5	17.74	16.11	5.88	4.38	5.03	3.95	6.27	22.36	5.74	60.29	18.38	6.69	27.12	20.98
KD10	30.1438	101.8692	47.08	17.01	16.96	6.31	4.63	5.03	3.81	6.11	23.54	6.41	62.64	19.97	5.73	31.75	21.59
KD10	30.1438	101.8692	45.94	14.98	14.97	4.75	4.41	5.04	4.03	6.18	21.96	5.7	60.79	18.35	5.62	29.33	21.93
KD10	30.1438	101.8692	45.76	16.18	15.38	5.18	4.26	4.79	3.9	5.65	21.96	5.65	58.62	17.27	5.87	29.02	22.38
KD10	30.1438	101.8692	48.48	16.79	17.71	5.58	4.41	4.89	4.5	5.83	23.56	5.43	65.42	18.87	6.34	29.04	22.49
KD10	30.1438	101.8692	48.89	16.17	16.13	5.14	4.07	4.68	3.92	5.22	24.11	5.68	64.63	19.38	5.4	28.82	23.07
KD10	30.1438	101.8692	55	16.56	16.84	5.58	5.16	4.94	4.52	6.14	25.95	4.48	61.54	19.59	6.83	30.67	23.58
KD10	30.1438	101.8692	48.11	15.74	16.93	5.66	4.38	5.34	4.08	6.02	23.3	6.25	60.04	19.13	7.12	28.1	22.36
KD10	30.1438	101.8692	49.17	17.13	17.65	5.62	4.16	5.13	4.39	6.14	24.57	6.09	67.83	20.34	6.23	29.47	23.17
KD10	30.1438	101.8692	52.17	17.15	17.06	5.91	4.33	4.69	4.28	6.02	21.67	6.39	63.62	20.18	6.76	30.93	23.99
KD10	30.1438	101.8692	50.92	16.43	17.49	5.86	4.62	5.45	4.13	5.7	23	6.89	68.69	20.82	27.09	32.52	23.36
KD10	30.1438	101.8692	49.89	19.89	16.56	5.72	4.55	4.82	4.09	5.73	23.74	6.44	60.51	20.61	7.21	30.11	22.62
KD10	30.1438	101.8692	50.83	17.42	16.91	5.47	4.33	5.14	4.45	6.13	24.66	5.74	61.38	20.69	6.52	29.83	22.9
KD10	30.1438	101.8692	49.47	16.68	17.82	5.52	4.83	5.03	4.24	5.67	23.31	5.83	64.32	19.23	7.04	28.93	22.9
KD10	30.1438	101.8692	46.9	16.75	15.3	5.8	4.8	5.32	4.65	5.63	23.43	6	63.36	18.91	6.65	28.28	21.78
KD10	30.1438	101.8692	48.64	16.03	15.6	6.1	4.43	5.26	4.07	5.1	22.45	6.06	62.03	18.46	6.82	30.3	22.18
KD10	30.1438	101.8692	45.37	15.38	15.44	5.72	4.46	4.93	3.53	5.07	23.58	5.22	61.48	19.84	6.22	29.39	22.4
KD10	30.1438	101.8692	47.36	16.03	16.22	5.71	4.23	4.28	3.67	5.76	22.21	5.76	67.56	20.02	5.75	32.41	23.47
KD10	30.1438	101.8692	47.36	16.03	16.22	5.71	4.23	4.28	3.67	5.76	22.21	5.76	67.56	20.02	5.75	32.41	23.47
DC11	28.42099	100.3514	46.95	16.62	17.79	6.28	4.79	4.44	3.97	5.53	22.21	5.38	60.16	18.99	6.72	28.91	22.46
DC11	28.42099	100.3514	46.03	16.63	17.32	6.28	4.37	5.05	4.54	5.7	21.97	6.06	61.9	18.7	6.53	28.49	21.02
DC11	28.42099	100.3514	45.51	15.74	16.77	5.41	4.89	4.73	4.08	5.13	21.73	5.66	64.88	19.64	5.7	32.25	22.65

Site_ID	Latitude (°N)	Longitude (°E)	SVL	HL	HW	SL	INS	IOS	UEW	ED	LAHL	LAD	HLL	TL	TW	TFL	FL
DC11	28.42099	100.3514	45.71	15.55	16.05	5.56	3.88	4.65	4.24	6.24	22.57	5.08	62.82	18.62	5.6	30.95	21.09
DC11	28.42099	100.3514	50.54	16.85	16.93	5.87	4.31	5.45	4.37	5.63	24.35	6.16	67.57	19.3	5.55	34.31	23.76
DC11	28.42099	100.3514	46.01	15.37	16.63	5.54	4.39	5.04	4.21	6.11	24.17	5.38	66.3	19.46	5.59	33.02	22.77
LT12	30.06709	100.1173	50.23	16.04	16.57	5.19	4.33	5.28	4.05	5.2	24.2	5.03	60.37	18.89	5.12	30.52	23.68
LT12	30.06709	100.1173	48.8	17.84	17.14	5.2	5.13	5.22	3.6	6.4	21.68	6.38	54.51	17.67	6.31	30.83	22.91
ML13	28.3592	100.5184	50.6	18.39	17.56	5.33	6.36	4.94	3.61	6.4	26.1	5.55	61.36	20.04	6.9	32.76	24.46
ML13	28.3592	100.5184	53.34	17.92	17.89	5.26	5.21	5.89	3.1	6.21	26.77	5.88	63.38	20.05	6.51	33.8	24.85
ML13	28.3592	100.5184	48.48	16.9	16.15	5.28	5.8	5.35	2.9	6.32	24.47	4.45	52.76	18.56	5.9	32.18	23.62
ML13	28.3592	100.5184	50.77	16.94	17.68	5.02	5.2	5.86	3.81	5.22	24.38	5.53	60.85	20.81	5.67	32.08	25.04
BT14	28.3592	100.5184	46.17	15.56	15.27	6.01	4.89	4.98	3.48	5.58	22.23	4.97	62.17	18.84	4.23	30.31	21.91
BT14	28.3592	100.5184	48.11	16.66	15.96	6.09	4.47	5.42	3.65	5.98	22.6	5.6	64.82	18.75	5.07	32.35	23.62
BT14	28.3592	100.5184	44.92	15.15	15.53	5.16	4.25	5.14	3.41	4.63	22.31	5.51	59.37	18.47	5.51	30.16	20.85
BT14	30.48216	99.5467	50.23	14.77	15.53	5.32	4.07	4.77	3.98	5.79	24.22	5.34	65.21	19.03	4.98	31.94	23.1
BT14	30.48216	99.5467	43.2	14.63	15.05	5.2	4.1	4.71	3.87	5.78	22.27	5.19	60.58	17.54	5.71	28.89	20.46
BT14	30.48216	99.5467	48.99	16.54	15.37	6.37	4.53	5.28	3.59	5.97	24.72	5.8	69.56	19.68	4.45	33.64	23.53
BT14	30.48216	99.5467	46.91	15.66	16.3	6.12	4.38	5.4	3.7	5.29	23.84	5.95	66.04	19.81	5.33	31.22	22.91
BT14	30.48216	99.5467	48.62	16.59	16.22	6.84	4.63	4.83	4.32	6.33	24.67	6.07	69.49	20.06	5.16	32.29	23.95
YSH15	32.77412	96.64868	68.39	22.78	24.43	7.6	5.81	6.84	5.6	6.4	30.66	7.49	77.9	29.78	7.77	39.99	16.23
YSH15	32.77412	96.64868	65.69	22.63	23.77	7.36	5.98	6.84	5.43	7.25	31.29	6.28	79.51	25.42	7.93	40.56	27.55
YSH15	32.77412	96.64868	62.34	22.36	22.81	7.82	6.16	7.86	5.76	6.73	29.63	6.91	78.72	26.34	8.53	40.1	29.56
YSH15	32.77412	96.64868	52.59	17.39	18.44	6.13	4.77	5.36	4.56	6.51	23.84	6.61	67.14	21.78	7.88	30.5	22.93
YSH15	32.77412	96.64868	51.01	17.03	17.25	5.6	4.86	5.33	3.69	5.94	22.49	5.58	62.98	20.33	6.44	31.06	21.22
YSH15	32.77412	96.64868	49.63	15.8	16.77	5.97	4.76	5.62	3.78	5.73	20.71	6.85	61.62	20.72	6.17	30.06	21.82
YSH15	32.77412	96.64868	49.91	15.98	16.46	5.96	4.39	5.97	3.52	4.95	22.56	5.36	55.04	19.32	7.14	25.98	20.02
YSH15	32.77412	96.64868	49.72	16.22	16.13	6.05	4.13	4.57	3.5	5.7	19.86	6.22	59.46	19.4	6.78	20.86	19.47
YSH15	32.77412	96.64868	46.54	16.09	16.73	6.02	4.48	5.79	4.28	5.61	20.94	6.13	69.22	22.27	7.01	29.33	18.8
YSH15	32.77412	96.64868	47.91	16.26	16.51	5.73	4.33	4.76	3.61	4.96	23.05	5.62	64.38	19.19	5.8	30.9	21.45
YSH15	32.77412	96.64868	50.85	16.75	17.66	5.41	4.42	4.87	3.96	6.58	20.68	5.59	61.11	19.46	6.95	27.2	19.07
YSH15	32.77412	96.64868	46.07	15.43	16.29	5.86	4.73	5.24	3.98	5.86	22.06	5.28	57.07	19.2	5.4	26.97	20.16
YSH15	32.77412	96.64868	45.58	15.01	15.43	5.12	3.72	4.88	3.76	5.47	22.94	6.73	59.18	19.63	5.54	30.18	19.85
YSH15	32.77412	96.64868	44.97	16.43	15.3	5.1	4.28	5.19	4.37	5.01	19.07	5.29	57.91	17.58	6.46	28.76	19.33
YSH15	32.77412	96.64868	43.43	14.48	16.74	5.74	5.18	4.95	3.43	5.23	22.73	5.69	60.19	19.26	6.32	27.46	19.26
YSH15	32.77412	96.64868	45.77	14.72	15.93	5.98	4.65	4.81	4.15	5.79	21.13	5.95	59.81	19.78	6.23	29.06	19.62
MK16	29.94484	98.54653	52.87	22.14	17.2	5.94	4.71	5.29	4.53	6.58	23.32	6.81	69.28	20.68	7.18	24.04	24.52
MK16	29.94484	98.54653	56.01	22.84	17.38	6.16	4.63	5.23	4.22	5.66	24.8	6.6	69.66	20.27	7.22	31.82	24.97
MK16	29.94484	98.54653	51.36	21.42	16.66	6.47	4.86	5.82	4.27	6.72	22.19	5.94	63.98	20.11	7.17	30.9	23.66
MK16	29.94484	98.54653	52.63	22.21	17.59	6.03	4.41	4.59	4.16	5.74	22.5	5.79	66.34	20.51	16.43	31.45	23.77
MK16	29.94484	98.54653	51.19	20.55	16.58	5.82	4.42	4.63	4.3	5.65	24.14	5.91	59.72	19.49	7.02	30.49	22.65
MK16	29.94484	98.54653	49.88	20.56	16.53	5.78	4.9	4.94	4.35	6.03	22.75	6.21	67.99	20.11	7.38	31.33	23.79
GJ17	30.87244	98.52251	49.31	18.78	15.27	5.39	5.19	4.99	3.8	6	21.08	5.71	58.59	19.03	5.76	31.25	23.14
BS18	30.45389	97.1726	47.33	17.29	16.21	5.15	4.55	4.7	4.08	6.43	22.54	5.69	56.62	18.36	5.4	28.56	21.77
BS18	30.45389	97.1726	55.08	21.01	17.19	6.21	4.1	4.95	4.54	7.3	22.46	7.02	70.23	22.05	6.16	37.92	25.96
BM19	29.86624	95.77211	59.79	24.33	19.62	6.81	5.53	5.88	4.98	6.77	27.59	6.64	74.72	21.88	7.27	38.18	28.1
BM19	29.86624	95.77211	53.13	23.49	17.77	5.69	4.42	4.81	4.81	7.75	25.45	5.8	64.17	20.76	7.02	33.38	22.68
BM19	29.86624	95.77211	58.8	22.08	17.79	7.02	4.75	4.92	4.67	5.61	23.77	6.9	67.61	22.04	7.09	34.67	25.4
BM19	29.86624	95.77211	52.18	22.12	19	6.14	5.04	5.51	4.77	6.14	25.32	6.03	64.25	20.94	6.3	33.82	22.51

Abbreviation: snout–vent length (SVL), head length (HL), head width (HW), snout length (SL); inter-nasal space (INS), width of upper eyelid

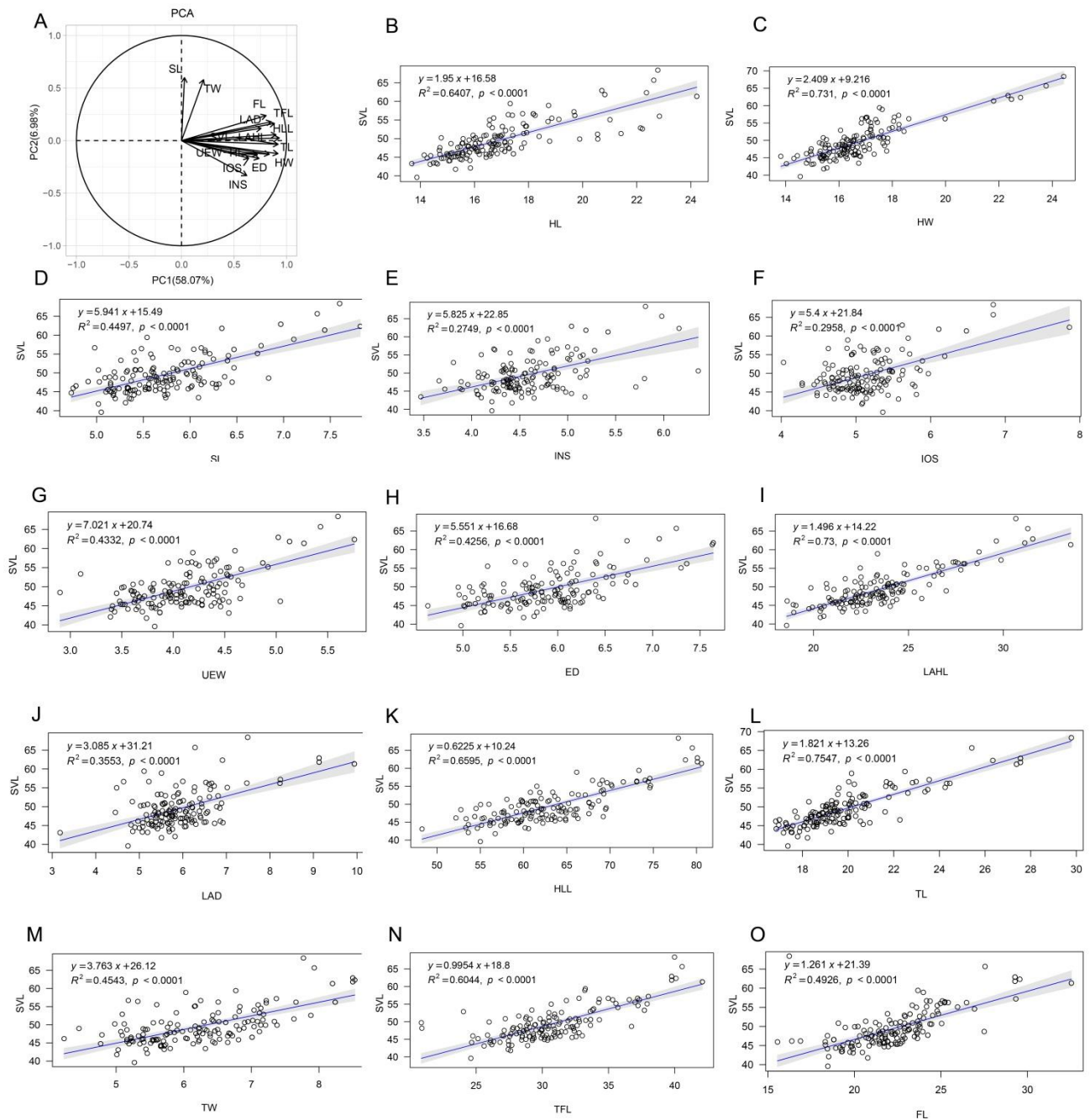
(UEW), inter-orbital space (IOS), diameter of eye (ED), length of lower arm and hand (LAHL), diameter of lower arm (LAD), hind-limb length (HLL), tibia length (TL), tibia width (TW), length of foot and tarsus (TFL) and foot length (FL).

**Supplementary Table S3.** Information and sources of primers used for DNA amplification

Fragment	Primer	Primer sequence (5'→3')	Source
<i>16S</i>	16SP7	CGCCTGTTTATCAAAAACAT	Vences et al. 2005
	16SP8	CCGGTCTGAACTCAGATCACGT	Vences et al. 2005
<i>COI</i>	Chmf4	TYTCWACWAAYCAYAAAGAYATCGG	Che et al. 2012
	Chmr4	ACYTCRGGRTGCCRAARAATCA	Che et al. 2012
<i>cyt b</i>	SCU_L14841	CTCCATCCAACATCTCAGCATGATGAAA	Li et al. 2009
	SCU5	ACAAGACCAATGCTTTAGTTAAGCTAC3	Li et al. 2009
<i>DOLK</i> (exon)	DOLK_F1	GARGTCATHGARGTNYTNGARGT	Shen et al. 2013
	DOLK_R1	GTYYTTYTTDGTNCCNGGCCA	Shen et al. 2013
	DOLK_F2	AGGGTTTTCCAGTCACGACCGMTGCTTYACHCCYGGNGARGC	Shen et al. 2013
	DOLK_R2	AGATAACAATTTACACAGGGTGTNCCTACNCCNACNGC	Shen et al. 2013
<i>KIAA</i> (exon)	KIAA_2013_F1	CTSAANTAYGCNGAYCAYTYTT	Shen et al. 2013
	KIAA_2013_R1	CCNGGNCCRCARTAYTCRTRTA	Shen et al. 2013
	KIAA_2013_F2	AGGGTTTTCCAGTCACGACACYATGCAYGCNGAGAAYYTGTGG	Shen et al. 2013
	KIAA_2013_R2	AGATAACAATTTACACAGGGANGCCACNCTRAACCARAA	Shen et al. 2013
<i>RAG1</i> (exon)	rag1_F	CCCAGGGTATCATTCTTTGAAT	This study
	rag1_R	CTCTCTGGTGGCATTGGGGTTTTT	This study
<i>cmcy-2</i> (intron)	CYMC-F	GTTGCCCTACTGGAGAACCGTG	Chen et al. 2009
	CYMC-R2	CTGGCGAGGGTCATAGGATTGT	Chen et al. 2009
	cmcy_F	ATAGACGTTAATTGTCCGGTAAGC	This study
	cmcy_R	AGCGCCCCTTCACTACAGAGCCTT	This study

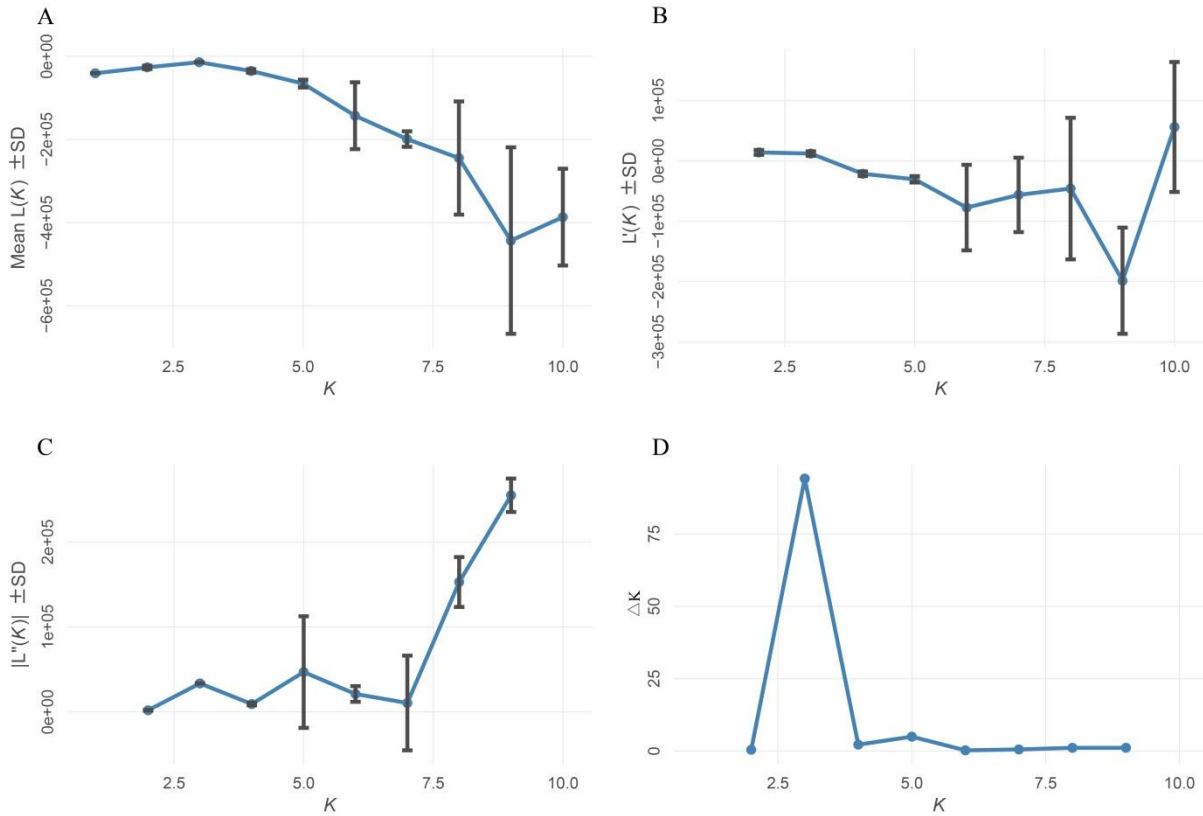
**Supplementary Table S4.** Pairwise  $F_{ST}$  of *S. boulengeri* based on 2189 bp mtDNA gene data

	YZ1	LX2	JZG3	XH4	TD5	ZK6	GL7	REG8	KD10	DC11	LT12	ML13	BT14	YSH15	MK16	GJ17	BS18
YZ1	0	0.31089	0.55653	0.27361	0.29053	0.8724	0.45714	0.87885	0.96158	0.96676	0.95183	0.98223	0.96994	0.95398	0.89693	0.981	0.95599
LX2	0.31089	0	0.51997	0.30391	0.2949	0.83817	0.18487	0.84598	0.93397	0.94794	0.93295	0.9633	0.95103	0.93511	0.879	0.9619	0.93706
JZG3	0.55653	0.51997	0	0.10986	0.04165	0.25542	0.51102	0.30435	0.73212	0.80777	0.79264	0.82355	0.81192	0.80138	0.7473	0.82607	0.80216
XH4	0.27361	0.30391	0.10986	0	-0.16239	0.36442	0.32442	0.40233	0.75315	0.82651	0.81171	0.84234	0.83011	0.81339	0.75675	0.84028	0.81414
TD5	0.29053	0.2949	0.04165	-0.16239	0	0.2238	0.30295	0.34473	0.72012	0.80419	0.78916	0.81984	0.80754	0.78891	0.73249	0.81581	0.78936
ZK6	0.8724	0.83817	0.25542	0.36442	0.2238	0	0.82937	0.23077	0.91314	0.9341	0.91992	0.94935	0.93768	0.92343	0.86874	0.94863	0.92481
GL7	0.45714	0.18487	0.51102	0.32442	0.30295	0.82937	0	0.83798	0.92684	0.94447	0.92955	0.95959	0.94734	0.93146	0.87581	0.95794	0.93335
REG8	0.87885	0.84598	0.30435	0.40233	0.34473	0.23077	0.83798	0	0.915	0.93639	0.92213	0.95111	0.93942	0.92538	0.87136	0.94997	0.92663
KD10	0.96158	0.93397	0.73212	0.75315	0.72012	0.91314	0.92684	0.915	0	0.97265	0.95855	0.9873	0.9756	0.96375	0.91283	0.98703	0.96559
DC11	0.96676	0.94794	0.80777	0.82651	0.80419	0.9341	0.94447	0.93639	0.97265	0	0.18874	0	0.26368	0.95038	0.89231	0.97765	0.95258
LT12	0.95183	0.93295	0.79264	0.81171	0.78916	0.91992	0.92955	0.92213	0.95855	0.18874	0	0.47458	0.37354	0.93566	0.8776	0.96237	0.93773
ML13	0.98223	0.9633	0.82355	0.84234	0.81984	0.94935	0.95959	0.95111	0.9873	0	0.47458	0	0.45139	0.96657	0.90881	0.99366	0.96877
BT14	0.96994	0.95103	0.81192	0.83011	0.80754	0.93768	0.94734	0.93942	0.9756	0.26368	0.37354	0.45139	0	0.95396	0.89612	0.98106	0.95606
YSH15	0.95398	0.93511	0.80138	0.81339	0.78891	0.92343	0.93146	0.92538	0.96375	0.95038	0.93566	0.96657	0.95396	0	0.01806	0.61563	0.24555
MK16	0.89693	0.879	0.7473	0.75675	0.73249	0.86874	0.87581	0.87136	0.91283	0.89231	0.8776	0.90881	0.89612	0.01806	0	0.24539	0.11151
GJ17	0.981	0.9619	0.82607	0.84028	0.81581	0.94863	0.95794	0.94997	0.98703	0.97765	0.96237	0.99366	0.98106	0.61563	0.24539	0	0.67049
BS18	0.95599	0.93706	0.80216	0.81414	0.78936	0.92481	0.93335	0.92663	0.96559	0.95258	0.93773	0.96877	0.95606	0.24555	0.11151	0.67049	0



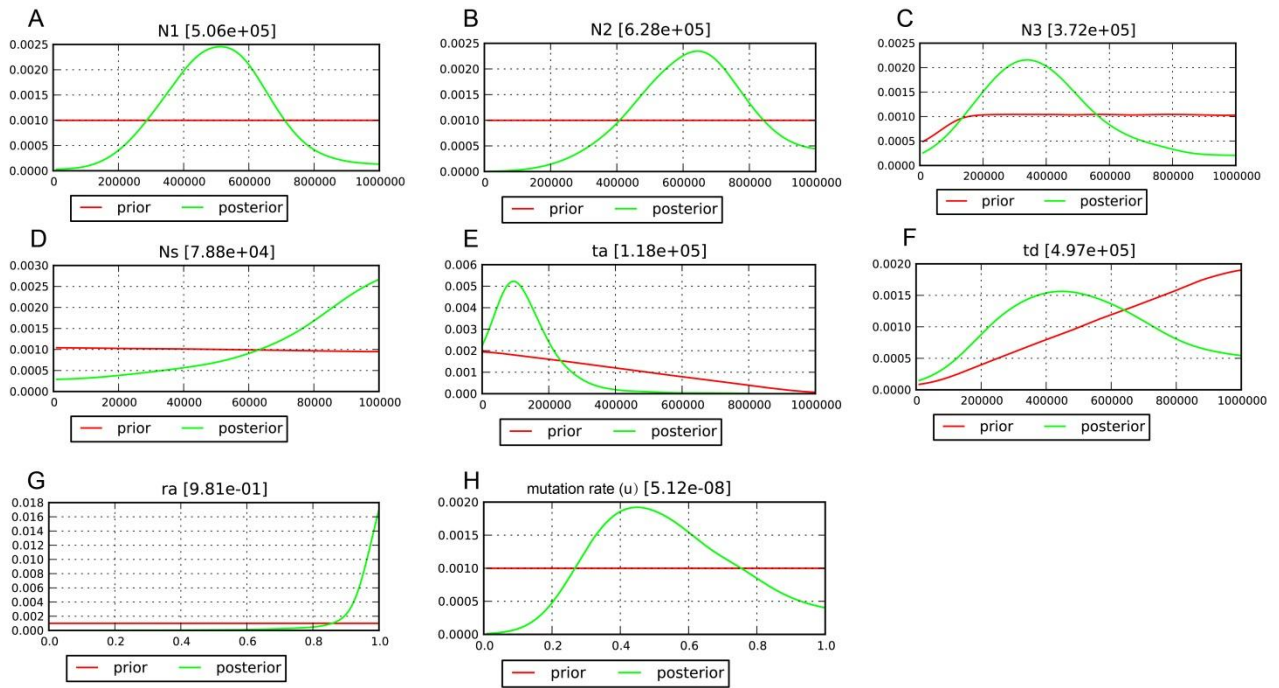
**Supplementary Figure S1 The correlation analyses between SVL and other morphological variables**

A: Principal component analysis (PCA) of morphological variables; B–O: Linear regression analysis between SVL and other morphological variables.



**Supplementary Figure S2 Four steps for the graphical method allowing detection of the true number of groups  $K$**

A: Mean  $L(K)$  ( $\pm SD$ ) over 3 runs for each  $K$  value using all 120 individuals with 4 nuclear genes loci. B: Rate of change of the likelihood distribution (mean $\pm SD$ ) calculated as  $L'(K)=L(K)-L(K-1)$ . C: Absolute values of the second order rate of change of the likelihood distribution (mean $\pm SD$ ) calculated according to the formula:  $|L''(K)|=|L'(K+1)-L'(K)|$ . D:  $\Delta K$  calculated as  $\Delta K = m |L''(K)|/s[L(K)]$ . The modal value of this distribution is the true  $K$  or the uppermost level of structure, here three clusters.



**Supplementary Figure S3** Prior and posterior distributions of parameters estimated by DIYABC v2.1.0

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