Supplementary Materials

Materials and Methods

DNA sequencing: Total genomic DNA of four individuals from the two sites was extracted using an EasyPure® Genomic DNA kit (TransGen Biotech, Beijing, China). Two mitochondrial fragments of the 12S ribosomal RNA gene (12S rRNA) and 16S ribosomal RNA gene (16S rRNA) from the four specimens were amplified using polymerase chain reaction (PCR) (Saiki et al., 1985). The 12S rRNA primers were L1091 (5'-AAACTGGGATTAGATACCCCACTAT-3') and H1478 (5'-GAGGGTGACGGGCGGTGTGT-3') (Kocher et al., 1989), and the 16S rRNA primers were L2206 (5'-GGCCTAAAAGCAGCCACCTGTAAAGACAGCGT-3') and L2606 (5'-CTGACCGTGCAAAGGTAGCGTAATCACT-3'), and H3056 (5'-CTCCGGTCTGAACTCAGATCACGTAGG-3') (Hedges et al., 1993) and H2741 (5'-AAGCTCCACAGGGTCTTCTCGTCTTATG-3') (Honda et al., 2006). The PCR products were checked on a 0.8% agarose gel and purified using ethanol precipitation. Purified PCR products were directly sequenced in both direction with a BigDye terminator kit using an ABI 310 analyzer (Applied Biosystems, USA). New sequences were deposited in GenBank under accession Nos. MW413384–MW413387 and MW411357–MW411360 (Supplementary Table S1).

Phylogenetic reconstructions

Sequences of the genus *Tropidophorus* and the outgroup species (*Lygosoma koratense*) were downloaded from GenBank for phylogenetic relationship reconstruction (Supplementary Table S1). The 12S rRNA and 16S rRNA datasets were aligned using ClustalX v1.83 (Thompson et al., 1997). We applied Bayesian inference (BI) and maximum-likelihood (ML) methods to infer phylogenetic relationships. Analyses were conducted based on concatenated sequences (12S rRNA and 16S rRNA). BI analyses were performed using MrBayes v3.1.2 (Ronquist et al., 2012). The best model of evolution for the concatenated mtDNA sequences was determined using jModelTest v2 (Darriba et al., 2012), ranked by the Akaike Information Criterion (AIC). The best-fit model was GTR+I+G for concatenated mtDNA sequences. Two independent runs were carried out with four Monte Carlo Markov chains (MCMCs) for 10 million generations with parameters and topologies sampled every 100 generations. Bayesian posterior probability (BPP) was determined to test the confidence of tree topology; nodes in the trees were considered strongly supported when BPP≥0.95 (Rannala 2004).

Convergence was determined using Tracer v1.6 (Rambaut & Drummond, 2013), and the first 25% of trees were discarded as burn-in. The ML analyses were conducted in RAxML (Stamatakis, 2014) on the CIPRES Science Gateway v3.1 (Miller et al., 2010) http://www.phylo.org). The best-fit model of evolution was selected as GTR+Γ (GTRGAMMA). Tree searches were performed 100 times and bootstrap proportions (BSP) were assessed using the rapid-bootstrapping algorithm (1 000 non-parametric bootstrap replicates) to test node support, where nodes with BSP≥70 were significantly supported. Genetic distances among *Tropidophorus* taxa were calculated using MEGA v5.1 (Kumar et al., 2004) based on the uncorrected *p*-distances (Kimura, 1980) for the 16S rRNA gene.

Morphological terminology

Morphological measurements were taken with a digital caliper to the nearest 0.1 mm. The following abbreviations were used (Nguyen et al., 2010): snout-vent length (SVL); tail length (TaL), total length (TL); distance from posterior junction of forelimb and body wall to anterior junction of hindlimb and body wall when limbs held at right angles to body (AG); snout length (SL), distance between tip of snout and anterior corner of eye; snout-forelimb length (SFlL), measured from tip of snout to anterior junction of forelimb and body wall to tip of fourth finger when limb held at right angles to body; head length (HL), measured from tip of snout to posterior margin of parietal or interparietal, depending on longest distance; head width (HW), measured at widest portion of temporal region; head height (HH), measured at deepest portion of temporal region; length of head and neck (HNL); distance from snout to anterior border of tympanum (STL); distance from anterior corner of eye to posterior border of nostril (END); eye length (EL), distance between anterior and posterior corners of eyelid; distance from anterior border of tympanum to posterior corner of eye (ETL); maximum diameter of tympanum (TYD); forelimb length (FlL), measured from anterior junction of forelimb and body wall to tip of fourth finger when limb held at right angles to body; hindlimb length (HlL), measured from anterior junction of hindlimb and body wall to tip of fourth finger when limb held at right angles to body; internarial distance, distance between nostrils (IN); inter-eye distance (IO), distance between eyes; eye-nostril distance (E-N), distance between anterior-edge of eyes and posterior-edge of nostrils; eye-snout distance, distance between anterior-edge of eyes and tip of snout (E-S); body width, greatest width of body (BW); nostril-snout distance, distance between anterior-edge of nostril and tip of snout (N-S). The following characteristics were counted (Nguyen et al., 2010): nuchals, enlarged scales behind parietals; paravertebral scales, number of scales in line from posterior edge of parietals to dorsal point opposite posterior margin of medial precloacals; ventral scales, scales from first gular to anterior margin of precloacals; midbody ventral scales, scales from posterior margin of fore limb to last scale before precloacals; number of tail scale rows at tenth subcaudal scale (including subcaudal). Bilateral scale counts are given as left/right. Other abbreviations: SD: Standard deviation; a.s.l.: above sea level; HNU: Hunan Normal University; GMC: Guangxi Medical University.

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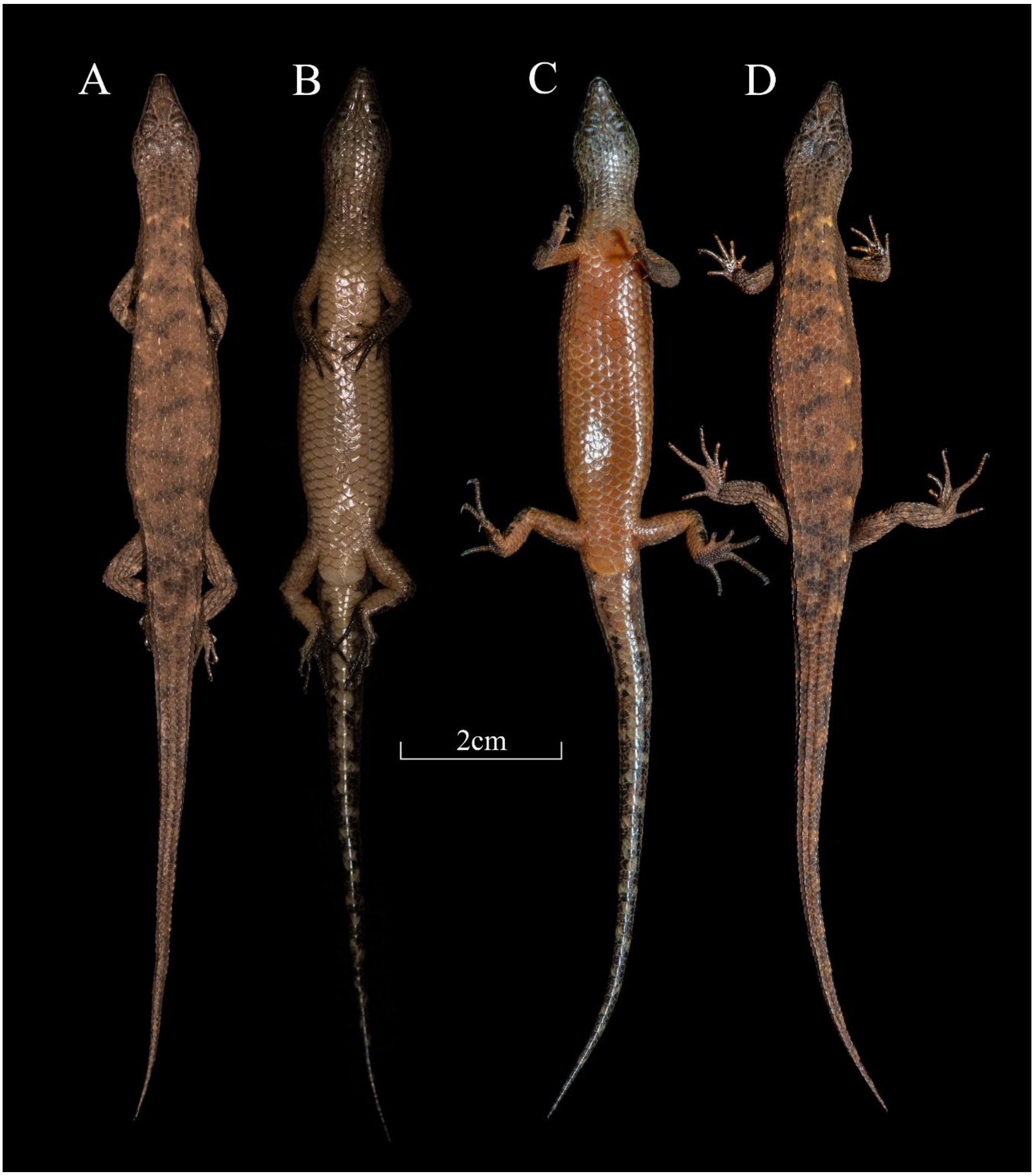
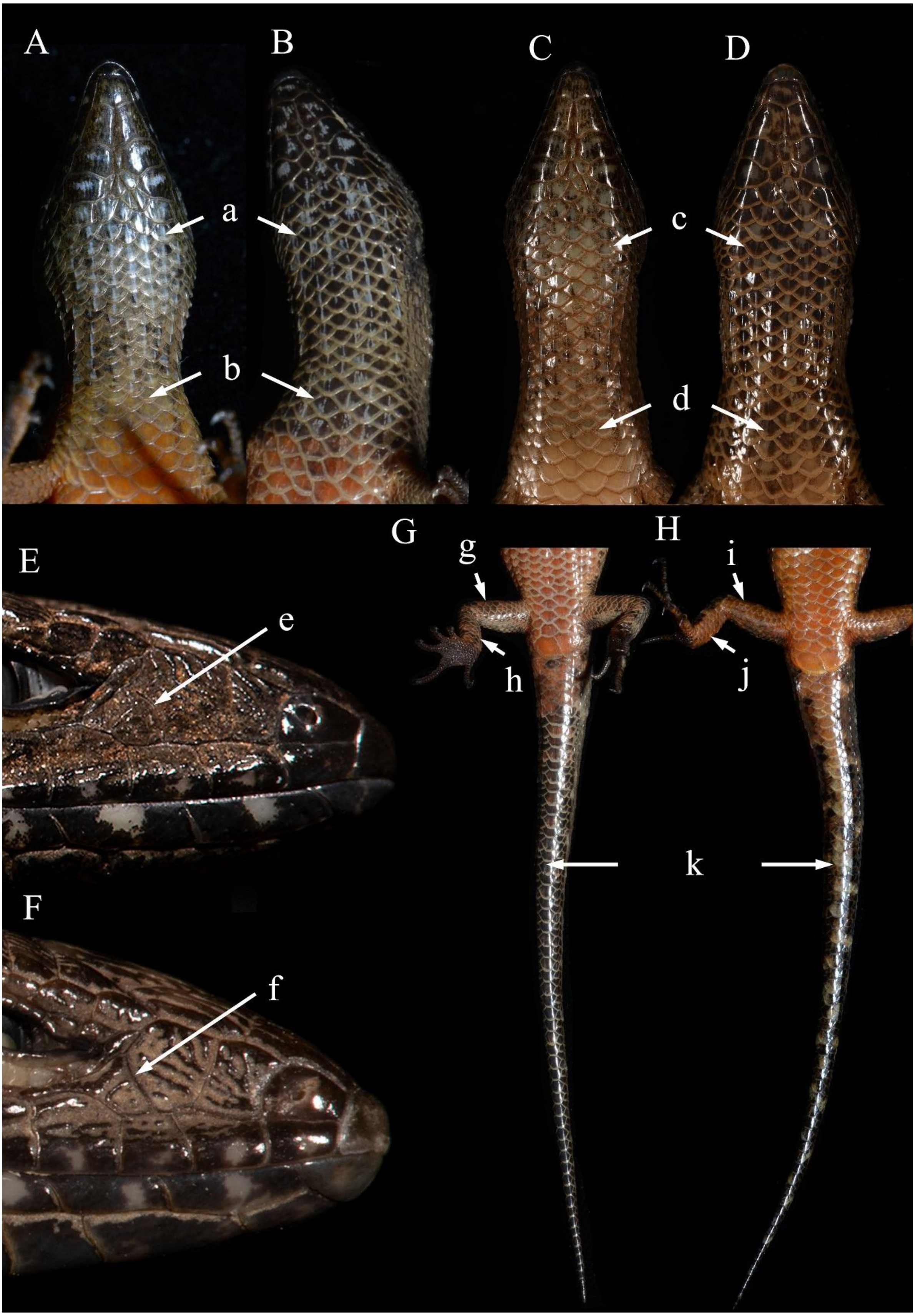
Supplementary Figure S1. Head feature photographs of *Tropidophorus guangxiensis guangxiensis* neotype.

HNU GKJ-2019007, Adult female; A, B, C, D: Photos in preservative; E, F, G, H: Photos in life; A, B, E, F: Lateral view of head; C, G: Dorsal view of head; D, H: Ventral view of head. Photos by Ke-Ji Guo.



Supplementary Figure S2. Body feature photographs of *Tropidophorus guangxiensis guangxiensis* neotype.

HNU GKJ-2019007, Adult female; A, B: Photos in preservative; C, D: Photos in life; A, D: Dorsal view; B, C: Ventral view. Photos by Ke-Ji Guo.



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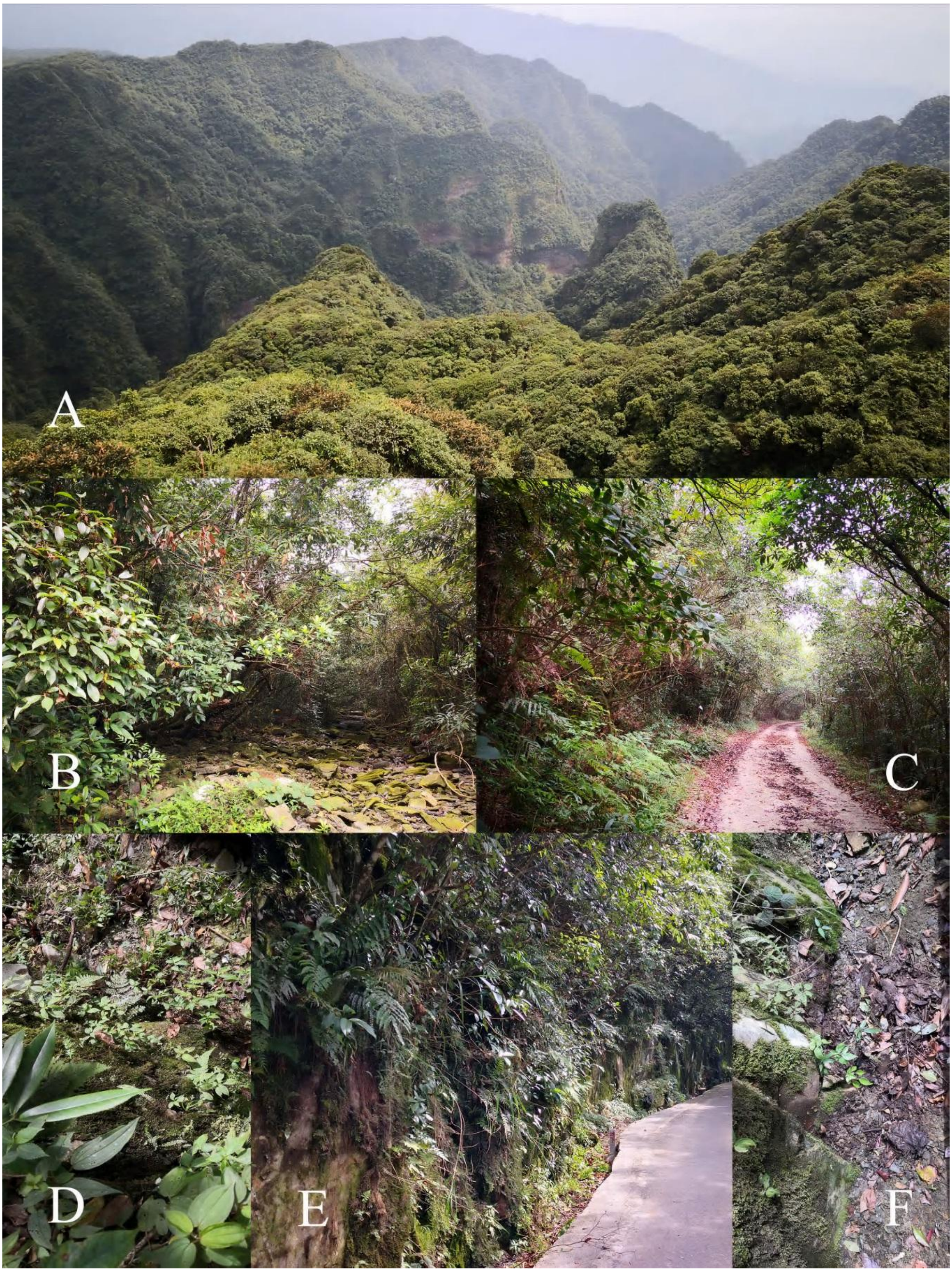
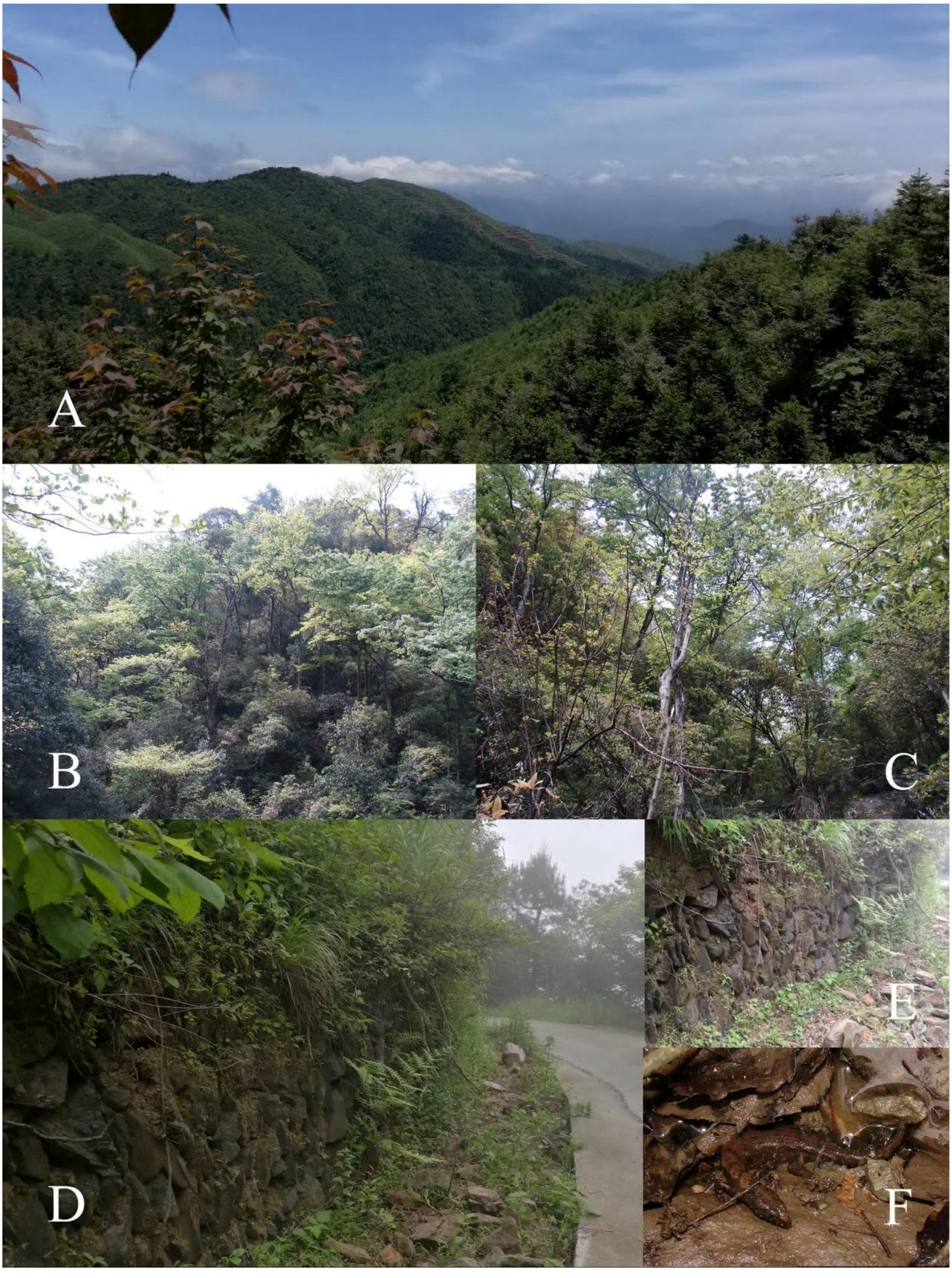
Supplementary Figure S3. Comparison of scales and patterns between *Tropidophorus guangxiensis hongjiangensis* ssp. nov. and *Tropidophorus guangxiensis guangxiensis*.

A, C, E, H: *Tropidophorus guangxiensis guangxiensis* (HNU GKJ-2019007); B, D, F, G: *Tropidophorus guangxiensis hongjiangensis* **ssp. nov**. (HNU GKJ-2016009); A, B: Ventral front of body of in life; C, D: Ventral front of body in preservative; E, F: Lateral view of head in preservative; G, H: Ventral view of hindlimb and tail; a, c: Color of throat; b, d: Color of ventral neck; e, f: Scales below eyes; g, i: Color of ventral thighs; H, j: Color of ventral shanks; k: Color of ventral tail. Photos by Ke-Ji Guo & Fu Shu.



Supplementary Figure S4. Habitat of *Tropidophorus guangxiensis guangxiensis.*

A, B, C: Macrohabitat of *Tropidophorus guangxiensis guangxiensis* at type locality; D, E, F: Microhabitat of *Tropidophorus guangxiensis guangxiensis* at type locality. Photos by Ke-Ji Guo.



Supplementary Figure S5. Habitat of *Tropidophorus guangxiensis hongjiangensis* ssp. nov.

A: Macrohabitat of *Tropidophorus guangxiensis hongjiangensis* **ssp. nov.** at type locality; B, C: Vegetation of type locality; D, E: Microhabitat of *Tropidophorus guangxiensis hongjiangensis* **ssp. nov.** at type locality; F: Ecological photos of *Tropidophorus guangxiensis hongjiangensis* **ssp. nov.** in life. Photos by Ke-Ji Guo.

Supplementary Tables

Supplementary Table S1. Samples used in this study with locality data and GenBank Accession numbers

Species	Voucher ID	12S rRNA	16S rRNA	Sample localities	Refrence
Tropidophorus apulus	*GenBank*	AY308 473	AY308 322	/	Schmitz, 2003
Tropidophorus baconi	*GenBank*	AB222 937	AB222 953	Sulawesi	Honda, et al., 2006
Tropidophorus baviensis	*GenBank*	AB222 942	AB222 958	Ha Tay, Vietnam	Honda, et al., 2006
Tropidophorus beccarii	*GenBank*	AB222 935	AB222 951	Sarawak, Borneo,	Honda, et al., 2006
Tropidophorus berdmorei	*GenBank*	AB028 811	AB028 823	Phu Luang, Thailand,	Honda, et al., 2000
Tropidophorus boehmei	*GenBank*	-	GU550 104	Mt. Hoang Lien, Lao Cai, northern Vietnam	Nguyen, et al., 2000
Tropidophorus boehmei	*GenBank*	-	GU550 105	Mt. Hoang Lien, Lao Cai, northern Vietnam.	Nguyen, et al., 2000
Tropidophorus brookei	*GenBank*	AB222 933	AB222 949	Sarawak, Borneo	Honda, et al., 2006
Tropidophorus cocincinensis	*GenBank*	AB222 943	AB222 959	Gia Lai, Vietnam	Honda, et al., 2006
Tropidophorus cocincinensis	*GenBank*	AY308 474	AY308 323	/	Schmitz, 2003
Tropidophorus grayi	*GenBank*	AB222 941	-	Philippines	Honda, et al., 2006
Tropidophorus hainanus	*GenBank*	AB222 944	AB222 960	Philippines	Honda, et al., 2006
Tropidophorus latiscutatus	*GenBank*	AB222 934	AB222 950	Phu Wua, Thailand	Honda, et al., 2006
Tropidophorus matsuii	*GenBank*	AB222 936	AB222 952	Phu Pa Namtip, Thailand	Honda, et al., 2006
Tropidophorus microlepis	*GenBank*	AB222 947	AB222 963	Indochina	Honda, et al. 2006
Tropidophorus micropus	*GenBank*	KY488 452	KY488 456	Putai, upper Sungei Baleh, Kapit District, Sarawak, Malaysia	Pui, et al., 2017
Tropidophorus micropus	*GenBank*	KY488 453	KY488 457	Putai, upper Sungei Baleh, Kapit District, Sarawak, Malaysia	Pui, et al., 2017

Species	Voucher ID	12S rRNA	16S rRNA	Sample localities	Refrence
Tropidophorus misaminius	*GenBank*	AB222948	AB222964	Mindanao, Philippines	Honda, et al., 2006
Tropidophorus murphyi	*GenBank*	AB222945	AB222961	Cao Bang, Vietnam	Honda, et al., 2006
Tropidophorus noggei	*GenBank*	-	EF611186	/	Ziegler, et al., 2007
Tropidophorus partelloi	*GenBank*	AB222946	AB222962	Mindanao, Philippines	Honda, et al., 2006
Tropidophorus robinsoni	*GenBank*	AB222939	AB222955	Phang-Nga, Thailand	Honda, et al., 2006
Tropidophorus sebi	*GenBank*	KY488450	KY488454	Putai, upper Baleh, Kapit district, Sarawak, East Malaysia	Pui, et al., 2017
Tropidophorus sebi	*GenBank*	KY488451	KY488455	Putai, upper Baleh, Kapit district, Sarawak, East Malaysia	Pui, et al., 2017
Tropidophorus sinicus	*GenBank*	AB222938	AB222954	Hong Kong, China	Honda, et al., 2006
Tropidophorus thai	*GenBank*	AB222940	AB222956	Doi Suthep, Thailand	Honda, et al., 2006
Tropidophorus guangxiensis **ssp.**	HNU GKJ-2016009	MW413387	MW411357	Huaihua, Hunan, China	This study
Tropidophorus guangxiensis **ssp.**	HNU GKJ-2016022	MW413384	MW411358	Huaihua, Hunan, China	This study
Tropidophorus guangxiensis guangxiensis	HNU GKJ-2019007	MW413386	MW411359	Mt. Daming, Zhejiang, China	This study
Tropidophorus guangxiensis guangxiensis	HNU GKJ-2019009	MW413385	MW411360	Mt. Daming, Zhejiang, China	This study
Lygosoma koratense	*GenBank*	AY308421	AY308269	/	Schmitz, 2003
Lygosoma koratense	*GenBank*	AB028805	AB028817	Thailand	Honda, et al., 2000

Supplementary Table S2 Uncorrected *p*-distances based on 16S rRNA among species and subspecies of *Tropidophorus* included in this study

	T. apulus	*T. baviensis*	*T. baconi*	*T. g. hongjiangensis* **ssp. nov.**	*T. g. guangxiensis*	*T. berdmorei*	*T. beccarii*	*T. boehmei*	*T. brookei*	*T. cocincinensis*	*T. grayi*	*T. hainanus*	*T. latiscutatus*	*T. matsuii*	*T. misaminius*	*T. microlepis*	*T. micropus*	*T. murphyi*	*T. noggei*	*T. partelloi*	*T. sebi*	*T. sinicus*	*T. thai*	*T. robinsoni*
T. apulus																								
T. baviensis	0.069																							
T. baconi	0.003	0.072																						
T. g. hongjiangensis **ssp. nov.**	0.072	0.066	0.072	0.000																				
T. g. guangxiensis	0.084	0.069	0.084	0.027	0.000																			
T. berdmorei	0.066	0.063	0.066	0.069	0.060																			
T. beccarii	0.066	0.075	0.069	0.090	0.093	0.075																		
T. boehmei	0.069	0.042	0.072	0.078	0.081	0.066	0.069																	
T. brookei	0.075	0.081	0.078	0.099	0.090	0.075	0.039	0.063																
T. cocincinensis	0.054	0.085	0.057	0.084	0.087	0.079	0.084	0.079	0.093															
T. grayi	0.048	0.084	0.048	0.069	0.072	0.075	0.081	0.072	0.099	0.069														
T. hainanus	0.057	0.021	0.060	0.066	0.072	0.048	0.078	0.051	0.078	0.082	0.075													
T. latiscutatus	0.069	0.063	0.072	0.084	0.081	0.063	0.075	0.057	0.078	0.088	0.087	0.066												
T. matsuii	0.066	0.063	0.069	0.087	0.072	0.060	0.084	0.054	0.081	0.084	0.084	0.066	0.021											
T. misaminius	0.078	0.078	0.081	0.107	0.101	0.081	0.030	0.078	0.036	0.096	0.096	0.084	0.078	0.081										
T. microlepis	0.063	0.081	0.066	0.090	0.081	0.069	0.075	0.066	0.072	0.061	0.063	0.075	0.081	0.072	0.090									
T. micropus	0.058	0.088	0.061	0.073	0.073	0.076	0.076	0.076	0.076	0.076	0.070	0.082	0.079	0.070	0.076	0.073								
T. murphyi	0.066	0.024	0.069	0.063	0.066	0.048	0.081	0.045	0.084	0.075	0.078	0.027	0.060	0.060	0.090	0.072	0.079							
T. noggei	0.060	0.051	0.063	0.072	0.069	0.063	0.075	0.048	0.072	0.087	0.075	0.054	0.024	0.033	0.078	0.066	0.070	0.054						
T. partelloi	0.075	0.078	0.072	0.104	0.099	0.078	0.030	0.072	0.036	0.090	0.093	0.084	0.084	0.081	0.012	0.084	0.070	0.090	0.084					
T. sebi	0.084	0.084	0.087	0.104	0.104	0.084	0.027	0.075	0.057	0.093	0.099	0.096	0.087	0.084	0.045	0.081	0.091	0.096	0.087	0.039				
T. sinicus	0.078	0.057	0.078	0.039	0.024	0.054	0.093	0.069	0.090	0.079	0.081	0.066	0.078	0.069	0.096	0.081	0.079	0.057	0.075	0.093	0.104			
T. thai	0.069	0.069	0.072	0.084	0.084	0.057	0.084	0.057	0.072	0.076	0.081	0.066	0.054	0.057	0.084	0.078	0.064	0.063	0.054	0.084	0.096	0.069		
T. robinsoni	0.057	0.051	0.060	0.066	0.069	0.057	0.081	0.051	0.072	0.075	0.081	0.054	0.054	0.057	0.090	0.072	0.061	0.045	0.042	0.084	0.093	0.057	0.024	

Supplementary Table S3 Measurements（in mm）of *Tropidophorus guangxiensis guangxiensis* and *Tropidophorus guangxiensis hongjiangensis* ssp. nov. (abbreviations in Supplementary Materials and Methods, ⁎ = regenerated tail)

Species	*Tropidophorus guangxiensis guangxiensis*		*Tropidophorus guangxiensis hongjiangensis* **ssp. nov.**								
No.	HNU GKJ-2019007	HNU GKJ-2019009	HNU GKJ-2016009	HNU GKJ-200704001	HNU GKJ-200704003	HNU GKJ-200704004	HNU GKJ-200704002	HNU GKJ-2016022	HNU GKJ-2016023	Average	±SD
Type	Neotype	Paraneotype	Holotype	Paratype	Paratype	Paratype	Paratype	Paratype	Paratype	N=6	N=6
Sex	F	M(sub-adult)	F	F	F	F	M	F(sub-adult)	Juvenile	without juvenile	without juvenile
SVL	62.5	48.1	58.5	62.1	64.3	69.7	55.9	49.4	30.4	60	7.1
TaL	68.8	56.7	69.1	65.9	69.5	66.2*	57.2*	53.3	31.9	63.5	6.7
TL	131.4	104.8	127.5	128	133.9	135.9	113.1	102.8	62.4	123.5	12.9
AG	29.7	24.4	30.6	31.5	32.3	37.8	29.3	25.4	16.3	31.1	4.1
SL	4.8	3.9	4.1	4	4.6	4.6	4.4	3.8	2.9	4.3	0.3
SFlL	41.2	33.1	34.8	36.6	36.5	36.6	35.3	31.5	20.4	35.2	2
HL	11	9.3	9.8	9.5	10.6	10.1	10.3	8.9	6.8	9.9	0.6
HW	8.5	7.2	7.8	8.5	8.7	8.7	8.6	7.3	4.9	8.3	0.6
HH	5.5	4.7	5.8	5.9	6.3	6.4	5.9	6	3.9	6.1	0.3
HNL	24.4	18.5	20.3	21.6	22	21.3	21.2	18.7	12	20.8	1.2
STL	10.5	10.3	10.7	11	11.8	11.6	11.6	9.7	6.9	11	0.8
END	3	2.4	2.4	2.6	3	2.7	2.6	2.3	1.6	2.6	0.2
EL	3.1	2.5	2.7	3.1	3.2	3	3.2	2.5	1.9	2.9	0.3
ETL	4.6	4	4.2	4.3	4.5	4.5	4.4	3.7	2.5	4.3	0.3
TYD	1.9	1.6	1.6	1.8	2.1	1.9	1.8	1.5	1.2	1.8	0.2
FlL	16.8	43.1	14.4	14.5	14.2	15.7	13.4	11.7	8	14	1.3
HlL	22.4	19.3	21.4	21.9	22.4	22.7	21.1	19	10.7	21.4	1.3

Supplementary Table S4 Scalation and Coloration of *Tropidophorus guangxiensis guangxiensis* and *Tropidophorus guangxiensis hongjiangensis* ssp. nov. (abbreviations in Supplementary Materials and Methods)

	Tropidophorus guangxiensis guangxiensis		*Tropidophorus guangxiensis hongjiangensis* **ssp. nov.**					
No.	HNU GKJ-2019007	HNU GKJ-2019009	HNU GKJ-2016009	HNU GKJ-200704001	HNU GKJ-200704003	HNU GKJ-200704004	HNU GKJ-200704002	HNU GKJ-2016022

Type	Neotype	Paraneotype	Holotype	Paratype	Paratype	Paratype	Paratype	Paratype
Sex	F	M(sub-adult)	F	F	F	F	M	F(sub-adult)
Scalation								
Upper head scales (sm=smooth, kl=keeled)	KL	KL	KL	KL	KL	KL	KL	KL
A shallow groove from posterior corner of nasal to the end of sixth upralabial	Y	Y	Y	Y	Y	Y	Y	Y
Frontonasal	1	0	1	1	1	0	0	1
Prefrontals widely separated	Y	N	Y	Y	Y	Y	N	Y
Interparietal with a small transparent spot	N	N	N	N	N	N	N	N
Number of scales bordering posterolateral parietals	5	6	7	6	6	6	6	6
Parietals in contact posteriorly	N	N	N	N	N	N	N	N
Nuchals	N	N	N	N	N	N	N	N
Supraoculars	4	4	4	4	4	4	4	4
Loreals	2	2	2	2	2	2	2	2
Loreals separated from supralabials by small scales	N	N	N	N	N	N	N	N
Lower eyelid	scaly	scaly	scaly	scaly	scaly	scaly	scaly	scaly
Supraciliaries	8/8	8/8	7/7	8/8	7/6	7/8	7/8	7/7
Supraciliary row interrupted by fourth supraocular	N	N	N	N	N	N	N	N
Supralabials	8	7/8	8	8	8	8	8	8
Infralabials	7/6	7/6	6/6	6/6	6/6	7/7	6/6	6/6
Primary temporal	3/3	4/4	3/3	4/4	4/4	4/3	4/4	3/3
Secondary temporal	4/4	4/5	5/5	4/4	4/4	6/4	4/4	4/4
Midbody scale rows	29	28	33	31	30	31	31	32
Dorsal scale rows across the back	8	8	8	8	8	8	8	8
Paravertebral scales	50	49	47	47	47	47	45	47
Paravertebral scales widened	N	N	N	N	N	N	N	N
Ventral scales(number of scales from first gular to anterior margin of precloacals)	50	44	50	53	50	51	50	52
Midbody ventral scales(counted from posterior margin of fore limb to last scale before precloacals)	29	27	31	33	32	32	30	32
Ventral scales(sm=smooth, kl=keeled)	SM	SM	SM	SM	SM	SM	SM	SM
Ventral scales of neck (sm=smooth, kl=keeled)	KL	KL	KL	KL	KL	KL	KL	KL
Precloacals	4	4	4	4	4	4	4	4
Right precloacal overlapped by left one	N	Y	N	Y	N	N	Y	Y

	Tropidophorus guangxiensis guangxiensis		*Tropidophorus guangxiensis hongjiangensis* **ssp. nov.**					
No.	HNU GKJ-2019007	HNU GKJ-2019009	HNU GKJ-2016009	HNU GKJ-200704001	HNU GKJ-200704003	HNU GKJ-200704004	HNU GKJ-200704002	HNU GKJ-2016022
Type	Neotype	Paraneotype	Holotype	Paratype	Paratype	Paratype	Paratype	Paratype
Sex	F	M(sub-adult)	F	F	F	F	M	F(sub-adult)
Medial precloacal enlarged, overlaps outer scales	Y	Y	Y	Y	Y	Y	Y	Y
Supracaudals(sm=smooth, kl=keeled)	KL	KL	KL	KL	KL	KL	KL	KL
Subcaudals	5+53+1	5+50+1	6+52+1	6+51+1	4+51+1	5+44+1* (tip lost)	5+47+1 *	5+48+1
Tail scale rows at position of tenth subcaudal	13	11	14	14	13	13	13	14
Lamellae under fouth finger	11/11	13/14	12/12	12/12	12/12	11/12	12/11	11/12
Lamellae under fouth toe	17/17	18/17	19/18	18/18	16/17	18/17	17/18	17/16
Ventralfront scales of hindlimbs(sm=smooth, kl=keeled)	SM	SM	SM	SM	SM	SM	SM	SM
Adpressed limbs touching	Y	Y	Y	N	N	N	Y	Y
Coloration in preservative								
Background of head and dorsum	dark	dark	dark	dark	dark	dark	dark	dark
Dorsum with light bands	indistinct	indistinct	indistinct	indistinct	indistinct	indistinct	indistinct	indistinct
Longitudinal rows of white spots on neck dorsum	2	2	2	2	2	2	2	2
Lateral side with white spots	Y	Y	Y	Y	Y	Y	Y	Y
Upper labial with white spots	Y	Y	Y	Y	Y	Y	Y	Y
Chin and throat with dark marbling	Y	Y	Y	Y	Y	Y	Y	Y
Ventral of neck dark brown with white pinstripe	Y	Y	Y	Y	Y	Y	Y	Y
Venter brownish-cream	Y	Y	Y	Y	Y	Y	Y	Y
Underside of tail tip dark grey	N	N	Y	Y	Y	Y	Y	Y

Y= Yes; N=No.

Supplementary Table S5 Comparisons of diagnostic characters in *Tropidophorus* from China (* = data obtained from literature)

Characters	*T. berdmorei*	*T. hainanus*	*T. sinicus*	*T. guangxiensis*	
				guangxiensis	*hongjiangensis* **ssp. nov.**
Upper head scales smooth (sm) or keeled (kl)	sm	kl	kl	kl	kl
Frontonasal	2	2	2	1/0	1/0
Frontonasal divided (2) or undivided (1)	1	1	2	–	-
Prefrontals in contact (1) or separated (0)	0/1	0, rarely 1	1	1/0	1/0
Parietals in contact (1) or separated (0) posteriorly	1,rarely0	1	-	0	0
Loreals	2	4	2/1	2	2
Anterior loreal divided	Y /N	-	-	N	N
Supraciliaries	8	5	6	8	6-8
Supraciliary row interrupted by fourth supraocular	Y	Y		N	N
Supralabials	6	6	6	7-8	8
Infralabials	5-7	5-7	5	6-7	6
Midbody scale rows	32-40	30-34	29-30	28-29	30-33
Paravertebral scales	64	-	-	45-50	45-47
Paravertebral scales widened (1) or not (0)	-	-	-	0	0
Dorsal body scales smooth (sm) or keeled (kl)	sm(kl in juveniles)	kl	kl	kl	kl
Ventral scales	53	-	-	44-50	50-53
Midbody ventral scales	-	-	-	27-29	30-33
Ventral scales smooth (sm) or keeled (kl)	sm	sm	kl	sm	sm
Scale rows at position of tenth subcaudal	-	-	-	11-13	13-14
Subcaudals divided on anterior part of tail (1) or on whole tail (2)	1	-	-	1	1
Lamellae under fourth toe	22	13-16	13-14	17-18	16-19
White spots on dorsum	present	present	present	present	present
Sample size (n)	n=10*	n=5*	n=7*	n=5*	n=6

Supplementary Table S6 Distribution information of samples from China used in this study

Site	Detail Sample localities	Longitude	Latitude	Species and Subspecies	Source
1	Husa, Yunnan, China	97.908700	24.465275	*T. berdmorei*	Zhao EM et al., 1999
2	Daming Moutain National Nature Reserve, Guangxi,China	108.365346	23.525552	*T. g. guangxiensis*	This study; Zhao EM et al., 1999
3	Mt. Jiulian, Jiangxi, China	114.552264	24.632778	*T. hainanus*	Zhao EM et al., 1999
4	Mt. Qiyun, Jiangxi, China	114.331558	25.565663	*T. hainanus*	Yang DD et al., 2008
5	Mt. Wuzhi, Hainan, China	109.587792	18.830943	*T. hainanus*	Zhao EM et al., 1999
6	Mt. Diaoluo, Hainan, China	109.868154	18.702561	*T. hainanus*	Zhao EM et al., 1999
7	Mt. Jianfengling, Hainan, China	108.895500	18.718302	*T. hainanus*	Lv SQ et al., 2005
8	Mt. Bawangling, Hainan, China	109.260438	19.136068	*T. hainanus*	Lv SQ et al., 2005
9	Mt. Limu, Hainan, China	109.766802	19.204772	*T. hainanus*	Lv SQ et al., 2005
10	Mt. Dayao, Guangxi, China	110.107577	23.939175	*T. hainanus*	Zhao EM et al., 1999
11	Mt. Chebaling, Guangdong, China	114.258143	24.731912	*T. hainanus*	Rao JT et al., 2011
12	Mt. Mang, Hainan, China	112.925401	24.928465	*T. hainanus*	Fei DB et al., 2010
13	Mt. Raoren, Guizhou, China	107.961229	25.952088	*T. hainanus*	Zhang YH et al., 2012
14	Mt. Dinghu, Guangdong, China	112.537245	23.168927	*T. sinicus*	Zhao EM et al., 1999
15	Mt. Baiyun, Guangdong, China	111.333164	23.485651	*T. sinicus*	Luo ZH, 2018
16	Mt. Luofu, Guangdong, China	114.040293	23.267053	*T. sinicus*	Zhao EM et al., 1999
17	Mt. Xiangtou, Guangdong, China	114.403827	23.337080	*T. sinicus*	Yang DD et al., 2001
18	Dapeng Peninsula Nature Reserve, Guangdong, China	114.550159	22.519795	*T. sinicus*	Zhang J et al., 2019

Site	Detail Sample localities	Longitude	Latitude	Species and Subspecies	Source
19	Mt. Wutong, Guangdong, China	114.218955	22.577534	*T. sinicus*	Tang YL et al., 2015
20	Hongkong, China	114.027786	22.394206	*T. sinicus*	Zhao EM et al., 1999
21	Mt. Dayao, Guangxi, China	110.335234	24.292401	*T. sinicus*	Zhao EM et al., 1999
22	Nonggang National Nature Reserve, Guangxi, China	106.960510	22.466298	*T. sinicus*	Zhao EM et al., 1999
23	Dizhou Nature Reserve, Guangxi, China	106.387440	23.006121	*T. sinicus*	Zeng XB & Su SL, 2008
24	Diding Nature Reserve, Guangxi, China	105.991578	23.094119	*T. sinicus*	Mo YM, et al., 2007
25	Laohutiao Nature Reserve, Guangxi, China	105.717503	23.098433	*T. sinicus*	Zeng XB et al., 2015
26	Mulun National Nature Reserve, Guangxi, China	108.272357	24.830213	*T. g. guangxiensis*	Wang QQ, 2014
27	Xuefeng Mountain National Forest Park, Hunan, China	110.398461	27.307747	*T. g. hongjiangensis* **ssp. nov.**	This study; Guo KJ et al., 2010