First record of *Theloderma khoii* Ninh, Nguyen, Nguyen, Hoang, Siliyavong, Nguyen, Le, Le & Ziegler, 2022 from China, with confirmation of *Rhacophorus orlovi* Ziegler & Köhler, 2001 in China (Anura, Rhacophoridae)

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https://zoobank.org/6A1E1FDF-9B54-43D0-A83E-9C0EEF849412

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Abstract

We report the first country record of *Theloderma khoii* Ninh, Nguyen, Nguyen, Hoang, Siliyavong, Nguyen, Le, Le & Ziegler, 2022 from China based on a specimen collected from Wenshan Prefecture, southeastern Yunnan, China. Morphologically, the specimen from Wenshan Prefecture agrees well with the type specimens of *T. khoii* from Vietnam except for having a smaller body size, and phylogenetically clustered with the type specimens of *T. khoii* from Vietnam. In addition, we confirm the distribution of *Rhacophorus orlovi* Ziegler & Köhler, 2001 in China based on three specimens collected from Honghe Prefecture, southern Yunnan, China. Morphologically, the specimens from Honghe Prefecture agree well with the type specimens of *R. orlovi* from Vietnam except for having a slightly larger body size in adult females, and phylogenetically clustered with the specimens of *R. orlovi* from Vietnam (including the type locality of *R. orlovi*).

Key Words

16S rRNA, Honghe Prefecture, Wenshan Prefecture, Yunnan

Introduction

The genus *Theloderma* Tschudi is a poorly known group of tree frogs which presently comprising 28 species distributed throughout Southeast Asia, southern China and northeastern India (Hou et al. 2017; Poyarkov et al. 2018; Du et al. 2022; Frost 2022; Ninh et al. 2022). To date, ten species have been reported from China (Du et al. 2022), namely *T. albobrunatum* (Liu & Hu), *T. baibungense* (Jiang, Fei & Huang), *T. bicolor* (Bourret), *T. corticale* (Boulenger), *T. gordonii* Taylor, *T. hekouense* Du, Wang, Liu & Yu, *T. lateriticum* Bain, Nguyen & Doan, *T. moloch* (Annandale), *T. pyaunkya* Dever, and *T. rhododiscus* (Liu & Hu). *Theloderma khoii* Ninh, Nguyen, Nguyen, Hoang, Siliyavong, Nguyen, Le, Le & Ziegler, 2022 is a species which was described recently from Ha Giang Province, Vietnam, and is currently known only from its type locality.

The genus *Rhacophorus* Kuhl & Van Hasselt currently containing 44 species with a distribution range from
Materials and methods

Specimens were collected, euthanized, and then fixed in 75% ethanol for storage after taking photographs. Liver tissue samples were preserved in 99% ethanol for molecular analysis. All specimens were deposited at Kunming Institute of Zoology, Chinese Academy of Sciences (KIZ).

Genomic DNA was extracted from liver tissue preserved in 99% ethanol using the standard phenol-chloroform extraction protocol (Sambrook et al. 1989). Partial fragment of the mitochondrial 16S rRNA was amplified via the polymerase chain reaction (PCR) using the primers 16SAR: 5'-CGCCTGTTTAYCATAAATC-3' and 16SBR: 5'-CCGTTYGAACCTGATCAYGT-3' (Palumbi et al. 1991). The product was purified and sequenced by Tsingke Biotechnology (Beijing) Co., Ltd. The new sequences were deposited in GenBank. Species of the genera Nyctixalus Boulenger and Zhangixalus Li, Jiang, Ren & Jiang were selected as outgroups respectively according to Li et al. (2019) and Du et al. (2022). Homologous and outgroup sequences were obtained from GenBank (Table 1). Sequences were aligned using MAFFT 7 (Katoh and Standley 2013). The technical computation methods for the best substitution model selection, Bayesian inference and Maximum likelihood phylogenetic analyses were the same as those in Liu et al. (2021).

Measurements were taken with a digital caliper to the nearest 0.1 mm. Morphological terminology for Theloderma khoii followed Ninh et al. (2022): SVL, snout-vent length; HW, maximum head width (across angle of jaws); HL, head length (from the back of the mandible to the tip of the snout); SNL, snout length (from anterior corner of eye to the tip of the snout); ED, eye diameter; UEW, maximum width of upper eyelid; IN, interornial distance; IOD, interorbital distance; DAE, distance between anterior corners of eyes; DPE, distance between posterior corners of eyes; EN, distance from anterior corner of the eye to the nostril; TD, tympanum diameter; TYE, distance from anterior margin of tympanum to posterior corner of the eye; FLL, forelimb length (from axilla to elbow); HAL, hand length (from elbow to the tip of third finger); OPT, outer palmar tubercle length; TFL, third finger length; FeL, femur length (from vent to knee); Tbl, tibia length (from knee to tarsus); FvL, foot length (from inner metatarsal tubercle to the tip of fourth toe); FTL, fourth toe length; and IMT, inner metatarsal tubercle length. Morphological terminology for Rhacophorus orlovi followed Ziegler and Köhler (2001): KRL, snout-vent length; KB, head width; KL, head length; AN, distance between anterior angle of eye to center of nostril; NS, distance between center of nostril to tip of snout; AD, horizontal eye diameter; TD, horizontal tympanum diameter; HaL, length of hand, up to the tip of the longest (3rd) finger; BL, length of the extended hindlimb from cloaca to tip of longest toe; FL, length of foot, exclusive of tarsus, up to the tip of the longest (fourth) toe; and IMT, length of inner metatarsal tubercle.

Figure 1. Map showing the type locality (black star) of Theloderma khoii and the type locality (black triangle) of Rhacophorus orlovi in Vietnam, the new collection site (black square) of T. khoii and the new collection site (black dot) of R. orlovi in China, and the other localities (black pentagon) of R. orlovi whose sequences were used in the phylogenetic analysis.
### Table 1. Samples used in molecular analyses of this study.

| Taxon | Voucher No. | Locality | GenBank No. |
|-------|-------------|----------|-------------|
| Rhacophorus annamensis | VNMN 4990 | Dak Nong, Nam Nung, Vietnam | LC010566 |
| Rhacophorus baluensis | FM223988 | Sabah, Malaysia | KC592089 |
| Rhacophorus bengalensis | UTA A-62770 | Lampung, Sumatra, Indonesia | KM212948 |
| Rhacophorus bispinatus | CAS229913 | Patao, Kachin, Myanmar | JX219445 |
| Rhacophorus borneensis | BORN: 22410 | Malai Basin, Sabah, Malaysia | AB781693 |
| Rhacophorus calcaratus | VNMN 4993 | Dak Lac, Chu Yang Sin, Vietnam | LC010573 |
| Rhacophorus catamitus | ENS 147296 | Sumatra, Indonesia | KX398975 |
| Rhacophorus cincticeps | VNMN 4107 | Gia Lai, Kon Ka Kinh, Vietnam | LC010585 |
| Rhacophorus heleneae | AMS R 173230 | Binh Thuan, Vietnam | JQ288087 |
| Rhacophorus hoabinhini | VNMN A.2016.16 | Hoa Binh, Vietnam | LC331097 |
| Rhacophorus indonesiensis | MGJ-Amp.23619 | Indonesia | AB983367 |
| Rhacophorus kio | VNMN 4110 | Gia Lai, Kon Ka Kinh, Vietnam | LC010589 |
| Rhacophorus lateralis | SDB.2010.330 | Karnataka, Bygoor, India | KC571277 |
| Rhacophorus malabaricus | Rmal-In | Madikeri, India | AB530549 |
| Rhacophorus marginifer | ENS 16162 | Java, Indonesia | KX398889 |
| Rhacophorus modestus | ENS 16653 | Sumatra, Indonesia | KX398904 |
| Rhacophorus nigropalmatus | Rao081203 | Malaysia | JX219438 |
| Rhacophorus norhayatae | NNRn | Endau Rompin, Johor, Malaysia | AB728191 |
| Rhacophorus orlovi | VNMN 4114 | Xuan Lien, Thanh Hoa, Vietnam | LC010597 |
| Rhacophorus orlovi | VNMN 3067 | Huong Son, Ha Tinh, Vietnam | LC010598 |
| Rhacophorus orlovi | VNMN 4116 | Ngoc Linh, Kon Tum, Vietnam | LC010599 |
| Rhacophorus orlovi | VNMN 4115 | Pu Huong, Nghe An, Vietnam | LC010600 |
| Rhacophorus orlovi | VNMN 24628 | Ha Tinh, Vietnam | LC545588 |
| Rhacophorus orlovi | VNMN 24626 | Ha Tinh, Vietnam | LC545589 |
| Rhacophorus orlovi | TQ.2018.56 | Tuyen Quang, Vietnam | LC548744 |
| Rhacophorus orlovi | TQ.2018.56 | Tuyen Quang, Vietnam | LC548744 |
| Rhacophorus paradisi | AMNH A161405 | Huong Son, Ha Tinh, Vietnam | DQ283049 |
| Rhacophorus orlovi | RAO 03309 | Maguam, Yunnan, China | JX219435 |
| Rhacophorus orlovi | RAO 02480 | Maguam, Yunnan, China | KF463849 |
| Rhacophorus orlovi | KZ20210506 | Hekou, Yunnan, China | OP393173 |
| Rhacophorus orlovi | KZ20210507 | Hekou, Yunnan, China | OP393174 |
| Rhacophorus orlovi | KZ20210508 | Hekou, Yunnan, China | OP393175 |
| Rhacophorus orlovi | FMNH2373243 | Sarawak, Bintulu, Malaysia | JX219454 |
| Rhacophorus poecilonotus | SDB.2011.1010 | Sarawak, Bintulu, Malaysia | KX398909 |
| Rhacophorus pseudomalabaricus | SDB.2011.1010 | Sarawak, Bintulu, Malaysia | KC593855 |
| Rhacophorus reinwardtii | Rao081205 | Malaysia | JX219443 |
| Rhacophorus rhodopus | SCUM 006692L | Mengyang, Yunnan, China | EU215531 |
| Rhacophorus roberti | VNMN 4123 | Gia Lai, Kon Ka Kinh, Vietnam | LC010613 |
| Rhacophorus spekei | IEBR A.2011.1 | Khammouan, Lao | LC331095 |
| Rhacophorus translineatus | Rao06237 | Medog, Tibet, China | JX219449 |
| Rhacophorus vampryus | VNMN 4125 | Hon Ba, Khanh Hoa, Vietnam | LC010616 |
| Rhacophorus verrucopus | D2542 Rao | Medog, Tibet, China | JX219436 |
| Theloderma albopunctatum | VNMN J24887 | Vinh Phuc, Vietnam | KU244375 |
| Theloderma annae | NAP05558 | Hoa Binh, Vietnam | MG917766 |
| Theloderma asperum | ZRC.1.19321 | Malaysia | GM042742 |
| Theloderma auratum | ZMUM AS528 | Gia Lai, Vietnam | MG917767 |
| Theloderma baikongense | YPX32340 | Motarai, Tibet, China | JX981089 |
| Theloderma bicolor | VNMN 3536 | Lao Cai, Vietnam | KJ280291 |
| Theloderma corticale | MVZ 223905 | Vinh Phuc, Vietnam | KU244364 |
| Theloderma gordoni | MVZ 223469 | Vinh Phuc, Vietnam | KU244363 |
| Theloderma hekouense | GXNU YU000006 | Hekou, Yunnan, China | OR843967 |
| Theloderma horridum | KUHE 52582 | Negeri Sembilan, Malaysia | LC012861 |
| Theloderma kii | VNMN 012757 | Ha Giang, Viet Nam | LC614701 |
| Theloderma kii | VNMN 012758 | Ha Giang, Viet Nam | LC614702 |
| Theloderma kii | KIZRao201204 | Xichou, Yunnan, China | OP393172 |
| Theloderma lacustrinum | NSCM 84683 | Vietiane, Laos | KX095246 |
| Theloderma laevis | NAP01644 | Lam Dong, Vietnam | KT461907 |
| Theloderma lateriscus | VNMN 1216 | Bac Giang, Vietnam | LC012851 |
| Theloderma leucophrys | LJT W46 | Malaysia | KC465841 |
| Theloderma licin | MVZ 9458 | Indonesia | KU244368 |
| Theloderma moloch | GXNU YU000115 | Yingjiang, Yunnan, China | MT509809 |
| Theloderma nebulosum | ROM 39588 | Kon Tum, Vietnam | KT461887 |
| Theloderma nebulosum | ROM 39588 | Kon Tum, Vietnam | KT461887 |
| Theloderma pallidum | NAP02516 | Lam Dong, Vietnam | KT461903 |
| Theloderma petulin | HNUE MNA2012.0001 | Dien Bien, Vietnam | KJ802929 |
| Theloderma physoderma | CAS247910 | Myanmar | KJ122823 |
| Theloderma pyrkaika | GXNU YU000116 | Yingjiang, Yunnan, China | MT509810 |
| Theloderma rhodoides | CIB GX00807017 | Jinxiu, Guangxi, China | LC012842 |
| Theloderma ryabovi | VNMN 3924 | Kon Tum, Vietnam | LC012860 |
| Theloderma sylviaturn | Stali | Chanthaburi, Thailand | KT461918 |
| Theloderma truongsonense | VNMN 4402 | Khanh Hoa, Vietnam | LC012847 |
| Theloderma vietnamense | AMJS174047 | Mondol Kiri, Cambodia | JN688171 |
| Nycitrusus pictus | KUHE 53517 | Malaysia | LC012863 |
| Nycitrusus spinosus | ACD 1043 | Mindanao, Philippines | DG231114 |
| Zhangixalus demycki | SCUM 060401L | Shuanguan, Guangdong, China | EU215545 |
| Zhangixalus dugritei | SCUM 055010L | Baoping, Sichuan, China | EU215545 |
Results

Inferred from partial 16S rRNA fragments, the sequence of the specimen collected from Xichou County, Yunnan, China, clustered with the sequences of the type specimens of *Theloderma khoii* from Vietnam (Fig. 2). There was no genetic distance (uncorrected p-distance) between the sequence of the specimen from Xichou County and the sequences of the type specimens of *T. khoii* from Vietnam. The sequences of the specimens collected from Hekou County, Yunnan, China, clustered with the sequences of the specimens of *R. orlovi* from Vietnam (including the type locality of *R. orlovi*) and from Maguan County, Yunnan, China (Fig. 3). The genetic distance (uncorrected p-distance) between the sequences of the specimens from Hekou County and the sequences of the specimens of *R. orlovi* from Vietnam was 0.4%, the genetic distance (uncorrected p-distance) between the sequences of the specimens from Maguan County and the sequences of the specimens of *R. orlovi* from Vietnam was 0.5%, and there was no genetic distance (uncorrected p-distance) between the sequences of the specimens from Hekou County and the sequences of the specimens from Maguan County.

Morphologically, the specimen from Xichou County agrees well with the type specimens of *T. khoii* from Vietnam except for having a smaller body size and the specimens from Hekou County agree well with the type specimens of *R. orlovi* from Vietnam except for having a slightly larger body size in adult females.

Taxonomic account

*Theloderma khoii* Ninh, Nguyen, Nguyen, Hoang, Silyavong, Nguyen, Le, Le & Ziegler, 2022

Figs 4, 5

Specimen examined. KIZ Rao201204, subadult female, collected in April 2012 by Yi Fan from Fadou Township, Xichou County, Wenshan Prefecture, Yunnan Province, China (ca. 23°22’N, 104°46’E, 1600 m elevation).

Description of the specimen from China. Measurements are presented in Table 2. Body size small (SVL 29.4 mm); head strongly depressed, length and width almost equal (HL 12.4 mm, HW 12.7 mm); snout short (SNL 4.9 mm), pointed and truncated; eye large (ED 3.8 mm), pupil circular; canthus rostralis indistinct, loreal region oblique, slightly concave; interorbital distance wider than internarial distance and upper eyelid width (IOD 3.4 mm,
IN 2.7 mm, UEW 2.7 mm); distance between anterior corners of eyes (DAE 6.5 mm) about 60.2% distance between posterior corners of eyes (DPE 10.8 mm); nostril oval, nearer the tip of snout; tympanum distinct, diameter (TYD 2.1 mm) less than eye diameter, tympanum separated from eye by distance (TYE 0.9 mm) 42.9% of tympanum diameter; pineal ocellus absent; supratympanic fold distinct, interrupted, extending from behind eye to beyond level of axilla, composed of large irregular glandular ridges; vomerine teeth arranged in two small oblique groups between choanae and widely separated from each other; tongue large, accounting for almost half of mouth, heart-shaped, dorsal surface smooth, notched and free posterior.

Forelimbs slender (FLL 6.3 mm, HAL 16.2 mm); relative length of fingers: I < II < IV < III; tips of fingers

**Table 2.** Measurements (in mm) of the specimen of *Theloderma khoii* from Xichou County, Yunnan, China. For abbreviations see Materials and methods.

|                  | KIZ/Rao201204 | KIZ/Rao201204 |
|------------------|---------------|---------------|
| SVL              | 29.4          | 2.1           |
| HW               | 12.7          | 0.9           |
| HL               | 12.4          | 6.3           |
| SNL              | 4.9           | 16.2          |
| ED               | 3.8           | 1.1           |
| UEW              | 2.7           | 6.9           |
| IN               | 2.7           | 15.7          |
| IOD              | 3.4           | 15.8          |
| DAE              | 6.5           | 13.3          |
| DEP              | 10.8          | 7.0           |
| EN               | 3.4           | 1.7           |

Figure 3. Maximum likelihood tree of the genus *Rhacophorus* based on partial 16S rRNA fragments. Numbers before slashes indicate ultrafast bootstrap support for Maximum Likelihood analyses (≥ 90 remain) and numbers after slashes indicate Bayesian posterior probabilities (≥ 0.90 remain).
dilated into large, rounded and flattened discs; subarticular tubercles large and distinct, with indistinct supernumerary tubercles; formula of subarticular tubercles: 1, 1, 2, 2; outer edge of fourth finger distinctly serrated. Hindlimbs slender, tibia longer than femur length and foot length (TbL 15.8 mm, FeL 15.7 mm, FoL 13.3 mm), tibiotarsal articulation reaching posterior edge of snout when hindlimbs pressed forward; relative length of toes I < II < V < III < IV; webbing formula I(1/3) – (1/2)II(0) – (1/2)III(0) – (1)IV(1) – (1/3)V; tips of toes dilated into rounded, flattened discs, smaller than discs on fingers; large subarticular tubercles roundish, formula of subarticular tubercles: 1, 1, 2, 3, 2; large inner metatarsal tubercle oval and raised (IMT 1.7 mm), outer metatarsal tubercle absent; outer edge of fifth toe with five distinct serrations.

Dorsal surface of head, body, and limbs very rough, with large irregular glandular ridges ordered symmetrically in middle vertebral region; a large, horn gland behind head roughly in X-shape; large conical tubercles on back of thighs near vent; lateral parts of body become granular, dense small tubercles below eye and 4–5 large tubercles behind tympanum on each side; throat and chest relatively smooth; belly and ventral surface and underside of thigh with thickened flat granules; axillary region and underside of tibia smooth.

**Coloration in life.** Dorsal surface of head and body green with irregular olive patches; tips of most tubercles red on olive patches and light green on other regions; dorsal surfaces of limbs green with dark olive bands, tips of tubercles red on bands and light green on other regions, finger and toe discs light green; lateral surface of head green, iris yellowish green with irregular black reticulation; tympanum dark olive; flanks light yellow with black patches and strips; ventral surface of head and body brownish black with many small white dots; a light yellow patch on anterior region of the base of forelimb on each side; ventral surface of limbs brownish black with some small white dots on ventral thigh and some light yellow patches on other regions of ventral limbs.

**Distribution.** This species is currently known only from the type locality in Ha Giang Province, northeastern Vietnam, and Xichou County, Wenshan Prefecture, southeastern Yunnan, China.

**Rhacophorus orlovi** Ziegler & Köhler, 2001

**Specimen examined.** KIZ20210506, subadult female; KIZ20210507–KIZ20210508, two adult females; all collected on 18 May 2021 by Shuo Liu from Guiliang
Figure 6. The specimens of *Rhacophorus orlovi* from Hekou County, Yunnan, China, in preservative. A. Dorsal view; B. Ventral view.

Village, Laofanzhai Township, Hekou County, Honghe Prefecture, Yunnan Province, China (22°41’10”N, 103°49’45”E, 750 m elevation).

**Description of the specimens from China.** Measurements are presented in Table 3. Body size moderate (KRL 53.9–55.6 mm in adult females); head slightly longer than wide (KL/KB 1.01–1.02); snout slightly pointed, rounded in dorsal and lateral views; nostril closer to tip of snout than to eye (NS/AN 0.59–0.83); canthus rostralis well developed, slightly rounded, constricted; loreal region concave, sloped towards lip; interorbital region slightly convex; interorbital distance longer than upper eyelid length and internarial distance; eye diameter shorter than snout; tympanum distinct, approximately half of eye diameter (TD/AD 0.48–0.52); vomerine teeth in oblique ridges; tongue cordiform, free behind.
Figure 7. The specimens of *Rhacophorus orlovi* from Hekou County, Yunnan, China, in life. A. Dorsolateral view of the subadult female (KIZ20210506); B. Ventral view of the subadult female (KIZ20210506); C. Dorsolateral view of the adult female (KIZ20210507); D. Ventral view of the adult female (KIZ20210507); E. Dorsolateral view of the adult female (KIZ20210508); F. Ventral view of the adult female (KIZ20210508).

Forelimbs slender, relative lengths of fingers I < II < IV < III; subarticular tubercles large and distinct, with small and distinct supernumerary tubercles; formula of subarticular tubercles: 1, 2, 2, 1; tips of fingers dilated into well developed, broad discs with circumferential groove; disc of third finger approximately equal
to tympanum diameter; webbing between first and second finger reaching subarticular tubercles; webbing between second and third finger nearly reaching base of disc of second finger and proximal subarticular tubercle of third finger; and webbing between third and fourth finger reaching distal subarticular tubercles. Hindlimbs slender, tibiotarsal articulation reaching between eye and snout tip when hindlimbs pressed forward; relative length of toes I < II < III < V < IV; subarticular tubercles distinct; formula of subarticular tubercles: 1, 1, 2, 3, 2; inner metatarsal tubercle oval, outer metatarsal tubercle absent; discs on toes smaller than those on fingers; webbing between first and second toe reaching base of disc of first toe and subarticular tubercle of second toe; webbing between second toe and third toe reaching base of disc of second toe and distal subarticular tubercle of third toe; webbing between third and fourth toe reaching base of disc of third toe and distal subarticular tubercle of fourth toe; and webbing between fourth and fifth toe reaching bases of discs. Skin smooth dorsally and laterally with sparse tiny tubercles; supratympanic fold distinct, ending above insertion of arm; skin on throat smooth, on abdomen and inner thighs coarsely granular; weak tubercles and protuberances on outer edges of lower arms and tarsus; tarsal projections on heels indistinct; skin beneath anal and inner thighs coarsely granular; weak tubercles and supratympanic fold distinct, ending above bases of discs on toes; discs on toes reaching bases of digits;

**Table 3.** Measurements (in mm) of the specimens of *Rhacophorus orlovi* from Hekou County, Yunnan, China. For abbreviations see Materials and methods.

|           | KIZ20210506 | KIZ20210507 | KIZ20210508 |
|-----------|-------------|-------------|-------------|
| KRL       | 30.6        | 53.9        | 55.6        |
| KB        | 12.1        | 19.9        | 20.9        |
| KL        | 12.3        | 20.3        | 21.1        |
| AN        | 3.0         | 5.6         | 6.0         |
| NS        | 2.5         | 3.3         | 3.9         |
| AD        | 4.0         | 6.5         | 7.3         |
| TD        | 1.9         | 3.4         | 3.6         |
| HaL       | 9.4         | 15.8        | 17.1        |
| BL        | 53.1        | 87.1        | 90.7        |
| FL        | 13.1        | 22.5        | 23.2        |
| IMT       | 1.4         | 2.6         | 2.6         |

**Coloration in life.** Dorsum flesh color, reddish brown, or dark brown, with some black dots or indistinct stripes; dorsal limbs with distinct dark bands; loreal region dark brown with irregular light yellow patches or no patch; iris golden in upper third, bronze in remainder; flanks brown with indistinct reticulation or black and yellow spots; groin and lateral thighs and shanks brownish black with white spots; vent region greyish black; venter greyish in adult females and light yellow to orange in subadult female.

**Distribution.** This species is currently known from Vietnam and Laos, as well as Maguan County, Wenshan Prefecture, and Hekou County, Honghe Prefecture, Yunnan, China.

**Discussion.** *Theloderma khoii* was known previously only from northeastern Vietnam (Ninh et al. 2022). This is the first record of *T. khoii* from China and from outside Vietnam. The new locality in China is approximately 35 km away from the type locality in Vietnam (Fig. 4). Our work brings the total species number of the genus *Theloderma* to 11 in China and to eight in Yunnan.

The population density of *Theloderma khoii* in China may be very low, or this species is very infrequently encountered due to its cryptic habits. We collected a specimen of this species ten years ago, thereafter, we have conducted many field surveys in southeastern Yunnan, but we have never seen this species again. Since we have only one subadult specimen, we have not described it as a new species. Recently, this species was described and named from northern Vietnam, and we confirmed that the specimen we collected in southeastern Yunnan ten years ago is conspecific with this species. Therefore, we report the first record of this species in China.

Hou et al. (2017) considered that *Theloderma bicolor* is distributed in Xichou County, Wenshan Prefecture, Yunnan, China, and provided a photograph (fig. 27 B) of *T. bicolor* from Xichou taken by Yi Fan. After verification, we confirmed that the individual in the photograph (fig. 27 B) in Hou et al. (2017) is the same one (KIZ-Rao201204) reported in this study. Therefore, we remove the record of *T. bicolor* from Xichou herein.

Little is known about the natural history of this species in China at present. More field surveys are needed to learn about and protect the populations of this species in China.

**Acknowledgements**

We would like to thank the local forest rangers for assistance in the field. Thanks also to our colleagues for their help and advice. We also thank the reviewers for their valuable comments on the manuscript. This work was supported by Science-Technology Basic Condition Platform from the Ministry of Science and Technology of the People’s Republic of China (Grant No. 2005DKA21402), National Natural Science Foundation Projects: Investigation and Systematic Taxonomy of the Amphibians of Rhacophoridae in China (Grant No. NSFC-30672043) and Study on Phylogeny and Evolutionary Mechanism of the Amphibians of Rhacophoridae (Grant No. NSFC-31071894), International Cooperation and Exchange Project of National Natural Science Foundation of China: Study on Biodiversity and Conservation of the Important Tropical and Subtropical Amphibian Groups Rhacophoridae and Hylidae in East and Southeast Asia (Grant No. NSFC-RFBR 30911120031), and the project of Ministry of Ecology and Environment of China: Investigation and assessment of amphibians and reptiles in southern Yunnan.
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