

## Short Communication

### First record of the Buonluoi forest skink *Sphenomorphus buenloicus* Darevsky & Nguyen, 1983 (Squamata: Scincidae) from Cambodia

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The family Scincidae (skinks) is a globally diverse group of lizards with 154 genera and 1,605 species currently recognised worldwide (Uetz *et al.*, 2016). Among these genera, the genus *Sphenomorphus* Fitzinger, 1843 currently comprises 109 species following recent taxonomic revisions which have transferred numerous species of *Sphenomorphus* to the newly established genera *Tythoscincus* and *Pinoyscincus* (Linkem *et al.*, 2011; Grismer *et al.*, 2016) and back-and-forth placement of taxa between the morphologically similar genera *Sphenomorphus*, *Leptoseps*, *Livorimica*, *Paralipinia*, *Lipinia*, and *Scincella* (Darevsky, 1990; Nguyen *et al.*, 2011).

*Sphenomorphus* skinks occur from India to South-east Asia, the Philippines and Australia and associated islands (Grismer *et al.*, 2008; Nguyen *et al.*, 2011; Datta-Roy *et al.*, 2013; Uetz *et al.*, 2016). They are distinguished by the combination of the following morphological characters: the absence of supranasal scales; the presence of prefrontals; parietals in contact posteriorly; lower eyelid scaly; tympanum deeply sunk; five digits on hind limbs; less than 30 subdigital lamellae on the fourth toe; inner preloocal scales overlapping the outer preloocal scales; median pair of preloocal scales enlarged; two or more scale rows of supra-digital scales on the dorsal surface of the fourth toe; and the presence of long thin and bifur-

cated hemipenes (Taylor, 1963; Lim, 1998; Grismer, 2008; Nguyen *et al.*, 2011). Following the allocation of *Sphenomorphus rufocaudatus* to the genus *Scincella* (Darevsky, 1990; Nguyen *et al.*, 2011), which we follow herein, the genus *Sphenomorphus* is represented by only four species in Cambodia: *S. indicus* (Gray, 1853), *S. lineopunctulatus* Taylor, 1962, *S. maculatus* (Blyth, 1853), and *S. stellatus* (Boulenger, 1900) (Grismer *et al.*, 2008; Hartmann *et al.*, 2010).

Phnom Namlyr Wildlife Sanctuary is located in the eastern plains of Cambodia beside the Vietnamese border in Mondulkiri Province (Fig. 1, locality 9). Knowledge of the herpetofauna of this area is very limited as only one survey has been undertaken there since 2000 (Stuart *et al.*, 2006). During a field visit to the wildlife sanctuary on 29 December 2014, the first author collected three skink specimens which could not be assigned to any of the four *Sphenomorphus* species currently known from Cambodia: CBC02769–70, two males; CBC02771 – one female (coordinates: 12°19'26.2"N, 107°23'38.0"E). One specimen (CBC02769) was encountered moving among leaf litter on a forest trail while the remaining two (CBC02770–71) were found underneath rotten logs. All were found during the day in evergreen forest between 10:30 and 14:20 hrs. The specimens were preserved in 10% formalin

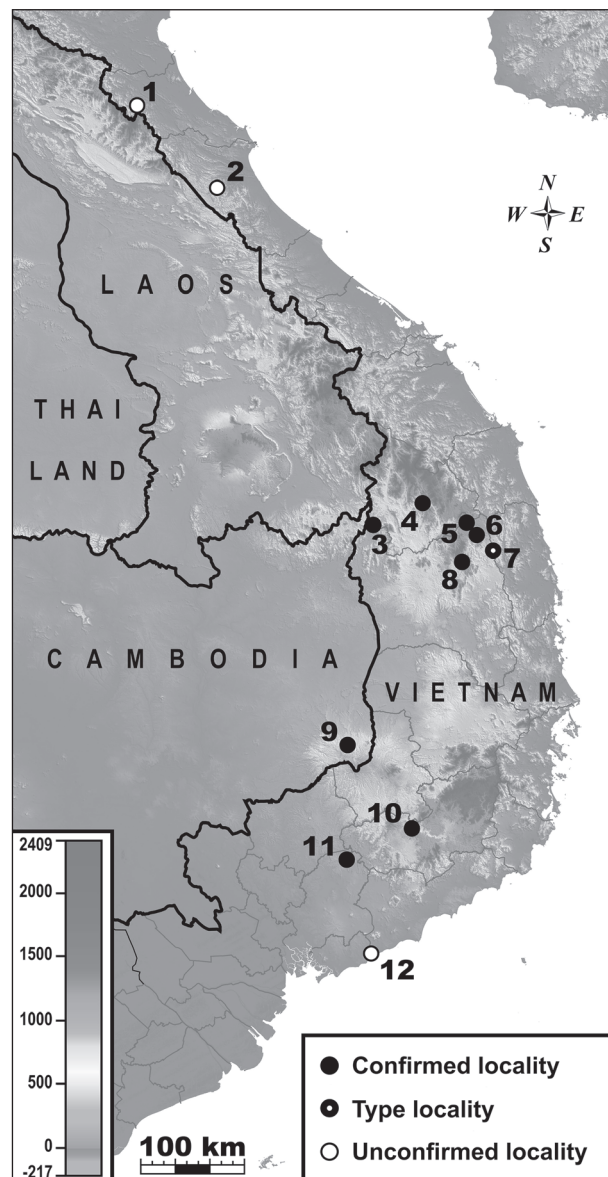
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and later transferred to 70% ethanol and deposited in the zoological collection of the Royal University of Phnom Penh, Cambodia. Examination of morphometric and meristic characters followed Darevsky & Nguyen (1983) and Nguyen *et al.* (2011).

The morphometric and meristic characters of the three *Sphenomorphus* specimens match those of *S. buenloicus* Darevsky & Nguyen, 1983, including the following (all measurements are given in mm): snout to vent length 53.2–56.1; tail length 25.8–30; prefrontals in contact; lower eyelids scaly; supraciliaries 10–13; supralabials 7, the 4<sup>th</sup> and 5<sup>th</sup> located underneath the eye; infralabials 6; primary temporal 1; supraocular 4; parietals in contact posteriorly; mid-body scale rows 32–34; ventral scales 62–66; limbs well-developed, each with 5 digits; subdigital lamellae under fourth toe 17–21; hemipenis bifurcating near the tip. In life (Fig. 2), Cambodian specimens have reddish brown colouration on the dorsum, flanks, and tail; scattered, small dark spots on the dorsum and labial region; an indistinct dark stripe from the nostril to the anterior corner of eye, passing the postocular and temporal region and running along the dorsolateral region to the base of tail; lower flanks, especially in the axillary region reddish-brown, with pinkish spotting in the region between posterior axilla and body; scattered tiny elongated light bars along the body and tail flanks; and dorsal surface of limbs with dark blotches. The colouration of specimens of *S. buenloicus* from Mondulkiri Province (Fig. 2A) is quite similar to that of the population from the type locality in Gia Lai Province, Vietnam (Fig. 2B).

Cambodian specimens differ slightly from *S. buenloicus* specimens from the type locality in certain morphological attributes based on the original description by Darevsky & Nguyen (1983): e.g., in having 10–13 supraciliaries (versus 9 in *S. buenloicus*); 32–34 mid-body scale rows (versus 30–34 in *S. buenloicus*); and 62–66 ventral scales (versus 55–58 in *S. buenloicus*). These differences may be due to population variation; however further studies including examination of genetic differentiation are required to understand the taxonomic importance of morphological differences between Cambodian and Vietnamese populations of *S. buenloicus*.

*Sphenomorphus buenloicus* was originally described from Buon Luoi in Gia Lai-Kon Tum Province of Vietnam (now Gia Lai Province, forest in the type locality is destroyed; Fig. 1, locality 7) and later reported from several localities in the mountainous regions of Tay Nguyen Plateau in Gia Lai and Kon Tum provinces of Vietnam (Fig. 1, localities 3–8). It was also recorded in Chu Mom Ray National Park in Kon Tum Province (Fig. 1, locality 3), adjacent to Virachey National Park



**Fig. 1** Known distribution of *Sphenomorphus buenloicus* in Vietnam and Cambodia: 1) Vu Quang N.P., Ha Tinh (Nguyen *et al.*, 2009); 2) Phong Nha-Ke Bang N.P., Quang Binh (Ziegler *et al.*, 2006; Nguyen *et al.*, 2009); 3) Chu Mom Ray N.P., Kon Tum (Jestrzanski *et al.*, 2013); 4) Kon Plong, Kon Tum (Nguyen *et al.*, 2009); 5) Kon Chu Rang N.R., Kon Ha Nung Plateau, Gia Lai (Bobrov & Semenov, 2008; Poyarkov, unpublished data); 6) So Pai, K Bang, Gia Lai (Nguyen *et al.*, 2009); 7) Buon Luoi, An Khe, Gia Lai (type locality, Darevsky & Nguyen, 1983); 8) Kon Ka Kinh N.P., Gia Lai (Bobrov & Semenov, 2008; Poyarkov, unpublished data); 9) Phnom Namlyr W.S., Mondulkiri (this study); 10) Loc Bac, Lam Dong (Vassilieva *et al.*, 2016; Poyarkov, unpublished data); 11) Nam Cat Tien, Dong Nai (Vassilieva *et al.*, 2016); 12) Binh Chau-Phuok Buu N.P., Ba Ria-Vung Tau (Nguyen *et al.*, 2009).



**Fig. 2** *Sphenomorphus buenloicus* in life: A) adult male from Phnom Namlyr Wildlife Sanctuary, Mondulhiri, Cambodia; B) adult male from Kon Chu Rang Nature Reserve, Gia Lai, Vietnam (© Neang Thy & Nikolay Poyarkov).

in Cambodia. Recently, *S. buenloicus* was found in the Loc Bac forest, Lam Dong Province (Fig. 1, locality 10) and Nam Cat Tien National Park, Dong Nai Province of Vietnam (Fig. 1, locality 11). The hilly area of the Lam Dong and Dong Nai provinces share many herpetofaunal elements with hilly areas in the eastern area of Mondulhiri Province, Cambodia (Fig. 1, locality 9; Stuart *et al.*, 2006). However, as some localities where *S. buenloicus* has been recorded in the northern part of central Vietnam (Fig. 1, localities 1–2) and southern Vietnam (Fig. 1, locality 12) are distant from what appears to be the main range of the species, their status should be clarified.

The present report extends the known range of *S. buenloicus* from its type locality in Gia Lai Province of Vietnam approximately 235 km southwest to Phnom Namlyr Wildlife Sanctuary in Cambodia, which coincides with its recent discovery in the Dong Nai and Lam Dong provinces of southern Vietnam (Vassilieva *et al.*, 2016). Discovery of *S. buenloicus* can be also anticipated in north-eastern montane Cambodia (Virachey National Park). This is the first record of *S. buenloicus* outside Vietnam and constitutes the fifth species of *Sphenomorphus* documented in Cambodia. Our discovery highlights the current incompleteness of information on reptiles in the eastern plains of Cambodia. This area has close affinities to the Annamite Mountains where many new species and herpetofaunal records have recently been documented (Nazarov *et al.*, 2012; Hartmann *et al.*, 2013; Nguyen *et al.*, 2013; Poyarkov *et al.*, 2014, 2015a, 2015b; Rowley *et al.*, 2016).

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