

A new species of *Scincella* (Squamata: Scincidae) from Vietnam

Authors: Nguyen, Quang Truong, Nguyen, Van Sang, Böhme, Wolfgang, and Ziegler, Thomas

Source: *Folia Zoologica*, 59(2) : 115-121

Published By: Institute of Vertebrate Biology, Czech Academy of Sciences

URL: <https://doi.org/10.25225/fozo.v59.i2.a6.2010>

BioOne Complete (complete.BioOne.org) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

A new species of *Scincella* (Squamata: Scincidae) from Vietnam

Quang Truong NGUYEN^{1,2*}, Van Sang NGUYEN¹,
Wolfgang BÖHME² and Thomas ZIEGLER³

¹ Institute of Ecology and Biological Resources, 18 Hoang Quoc Viet, Hanoi, Vietnam;
e-mail: nqt2@yahoo.com

² Zoologisches Forschungsmuseum Alexander Koenig, Adenauerallee 160, D-53113 Bonn, Germany;
e-mail: w.boehme.zfmk@uni-bonn.de

³ AG Zoologischer Garten Köln, Riehler Straße 173, D-50735 Köln, Germany; e-mail: ziegler@koelnerzoo.de

Received 7 January 2009; Accepted 6 April 2009

Abstract. We describe a new species of *Scincella* similar to *Sphenomorphus tridigitus* based on a single specimen from Lang Son Province, northeastern Vietnam. The new species differs from the latter by presence of lower eyelids with undivided opaque window, forelimbs with five digits, and by absence of prefrontals. *Scincella apraefrontalis* sp. n. is distinguished from all other species of *Scincella* and all other Asian limb-reduced lygosomines by a combination of the following characters: no supranasals; no prefrontals; nasal and first supralabial fused; six supralabials; lower eyelid with undivided opaque disc; no external ear openings; 18 midbody scale rows; and pentadactyl limbs.

Key words: Lygosominae: *Scincella apraefrontalis* sp. n., Vietnam: Lang Son Province, generic relationship

Introduction

At present, a total of 34 species of the genus *Scincella* (Mittleman, 1950) have been reported, including 29 species from Asia and five species from southeastern North America (Greer 1974, Shea & Greer 2002). This genus is differentiated from other sphenomorphines by its small size, attenuate habitus, terrestrial behaviour, postorbital bone which is usually long and thin, and a transparent window in a moveable lower eyelid (Greer 1974).

The generic assignment of many Southeast Asian lygosomines including *Scincella*, however, is still uncertain, and their phylogenetic relationships remain unresolved. The lower eyelid with a transparent or opaque window is found in several genera of Asiatic skinks: *Asymblepharus*, *Leptoseps*, *Lipinia*, *Paralipinia*, and *Vietnascincus* (Darevsky & Orlov 1994, 1997, Greer 1997, Eremchenko 2002, Shea & Greer 2002). Darevsky & Orlov (1997) described a new genus of arboreal skinks, *Paralipinia*, with double rows of subdigital lamellae on basal fingers and toes. Subsequently, this genus was synonymized

with *Scincella* by Greer & Shea (2003) based on the secondary temporal scale overlap pattern (lower scale overlapping upper one). This character was not included when Greer et al. (2006) allocated *Siaphos tridigitus* to *Sphenomorphus*, although it differs from most species of *Sphenomorphus* by having the upper temporal scale overlapping the lower one (instead of the opposite condition). Although we agree with Greer & Shea (2003) that the generic relationships of *Paralipinia* are likely closer to *Scincella* than to *Lipinia*, we advocate considering *Paralipinia* as a distinct genus until additional data is available. Greer (1997) erected *Leptoseps* for *Siaphos poilani* Bourret, 1937 and *Larutia osellai* Böhme, 1981. Although Greer mentioned the new genus as a member of the *Sphenomorphus* group of lygosomine skinks, he did not compare *Leptoseps* with *Scincella*. *Scincella* can be distinguished from *Leptoseps* by the number of digits on the hindlimbs: five versus four, respectively (Greer 1997). Therefore, in view of these uncertainties, we provisionally consider lygosomines with a transparent or opaque window

* Corresponding Author

on the lower eyelid, supranasals absent, hindlimbs with five digits, lamellae under the basal digits in one row, and dorsum without dark and light stripes as belonging to the genus *Scincella*, pending future studies, particularly molecular genetic analyses.

As a result of recent field work in northeastern Vietnam, we found a remarkable small skink which represents a member of the genus *Scincella* by the combination of characters as mentioned above. However, this specimen was not assignable to any of the lygosomine species known from Vietnam nor to species reported from neighbouring countries, so that we herein describe it as a new species.

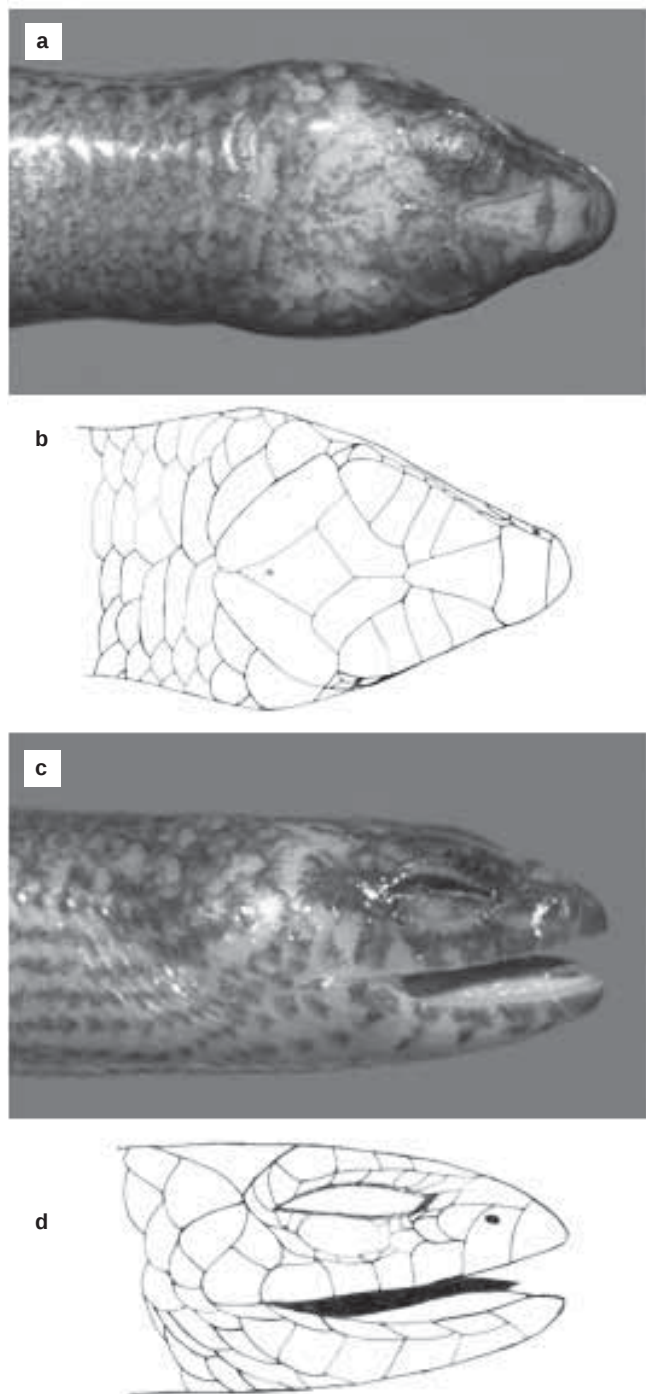
Material and Methods

Field work was conducted in April 1998 within Huu Lien Nature Reserve, Huu Lung District, Lang Son Province. Specimens referred to within this paper are deposited in the collections of the Institute of Ecology and Biological Resources (IEBR), Hanoi, Vietnam and of the Muséum National d'Histoire Naturelle (MNHN), Paris, France.

Morphological analysis: Measurements were taken with a dial calliper to the nearest 0.1 mm. The following abbreviations were used: SVL: Snout-vent length, TaL: Tail length, AG: Distance from axilla to groin, HL: Maximum head length (from the tip of snout to the posterior margin of parietal), HW: Maximum head width, HH: Head height, SL: Snout length (from the anterior corner of eye to the tip of snout), STL: Distance from snout to anterior margin of tympanum (or vestige of tympanum), SFIL: Snout-forelimb length, END: Distance from the anterior corner of eye to nostril, EL: Eye length, ETL: Distance from anterior border of tympanum to the hind margin of eye, TYD: Maximum diameter of tympanum, FIL: Forelimb length, HIL: Hind limb length. Scalation: Nuchal scales: widened scales behind parietals, paravertebral scales: number of scales from posterior edge of parietals to the point above vent, ventrals in transverse rows: number of scales from first gular row to precloacal scales. Altitude: a.s.l.: above sea level. Formula of dorsal scale rows between lateral stripes follows Inger et al. (1990) and Chen et al. (2001).

Scincella apraefrontalis sp. n.

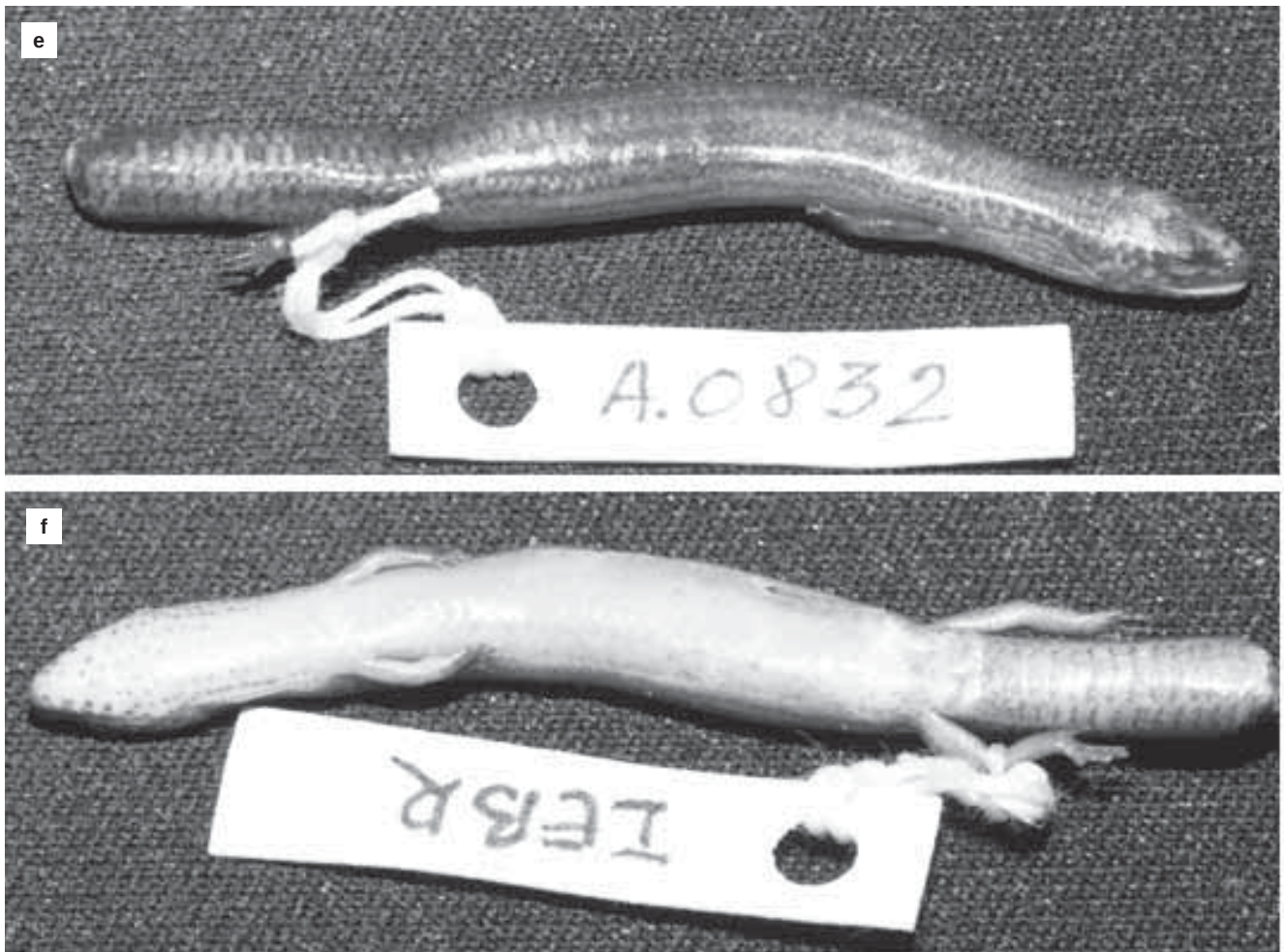
Holotype: IEBR A.0832, an adult male collected in April 1998 by Nguyen Van Sang and Nguyen Quang Truong from the Huu Lien Nature Reserve, Huu Lung District, Lang Son Province (21°40'N, 106°20'E), at an altitude of ca. 200 m a.s.l.



Above and opposite page:

Fig. 1. Holotype of *Scincella apraefrontalis* sp. n. (IEBR A.0832) from Huu Lien Nature Reserve, Lang Son Province: a) and b) dorsal view of head, c) and d) lateral view of head, e) dorsal view, and f) ventral view. Photographs by T. Ziegler.

Diagnosis: Small skink (36.1 mm SVL); supranasals absent; prefrontals absent; nuchals two or three pairs; nasal and first supralabial fused; loreal single; supralabials six; infralabials five; lower eyelid with



undivided opaque window; external ear openings absent; midbody scales in 18 rows; limbs short, pentadactyl, widely separated when adpressed; subdigital lamellae in one row under the digits, numbering eight on fourth toe; dorsum and tail base bronze brown with some indistinct darker spots in anterior part of each scale; laterals paler with three or four longitudinal dark brown stripes.

Description of holotype: Size small (SVL 36.1 mm); tail lost; see Table 1 for further measurements; head longer than wide (ratio of SVL/HL 6.6); snout rounded anteriorly; rostral wider than high, visible from above; supranasals absent; frontonasal wider than long, in contact with rostral, nasals, loreals, anterior supraciliaries, and frontal; prefrontals absent; frontal narrowing posteriorly, as long as distance to the snout, in contact with frontonasal, anterior supraciliaries, first and second supraoculars, and frontoparietals; a pair of frontoparietals, in contact with each other anteriorly, and bordered with frontal, three posterior supraoculars, parietals and interparietal; interparietal lozenge, slightly wider than frontal, with a small transparent spot; parietals in

contact posteriorly, posterior border covered by three enlarged scales; nuchal scales 2/3; nostril in single nasal; nasal and first supralabial fused; loreal single, in contact with nasal, second supralabial, preocular, anterior presubocular, and frontonasal; preocular single; presuboculars two, lower one in contact with second and third supralabials; supraciliaries six; supraoculars four, first and fourth longest, followed by a small postsupraocular; postocular in contact with fourth supraocular, postsupraocular, and upper postsubocular; postsuboculars three, lower one in contact with fifth supralabial; primary temporal single, in contact with fifth and sixth supralabials; secondary temporals two, upper very large, in contact with posterior border of parietal, and overlapped by lower one; lower eyelid with an undivided opaque window (central disc), separated from supralabials by a row of small scales; supralabials six (counting the first supralabial fused to nasal), fourth below the eye; external ear openings absent, its position indicated by scaly depression; mental wider than long, rounded anteriorly, in contact with anterior infralabials and postmental; infralabials

five; postmental undivided, in contact with mental, anterior infralabials, and anterior pair of chinshields; three pairs of chinshields, anterior pair in contact medially, second pair separated from each other by a gular scale, and posterior pair separated from each other by three scales. Midbody scales in 18 rows; dorsal scales smooth, larger than lateral scales, in four rows; paravertebral scales 52; ventrals smooth, in 50 transverse rows; precloacals two, enlarged; tail thick at base, tail tip lost, medial subcaudals of tail base widened.

Limbs relatively short (ratio of FIL/SVL 14.1% and HIL/SVL 22.4%), pentadactyl, widely separated when adpressed, and adpressed forelimbs not reaching to eye; dorsal surface of digits covered by two scale rows on basal and by a single row on terminal phalanges; subdigital lamellae smooth, in one row under the digits, numbering seven under fourth fingers and 8/9 under fourth toes.

Colouration in alcohol: Free margins of upper and lower eyelids not edged in white; dorsum and tail base bronze brown with some indistinct darker spots in anterior part of each scale; laterals paler with three or four longitudinal dark brown stripes from behind the eye to hindlimb; infralabials and throat with dark spots; venter cream; underside of tail base with indistinct brown marbling.

Comparisons: Among the currently known species of *Scincella* from Asia, the following have a relatively low midbody scale count: *S. barbouri* (Stejneger, 1925) with 24-28 rows; *S. beddomei* (Boulenger, 1887) with 20-24; *S. bilineata* (Gray, 1846) with 22-26; *S. modesta* (Günther, 1864) with 24-32; *S. monticola* (Schmidt, 1925) with 22-26; *S. punctatolineata* (Boulenger, 1893) with 22-28; and *S. travancorica* (Beddome, 1870) with 22-30 (Boulenger 1887, Schmidt 1925, 1927, Smith 1935, Taylor 1963, Ouboter 1986, Inger et al. 1990, Chen et al. 2001, Shea & Greer 2002). According to Eremchenko (2002), two other Himalayan scincid taxa, *Scincella himalayana* (Günther, 1864) (with 24-32 midbody scale rows) and *S. sikkimensis* (Blyth, 1853) (with 21-29 midbody scale rows) were transferred to the genus *Asymblepharus*. *Scincella apraefrontalis* sp. n. differs from all afore mentioned species by having a midbody scale count of only 18 rows (versus 20 and more rows), by lacking prefrontals (versus present in the afore mentioned species), and by lacking external ear openings (which are present in the previously listed taxa).

Scincella apraefrontalis sp. n. is most similar to *Sphenomorphus tridigitus* (Bourret, 1939) by

having midbody scales in 18 rows, adpressed limbs widely separated, and by the absence of external ear openings. However, the new species differs from the latter by lacking prefrontals (which are very small but present in *S. tridigitus*), by having pentadactyl forelimbs (which only have three digits in *S. tridigitus*), lower secondary temporal overlapping upper one (upper secondary temporal overlapping lower one in *S. tridigitus*), and lower eyelid with an undivided opaque window (versus scaly lower eyelid in *S. tridigitus*) (Greer et al. 2006, per. obs.). *Scincella apraefrontalis* sp. n. also shares several diagnostic characters of *Leptoseps* such as supranasals absent; prefrontals absent; only a single loreal; first supraciliary in contact with frontal; lower eyelid with an opaque window; supralabials six; infralabials five; external ear openings absent; midbody scales in 18 rows, and dorsal scales smooth. However, in comparison with Greer's (1997) description, the new species can clearly be distinguished from *Leptoseps* by having nasal and first supralabial fused (nasal and first supralabial not fused in *Leptoseps* spp.); both fore and hind limbs pentadactyl, more developed (ratio of FIL/SVL 14.1% and HIL/SVL 22.4% versus 6% and 7-8%, respectively, in *Leptoseps* spp.); ratio of SVL/HL 6.6 (versus 8.3-8.5 in *Leptoseps* spp.). *Scincella apraefrontalis* sp. n. further differs from *Leptoseps poilani* and *L. osellai* by having 52 paravertebral scales (versus 75-77 scales in *L. poilani* and 82 scales in *L. osellai*) (Bourret 1937, Böhme 1981, Greer 1997). *Scincella apraefrontalis* sp. n. is distinguishable from *Leptoseps tetradactylus* by having 18 midbody scale rows (versus 20 in *L. tetradactylus*), by lacking prefrontals (prefrontals very small in *L. tetradactylus*), and by having lower eyelid with opaque window (lower eyelid scaly in *L. tetradactylus*) (Darevsky & Orlov 2005). Distribution: *Scincella apraefrontalis* sp. n. is only known from the type locality in Lang Son Province, northeastern Vietnam (Fig. 2).

Natural history: The new species is currently known only from a single male specimen, which was found active during the daytime among leaf litter on the ground of secondary limestone forest at an altitude of 200 m a.s.l. The mode of life of *Scincella apraefrontalis* sp. n. in the Huu Lien Nature Reserve supports the supposition of Greer (2002): the loss of the external ear opening of skinks may help to reduce water loss and this character is strongly associated with two different features: fossoriality and small size. The holotype has two yellowish white testicles, each 3.3 mm in length.

Table 1. Measurements (in mm) and selected morphological characters of *Scincella apraefrontalis* sp. n. compared to *Sphenomorphus tridigitus* from Vietnam (F – Female, M – Male, * – regenerated tail or tip lost, for abbreviations see Material and Methods).

	<i>Scincella apraefrontalis</i> sp. n.	<i>Sphenomorphus tridigitus</i>	
	IEBR A.0832 (Holotype, M)	IEBR 73 (M)	IEBR 74 (F)
Measurements (in mm)			
SVL	36.1	38.5	37.6
TaL	lost	56.1*	36.9*
AG	21.4	21.2	21.5
SL	2.4	2.3	2.2
STL	6.0	6.6	6.9
SFIL	11.9	12.8	11.9
END	0.9	1.2	1.1
EL	1.6	1.7	1.8
HL	5.5	6.2	6.4
HW	4.3	4.1	4.3
SVL/HW	8.4	9.4	8.7
HH	3.3	3.4	3.3
External ear openings	absent	absent	absent
TYD	-	-	-
FIL	5.1	5.8	5.8
HIL	8.1	9.0	8.2
Number of digits on forelimb	5	3	3
Scalation			
Prefrontals	absent	2, separated	2, separated
Supraoculars	4	4	4
Nuchals	2/3	2/2	3/3
Nasal fused to first supralabial	yes	yes	yes
Supranasals	absent	absent	absent
Loreals	1	1	1
Supraciliaries	6/6	7/7	7/7
Supralabials	6/6	6/6	6/6
Lower eyelid	opaque window	scaly	scaly
Infralabials	5/5	5/5	5/5
Midbody scale rows	18	18	20
Paravertebral scales	52	52	52
Scale rows between lateral stripes	4	$\frac{1}{2} + 4 + \frac{1}{2}$	$\frac{1}{2} + 4 + \frac{1}{2}$
Dorsal scales in comparison with lateral scales	larger	subequal	subequal
Ventrals in transverse rows	50	52	52
Enlarged precloacals	2	2	2
Subdigital lamellae on 4 th toe	8/9	8/8	7/8
Limbs when adpressed	separated	separated	separated
Longest finger reaching to eye	no	no	no

Etymology: The species name derives from Latin: *apraefrontalis* – meaning “without prefrontals”. As common names we suggest Huulien ground skink (English), Scinque de terre d’Huulien (French), Huulien Bodenskink (German), and Thần lằn cổ hữu liên (Vietnamese).

Discussion

In the revision of Asian *Scincella*, Ouboter (1986) synonymized many species and recognized only 12 species from this region. He placed both *Lygosoma rupicola* (Smith, 1916) and *Leiolopisma siamensis* (Taylor & Elbel, 1958) in the synonymy of *S. melanosticta*. Subsequent to Shea & Greer (2002), Teynié et al. (2004) listed again *Scincella rupicola* as a distinct species, known from Laos, Vietnam, and Thailand. In the recent checklist of amphibian and reptiles of Vietnam, Nguyen et al. (2005) listed four species of *Scincella*: *S. doriae* (Boulenger, 1887), *S. melanosticta* (Boulenger, 1887), *S. reevesii* (Gray, 1838), and *S. rufocaudata* (Darevsky & Nguyen, 1983). However, previous records of *S. melanosticta* in northern Vietnam were replaced by *Livorimica bacboensis*, a new genus and species described in 2003 by Eremchenko. Bourret (1937) described *Leiolopisma ochraceum* without precise locality for the type specimen. Bourret (2009) noted a female collected from “Indochine française (ou Yunnan?)”. Ouboter (1986) considered *Leiolopisma ochraceum* to be a synonym of *Scincella reevesii*. Shea & Greer (2002) mentioned the syntypes (MNHN 48.57) of *Scincella ochracea* from Southeast Asia. The record of this species from Vietnam was subsequently followed by Eremchenko (2003), Bobrov & Semyonov (2008), David & Ineich in Bourret (2009). The discovery of *Scincella apraefrontalis* sp. n. from Lang Son Province brings the total species number of currently recognized Vietnamese *Scincella* to seven (*S. doriae*, *S. monticola*, *S. ochracea*, *S. reevesii*, *S. rufocaudata*, and *S. rupicola*) (Nguyen et al. 2009, 2010).

Acknowledgements

We are grateful to X.C. Le and N.C. Dang (IEBR, Hanoi) for their support and encouragement. We wish to thank the directorate of the Forest Protection



Fig. 2. Map showing the type locality of *Scincella apraefrontalis* sp. n. from Lang Son Province, Vietnam (•).

Department, Department of Science and Technology, and the Huu Lien Nature Reserve (Lang Son Province) for issuing relevant permits. We gratefully acknowledge R.H. Bain (AMNH, New York), N. Ananjeva and N.L. Orlov (ZISP, St. Petersburg), V.V. Bobrov (Moscow) for providing literature and comments on the manuscript. Furthermore, we thank the Nature Reserve staff and M.L. Hoang (Huu Lien, Huu Lung) for their assistance during field work in Lang Son Province. This research was partially funded by the Institute of Ecology and Biological Resources (IEBR) and the German Academic Exchange Service (DAAD).

Literature

- Bobrov V.V. & Semenov D.V. 2008: [Lizards of Vietnam]. Society for Scientific Editions, KMK, Moscow. (in Russian)
- Böhme W. 1981: A new lygosomine skink from Thailand (Reptilia: Scincidae). *Boll. Mus. Civ. Storia Nat., Verona* 8: 375–382.
- Boulenger G.A. 1887: Catalogue of the lizards in the British Museum (Natural History). London.

- Bourret R. 1937: Notes herpétologiques sur l'Indochine française. XII Les lézards de la collection du Laboratoire des Sciences Naturelles de l'Université. *Bull. gén. Instr. publ., Hanoi*: 1–39.
- Bourret R. 2009: Les lézards de l'Indochine. *Edition Chimaira, Frankfurt am Main*.
- Chen S.-L., Hikida T., Han S.-H., Shim J.-H., Oh H.-S. & Ota H. 2001: Taxonomic status of the Korean populations of the genus *Scincella* (Squamata: Scincidae). *J. Herpetol.* 35: 122–129.
- Darevsky I.S. & Nguyen V.S. 1983: New and little known lizard species from Vietnam. *Zool. Zh.* 62: 1827–1837.
- Darevsky I.S. & Orlov N.L. 1994: *Vietnascincus rugosus*, a new genus and species of the *Dasia*-like arboreal skinks (Sauria, Scincidae) from Vietnam. *Russ. J. Herpetol.* 1: 37–41.
- Darevsky I.S. & Orlov N.L. 1997: A new genus and species of scincid lizards from Vietnam: the first Asiatic skink with double rows of basal subdigital pads. *J. Herpetol.* 31: 323–326.
- Darevsky I.S. & Orlov N.L. 2005: New species of limb-reduced lygosomine skink genus *Leptoseps* Greer, 1997 (Sauria, Scincidae) from Vietnam. *Russ. J. Herpetol.* 12: 65–68.
- David P. & Ineich I. 2009: The lizards of the former French Indochina (Vietnam, Cambodia, Laos). An updated reappraisal. In: R. Bourret (ed.), *Les lézards de l'Indochine. Edition Chimaira, Frankfurt am Main*: 347–436.
- Eremchenko V.K. 2002: Scincidae. In: Schleich H.H. & Kästle W. (eds.), *Amphibians and reptiles of Nepal. A.R.G. Gantner Verlag*: 723–768.
- Eremchenko V.K. 2003: Generic and specific redefinition and redescription of the North-Vietnam skink *Scincella melanosticta* (Boulenger, 1887). *Izvestiya Vusov* 2003 (1–2): 20–28.
- Greer A.E. 1974: The generic relationships of the scincid lizard genus *Leiopisma* and its relatives. *Austral. J. Zool. (Suppl. Ser. 31)*: 1–67.
- Greer A.E. 1997: *Leptoseps*: a new genus of scincid lizards from Southeast Asia. *J. Herpetol.* 31: 393–398.
- Greer A.E. 2002: The loss of the external ear opening in scincid lizards. *J. Herpetol.* 36: 544–555.
- Greer A.E., David P. & Teynié A. 2006: The Southeast Asian scincid lizard *Siaphos tridigitus* (Bourret, 1939) (Reptilia, Scincidae): a second specimen. *Zoosystema* 28 (3): 785–790.
- Greer A.E. & Shea G. 2003: Secondary temporal scale overlap pattern: a character of possible broad systematics importance in spheonomorphine skinks. *J. Herpetol.* 37: 545–549.
- Günther A. 1864: The reptiles of British India. *Taylor & Francis, London*.
- Inger R.F., Zhao E.-M., Shaffer H.B. & Wu G.-F. 1990: Report on a collection of amphibians and reptiles from Sichuan, China. *Fieldiana Zoology* 58: 1–24.
- Nguyen V.S., Ho T.C. & Nguyen Q.T. 2005: [A checklist of amphibians and reptiles of Vietnam]. *Agricultural Publishing House, Hanoi. (in Vietnamese)*
- Nguyen V.S., Ho T.C. & Nguyen Q.T. 2009: Herpetofauna of Vietnam. *Edition Chimaira, Frankfurt am Main*.
- Nguyen Q.T., Nguyen T.T., Böhme W. & Ziegler T. 2010: First record of the mountain ground skink *Scincella monticola* (Schmidt, 1925) (Squamata: Scincidae) from Vietnam. *Russ. J. Herpetol.* 17 (1): 67–69.
- Ouboter P.E. 1986: A revision of the genus *Scincella* (Reptilia: Sauria: Scincidae) of Asia, with some notes on its evolution. *Zool. Verhandl.* 229: 1–66.
- Schmidt K.P. 1925: New reptiles and a new salamander from China. *Amer. Mus. Novitates* 157: 1–5.
- Schmidt K.P. 1927: Note on Chinese reptiles. *Bull. Amer. Mus. Nat. Hist.* 54: 467–551.
- Shea G.M. & Greer A.E. 2002: From *Sphenomorphus* to *Lipinia*: generic reassignment of two poorly known New Guinea skinks. *J. Herpetol.* 36: 148–156.
- Smith M.A. 1935: The fauna of British India, including Ceylon and Burma. Reptilia and Amphibia. Vol. 2-Sauria. *Taylor and Francis, London*.
- Taylor E.H. 1963: The lizard of Thailand. *Univ. Kansas Sci. Bull.* 44 (14): 687–1077.
- Teynié A., David P., Ohler A. & Luanglath K. 2004: Notes on a collection of amphibians and reptiles from southern Laos, with a discussion of the occurrence of Indo-Malayan species. *Hamadryad* 29: 33–62.