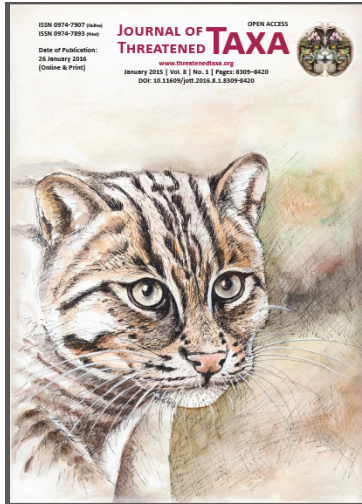


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SHORT COMMUNICATION

FIRST RECORD OF *SCOTOPHILUS KUHLII* LEACH, 1821 (CHIROPTERA: VESPERTILIONIDAE) FROM NEPAL

Dibya Dahal, Sanjan Thapa & Khadga Basnet

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FIRST RECORD OF *SCOTOPHILUS KUHLII* LEACH, 1821 (CHIROPTERA: VESPERTILIONIDAE) FROM NEPAL

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Abstract: Occurrence of *Scotophilus kuhlii* was speculated throughout the southern plain (Tarai) of Nepal. However, there was no record of voucher specimen of the species from Nepal. We collected a specimen from the Tikulia tole, Pakali Village Development Committee, Sunsari District of southeastern Nepal and deposited at Central Department of Zoology (CDZ) Museum, Tribhuvan University, Kathmandu. The specimen was identified as *S. kuhlii* based on measurement of external body, cranial, dental parts and detail description of the species. This is the first specific locality record of the species from Nepal that confirms its presence in the country.

Keywords: Cranial, dental parts, first specific locality record, measurements of external body, *Scotophilus kuhlii*, Sunsari District.

Abbreviations: HB - head and body length; T - tail length; TIB - tibia length; HF - hind foot length; FA - forearm length; Thumb - first metacarpal length; 3Mt - third metacarpal length; 1ph3Mt - length of the first phalanx of the third metacarpal; 2ph3Mt - length of the second phalanx of the third metacarpal; 4Mt - fourth metacarpal length; 1ph4Mt - length of the first phalanx of the fourth metacarpal; 2ph4Mt - length of the second phalanx of the fourth metacarpal; 5Mt - fifth metacarpal length; 1ph5Mt - length of the first phalanx of the fifth metacarpal; 2ph5Mt - length of the second phalanx of the fifth metacarpal; E - ear length; Tragus - tragus length; WSP - Wingspan; GTL - Greatest length of the skull; CCL - Condylar-canine Length; C-M³ - Maxillary tooththrow; M³-M³ - Posterior Palatal Width; C¹-C¹ - Anterior Palatal Width; M - Mandible Length; C-M₃ - Mandibular Tooththrow; ZB - Zygomatic Breadth; BB - Breadth of Braincase; PC - Postorbital Constriction

Scotophilus kuhlii Leach, 1821 has been listed in the faunal list of the country (Suwal & Verheugt 1995; Shrestha 1997; Baral & Shah 2008; Acharya et al. 2010). Occurrence of the species was speculated throughout the southern plain (Tarai) of Nepal (Corbet & Hill 1992) including all protected areas outside in some districts like Morang, Jhapa and Parsa (Jnawali et al. 2011). Simmons (2005) and Srinivasulu & Srinivasulu (2012) indicated probable occurrence of this species in Nepal. However, there was no record or voucher specimen of the species from Nepal (Pearch 2011).

MATERIALS AND METHODS

A specimen was collected from Tikulia tole (26°42'20.82"N & 87°13'8.22"E), Pakali-8, Sunsari District, Nepal at an elevation of 107m (Fig. 1) on 12 February 2012 by the first author and deposited in the museum of Central Department of Zoology, Tribhuvan University, Kathmandu, where it is preserved in 70% ethanol.

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Conflict of Interest: The authors declare no competing interests.

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Systematic review

Scotophilus kuhlii Leach, 1821
 Asiatic Lesser Yellow House Bat
Scotophilus kuhlii Leach, 1821: 72. "India".

Material

CDZ TU_BAT 032, 12.ii.2012, 1 adult male, Tikulia tole, Pakali-8, Sunsari District, Nepal 26°42'20.82"N & 87°13'8.22"E, elevation 107m.

Variation

Bates & Harrison (1997) refer specimens from Indian Subcontinent as *S. kuhlii* following Hill & Thonglongya (1972) and *S.k. wroughtoni* to subspecific form. The present material differs from the description by Bates & Harrison (1997) in colour of ventral pelage.

Diagnosis and description

Measurement of external body, cranial, and dental parts (Table 1) and detail description of *Scotophilus kuhlii* are the basis of diagnosis of the species. Tail is long and its terminal tip projects 2mm from the interfemoral membrane. Head has a broad and blunt muzzle, characteristic crescent-shaped tragus and a well-developed antitragus. Genus *Eptesicus* is also identified by the shape of the tragus, but it is short and blunt strikingly different from that of *Scotophilus*. The antitragus is separated by a distinct notch at the posterior end of the tragus. Forearm measures 47mm and the total mass weighs 22g. The skull has an elongated and profound braincase with distinct lambda which projects above the posterior of supraoccipital. There are well developed lamboid crests. The short and broad rostrum has prominent lachrymal processes above the orbits. At the inter-orbital region, the sagittal crest is bifurcated and extends to the front of the orbits. Nasal aperture is wide. Anterior of the palate (to the mid-point of the first upper premolar (pm⁴)) is emarginated broadly and intensely. Tympanic bullae are small and about the breadth of basioccipital. Coronoid processes in mandible are tall and triangular. The angular process is broad and slightly deflected outward. Dental character includes unicuspid upper incisor with a well-developed cingulum. The left upper incisor is missing. The upper canine which is in contact with upper incisor is large (Image 1). The lower canine is tall and recurved (Image 2). The upper premolar (pm⁴) measures two-thirds the height of the canine (Image 1). The first lower premolar (pm₂) is minute and is about one-third the crown area and one-fourth the height of the second lower premolar

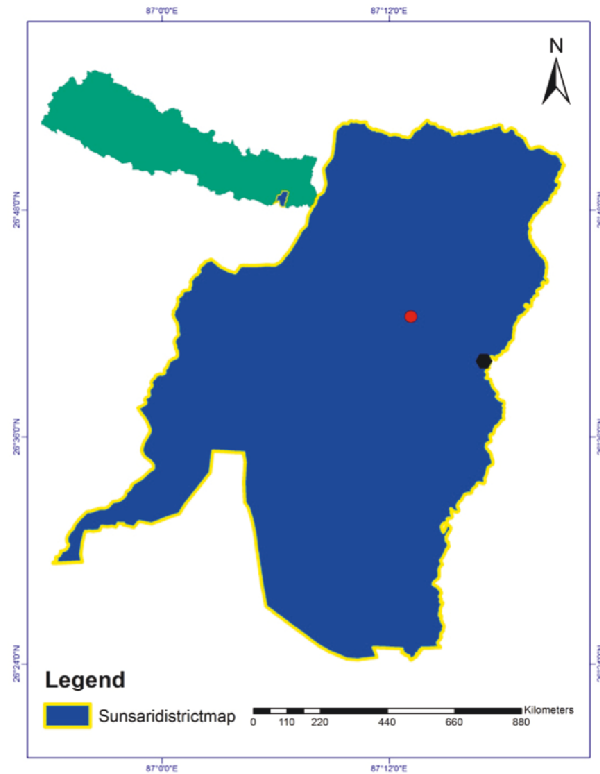


Figure 1. Map depicting the collection site (red circle) of the Asiatic Lesser Yellow House Bat with reference site Itahari (black hexagon) in Sunsari District, Nepal.

Table 1. Selected external, cranial, and dental measurements (in mm.) of *Scotophilus kuhlii* (CDZ TU_BAT 32) from Tikulia tole, Pakali V.D.C. ward # 8, Sunsari District, Nepal.

HB	67	2Ph3MT	21
T	41	WSP	374
TIB	17	E	10
HF	9	Tragus	7
FA	47	GTL	19.2
Thumb	8	CCL	17.2
5MT	43	BB	10.3
1Ph5MT	9	PC	3.4
2Ph5MT	10	C-M3	6.6
4MT	44	C-M3	7.3
1Ph4MT	12	M	13.5
2Ph4MT	13	C1-C1	6.3
3MT	45	M3-M3	7.5
1Ph3MT	15	ZB	13.2

(pm₄). The second lower premolar measures about two-thirds the height of the lower canine. The sizes of lower first and second molars are equal (Image 2).

The specimen has brownish dorsal pelage on the



Image 1. Lateral view of the skull of Asiatic Lesser Yellow House Bat (CDZ TU_BAT 32) collected from Tikuliatal, Pakali V.D.C. ward # 8, Sunsari District, Nepal.



Image 2. Lateral view of the mandible of Asiatic Lesser Yellow House Bat (CDZ TU_BAT 32) collected from Tikuliatal, Pakali V.D.C. ward # 8, Sunsari District, Nepal.

back, head and around the neck. The specimen lacks characteristic yellowish tinge in the ventral pelage that is evident in *S. heathii*. The ventral pelage is brownish-white (Image 3). Smaller size of the external characters and the skull identifies the species to be *S. kuhlii*.

Ecology and Habitat

The material was collected from a palm tree in Pakali Village Development Committee (VDC) located south of Mahendra Highway, 4km west of Ithari and 3km east of Jhumka Bazaar in Sunsari District (Fig. 1). Climate of the collection area is characterized by tropical monsoon type with minimum and maximum temperature of 8.8°C and 36.8°C, respectively. The area receives an annual average rainfall of 1934.5mm (RARST 2014). The collection site is mainly dominated by agricultural land cultivated with paddy, wheat, maize, mustard, gram, garden pea, papaya, golden gram, white jute and sugarcane. Banana



Image 3. Asiatic Lesser Yellow House Bat *Scotophilus kuhlii* collected from Tikuliatal, Pakali V.D.C. ward # 8, Sunsari District, Nepal.

Musa paradisiaca, betlenut *Areca catechu*, coconut *Cocos nucifera*, mango *Mangifera indica*, jack fruit *Artocarpus heterophyllus* and litchi *Litchi chinensis* are the fruits cultivated in the area. Bamboo and palm trees are patchily distributed within agricultural landscape. Vegetation of the area includes Sissoo *Dalbergia sissoo*, Sal *Shorea robusta*, Simal *Bombax ceiba*, Khayer *Acacia catechu*, Banyan tree *Ficus benghalensis*, Kadam *Anthocephalus chinensis*, Peepal *Ficus religiosa*, Black plum *Syzygium cumini*, Tallow tree *Triadica sebifera* and Mulberry *Morus alba*.

DISCUSSION

S. kuhlii ranges through much of South Asia, southern China and Southeast Asia (Bates et al. 2008). In South Asia, it is presently known from Bangladesh (Chittagong, Khulna and Sylhet divisions), India (Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand and West Bengal), Pakistan (Punjab and Sind) and Sri Lanka (Central, Eastern, Northern, North Central and Uva provinces) (Khan 2001; Das 2003; Vanitharani 2006; Korad et al. 2007). In South Asia, it has been recorded

from sea level to an elevation of 1,111m (Molur et al. 2002).

S. kuhlii has been recorded from 12 localities in Bihar and 16 localities in West Bengal in India. Among them, the nearest locality from Tikulia tole, Pakali V.D.C., Nepal is Purniya District, Bihar, India. The ventral pelage is pale brown, usually without the characteristic yellowish tinge as found in *S. heathii* (Bates & Harrison 1997). However, pelage of our specimens is also anomalous from a specimen with the dorsal pelage olive brown in color and ventrally creamy and a distinct 'collar' on the throat reported by Srinivasulu et al. (2010). The recorded locality lies within the critical/ endangered Global 200 terrestrial eco-region number 91, Tarai-Duar Savanna and Grasslands (Olson & Dinerstein 2002). Nepal includes part of the Himalaya Hotspot as defined by Conservation International (2007). This is the first specific locality record of the species collected in Nepal that confirms its occurrence in the country.

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