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Short Note
First Record of *Sphaerias blanfordi* (Chiroptera: Pteropodidae) from Lao PDR

BOUNSAVANE DOUANGBOUBPHA[1,2*], DAOSAVANH SANAMXAY[1,2], VILAKHAN XAYAPHET[1], SARA BUMRUNGSRI[2] AND PAUL J. J. BATES[3]

[1]*Faculty of Environmental Sciences, National University of Laos, Dong Dok Campus, P.O. Box: 7322, Xaythany District, Vientiane Capital, LAO PDR*
[2]*Department of Biology, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90112, THAILAND*
[3]*Harrison Institute, Centre for Systematics and Biodiversity Research, Bowerwood House, St. Botolph's Road, Sevenoaks, Kent, TN13 3AQ, GREAT BRITAIN*
* Corresponding author. E-mail: *bounsavanhd@yahoo.com*
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In October 2010, a single adult male specimen of *Sphaerias blanfordi* was obtainned from Muang Khau market, Phonxay Village, Khao District, Phongsaly Province, Lao PDR. This individual, which was collected near to Phonxay at an elevation of approximately 376 meters a.s.l., represents the first record of the species from Lao PDR.

To date, 87 bat species have been recorded from the Lao People's Democratic Republic (Lao PDR). This number is based on the records summarised and published in 1999[1], and subsequently revised in 2008[2]. It is further augmented by seven more recently added species, namely: *Hipposideros rotalis*, *H. scutinares*, *H. khaokhouayensis*, *Kerivoula titania*, *K. kachinensis* and *Barbastella darjelingensis*[3-8].

Sphaerias blanfordi is currently known from north-eastern India, eastern Nepal to south-eastern China, northern Myanmar, northern Thailand and northern Vietnam[9]. It was proposed that this species might be expected in northern Lao PDR[1] but it was subsequently omitted from the country list[2, 10-12] for lack of supporting data. The new locality record reported herein lies between previously known localities in northern Vietnam and northern Thailand (see Fig. 1).

Measurements.– One voucher specimen, an adult male, was collected in Lao PDR and is held in the collection of the Faculty of Environmental Sciences, National University of Laos, Vientiane Capital, Lao PDR (FES).

Standard measurements were taken with a digital caliper[13]. They included: **HB**: head and body length – from the tip of the snout to the anus, ventrally; **FA**: forearm length – from the extremity of the elbow to the extremity of the carpus with the wings folded; **EL**: ear length – from the lower border of the external auditory meatus to the tip of the pinna; **TL**: tail length – from the tip of the tail to its base adjacent to the anus; **HF**: foot – from the extremity of the heel behind the os calcis to the extremity of the longest digit, not including the hairs or claws; **TIB**: tibia length – from the knee joint to the extremity of the heel behind the os calcis; **3MT**, **4MT** and **5MT**: third, fourth and fifth metacarpal lengths, respectively – from the extremity of the carpus to the distal extremity of the third, fourth or fifth metacarpal, respectively;

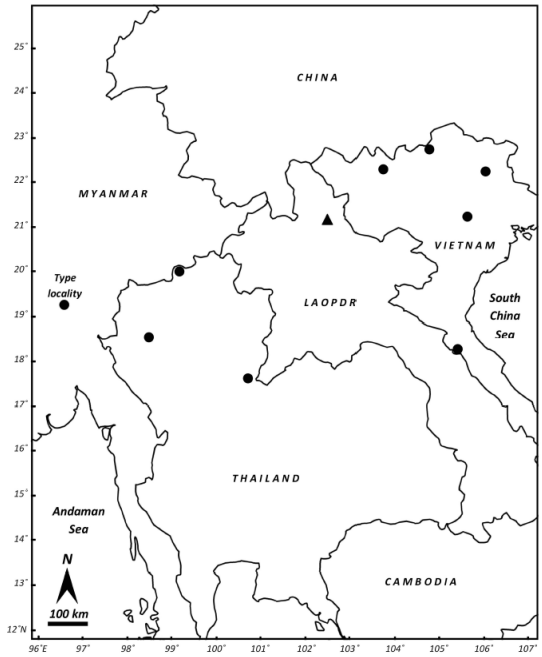

FIGURE 1. Distribution map of *Sphaerias blanfordi*. Black triangle represents new locality in Lao PDR. Black circles are localities taken from the literature for Myanmar[16], Thailand[17] (S. Bumrungsri, unpublished data) and Vietnam[18-21].

3D1P, **3D2P**, **4D1P**, **4D2P**: length of the first (1P) and second (2P) phalanges of the third (3D) and fourth (4D) digits, respectively; **3D1P/3MT x 100** – % length of the first phalanx of the third digit relative to its metacarpal length; **GTL**: greatest length of the skull – the greatest antero-posterior diameter of the skull, from the most projecting point at each extremity regardless of what structure forms these points; **CCL**: condylo-canine length – from the exoccipital condyle to the anterior alveolus of the canine; **CBL**: condylo-basal length – from the exoccipital condyle to the alveolus of the anterior incisor; **MW**: mastoid width – the greatest distance across the mastoid region; **ZB**: zygomatic breadth – the greatest width of the skull across the zygomata; **BB**: breadth of the braincase – width of the braincase at the posterior roots of the zygomatic arches; **PC**: postorbital constriction – the narrowest width across the constriction posterior to the orbits; **ML**: mandible length – from the most posterior part of the condyle to the most anterior part of the mandible, including the lower incisor; $\mathbf{C^1}$-$\mathbf{C^1}$: anterior palatal width – taken across the outer borders of the upper canine; $\mathbf{M^1}$-$\mathbf{M^1}$: posterior palatal width – taken across the outer borders of the first upper molar; **C**-$\mathbf{M^1}$: upper toothrow length – from the front of the upper canine to the back of the crown of the first upper molar; **C**-$\mathbf{M_2}$: lower toothrow length – from the front of the lower canine to the back of the crown of the second lower molar.

SYSTEMATIC DESCRIPTION

Sphaerias blanfordi Thomas, 1891 (Blanford's fruit bat) (Figure 1)

Cynopterus blanfordi Thomas, 1891; Leito, Cheba, Karin Hills, Myanmar (Burma), 1000 m.

New Material.– FES.MM.10.060, ♂, obtained from Muang Khua (Khua District) Market, Phonxay Village, Khua District, Phongsaly Province, Lao PDR (collected from near Phonxay Village, Khua District, Phongsaly Province; c.o. 21° 04' 53" N, 102° 30' 20" E, 376 m a.s.l.).

External characters.– This specimen of *Sphaerias blanfordi* has a forearm length of 55.3 mm (Table 1), which compares favourably to previously reported average forearm lengths of 54.9 mm (51.7-60.5 mm)[13] and 52-60 mm[2]. The ears of this male Lao specimen are dark brown, relatively long, oval-shaped and with a rounded tip

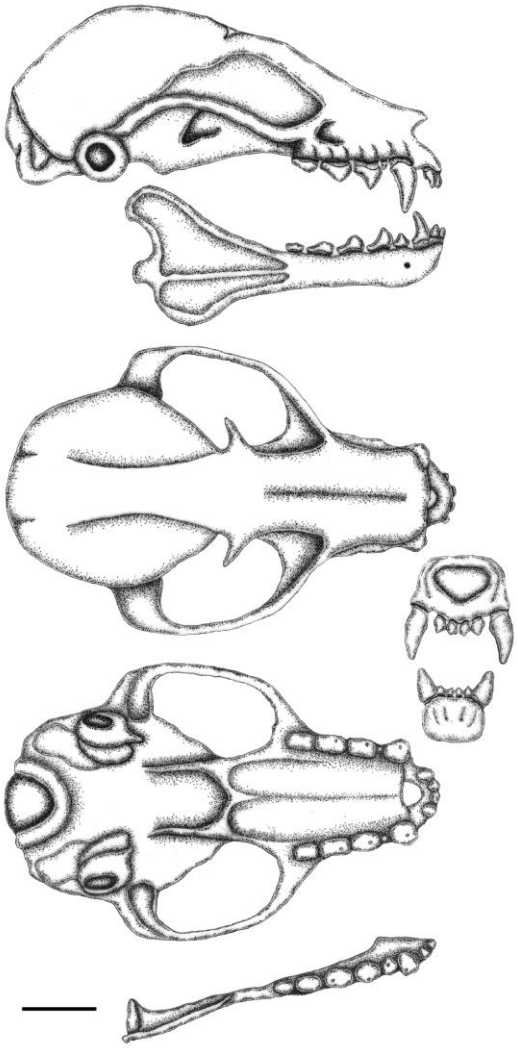

FIGURE 2. Skull of *Sphaerias blanfordi*, FES.MM.10.060, ♂, Muang Khua Market, Phonxay Village, Khua District, Phongsaly Province, Lao PDR. Scale: 5 mm.

and pale border. The antitragal lobe is small and triangular in shape. The fur is uniformly dark with two brown round patches on the underside of the neck. The muzzle is relatively short but the nostrils are large with a well-defined groove between the two. There is no tail. The interfemoral membrane is narrow and covered by long fur. The wing bones are pale and the wing membranes are dark. The fourth metacarpal exceeds the fifth in length but is shorter than the third. The first phalanx of the third digit is 66.8% the length of the relatively long third metacarpal (Table 1).

Cranial and dental characters.– The Lao specimen of *Sphaerias blanfordi* has a condylo-basal length of 27.7 mm (Table. 1), slightly larger than the 26.2 mm previously reported for a specimen from Myanmar[13], although both of these are based only on a single specimen from each region and so the difference may not be significant. The mastoid width is 12.8 mm, which is considerably narrower than the breadth of the zygomata. When viewed in lateral profile, the braincase is high and slopes backwards to the parietal region (Fig. 2). The rostrum is low, narrow and long. There is no sagittal crest. Each zygoma is narrow on both anterior and posterior parts. The coronoid process of each half mandible is well-developed and exceeds the height of the lower canine (C_1).

The upper toothrow (C-M^1) is 8.4 mm in length, which is longer than the 8.0-8.1 cited previously[13]. There is one upper and two lower molars. The upper incisors are characteristically triangular in shape, differing from other Cynopterine bats; the first (I^2) is a little smaller and slightly shorter than the second (I^3) (Fig. 2). The upper canine (C^1) is robust and long. The first upper premolar (P^2) is very small, considerably smaller than I^2. The second and third upper premolars (P^3 and P^4) are large; P^3 has a more developed cusp than P^4. The first upper molar (M^1) is long; its length exceeds its breadth. The lower incisors (I_1 and I_2) are smaller than the upper; the lower canine (C_1) is also smaller but is well-developed. The first lower premolar (P_2) is

TABLE 1. External, cranial and dental measurements (in mm) of a single male *Sphaerias blanfordi* specimen from Lao PDR.

Characters	in mm
FA	55.3
EL	19.8
TL	0.0
HF	13.3
TIB	21.8
3MT	39.7
4MT	38.4
5MT	36.9
3D1P	26.5
3D2P	34.6
4D1P	20.7
4D2P	22.9
3D1P/3MTx100	66.8%
GTL	28.6
CCL	26.2
CBL	27.7
MW	12.8
ZB	18.3
BB	12.7
PC	5.5
ML	21.7
C^1-C^1	7.0
M^1-M^1	8.4
C-M^1	8.4
C-M_2	9.7

small, although larger than the lower incisors. The second and third lower premolars (P_3 and P_4) are large; P_3 has a more developed cusp than P_4. The first lower molar (M_1) is long; the second (M_2) is small and with a more rounded outline, when viewed from above.

Comparison with other similar taxa.– *Sphaerias blanfordi* is essentially similar to *Cynopterus* in external morphology, but is distinguished by the absence of a tail, a character shared with *Megaerops*. In the skull, *S. blanfordi* has a lower and narrower rostrum than that of *Cynopterus*. In *Megaerops*, the rostrum is much shorter. In the dentition, *S. blanfordi* has characteristically triangular-shaped upper incisors; they are smaller and more peg-like in *Cynopterus*. In *Megaerops*, the upper incisors are smaller and not triangular in shape and there is only one pair of lower incisors.

Conservation status.– *Sphaerias blanfordi* was included as 'Lower Risk, least concern'.[10-12]

Ecology and behaviour.– *Sphaerias blanfordi* is found in hill forests at altitudes of 300-2,700 meters a.s.l.[2,12]. In Lao PDR, it was found in a mountainous area at an elevation of approximately 376 meters a.s.l. The surrounding vegetation included dry evergreen forest, *Imperata* grasslands and some secondary vegetation.

DISCUSSION

The new record of *S. blanfordi* in Lao PDR supports those who suggested that the additional field studies would discover further bat species within Lao PDR[1]. It also supports previous findings that this fruit bat favours mountainous areas at altitudes between 300-2,700 meters a.s.l.[2,12] Its distribution, as currently understood, also suggests that it may prove to be more widespread in western and eastern parts of Lao PDR, and also in the Annamite Range, which is between 500-2,000 meters a.s.l.[15]

It has been suggested that there are no major threats to this species in South-east Asia[11-12]. However, in the present study it was found as 'bush-meat' in a local market, together with *Cynopterus*. This supports earlier research, which noted that most bats species in Lao PDR are threatened by loss of habitat and/or by hunting for food, and that the greatest threat appears to be exploitation for food[1]. This problem is not restricted to bats but it is also a considerable problem for all mammals in Lao PDR[15].

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