

## (II)

# NEW RECORDS OF BATS FROM HIMACHAL PRADESH WITH SOME ECOLOGICAL NOTES

## Introduction

Chiropteran fauna of the State of Himachal Pradesh (H.P.) has not been studied extensively thus the information on distribution of this group in this area is relatively scanty. During the course of the present study field surveys were conducted in different parts of the state and also the laboratory collection of bats of the Zoological Survey of India, Solan was examined. The authors could collect sizable collection of bats, of which, five species were not reported earlier from H.P. However, their recorded distribution in North India is up to Mussoorie (30.26N, 78.04E) in Uttaranchal at the closest. These are being recorded here for the first time from H.P. So far, a total of 19 species of bats have been recorded. With these new additions, the number has gone up to 24. Information on the distribution of these species is derived from Alfred *et al.* (2002), Bates and Harrison (1997), Corbett and Hill (1992) and Das (2003).

## Family : Rhinolophidae

### 1. *Rhinolophus luctus* Temminck, 1885

*Material examined* : 1, adult female (Collection No. CW 21)

*Body measurements*: HB - 87mm, TL - 54mm, HF - 19mm, E - 41mm, FA - 72, TB - 40mm

*Skull measurements*: GTL - 33.4mm, CBL - 29.6mm, CCL - 28mm, CM<sup>3</sup> - 12.1mm, M<sup>3</sup>-M<sup>3</sup> - 11mm, BB - 13.5mm,

PC - 3.2 mm, ZB - 15.3mm, C'C' - 8.4mm, M - 22.5, CM<sub>3</sub> - 13mm.

*Coll.* Arki, Solan distt., H.P., 27 V.2004. Uttam Saikia.

*Distribution* : Earlier recorded localities in India include *Assam*: Gunjong (Sinha, 1973), *Madhya Pradesh* : Panchmarhi (Sinha, 1973), *Meghalaya*: Khasi Hills (Dobson, 1876), *Nagaland*: Khezabama (Sinha, 1973), *Sikkim*: No exact locality, *Uttaranchal*: Mussoorie, (Dobson, 1878), *West Bengal*: Darjeeling (Dobson, 1878), Singla (Wroughton, 1916a), *Himachal Pradesh*: Arki, Solan dist. (present study). The range of the species is hereby extended up to Himachal Pradesh in the North. Elsewhere: Bali, Java, Malaysia, Myanmar, Nepal, Southern China, Sumatra, Thailand and Vietnam.

*Taxonomic remarks* : Specimens from Indian subcontinent are referred to *R. luctus perniger* (Bates & Harrison, 1997).

*IUCN Status* : NT

*Observations* : The specimen was caught inside a dilapidated temple situated in the midst of thorny bush of *Lantana* and was roosting alone. The same species was also observed with a single specimen hanging from the wall of a narrow hilly cave (1200m) at Arki in Solan District. So it appears to roost alone. In both the cases the roost site was not found to be shared by any other species. A foetus in

advanced stage of development (weighing 10 gm) was found in the right horn of the uterus. Considering the stage of the foetus, parturition period of the species in this area appears to be in the month of June.

## 2. *Rhinolophus affinis* Horsfield, 1823

*Material examined*: 1, adult male (Collection No. CW 2)

*Body measurements*: HB - 50mm, TL - 25mm, HF - 9mm, E - 17mm, FA - 53mm, TB - 24mm

*Skull measurements*: GTL - 23.4mm, CCL - 19.8mm, CM<sup>3</sup> - 9.2mm, M<sup>3</sup>-M<sup>3</sup> - 9mm, BB - 9.2mm, PC - 2.6mm, ZB - 11.5mm, C<sup>1</sup>-C<sup>1</sup> - 6.4mm, M - 15.8mm, CM<sub>3</sub> - 9.5mm.

*Coll.* Kot Beja, Solan dist. H.P., 09.IV. 2004. Uttam Saikia.

*Distribution* : Recorded localities in India include *Andaman Islands*: Interview Island (Sinha, 1973) and South Andaman, *Arunachal Pradesh*: Miao, *Meghalaya*: Cherrapunji and some other areas of Khasi Hills (Hinton and Lindsey, 1926), *Nagaland*: Takubama, *Tamil Nadu*: No exact locality (Das *et al.*, 1995), *Uttaranchal*: Mussoorie, *Uttar Pradesh*: Bilaspur (Bhat, 1974), *West Bengal*: Darjeeling (Dobson, 1878), Hasimara (Wroughton, 1917), Pashok (Aggarwal *et al.*, 1992), *Himachal Pradesh*: Kot Beja, Solan dist. (present study). Hence the Northward range of the species is extended up to Himachal Pradesh. Elsewhere: Bangladesh, Bhutan, Indonesia, Malaysia, Myanmar, Nepal, Southern China, and Sri Lanka.

*Taxonomic remarks*: Specimens from Northern India are referred to *R. affinis himalayanus* (Bates and Harrison, 1997). *IUCN Status*: LC

*Observations*: The specimen was caught in the night accidentally entering in a room, which is adjacent to a buffalo shed heavily infested with flies. Many were observed frequenting the area although none were caught in the mist net set there. They apparently fly relatively high.

## Family: Hipposideridae

## 3. *Hipposideros armiger* Hodgson, 1835

*Material examined* : 1 adult male (Collection No. CW 32)

*Body measurements*: HB - 81mm, TL - 61mm, HF - 15.2mm, E - 30mm, FA - 95mm, TB - 42mm.

*Skull measurements* : GTL - 32.8mm, CBL - 28.6mm, CM<sup>3</sup> - 12.8mm, M<sup>3</sup>-M<sup>3</sup> - 13mm, BB - 12mm, PC - 5mm, ZB - 18mm, C<sup>1</sup>-C<sup>1</sup> - 8.3mm, M - 22.8mm, CM<sub>3</sub> - 14.1mm

*Coll.* Karol (2200m), Solan dist. H.P., 18. IX. 2004. Uttam Saikia

*Distribution*: Recorded localities in India are *Assam*: Rajapara (Hinton and Lindsey, 1926); *Meghalaya*: Cherrapunji (FMNH), Shangpung, Laitkynsao, Khongsong (Hinton and Lindsey, 1926), Shillong (Kurup 1968); *Sikkim*: Rongli (FMNH); *Uttaranchal*: Mussoorie (Jerdon, 1874); *Uttar Pradesh*: Katarmal (Bhat, 1974); *West Bengal*: Gopaldhara, Tong Song, Pashok (Wroughton, 1916a) Goonati, Mahanadi (Agrawal *et al.*, 1992); *Himachal Pradesh*: Solan (present study). The northward range of this species is hereby extended up to Himachal Pradesh. Elsewhere: China, Malaysia, Myanmar, Nepal, Thailand, Vietnam and nearby small islands.

*Taxonomic remarks*: Specimens from Indian subcontinent are referred to the

nominate race *H. armiger armiger* (Bates and Harrison, 1997)

*IUCN Status*: LC

*Observations*: The specimen was collected from a cave/tunnel (2200m) said to open at Pinjore in Haryana about 50 km South to Solan.

The population size of the species in the cave is about 10 and scattered in the area of about 2.32 m<sup>2</sup> (25 ft<sup>2</sup>). All the specimens were seen beyond 10m from the cave mouth. This is probably the highest altitudinal record for the species. The cave is shared by another two species namely *Myotis blythii* and *M. mystacinus*. This species emerges earlier than the other two in early evening (6.40 pm). The whole group comes out within a span of 10 minutes.

#### Family : Vespertilionidae

#### 4. *Miniopterus schreibersii* (Kuhl, 1819)

*Material examined*: 2 adult female (Collection No. CW 6 & CW 7)

*Body measurements*: HB - 55mm, 56mm; TL - 57mm, 60mm; HF - 10mm, 10mm; E - 11mm, 9mm; FA - 47mm, 48mm; TB - 20mm, 20mm.

*Skull measurements*: GTL - 15.9mm, 16.2 mm; CBL - 15.3mm, 15.5mm; CCL - 14.5mm, 14.6mm; CM<sup>3</sup> - 6.1mm, 6mm; M<sup>3</sup>-M<sup>3</sup> - 7mm, 6.7mm; BB - 8.1mm, 8mm; PC - 3.8mm, 3.5mm; ZB - 8.9mm, 8.7mm; C<sup>1</sup>-C<sup>1</sup> - 5mm, 4.8mm; M - 12.1mm, 12mm; CM<sub>3</sub> - 6.7mm, 6.2mm.

*Coll.* Barog tunnel, Solan dist. H.P., 02.V. 2004. Uttam Saikia.

*Distribution* : Recorded localities in India

are Arunachal Pradesh: 73 km ESE of Miao, Maharashtra: Mahabaleshwar (Wroughton, 1916b), Panchgani (Brosset, 1962), Satara (Hill, 1976), Meghalaya: Siju cave (Das *et al.*, 1995), Sikkim: Sonari, Tamil Nadu: St. Thome Island, Uttaranchal: Mussoorie (Blanford, 1888-91), Uttar Pradesh: Ramanagar (Wroughton, 1914), West Bengal: Calcutta (Agrawal *et al.*, 1992), Himachal Pradesh: Barog, Solan dist. (present study). The Northward distribution of this species is hereby extended upto Himachal Pradesh. Elsewhere: Indian subcontinent, Iran, Japan, Morocco through the Caucasus, Southern Europe, sub-Saharan Africa.

*Taxonomic remarks* : Specimens from Indian subcontinent are referable to *M. schreibersii fuliginosus*. (Bates and Harrison, 1997).

*IUCN Status*: LC

*Observations*: The specimens were collected from a railway tunnel measuring above one km in length. They were roosting in a large number (2,000 approx.) in very close pack, bodies pressed together in several layers. The tunnel is shared by a couple of other species including *Rhinolophus ferrumequinum* and *R. ruoxii*. This species has further been observed roosting in small numbers (4-5) in some holes inside another tunnel (about 10 km away from the previous one) which is comparatively shorter. So it appears that like many others, this species is indifferent to human presence or railway traffic provided other conditions are favourable. All the 5 specimens captured from the site were female. So the formation of exclusive female colonies remains a possibility

although observations of Beosset (1962) on a large colony of this bat near Mahabaleshwar do not corroborate this observation.

**5. *Myotis siligorensis* (Horsfield, 1855)**

*Material examined:* 1, adult male (HAZFS, ZSI, Solan collection)

*Body measurements* (wet): HB - 32mm, HF - 6.3mm, E - 8.7mm, FA - 33mm, TB - 10.7mm.

*Skull measurements:* GTL - 13.5mm, CBL - 12.4mm, CCL - 12mm, CM<sup>3</sup> - 5mm, M<sup>3</sup>-M<sup>3</sup> - 5.5mm, BB - 6.6mm, PC - 3.3mm, ZB - 8.3mm, C<sup>1</sup>-C<sup>1</sup> - 3.5mm, M - 9.8mm, CM<sub>3</sub> - 5.1mm.

*Coll.* Solan, Solan dist., 05.III.1973. L.S. Verma.

*Distribution:* Recorded localities within India are *Meghalaya*: Konshnong (Hinton and Lindsay, 1926), *Sikkim*: Bakkim (Kifune, 1984), *Uttaranchal*: Dwali, Dogalbita (Bhat, 1974), Mussoorie, *West Bengal*: Siliguri, Ghum (Topal, 1974), *Himachal Pradesh*: Solan (present study). Northward range of this species is thus extended to Himachal Pradesh. Elsewhere: Indonesia, Malaysia, Southern China and Vietnam.

*Taxonomic remarks* : All specimens from the Indian subcontinent are referred to the nominate subspecies *M.s. siligorensis*. (Bates and Harrison, 1997).

*IUCN Status:* NT

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