

A CATALOGUE OF BATS RECORDED IN THRISSUR DISTRICT, KERALA

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Abstract

An extensive survey and collection of specimens of 24 taxa of bats representing six families and 14 genera (barring Rhinopomatidae) were made in Thrissur District, Kerala during the years between 1990 and 1999; a few places in the northern and other central and southern districts of Kerala also were explored. All these places are agricultural areas. In the majority of cases specimens of different species of bats were collected from their roosts during day time. Total number of specimens of different species of bats collected ranges from a minimum of two to a maximum of about 550.

Keywords

Bats, inventory, Thrissur District, Kerala

Introduction

A faunistic survey by Blanford (1891) and some observations on the breeding biology of Asiatic Greater Yellow House Bat (*Scotophilus heathii*) (Ramakrishna & Madhavan, 1977; Gopalakrishna & Madhavan, 1978; Madhavan, 1981; Sastry & Madhavan, 1984, 1986) and studies on the taxonomy and geographical distribution of six species of bats obtained by the 1980 Silent Valley Expedition (Das, 1986) are the only studies on bats of Kerala. A detailed survey of bats of Kerala undertaken by the author embodies observations on some aspects of ecology, behaviour and reproduction of bats.

Materials and Methods

Geographical areas covered by the present study (Fig. 1 and 2) include several villages in Thrissur District. A few places in the districts of Kozhikode, Ernakulam, Kottayam, Alappuzha and Kollam also have been explored. All these places are agriculture oriented. Total number of specimens of different species of bats collected during the period between 1900 and 1999 ranges from a minimum of two to about a maximum of 550 specimens, the lowest being those of *Myotis* and *Tadarida* species, and the highest being that of *Tylonycteris pachypus*. The specimens of

bats were collected from their roosts during the day except those which were netted from trees, or caught during their flight in the evening or under other special circumstances. The specimens were collected from ridges and clefts in the wall of wells, under the roofs and between tiles of roofs of houses, hollows in tree trunks, within the whorls of leaves of plantain, the grass reeds and holes underneath these, the internodal cavities of bamboo, the lofts of houses, subterranean refuges, etc. Long forceps, butterfly nets, fishing nets and Japanese mist nets were used to catch the specimens. The body weights, forearm length, fur colour, nature of mammary glands and external genitalia of females and the nature of the scrotum and the penis in the males were recorded. Several specimens of different taxa of bats under critical reproductive stages were dissected for their different genital organs and other parts, and these were fixed in appropriate fixatives and preserved. In some cases, specimens were maintained in captivity for the purpose of observing their breeding behaviour and also for conducting experiments under restricted conditions. Rest of the specimens were set free. The specimens were identified by the British Museum, London and by the Zoological Survey of India, Calcutta. Representative specimens of each species of bats collected have been deposited in these Institutes.

Results and Discussions

Out of the 18 families of living bats (Hill & Smith, 1988) eight families are represented in India. This survey in Kerala has been able to enlist 24 bat species representing six families and 14 genera leaving those from Rhinopomatidae whose distribution is associated with xerothermic conditions (Brosset, 1962). However, *Rhinopoma hardwickii* has been recorded from the humid coastal and other areas (Bhat & Sreenivasan, 1972, 1990). Further survey may be helpful to locate members of this family farther south in India. Most of the specimens were collected from their roosts except *Rousettus leschenaulti*, *Hipposideros fulvus* and *Tadarida aegyptiaca*. *R. leschenaulti* was netted from guava trees; *H. fulvus* was caught during their flight, and *T. aegyptiaca* was caught once during its flight and on another occasion when it had blundered into a room. *Myotis horsfieldii* and *Myotis montivagus peytoni* appears to be rare in this region. Other species such as *Taphozous saccolaimus*, *Rhinolophus beddomei* and *Kerivoula picta* are not as rare as believed, but

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Figure 1. Map of Kerala showing collection locations

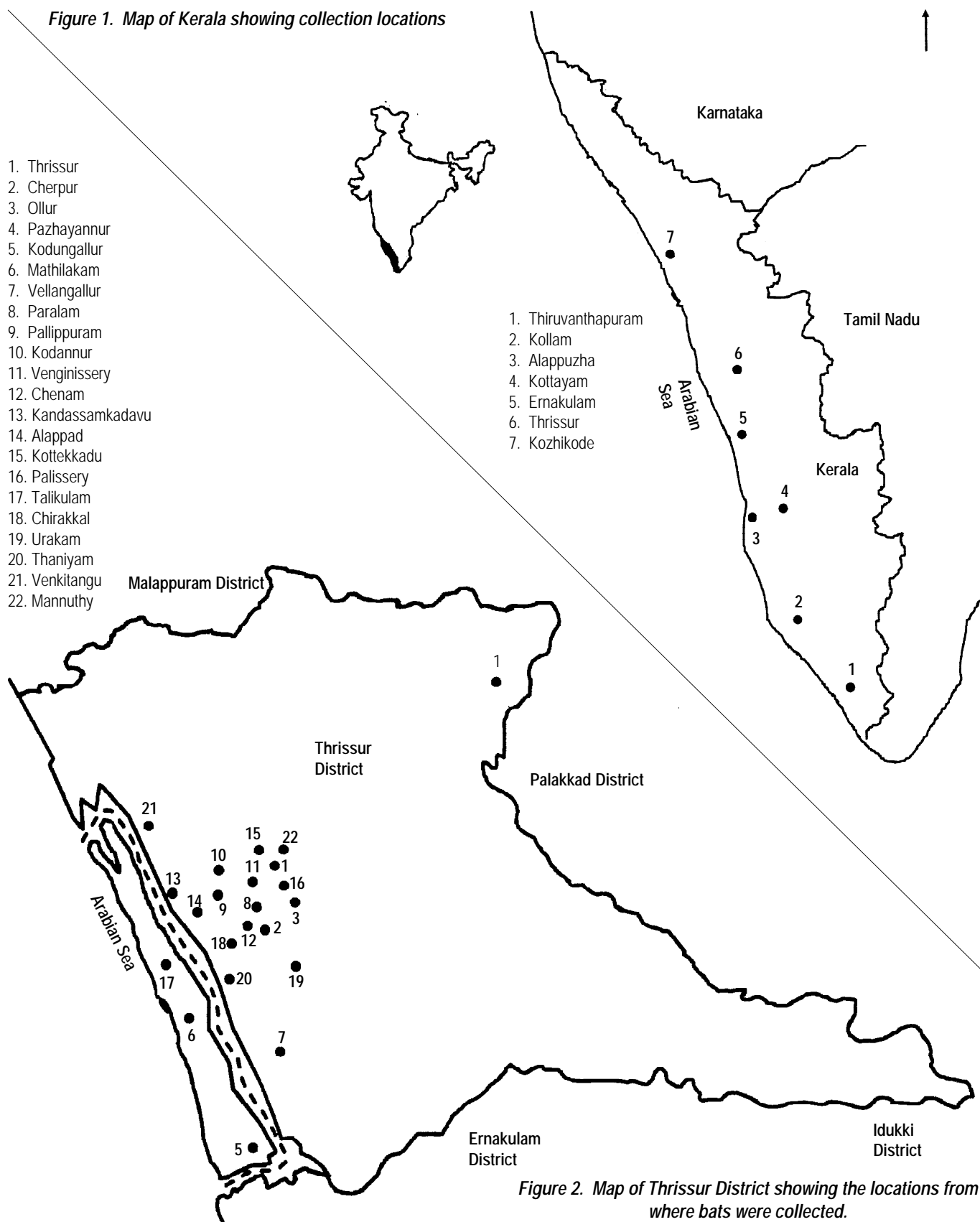


Figure 2. Map of Thrissur District showing the locations from where bats were collected.

Table 1. Bats (Order: Chiroptera) recorded in Kerala with special reference to Thrissur District.

Common and Scientific Name	Collected From	Localities
Suborder: Megachiroptera		
<u>Family: Pteropodidae</u>		
Flying Fox <i>Pteropus giganteus</i> (Brunnich, 1782)	Large trees.	Villages as well as most cities.
Indian Fulvus Fruit Bat <i>Rousettus leschenaulti</i> (Desmarest, 1820)	Guava tree. Netted at night.	Ernakulam
Short-nosed Fruit Bat <i>Cynopterus sphinx</i> (Vahl, 1797)	Hanging fronds of palm trees. Sometimes old houses and hollows of trees.	Thrissur (Cherpu, Paralam, Kodanur, Venginissery, Chenam, Chirakkal)
Suborder: Microchiroptera		
<u>Family: Emballonuridae</u>		
Pouch-bearing Bat <i>Taphozous saccolaimus</i> Temminck, 1838	Mainly from hollows of decayed trunks of jaggery palm; occasionally houses.	Thrissur (Venlangallur, Pallipuram, Paralam)
Black-bearded Tomb Bat <i>Taphozous melanopogon</i> (Temminck, 1841)	Underneath the tiles in the roof of a church.	Ernakulam
Long-winged Tomb Bat <i>Taphozous longimanus</i> Hardwicke, 1825	Underneath a road bridge	Ernakulam
<u>Family: Megadermatidae</u>		
Indian False Vampire (Greater False Vampire Bat) <i>Megaderma lyra</i> E. Geoffroy, 1810	Lofts of old houses	Thrissur (Mathilakom, Paralam, Venginissery, Chenam, Thalikkulam, Urakam), Ernakulam
Malaya False Vampire (Lesser False Vampire Bat) <i>Megaderma spasma horsfieldi</i> (Blyth, 1863)	Lofts of old houses. Among leaves of coconut tree	Thrissur (Paralam, Venginissery)
<u>Family: Rhinolophidae</u>		
Rufous Horse-shoe Bat <i>Rhinolophus rouxii rouxii</i> (Temminck, 1835)	Irrigation water tunnel. Hollows in the walls of wells.	Thrissur (Kottekkadu), Ernakulam
Little Indian Horse-shoe Bat <i>Rhinolophus lepidus</i> Blyth, 1844	Subterraneous refuge.	Kozhikode, Kollam
Lesser Woolly Horse-shoe Bat <i>Rhinolophus beddomei</i> (Anderson, 1905)	Hollows in the walls of wells. Rarely also from houses.	Thrissur (Paralam, Pallipuram, Venginissery, Kottekkadu)
<u>Family: Hipposideridae</u>		
Dusky Leaf-nosed Bat <i>Hipposideros ater ater</i> (Templeton, 1848)	Dark, cool dungeons; hollows in the walls of wells; car porches; among the grass, reeds and holes underneath these.	Thrissur (Pazhayannur, Kodungallur, Mathilakom, Paralam, Pallipuram, Chenam, Alapad), Kozhikode, Ernakulam, Alapuzha
Andersen's Leaf-nosed Bat <i>Hipposideros pomona pomona</i> (Andersen, 1918)	Car porch; Parapet enclosures of houses.	Thrissur (Venginissery), Alapuzha
Schneider's Leaf-nosed Bat <i>Hipposideros speoris</i> (Schneider, 1800)	Underground cellars; under bridges; caves; uninhabited old palaces.	Kozhikode, Ernakulam
Fulvous leaf-nosed Bat <i>Hipposideros fulvus</i> (Gray, 1838)	Netted while fluttering in the evening.	Ernakulam
<u>Family: Vespertilionidae</u>		
Least Pipistrelle <i>Pipistrellus tenuis</i> (Wroughton, 1899)	Crevices in the walls and door frames; under the tiles of roof of houses; hollows of coconut tree trunk; spathes of coconut tree.	Thrissur (Paralam, Pallipuram, Venginissery, Chirakkal), Ernakulam
Kelaart's Pipistrelle <i>Pipistrellus ceylonicus</i> (Kelaart, 1852)	Hollows in the coconut tree trunk	Thrissur (Paralam, Pallipuram, Kodanur, Venginissery, Chenam, Chirakkal, Taniyam)

Common and Scientific Name	Collected From	Localities
Dormer's Bat <i>Pipistrellus dormeri</i> (Dobson, 1875)	Hollows in the coconut tree trunk; under the tiles on roof of houses; under road bridges.	Thrissur (Paralam, Pallipuram, Venginissery, Chenam)
Asiatic Greater Yellow House Bat <i>Scotophilus heathii</i> Horsfield, 1831	Under tiles of roof of houses.	Thrissur (Paralam, Ollur, Pallipuram, Venginissery, Chenam, Kandassankadavu, Palisseri, Venkitangu)
Indian Painted Bat. <i>Kerivoula picta picta</i> (Hill, 1965)	Inside rolled-up dry or tender leaves of plantain tree. Netted in the house.	Thrissur (Paralam, Pallipuram, Venginissery), Kottayam.
Bamboo Bat. <i>Tylonycteris pachypus</i> (Temminck, 1840)	Inside the internodal cavities of bamboo.	Thrissur (Cherpu, Ollur, Paralam, Pallipuram, Kodanur, Venginissery, Urakam, Taniyam, Mannuthy)
Horsfield's Bat <i>Myotis horsfieldii</i> (Temminck, 1840)	Cavity in the wall of well. Subterranean refuge.	Kozhikode
Burmese Whiskered Bat <i>Myotis montivagus peytoni</i> (Wroughton & Ryley, 1913)	Subterranean refuge.	Kozhikode
Egyptian Free-tailed Bat <i>Tadarida aegyptiaca thomasi</i> (Wroughton, 1919)	Caught accidentally while being chased by a crow; another specimen blundered into a room and hid itself inside a hung shirt.	Thrissur (Venginissery), Ernakulam

Taxonomy and nomenclature after Bates and Harrison, 1997.

only difficult to track down.

Kerala is an *El Dorado* of bats. This is a land of monsoon, and the climate does not suffer wide fluctuations and intolerable extremes. Fruits and insects are in abundance in such situations.

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References

- Bates, P.J.J. and D.L. Harrison (1997).** *Bats of the Indian Subcontinent*. Harrison Zoological Museum, Kent. xvi + 258 pp.
- Bhat, H.R. and M.A. Sreenivasan (1972).** Occurrence of *Rhinopoma hardwickei*, Gray, 1831, the lesser rat-tailed bat in a humid area of coastal Mysore. *J. Bombay nat. Hist. Soc.*, 69(1): 172.
- Bhat, H.R. and M.A. Sreenivasan (1990).** Records of bats in Kyasanur Forest disease area and environs in Karnataka State, India, with

ecological notes. *Mammalia* 54(1): 69-106.

Blanford, W.T. (1888-1891). *The Fauna of British India - Mammalia*, London.

Brosset, A. (1962). The bats of Central and Western India, Part 1. *J. Bombay nat. Hist. Soc.*, 59(1): 1-57.

Das, P.K. (1986). Studies on the taxonomy and geographical distribution of the species of bats obtained by the Silent Valley (Kerala, India) expedition, 1980. *Rec. Zool. Survey*, 84(1-4): 259-276.

Gopalakrishna, A. and A. Madhavan (1978). Viability of spermatozoa in the Indian Vespertilionid bat, *Scotophilus heathi* (Horsfield). *Indian J. Exp. Biol.* 16(7): 852-854.

Hill, J.E. and J.D. Smith (1988). *Bats - A Natural History*. British Museum (Natural History), London.

Madhavan, A. (1981). Breeding habits and associated phenomenon in some Indian bats, Part VI - *Scotophilus heathi* (Horsfield) - Vespertilionidae. *J. Bombay nat. Hist. Soc.* 77(2): 227-237.

Ramakrishna, P.A. and A. Madhavan (1977). Foetal membranes and placentation in the Vespertilionid bat, *Scotophilus heathi* (Horsfield). *Proc. Indian Acad. Sci.* 86B(2): 117-126.

Sastry, M.S. and A. Madhavan (1984). Early development, implantation and amniogenesis in the Microchiropteran bat, *Scotophilus heathi* (Horsfield). *Proc. Nat. Acad. Sci. India* 54B(1): 9-20.

Sastry, M.S. and A. Madhavan (1986). Development of foetal membranes and placentation in a Microchiropteran bat, *Scotophilus heathi* (Horsfield). *Proc. Nat. Acad. Sci. India* 56B(3): 187-198.