

ECTOPARASITES OF SOME BATS FROM INDIA

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OBservations made on external parasites of bats from Bombay State and some other parts of India for the last three years show that Indian bats carry a rich fauna of ectoparasites, particularly Diptera and mites. Fleas and bugs have also been found in small numbers. Some of the parasites exhibit peculiar adaptations.

Stiles and Nolen¹ were the first to give a complete list of bat parasites then known. A reference to this list would show that comparatively few species of bat parasites have been carefully studied, particularly those from Indian bats. Of the pupiparous Diptera, the Nycteribiids and Streblids are exclusively parasitic on bats. A good deal of work has been done on their systematics and bionomics in some parts of the world but very little in India. Scott,² Bal and Ahmad³ and Jobling⁴ have studied about 18 species of Nycteribiids and 5 species of Streblids from Indian bats.

In all, 11 species of Nycteribiids, viz., *Basilia scotti*, *Penicillidia jenynsi* var. *indica*, *P. fletcheri*, *P. bombayensis*, *Nycteribia phillipsi*, *N. allotopa*, *N. parvula*, *Cyclopodia sykesii*, *C. ferrarii*, *Tripselia amiculata* and *Eucampsipodia hyrtli orientalis* have been found during this study. Of these *Basilia scotti* and *Penicillidia bombayensis* are new to science and *Eucampsipodia hyrtli orientalis* is a new sub-species.

Of the family Streblidae, *Nycterbosca gigantea*, *N. amboinensis*, *N. modesta*, *N. taji* and *Raymondia joblingi* have been obtained during this investigation and of them *N. taji* and *R. joblingi* are new species.

Mites form another important group of external parasites which are encountered in large numbers on bats. Nothing is practically known about mites found on Indian bats excepting a few records by Oudemans⁵ and Radford.⁶ The bat mites are confined to the families Spinturnicidae, Macronyssidae (Liponyssidae), Myobiidae, Trombiculidae, Lælaptidae, Sarcoptidae, Listrophoridae and Spelærhynchidae. Of these the members of the first five are represented in our collection from Bombay State.

Under the family Spinturnicidae, *Ancyrtopus indica*, *A. kanheri*, *A. zelebori*, *Meristaspis*

lateralis, *Spinturnix psi*, *S. euryalis orientalis* and *Periglischrus rhinolophi* are recorded for the first time from India. Of these *A. indica*, *A. kanheri* and *P. rhinolophi* are treated as new to science and *S. euryalis orientalis* as a new sub-species. The specimens of *A. indica* and *A. kanheri* were collected from *Rousettus leschanaulti*, Bombay, 1953, and *P. rhinolophi* and *S. euryalis orientalis* from *Rhinolophus rouxi*, Tulsi Lake Tunnel, Bombay, 1953.

The family Macronyssidae is represented here by *Steatonyssus hubli*, *Ichoronyssus lingaraji* and *Hirstesia transvaalensis* and the first two species are new to science. *S. hubli* and *I. lingaraji* are obtained from *Pipistrellus ceylonicus chrysotricha*, Hubli, 1953, and *Taphozous longimanus*, Belgaum, 1954, respectively. *H. transvaalensis* from *Miniopterus fuliginosus*, Maha-bleshwar, 1953, agrees with the description given by Zumpt⁷ but shows slight variations in the shape of the dorsal plate.

A record of *Neolælaps magnistigmatus* belonging to the family Lælaptidae is made for the first time from India and it seems to be a common mite on flying-foxes.

Only three species of Myobiid mites have been collected from Bombay bats during the course of this investigation. Of these *Foliomyobia jamesonia* and *Neomyobia tulsi* are new species and *Foliomyobia barnleyi* has been recorded for the first time from India. *F. jamesonia* is found on *Rousettus leschenaulti* and *N. tulsi* on *Rhinolophus rouxi*, Bombay, 1954-55. *F. barnleyi* has been found to parasitize *Taphozous longimanus*, Bombay, 1952.

Of the two new species of Trombiculid mites reported here *Whartonia bremania* is separated from *W. perplexa* in possessing much broader scutum and chelicerae with strong teeth. The specimens of this species were obtained from *Hipposideros bicolor fulvus*, Karla Caves, Bombay, 1953. *Trombicula hampi* collected from *Rhinophoma hardwicki*, Hampi (Mysore State) is differentiated from *T. laveri* by the different standard data of measurements and by the bases of the sensillæ, not being midway between the antero-lateral and postero-lateral setæ.

Jordan and Rothschild⁸ and Mathur⁹ have reported a few bat-bugs from India. *Cimex*

pipistrellus and *Cacodmus indicus* were the only two species taken from house-bats during this investigation.

Smit¹⁰ has recorded a few species of fleas from *Rousettus* and *Pipestrellus* groups of bats and *Thaumapsylla breviceps orientalis* was collected from *R. leschenaulti*, Kanheri and Elephanta Caves, Bombay, 1953.

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