



***Medical Zoology  
and Entomology***

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## Medical Zoology and Entomology

Studies on the involvement of haematophagous arthropods and nonhuman vertebrates in the natural cycle of arthropodborne viruses at NIV, resulted in establishment of the Division of Medical Entomology and Zoology. The Division has carried out extensive faunistic, taxonomic, bio-ecologic and disease relationship studies on blood-sucking insect and acarines, birds and mammals.

Numerous entomological and zoological surveys have been carried out in different parts of India including the Himalayas, which generated a wealth of information on the haematophagous arthropod fauna of the country.



*Mosquito collection in cattle shed*

A number of epidemics of suspected arboviral origin in many parts of the country were investigated to determine the role of vectors.

Serological surveys on a variety of animals and birds have been carried out.

Ecology of mosquitoes, ticks, sandfly, mites, etc, was studied.

Experimental studies were conducted to



incriminate arthropods and animals as vectors and hosts respectively.

Taxonomic studies were conducted on a variety of arthropods and vertebrates. Several new species were described - mosquitoes (1), sandflies (2), sucking lice (14), fleas (2), bugs (3), ticks (18), *trombiculid* mites (63) and mesostigmatic mite (1). A new species of rodent and one subspecies of bird was also described.

NIV has an excellent reference collection museum. It has distinction of holding Indian rodents (52 species), birds (342 spp), bats (22 spp) and arthropod collections such as mosquitoes (203 spp), ticks (52 spp), fleas (35 spp), mites (50 spp) and sandflies (15 spp) specimens.



*Collection of blood sample from rat*

Colonies of several species of mosquitoes, sandflies and ticks are maintained for studies, such as experimental transmission, insecticide resistance, virus propagation, repellants, etc.

Many techniques, such as mosquito inoculation, IFA, ELISA, etc., have been standardized and are routinely used for various investigations.

Many species of mosquitoes, ticks, sand flies, mites and fleas from many parts of the country have been screened to determine the insecticide resistance / susceptibility status.



*Mosquito identification in progress*

Regular training programs in various entomological techniques are conducted for state government scientists to help them to manage and monitor vectors of viral diseases. In 2003, large numbers of entomologists / epidemiologists from Andhra Pradesh were trained in the taxonomy and collection techniques of sandflies for surveillance of Chandipura virus.