

## Filariasis

*Wuchereria bancrofti* and *Brugia malayi* cause Bancroftian and Brugian filariasis, respectively. *Brugia malayi* occurs as periodic and subperiodic forms and is primarily found in the flat coastal areas in the southern part of Thailand. *Wuchereria bancrofti* occurs primarily in the hilly, forested areas in the western part of the country. The main vectors of *B. malayi* are species of *Mansonia*. *Wuchereria bancrofti* is largely an urban and suburban disease in many parts of the world due to the habits of its principal vectors, *Downsiomyia*, *Finlaya*, and *Mansonia* species (Harinasuta *et al*, 1970; Gould *et al*, 1982; Sucharit *et al*, 1988; Division of Filariasis, 1995).

During the preparation of this manuscript, Reinert *et al* (2004) elevated the generic names *Downsiomyia* and *Finlaya* for filarial vectors previously included in subgenus *Finlaya* of *Aedes*.

*Culex quinquefasciatus* is the predominant vector of urban filariasis in some areas of Africa and the Oriental Region. In Thailand, a nocturnally periodic form of *W. bancrofti* is transmitted by *Cx. quinquefasciatus* (Sucharit *et al*, 1988; Division of Filariasis, 1996; Jitpakdi *et al*, 1998). *Culex bitaeniorhynchus* has been found naturally infected with larvae of *W. bancrofti* in India (Iyengar, 1938) and *B. malayi* in Sri Lanka (Carter, 1948). *Culex sitiens* is a potential vector of human pathogens. It has been found naturally infected with larvae of *B. malayi* in Thailand (Iyengar, 1953).

## THE CULEX AND LUTZIA FAUNA OF THAILAND

The *Culex* fauna of Thailand was first noted by Stanton (1920). Edwards (1922) included some general records from Thailand, and Barraud and Christophers (1931) reported on species collected by JA Sinton during a two-week railway tour of the country. Causey (1937) summarized information collected during a four-year stay in Thailand, and Iyengar (1953) listed 48 species and subspecies from southern Thailand. Thurman and Thurman (1955) reported mosquito specimens collected from light traps in northern Thailand and found that 78% were *Culex*.

Thurman (1959) listed 42 species in six subgenera, *ie*, *Culex*, *Culiciomyia*, *Mochthogenes*, *Neoculex*, *Lophoceraomyia*, and *Lutzia*. Bram (1967) treated 61 species of these subgenera and one species of a new subgenus, *Thaiomyia*, which was synonymized with *Culiciomyia* by Harrison (1987).

Sirivanakarn (1971, 1972) reclassified the species of *Mochthogenes* (three species) and *Neoculex* (two species) as members of subgenus *Eumelanomyia* and listed three additional species among the *Culex* fauna of Thailand (*Cx. kiriensis*, *Cx. otachati*, and *Cx. phangngae*). Sirivanakarn (1976) recorded three additional species (*Cx. edwardsi*, *Cx. infula*, and *Cx. murrelli*) and a new species (*Cx. longicornis*) of subgenus *Culex*. Sirivanakarn (1973a, 1977b) recorded two new species of subgenus *Culiciomyia* (*Cx. harrisoni* and *Cx. lampangensis*) and Sirivanakarn (1977c) added four new country records (*Cx. minutissimus*, *Cx. pilifemoralis*, *Cx. tuberis*, and *Cx. whartoni*) and three new species of subgenus *Lophoceraomyia* (*Cx. gracicornis*, *Cx. hirtipalpis*, and *Cx. paioji*) to the Thai fauna. These additions brought the total number of *Culex* species known to occur in Thailand to seventy-seven. Harrison *et al* (1991) revised the list of Culicidae found in Thailand. They added *Cx. jacksoni* and *Cx. mimeticus* of subgenus *Culex*, *Cx. sasai* and *Cx. viridiventer* of subgenus *Culiciomyia*, one new record (*Cx. richei*) and the new species, *Cx. oresbius*, of subgenus *Eumelanomyia* described from Thailand by Harbach and Rattanarithikul (1988).

Tanaka (2003) elevated *Lutzia* to generic status and introduced a new subgenus, *Metalutzia* for *Lt. fuscana* and *Lt. halifaxii*. Tanaka also elevated *Lt. vorax* from synonymy with *Lt. halifaxii*, and this species is included herein as a new country record.

Tanaka (2004) transferred the species of the Bitaeniorhynchus Subgroup of subgenus *Culex* to subgenus *Oculeomyia*, which he resurrected from synonymy with *Culex*. Consequently, the Bitaeniorhynchus Subgroup is no longer recognized as an informal category of classification. In this study, we add one undescribed species belonging to subgenus *Oculeomyia*. Eighty-five species of *Culex* and *Lutzia* are now known to occur in Thailand.

### **Habitats of the immature stages**

*Culex* have a worldwide distribution but more species occur in tropical and subtropical regions. These mosquitoes occur at altitudes ranging from lowland areas to high mountains. They are frequently associated with a variety of forest types, including primary and secondary tropical rain forests, wet to dry evergreen forests, and secondary evergreen and deciduous forests. Larvae are found both in temporary and permanent bodies of water. Specific habitats are located in lighting conditions ranging from direct sunlight to deep shade. In addition to a variety of ground water-habitats, many species inhabit artificial and natural containers. Most species occur in freshwater, but a few also