



Description of a new species, *Anopheles pseudosundaicus* (Diptera: Culicidae) from Kerala, India

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Abstract

Specimens of *Anopheles pseudosundaicus*, new species, belonging to the Pyretophorus Series of Anopheles (Cellia), were collected from the coastal areas of Alleppey and Kollam districts in Kerala, southwest India. Female (holotype), male (allotype), pupa and fourth-stage larva of this species are described and illustrated to distinguish it from *An. subpictus* Grassi and *An. sundaicus* (Rodenwaldt). It differs from *An. sundaicus* by the absence of speckling on legs and from *An. subpictus* in having a complete prehumeral dark spot on costa in wings. A partial sequence of Cytochrome oxidase C subunit 1 (CO1) of mt DNA places *An. pseudosundaicus* phylogenetically distant from *An. sundaicus* and closer to *An. subpictus*.

Key Words: *Anopheles pseudosundaicus*, Culicidae, Kerala, India

Introduction

Fifty eight species of *Anopheles* have so far been recorded in India (Knight & Stone 1977; Walter Reed Biosystematics Unit 2001) and as many as ten species are considered primary or secondary vectors of malaria (Roy *et al.* 1978, Nagpal & Sharma 1995, Tyagi & Yadav, 2001, Tyagi 2002, 2004). The last endemic species, *An. pinjaurensis* Barraud was discovered from India more than seven decades ago (Christophers 1933). In India only a few species, e.g., *An. subpictus* Grassi and *An. sundaicus* (Rodenwaldt), have been reported breeding in the fresh and/or brackish water of coastal areas (Covel 1944, Reid 1968). The coastline of the Indian peninsular region is a rich, yet little explored habitat for mosquitoes. Studies initiated after the tsunami on December 26, 2004 revealed a new mosquito species, *Anopheles pseudosundaicus*, belonging to the Pyretophorus Series of Anopheles (Harbach 2004). This species was encountered in Kerala State, southwestern India. Although, the new taxon seems to be close to *An. subpictus* and *An. sundaicus*, nevertheless, it differs distinctly from either of them both in morphological (adult and immature) and molecular characteristics. In this paper we describe this new species, morphologically and molecularly using mtDNA sequence, to distinguish it from *An. subpictus* and *An. sundaicus*. The terminology used as well as abbreviations of generic and subgeneric names are followed from various references (Reinert 1975, Harbach & Knight 1980, 1982, Bickley & Ward 1989).