

The Subgenus Stegomyia in Southeast Asia

Yiau-Min Huang
Southeast Asia Mosquito Project*
Smithsonian Institution
Washington, D. C. 20560

The subgenus Stegomyia Theobald is essentially confined to the tropical and subtropical regions of the old world, chiefly the Ethiopian, Oriental and Australasian regions. It is also represented in the southern part of the Palaearctic region. A. aegypti (Linnaeus) has, of course, been introduced into the new world.

Members of the subgenus Stegomyia occur in urban and in inhabited rural areas. The breeding sites of Stegomyia are tree holes, bamboo stumps, leaf axils, rock holes, coconut shells and tin cans - a wide variety of natural and artificial container habitats.

Because of the ability of the eggs to withstand dessication certain species occur in relatively arid areas. The common belief that the subgenus is confined to forests and areas of high rainfall is wrong.

Females of several species attack man readily. Stegomyia is a very important subgenus medically and includes vectors of human filarial worms and a number of viruses which affect man.

The subgenus has not been studied as a unit since Edwards (1932). It has been investigated only in faunal and limited systematic studies. A sound revision of the entire subgenus is badly needed.

Edwards (1932) divided the subgenus into four groups which he designated A, B, C and D. Knight and Rozeboom (1946) defined a fifth group for albolineatus and its relatives and this was designated Group E by Knight and Hurlbut (1949). Bohart (1956) added Groups F and G. Belkin (1962) defined an eighth group for edwardsi and its relatives. Thus so far, the subgenus consists of the following eight groups: Group A. (aegypti group), Group B. (w-albus group), Group C. (scutellaris group), Group D. (vittatus group), Group E. (albolineatus group), Group F. (pandani group), Group G. (maehleri group) and Group H. (edwardsi group).

Of the eight recognized groups of Stegomyia mentioned above, six are represented in Southeast Asia. Approximately 30 species and subspecies of Stegomyia mosquitoes have been reported in the past as occurring in the Southeast Asia Mosquito Project (SEAMP) area. Of these 30 species, 5/6 of the adults (male and female), 1/3 of the pupae and 2/3 of the larvae are known.

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As noted above Stegomyia is one of the most important subgenera from a medical point of view. It is therefore surprising that so little attention has been paid to it taxonomically and biologically.

I should like to point out that at present our knowledge of this group of mosquitoes in Southeast Asia is not only scanty but rather confused. It is incredible that even the most common and medically important species such as albopictus (Skuse) has often been misidentified. This is simply because there is no literature that has given the characters for distinguishing closely allied species, e.g. albopictus females from pseudalbopictus (Borel), and also because it is commonly believed that any albopictus - like mosquito is albopictus. In fact, the Stegomyia have never been thoroughly collected in Southeast Asia and how many of these albopictus-like mosquitoes will still be found in the area is a question that may well be asked.

It is, of course, obvious that if there has been confusion and misidentification in the naming of the species that much of the published information on habits, ecology and medical importance is now open to question.

The immature stages of many species are not known with certainty at present. Unfortunately too the larvae of quite a few species don't show easily appreciated differences and in some there appear to be none. This has not however prevented the issue of faunal and distributional lists by some entomologists who are unaware of the true state of affairs. Several closely related species are differentiated primarily or entirely on male terminalia and there appear to be several species-complexes in existence in Southeast Asia. In order to solve these problems individually reared specimens and series of specimens reared from an egg batch of a single female mosquito will be required.

Many of the important species reported from Southeast Asia were originally described from elsewhere, for example, subalbopictus Barraud, novalbopictus Barraud, patriciae Mattingly, annandalei (Theobald), raggi (Barraud) and mediopunctatus (Theobald) are from India. It is highly desirable therefore to obtain reared topotypic material of these forms and also obtain similar material of species reported from Southeast Asia in order to establish the true identity of the Southeast Asia forms.

To add to the taxonomic difficulties it appears that the subgenus is in a state of fairly rapid speciation with the result that isolated island faunas appear to be differentiating. It therefore becomes very difficult to decide if these island forms are really specifically different or not. The final answers might come from cytotoxic, cross-breeding, ethological and similar methods, but first of all the situation calls for a sound basic taxonomic revision by standard museum methods. Collectors and others should therefore beware of this tendency in the subgenus and make careful studies before naming island forms.

In short, Stegomyia mosquitoes from the entire Oriental Region are urgently needed while the revisionary work of this subgenus is in progress. It is hoped that entomologists, epidemiologists and other biologists will understand the importance of and the necessity for this revisionary work and that they will support us by sending Stegomyia material to SEAMP so that the final publication of this revision will not only contribute to a better understanding of the subgenus but will also be of considerable value for studies on mosquito-borne pathogens in the area.

It remains to say that it is the avowed policy of SEAMP to return a proportion of named material to senders, collaborators and collectors. The main objective of the project is not primarily the description of new species and these, when discovered, will be returned to the collector if desired. Our main purpose is to review the whole fauna and for this we must personally see specimens from as far and wide as possible, so as to make our work truly representative.

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