

DISTRIBUTION OF CAVE-DWELLING PHLEBOTOMINE SAND FLIES AND THEIR NOCTURNAL AND DIURNAL ACTIVITY IN PHITSANULOK PROVINCE, THAILAND

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Abstract. An entomological survey of sand flies was conducted in Naresuan Cave in Noen Maprang District, Phitsanulok Province, during November 2009 to December 2010. A total of 10,115 cave-dwelling sand flies were collected with CDC light traps nocturnally (06:00 AM and 06:00 PM) and diurnally (06:00 PM and 06:00 AM). The ratio between male and female sand flies was 1:1.3 (4,363:5,752). The ratio between the number of sand flies caught nocturnally and diurnally was 2.6:1 (7,268:2,847). In this study, 13 species belonging to 4 genera were identified, of which 4 belonged to the genus *Phlebotomus*, 7 to *Sergentomyia*, 1 to *Nemopalpus* and 1 to *Chinius*. An abundance of species were observed: *Nemopalpus vietnamensis* (49.15%), *P. argentipes* (20.15%), *C. barbazani* (15.79%), *P. teshi* (9.53%), and *S. anodontis* (3.21%). Less common species (<1%) were *S. barraudi* (0.63%), *P. stantoni* (0.57%), *S. dentata* (0.49%), *S. quatei* (0.17%), *P. philippinensis gouldi* (0.12%), *S. silvatica* (0.10%), *S. gemmea* (0.05%), and *S. iyengari* (0.04%). The predominant species in the Naresuan Cave was *Nemopalpus vietnamensis* (49.15%). The data demonstrates variability in sand fly prevalence, species composition, and relative abundance in caves. *P. argentipes* was found throughout the day in the caves, which is important because it is believed to be the *Leishmania* spp vector. This study highlights the diurnal activity of the sand fly and the day-time risk of leishmaniasis. In conclusion, although leishmaniasis has not been reported in Phitsanulok, there should be heightened awareness of infection in these areas with vectors of the protozoa.

Keywords: sand fly, cave-dwelling, nocturnal, diurnal, distribution, Thailand

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