> The Corum, Montpellier, France > 8 - 11th October 2012

Abstract book

the 18th International Conference



E-sove 2012

From biology to integrated control in a changing world

European Society for Vector Ecology

www.esove2012.eu

cirad EID MÉDITERRANÉE IRD Institut de recherche pour le développement

poster 2.21

Sand fly fauna and their ecological features in Southern Mongolia

> C. Sanjoba [1], S. Gantuya [2], **Y. Ozbel** [3], M. Asada [1], B. Lkhagvasuren [4], S. Demir [5], H. Kavur [6], S.K. Arserim [6], Y. Matsumoto [1]

[1] The University of Tokyo, School of Agricultural and Life Sciences, Department of Molecular Immunology, Tokyo, Japan
[2] Institute of Veterinary Medicine, Department of Parasitology, Ulaanbaatar, Mongolia
[3] Ege University Medical School Department of Parasitology, Izmir, Turkey
[4] Mammalian Ecology Laboratory, Institute of Biology, Ulaanbaatar, Mongolia
[5] Mustafa Kemal University Science Faculty, Department of Biology, Hatay, Turkey
[6] Ege University Science Faculty, Department of Zoology, Izmir, Turkey

Zoonotic cutaneous leishmaniasis transmission due to *L. major* occurs in western China to southwestern Mongolia in rural areas where four species of *Phlebotomus* maintain wild rodent leishmaniasis in gerbil and mouse populations. *Phlebotomus alexandri*, *P. andrejievi*, *P. caucasicus* and *P. mongolensis* are the rodent-feeding sand flies that are suspected human vectors. Zoonotic cutaneous leishmaniasis is focally endemic and has been described as one of the major public health problems in southern Mongolia, where the reservoir is the great gerbil, *Rhombomys opimus*. No investigation on leishmaniasis in great gerbils and sand fly fauna of southern Mongolia has been done recently. In the present study, we aimed to detect sand fly fauna and its present distribution, to understand the ecology of sand flies as well as the effect of environmental changes on different populations of sand fly species in the selected areas of southern Mongolia.

The study was carried out in Dornogobi, Umnugobi, Uvurkhangai and Bayankhongor aimags in the Southern Gobi between 28 July and 12 August 2008. The sampling locations were overlapping areas with *Rhombomys opimus* is seen. Sand fly collection was done using three different methods, sticky paper traps (mainly placed in/around the entrances of rodent burrows), CDC light traps (mainly inside the local vegetations) and a variety of rodent burrow traps (RoBuT).

A total of 1206 specimens representing three species, *P. andrejevi* (92.95%), *P. mongolensis* (4.47%), *P. alexandri* (2.57%) belonging to *Paraphlebotomus* subgenus was collected and distribution map is prepared. The majority (>90%) of the sand flies were captured by sticky traps placed in the entrance of rodent burrows. The rest of the sand flies were found in the vegetation. We also observed that the rodents always colonized the areas where saxaul trees are present.

The distribution of sand flies and great gerbil and saxaul trees is overlapping in southern Mongolia. The findings clearly indicated that the life cycle of sand flies in Gobi desert is happening in rodent burrows where they are perfect shelter *(i)* to protect sand flies from very hot climate and, *(ii)* to get suitable environment for developing sand fly larvae. Adult flies do not need to go out for plant juice because gerbils are always providing fresh leaves of saxaul trees inside the burrows.