Rodents biodiversity and associated infections in Southeast Asia

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**Abstract** :

We are currently involved in a Franco-Thai program devolved to a multidisciplinary investigation of Muridae rodents (‘‘mice and rats''), their parasites and the pathogens that they may carry and/or transmit to human, with a better understanding of diseases emergence as an ultimate goal. In such a context, pathogens circulation in the wild is a complex but pivotal phenomenon which requires a continuum of scientific approaches to be accurately apprehended. In particular, a rigorously comparative study is mandatory in order to take into account the interactions between parasites, wild and domestic hosts (uncluding human) and their environment. This is the reason why we rely on both concepts and techniques from a wide range of disciplines including taxonomy, cytogenetics, phylogenetics, phylogeography, population genetics, ecology, geography as well as modeling. With the following objectives. Objective 1: To precisely identify and characterize the rodent species acting as reservoirs, and to document their ecology, geographic distribution as well as the genetic structure of their populations. To assess parasite and pathogen diversity in relation to their associated rodent hosts. To provide cophylogenies and co-phylogeographies in order to enlight the evolutionary relationships of hosts and parasites. Objective 2: To map and correlate the observed rodents distributions with their species-specific environmental landscapes in order to extrapolate their potential ‘‘real'' range and to anticipate their future distributions in relation to landscape modifications. Objective 3: Computing epidemiological databases. Crosschecking field data and GIS data. Definition and standardization of a risk-scale. Finalization of maps of risks and distributions. Atlas of Thai Muridae. Reference collection of Thai Muridae. Education and training of students. Following the listing of the objectives, we expose the first results of our studies and we sketch future projects.