

# 平成28年度 第15回 数理分子生命理学セミナー

日時：平成28年7月27日(水) 14:35～16:05

場所：理学部 E209 講義室

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演題：**Cryptic anuran biodiversity in South and Southeast**

**Asia: revealing and evolutionary affinities of new species**

**要旨：** Amphibians are the earliest tetrapods or land vertebrates which evolved from their fish-like ancestors during the Devonian period about 400 million years ago. The order Anura (frogs and toads) belong to class Amphibia; and generally frog is tailless amphibians having squat body, moist smooth skin, and long hind limbs for leaping. To date (May 6, 2016), there are 7533 amphibian species (88% [6644], 12% [684] and 3% [205] for Anura, Caudata and Gymnophiona, respectively) have been listed. During the last 30 years, the total number of known amphibian species has increased by over 60%. Because, recent advance of mitochondrial DNA (mtDNA) sequences incorporating with morphological data revealed a new horizon to reconcile the taxonomic separation among the cryptic species (morphologically similar, but genetically distinct) of frogs. Notwithstanding, the diversity of anurans in South and Southeast Asia remains underestimated. Therefore, to elucidate the hitherto overlooked cryptic anuran biodiversity of these areas, I collected frog samples from Bangladesh, India, China, Thailand, Malaysia, Indonesia and Japan. Subsequently, the specimens were preliminarily identified to species based on morphological characteristics following the pertinent taxonomic literature and using the species names adopted in the contemporary online reference of amphibian taxonomy. I then sequenced fragment of mtDNA. The results of genetic divergences and phylogenetic analyses incorporating data from related species, revealed the occurrence of eight candidate species i.e. *Hoplobatrachus* cf. *tigerinus*, two *Fejervarya* sp. (large and medium type), *Hylarana* cf. *taipehensis*, *Hylarana* sp., *Microhyla* cf. *ornata* (two forms) and *Microhyla* sp. from Bangladesh. Most or all of these candidate species might warrant full species status and three of them [*H. litoralis*, *M. mukhlesuri* and *M. mymensinghensis*] have been taxonomically described using multiple data sets (molecular, morphological and acoustic data) in the course of my further work. One of these new species viz. *H. litoralis* was new to science in 150 years since the last report of genus *Hoplobatrachus* in 1858. Similarly, I also found six candidate species (*Polypedates* cf. *leucomystax*, *Chalcorana* cf. *chalconota*, *Hylarana* sp., *Amnirana* cf. *nicobariensis*, *Amolops* cf. *larutensis* and *Microhyla* cf. *okinavensis* from Thailand [Chantaburi], Indonesia [Maelipet Siberut], Malaysia [Langkawi Island], Indonesia [Muara Siberut], Malaysia [Gombak] and Japan [Ishigaki Island], respectively) and six possible candidate species (*Hylarana* cf. *erythraea*, *M.* cf. *heymonsi*, two forms of *M.* cf. *ornata*, two lineages of *Duttaphrynus* cf. *melanostictus* from Malaysia [Langkawi Island]/Thailand [Chantaburi], Malaysia [Univ. Malaya Campus], India [Mudigere and Talapu] and Malaysia [Univ. Malaya Campus], respectively) from the South and Southeast Asia. These findings have greatly advanced our understanding of species diversity of amphibians in Asia and provide useful information for conservation of amphibian biodiversity.