

A Checklist of the Amphibians in Thailand

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ABSTRACT.—A checklist of amphibians in Thailand has been compiled based on literature surveys. Specific name and distribution were gathered from many recent publications. The number of amphibians increased substantially from previous reports. The amphibian fauna of Thailand comprises of 130 species, 8 families, and 3 orders. The literatures of amphibian studies in Thailand were also listed for future cited.

KEY WORDS: Checklist; Distribution; Amphibian; Thailand; Southeast Asia

INTRODUCTION

Distribution pattern of amphibian fauna is mainly affected by rainfall, pattern of vegetation and geography. Biogeographically, Thailand is located among 4 types of regions including Northeastern montane region in northern and western part, Thai-Lao dry plateau in northeastern part, Southeast Asian lowland in central and eastern part, and Tenasserim and Malay Peninsular in southern part of Thailand (Inger, 1999). Peninsular Thailand has been acknowledged as land bridge of animal distribution from the northern region across the southern region.

One hundred and forty years ago, the amphibian fauna of Thailand was first collected by Henri Mouhot, and Dr. Albert Günther was the first author who described amphibians from Thailand (Günther, 1861). Malcolm A. Smith, a British naturalist, studied amphibians and reptiles of Thailand intensively and published

several articles during 1915-1923 (Smith, 1915; 1916a, b, c; 1917a, b, c, d; 1922a, b, c; 1923). In 1917, he listed 52 amphibian species found to inhabit in Siam (=Thailand) (Smith, 1917a,b,c,d). Later on, some of these species were changed by other authors. During 1957-1958 and 1959-1960, Edward H. Taylor, an American scientist under the Fullbright scholarship, did thorough field surveys and researches on herpetofauna of Thailand. He published "The amphibian fauna of Thailand" in 1962 listing 100 species of amphibian found in Thailand (Taylor, 1962). In 1993, a checklist of 106 amphibian species found in Thailand was compiled by Kongthong and Nabhitabhata as part of efforts to put together biodiversity information of Thailand. Since then, there has been growing number of researchers working in this field and contributing to accumulation of the number of amphibian fauna known to occur in Thailand. This included status reviews of specific taxons, descriptions of new species (Matsui et al., 1998; 1999), and report of new records (Chan-Ard et al., 1999).

In order to update the information, we conducted a comprehensive review and

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compiled a new checklist of amphibian fauna in Thailand. We also listed literatures about amphibian studies in Thailand for future reference.

communications. The updated specific names were used in accordance with “Amphibian species of the world: An online reference” by Frost (2000).

METHODS

Taxonomic and distribution data were mainly derived from literature surveys. Informations of some species were gathered from unpublished data as well as personal

RESULTS

The amphibian fauna of Thailand comprises of 130 species in 8 families and 3 orders. The species and distribution are listed below.

Order Caudata (Urodela)

Family Salamandridae

Tylototriton verrucosus Anderson, 1871

Distribution:—Western Yunnan, China to northern Myanmar, hills of Arunachal Pradesh, Sikkim, Darjeeling in India, Bhutan, and eastern Nepal; Chiang Dao, Chiang Mai Province to Phu Luang, Loei Province in the northern Thailand; northern Vietnam

Order Gymnophiona (Apoda)

Family Ichthyophiidae

Caudacaecilia asplenica (Taylor, 1965)

Distribution:—Sarawak, Borneo; Malaysia; southern Thailand

Ichthyophis acuminatus Taylor, 1960

Distribution:—Me Wang Valley, northern Thailand

Ichthyophis kohtaoensis Taylor, 1960

Distribution:—Koh Tao Island and mainland Peninsular Thailand

Ichthyophis supachaii Taylor, 1960

Distribution:—Nakhon Si Thammarat Province and Trang Provinces, southern Thailand

Ichthyophis youngorum Taylor, 1960

Distribution:—Doi Suthep, Chiang Mai Province, northern Thailand

Order Anura (Salientia)

Family Ranidae

Amolops larutensis (Boulenger, 1899)

Distribution:—Malaysia; Peninsular Thailand

Amolops marmoratus (Blyth, 1855)

Distribution:—Eastern Himalayan region of India and Nepal to Thailand and China (Yunnan and Tibet)

Chaparana aenea (Smith, 1922)

Distribution:—Doi Chang, northern Thailand

Elachyglossa glydenstolpei Anderson, 1916

Distribution:—Koon Tan Mountains, northern Thailand

Hoplobatrachus rugulosus (Wiegmann, 1835)

Distribution:—Myanmar and southern China (north to Hubei and including Taiwan) to Thailand and Peninsular Malaysia; introduced in Borneo (Sabah, Malaysia)

Huia nasica (Boulenger, 1903)

Distribution:—Thailand; Tonkin, Vietnam

Ingerana tasanae (Smith, 1921)

Distribution:—Peninsular Thailand

Ingerana tenasserimensis (Sclater, 1892)

Distribution:—Myanmar to Peninsular Thailand and adjacent Malaysia

Limnonectes blythii (Boulenger, 1920)

Distribution:—Myanmar; Thailand; Malaysia; Singapore; Sumatra, Indonesia

Limnonectes cancrivorus (Gravenhorst, 1829)

Distribution:—Thailand, Malay Peninsula and Singapore to the Philippines and the Lesser Sundas as far as Flores; Guangxi and northeastern coast of Hainan Island, China; Vietnam

Limnonectes doriae (Boulenger, 1887)

Distribution:—Myanmar to Thailand and Malaysia; Andaman Island, India

Limnonectes kohchangae (Smith, 1922)

Distribution:—Koh Chang, Koh Kut, Koh Mehsi and on the mainland at Ok Yam, Thailand

Limnonectes kuhlii (Tschudi, 1838)

Distribution:—Assam, India and Yunnan and Taiwan, China through Indochina to the Greater Sundas as far as Sulawesi, Indonesia

Limnonectes laticeps (Boulenger, 1882)

Distribution:—Assam, India to Thailand, Malaysia, and Borneo; Sarawak, Malaysia

Limnonectes limnocharis (Boie, 1835)

Distribution:—China: Taiwan, Sichuan, and south of Yangtze River and north to Shandong to Nepal; Pakistan; India; Sri Lanka; southern Japan; Thailand; Vietnam; Malaysia; Singapore; Philippines; Greater Sunda Island and the Lesser Sundas as far east as Flores

Limnonectes macrodon (Dumeril and Bibron, 1841)

Distribution:—Myanmar; Thailand; Malaysia; Java and Sumatra, Indonesia; Rioux Archipelago

Limnonectes macrognathus (Boulenger, 1917)

Distribution:—Myanmar through Thailand to northern Malaysia; Indonesia

Limnonectes paramacrodon (Inger, 1966)

Distribution:—Thailand; Malaysia; western and northern Borneo (Malaysia and Indonesia)

Limnonectes pileatus (Boulenger, 1916)

Distribution:—Eastern and northern Thailand

Limnonectes plicatellus (Stoliczka, 1873)

Distribution:—Yala Province, southern Thailand; Malaysia; Singapore

Limnonectes raja (Smith, 1930)

Distribution:—Pattani Province, Songkhla Province and Phatthalung Province, Thailand; Kuala Lumpur, Malaysia

Occidozyga laevis (Günther, 1859 "1858")

Distribution:—Borneo, Java, Sumatra, Sulawesi, Bali, Sumbawa and Flores, Indonesia; Philippines; southern Thailand; Malaysia; Singapore; China

Occidozyga lima (Gravenhorst, 1829)

Distribution:—Lower Bengal (India) through Myanmar, Thailand and Laos to southern China (including Hainan Island); Vietnam; Malaysia; Java, Indonesia

Occidozyga magnapustulosus (Taylor and Elbel, 1958)

Distribution:—Northern and northeastern Thailand

Occidozyga martensii (Peters, 1867)

Distribution:—Thailand; Vietnam (presumably Laos); southern China: Yunnan, Guangxi, and Hainan Island

Paa bourreti (Dubois, 1987 "1986")

Distribution:—Sa Pa, Lao Cai Province, northern Vietnam; Thailand

Paa fasciculispina (Inger, 1970)

Distribution:—Chanthaburi Province, eastern Thailand

Rana adenopleura Boulenger, 1909

Distribution:—Taiwan, Yunnan, China; Yaeyama group of Ryukyu Island, Japan; Thailand

Rana alticola Boulenger, 1882

Distribution:—Hills of Assam, India; Tenasserim, Myanmar to Thailand and Tonkin, Vietnam

Rana andersonii Boulenger, 1882

Distribution:–Upper Myanmar; northern Thailand to Yunnan, Guizhou and Hainan Island, China; Tonkin, Vietnam

Rana archotaphus Inger and Chanard, 1997

Distribution:–Doi Inthanon National Park, Chiang Mai Province, northern Thailand

Rana catesbeiana Shaw, 1802

Distribution:–North America, restricted to "vicinity of Charleston, South Carolina" [USA], eastern North America, except southern Florida, north to Nova Scotia, New Brunswick; southern Quebec and southern Ontario, Canada; west to the central plains and south to Veracruz, Mexico; introduced on Cuba, Isla de Juventud (=Isla de Pinos); Puerto Rico; Hispaniola and Jamaica in the Antilles; introduced widely in the rest of the world; introduced and released to the forest of northern Thailand

Rana chalconota (Schlegel, 1837)

Distribution:–Thailand; Malaysia; Singapore; Java, Bali and Sulawesi, Indonesia

Rana cubitalis Smith, 1917

Distribution:–Myanmar; Thailand

Rana erythraea (Schlegel, 1837)

Distribution:–Java; Borneo; Negros and Panay Island, Philippines; southern Vietnam and Thailand through Myanmar to west Bengal and Orissa, India; Malaysia; Singapore

Rana glandulosa Boulenger, 1882

Distribution:–Southern Thailand to Malaysia; Singapore; Sumatra and Borneo (Indonesia and Malaysia)

Rana hosii Boulenger, 1891

Distribution:–Sarawak, Borneo, Malaysia; Peninsular Thailand; Malaysia

Rana lateralis Boulenger, 1887

Distribution:–Northern, central and eastern Thailand; southern Myanmar; northern Vietnam

Rana leptoglossa (Cope, 1868)

Distribution:–Assam, India through Myanmar to southern Thailand and Annam, Vietnam

Rana livida (Blyth, 1856 "1855")

Distribution:–Darjeeling region and mountains of Assam, India through Myanmar, western and northern Thailand to Vietnam; Shaanxi, Jiangxi, Fujian, Guangdong, Anhui, Zhejiang, Hunan, Yunnan, Guizhou and Hainan Island, China

Rana luctuosa (Peters, 1871)

Distribution:–Southern Thailand; Malaysia; Borneo

Rana macrodactyla (Günther, 1859 "1858")

Distribution:—Hong Kong, Guangdong, Guangxi and Hainan, China; southeastern Asia

Rana miopus Boulenger, 1918

Distribution:—Peninsular Thailand; Malaysia

Rana montivaga Smith, 1921

Distribution:—Annam, Vietnam; Thailand

Rana nicobariensis (Stoliczka, 1870)

Distribution:—Palawan Island, Philippines; Bali to Malay Peninsula; Nicobar Island, India; Thailand

Rana nigrovittata (Blyth, 1856 "1855")

Distribution:—Nepal; Assam, India to Yunnan, China; Vietnam; Thailand south to Malaysia

Rana raniceps (Peters, 1871)

Distribution:—Sarawak, Indonesia; Malaysia and the islands of Borneo and possibly Sumatra;
Peninsular Thailand

Rana schmackeri Boettger, 1892

Distribution:—Central, southeastern China north to Gansu and Shaanxi, Hainan Island; Thailand

Rana scutigera Andersson, 1916

Distribution:—Peninsular Thailand

Rana signata (Günther, 1872)

Distribution:—Peninsular Thailand; Malaysia; Sumatra, Indonesia; Sabah and Sarawak, Malaysia

Rana taipehensis Van Denburgh, 1909

Distribution:—Southern China (west to eastern Yunnan and including Taiwan and Hainan Island) to
central Vietnam; Thailand; eastern India; Nepal

Taylorana hascheana (Stoliczka, 1870)

Distribution:—India to Vietnam; Thailand; Peninsular Malaysia; Java, Indonesia

Order Anura (Salientia)

Family Pelobatidae

Brachytarsophrys carinensis (Boulenger, 1889)

Distribution:—Southern Myanmar and adjacent northern Thailand; Vietnam

Brachytarsophrys feae (Boulenger, 1887)

Distribution:—Northern Myanmar and northern Thailand to northern Vietnam and Jingdon, Yunnan,
China

Leptobrachium chapaense (Bourret, 1937)

Distribution:–Northern Vietnam through Laos to northern Thailand, the Karin region of Myanmar and the Hengduanshan Mountains of southern Yunnan, China

Leptobrachium hendricksoni Taylor, 1962

Distribution:–Yala Province, Peninsular Thailand and Pahang, Kuala Lumpur, Malaysia; Sarawak, Borneo, Malaysia

Leptobrachium smithi Matsui, Nabhitabhata, and Panha, 1999

Distribution:–Northern, western and southern Thailand

Leptolalax pelodytoides (Boulenger, 1893)

Distribution:–Hong Kong, Yunnan, Guangxi and Fujian, China; Myanmar; Thailand; northern Vietnam; Malaysia

Megophrys montana Kuhl and Van Hasselt, 1822

Distribution:–Thailand southeast to Sumatra, Java, Natuna and Borneo; Philippines

Ophryophryne microstoma Boulenger, 1903

Distribution:–Northern Thailand; northern Vietnam and adjacent southern Guangxi and Yunnan, China

Xenophrys aceras (Boulenger, 1903)

Distribution:–Peninsular Thailand; Malaysia

Xenophrys lateralis (Anderson, 1871)

Distribution:–Yunnan, Guangdong, Hunan and Hongkong, China; northeastern India; Bangladesh; Myanmar; northern Thailand; northern Vietnam

Xenophrys longipes (Boulenger, 1886 "1885")

Distribution:–Thailand and Cambodia south to Malaysia

Xenophrys minor Stejneger, 1926

Distribution:–Chengdu, Sichuan, Guizhou, Tibet, Sichuan, Yunnan, Hubei, Hunan and Guangxi, China; Thailand

Xenophrys parva (Boulenger, 1893)

Distribution:–Eastern and central Nepal; Sikkim, Assam and Darjeeling, India through Bangladesh and Myanmar to Thailand and Yunnan, China

Order Anura (Salientia)

Family Bufonidae

Ansonia inthanon Matsui, Nabhitabhata, and Panha, 1998

Distribution:–Doi Inthanon National Park, Chiang Mai Province, northern Thailand

Ansonia malayana Inger, 1960

Distribution:—Peninsular Thailand from the Isthmus of Kra southward to Malaysia

Ansonia penangensis Stoliczka, 1870

Distribution:—Southern Thailand through Malaysia; Borneo

Ansonia siamensis Kiew, 1985 "1984"

Distribution:—Khao Chong, Trang Province, southern Thailand

Bufo asper Gravenhorst, 1829

Distribution:—Southern Myanmar through western and Peninsular Thailand to Sumatra, Borneo and Java, Indonesia

Bufo biporcatus Gravenhorst, 1829

Distribution:—Philippines; Sumatra; Java; Borneo; Malaysia; southern Thailand

Bufo macrotis Boulenger, 1887

Distribution:—Myanmar through western and southern Thailand to the central highlands of Vietnam and northern Malaysia

Bufo melanostictus Schneider, 1799

Distribution:—Southwestern and southern China (including Taiwan) throughout southern Asia from Nepal to Sri Lanka; Andaman Island; Myanmar; Thailand; Vietnam; Malaysia; Sumatra, Java, Borneo and Bali, Indonesia

Bufo parvus Boulenger, 1887

Distribution:—Southern Myanmar and southern Thailand to Malaysia; Java and Sumatra, Indonesia

Leptophryne borbonica (Tschudi, 1838)

Distribution:—Southern Thailand to Sumatra, Java, Indonesia and Borneo

Pedostibes hosii (Boulenger, 1892)

Distribution:—Extreme southern Thailand; Malaysia; Borneo; Sumatra, Indonesia

Order Anura (Salientia)

Family Hylidae

Hyla annectans (Jerdon, 1870)

Distribution:—Southern Asia (south of Himalayas) from Assam and Meghalaya, India through northern Myanmar, northern Thailand and Vietnam to western China

Order Anura (Salientia)

Family Rhacophoridae

Chirixalus doriae Boulenger, 1893

Distribution:—Northern Myanmar; Thailand; Vietnam; Yunnan and Hainan Island, China

Chirixalus hansenae (Cochran, 1927)

Distribution:—Nong Khor, Chonburi Province, central-east Thailand

Chirixalus nongkhorensis (Cochran, 1927)

Distribution:—Myanmar; Thailand; central Vietnam

Chirixalus vittatus (Boulenger, 1887)

Distribution:—Myanmar to Hainan Island and Yunnan, China; Vietnam; Thailand

Nyctixalus pictus (Peters, 1871)

Distribution:—Southern Thailand; Borneo; Malaysia; Singapore; Sumatra; Palawan Island, Philippines

Philautus aurifasciatus (Schlegel, 1837)

Distribution:—Java, Indonesia; Thailand

Philautus carinensis (Boulenger, 1893)

Distribution:—Myanmar; Thailand

Philautus gracilipes Bourret, 1937

Distribution:—Northern Vietnam; Yunnan, China; Thailand

Philautus parvulus (Boulenger, 1893)

Distribution:—Myanmar and northern Thailand to northern Vietnam

Polypedates colletti (Boulenger, 1890)

Distribution:—Peninsular Thailand to Sumatra; Borneo; Natuna Islands and islands of the South China Sea

Polypedates feae (Boulenger, 1893)

Distribution:—Myanmar through northern Thailand to Tonkin, Vietnam and Yunnan, China

Polypedates leucomystax (Gravenhorst, 1829)

Distribution:—Sikkim and Assam, India; southern China; Thailand; Vietnam; Malaysia; Singapore; Philippines; Java, Indonesia

Polypedates macrotis (Boulenger, 1891)

Distribution:—Sumatra and Borneo; Sulu Archipelago; Palawan, Busuanga, Calauit, Jolo and Dumaran islands, Philippines; Thailand

Polypedates megacephalus Hallowell, 1861 "1860"

Distribution:—China: Taiwan; introduced on Okinawa Island, Japan; Vietnam; Thailand

Rhacophorus appendiculatus (Günther, 1859 "1858")

Distribution:—Myanmar; Cambodia; Vietnam; Thailand; Malaysia to Sumatra; Borneo; Philippines

Rhacophorus bimaculatus (Peters, 1867)

Distribution:—Vietnam; Thailand; Borneo; Philippines

Rhacophorus bipunctatus Ahl, 1927

Distribution:—Eastern Himalayan region of India, adjacent Tibet to Yunnan, Hunan, Hainan and Guangxi, China; Central Highlands of Vietnam; presumably to be found in Laos; Karin Hills of Myanmar; Peninsular Thailand; Perak, Malaysia

Rhacophorus bisacculus Taylor, 1962

Distribution:—Northeastern Thailand; Assam, India

Rhacophorus cyanopunctatus Manthey and Steiof, 1998

Distribution:—Peninsular Thailand and Malaysia; Singapore; Borneo

Rhacophorus dulitensis Boulenger, 1892

Distribution:—Sumatra and Borneo; Peninsular Thailand

Rhacophorus maximus Günther, 1859 "1858"

Distribution:—Northeastern India; Nepal; northern Thailand; Yunnan and Tibet, southern China

Rhacophorus nigropalmatus Boulenger, 1895

Distribution:—Peninsular Thailand through Malaysia; Sumatra; Borneo (Kalimantan, Indonesia and Sabah and Sarawak, Malaysia)

Rhacophorus prominans Smith, 1924

Distribution:—Peninsular Thailand and Malaysia

Rhacophorus reinwardtii (Schlegel, 1837)

Distribution:—Java and Sumatra, Indonesia; Borneo, Sabah, Malaysia; Malay Peninsula; Vietnam; Yunnan and Guangxi, China

Rhacophorus robinsonii Boulenger, 1903

Distribution:—Southern Thailand and adjacent Malaysia

Rhacophorus verrucosus Boulenger, 1893

Distribution:—Myanmar; Thailand

Theloderma asperum (Boulenger, 1886)

Distribution:—Assam, India through Myanmar and adjacent China (Tibet) to Vietnam; Thailand; Peninsular Malaysia; Sumatra, Indonesia

Theloderma gordoni Taylor, 1962

Distribution:—Chiang Mai Province, northern Thailand; northern Vietnam

Theloderma horridum (Boulenger, 1903)

Distribution:—Southern Thailand and Malaysia; northern Borneo (Sabah, Malaysia)

Theloderma stellatum Taylor, 1962

Distribution:—Chanthaburi Province, eastern Thailand to northern Vietnam

Order Anura (Salientia)

Family Microhylidae

Calluella guttulata (Blyth, 1856 "1855")

Distribution:—Southern Myanmar and the central highlands of Vietnam to Thailand and the northern part of the Malay Peninsula

Glyphoglossus molossus Günther, 1869 "1868"

Distribution:—Myanmar and southern Vietnam to Peninsular Thailand

Kalophrynus interlineatus Blyth, 1855 "1854"

Distribution:—Southern China to southern Cambodia and southeastern Myanmar; eastern Thailand

Kalophrynus pleurostigma Tschudi, 1838

Distribution:—Islands of the Sunda Shelf: Sumatra, Borneo, Java, Natuna Island and southern Philippines; Singapore; Peninsular Malaysia; Thailand

Kaloula baleata (Müller, 1836)

Distribution:—Java, Indonesia; Malay Peninsula to Lesser Sundas, Celebes, Borneo, and Philippines; Andaman Island; western and southern Thailand

Kaloula mediolineata Smith, 1917

Distribution:—Southwestern Thailand except for extreme south

Kaloula pulchra Gray, 1831

Distribution:—Nepal and southern China to Myanmar; Thailand; Vietnam; Peninsular Malaysia; Singapore; Sumatra; Borneo; Sulawesi

Microhyla annamensis Smith, 1923

Distribution:—Southern Vietnam; Thailand

Microhyla annectens Boulenger, 1900

Distribution:—Peninsular Thailand and Malaysia; Borneo; Sulu Archipelago; Philippines

Microhyla berdmorei (Blyth, 1856 "1855")

Distribution:—Myanmar and northern Thailand through Laos, the central highlands of Vietnam and Cambodia to Malaysia, Sumatra, and Borneo; Meghalaya, India

Microhyla borneensis Parker, 1928

Distribution:—Thailand; Borneo; Malay Peninsula; Singapore

Microhyla butleri Boulenger, 1900

Distribution:—Southern China (including Hainan and Taiwan); Myanmar; Vietnam; Thailand; Malay Peninsula including Singapore

Microhyla fowleri Taylor, 1934

Distribution:—Chiang Mai, northern Thailand and adjacent China

Microhyla heymonsi Vogt, 1911

Distribution:—Southern China (including Hainan and Taiwan) through Southeast Asia (excluding Myanmar) to Malay Peninsula including Singapore and Sumatra, Indonesia

Microhyla ornata (Dumeril and Bibron, 1841)

Distribution:—Ryukyu Island, Japan and southern China (including Taiwan and Hainan) northward to Shanxi and Shaanxi; south and west to Nepal, India and Sri Lanka; southeast to Thailand and the Malay Peninsula

Microhyla pulchra (Hallowell, 1861 "1860")

Distribution:—Hong Kong, Huang-Pu, Guangdong; Southern China (including Hainan Island) west to Yunnan; Thailand; Malaysia; Singapore

Micryletta inornata (Boulenger, 1890)

Distribution:—Myanmar and southern China (including Taiwan) to Vietnam; Thailand; Malaysia; Sumatra, Indonesia

DISCUSSION

Compilation of data on number of species and distribution, and update of specific name reveal the total of 130 amphibian species in 8 families and 3 orders inhabiting in Thailand. The number increases considerably from previous reports of Kongthong and Nabhitabhata (1993: 106 species) and Chan-Ard et al. (1999: 105 species). The increasing number is mainly due to extensive field surveys of researchers from Thailand and other countries. In addition, many taxon names used in this checklist are different from the previous reports. These include many species of genus *Xenophrys* (previously *Megophrys*), these names were updated according to Frost (2000).

Rana catesbeiana, a non-native frog, is also listed as one of amphibian species in Thailand as it had been introduced into Thailand 10 year ago for culture as food source. Recently, some of these frogs were released into natural forest

in the northern Thailand. *Huia nasica* is added to the list of amphibian in Thailand for the first time due to the presence of specimen previously collected from Kanchanaburi Province, western Thailand (Yang, 1991; Inger et al., 1999).

Some frogs that have been described as new species during the last decade include *Rana archotaphus* (Inger and Chan-Ard, 1997), *Ansonia inthanon* (Matsui et al., 1998), *Rhacophorus cyanopunctatus* (Manthey and Steiof, 1998), and *Leptobrachium smithi* (Matsui et al., 1999).

Biogeographical distribution of amphibians in Thailand shows resembling pattern to the adjacent areas. Inger (1999) noted that some amphibian species of the northern part of Thailand were similar to China amphibian species. Although there had been limited number of amphibian studies in Myanmar, the publications showed some species in common to the western part of Thailand. In the southern part of Thailand, Isthmus of Kra is the highest range of distribution of some southern species. These support the notion that Peninsular

Thailand is the land bridge of animal's distribution.

With high diversity of ecosystems, we expect that number of amphibian species in Thailand should be much more than the number known to present. Contributions to this expected number could be from comprehensive field surveys and application of new techniques to systematic researches. Molecular biology technique, e.g. isozyme electrophoresis and DNA sequencing, has been accepted as the most relevant technique to reveal cryptic species and phylogenetic relationship. This was evident as Matsui et al. (1999) proposed that several molecular biology techniques are required for phylogenetic analysis of *Leptobrachium* group.

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