

***Kaloula baleata* (Müller, 1836) (Anura: Microhylidae),
an Addition to the Batrachofauna of Thailand**

In the course of herpetological and batrachological surveys in Peninsular Thailand, the authors found, in the provinces of Phang-Nga, Phuket and Trang, several specimens of *Kaloula baleata* (Müller, 1836), a species not yet known to be part of the batrachofauna of Thailand.

SUVATTI (1950) and TAYLOR (1962) listed only two species of *Kaloula* Gray, 1831 in Thailand: *Kaloula pulchra* Gray, 1831, and *Kaloula mediolineata* Smith, 1917. A third species, *Kaloula aureata*, was recently described by NUTPHAND (1989). However, the taxonomic status of the latter taxon seems highly doubtful (DUBOIS *ET AL.*, in prep.). Meanwhile, this new species record brings to four the number of nominal species of this microhylid genus present in Thailand.

The Thai specimens and their localities, as well as the recorded ecological data, are detailed below. All specimens were deposited in the collections of the Muséum National d'Histoire Naturelle (MNHN) in Paris. The measurements taken on the specimens are given in Table 1.

Phang-Nga Province: In the Phang-Nga Wildlife Breeding Station (8°28' N, 98°32' E; Muang District), during a nocturnal walk on 19 July 1998 in the humid evergreen forest, we (C.C., O.L. & O.P.) captured, near a small shallow pool, two juvenile *K. baleata* (MNHN 1998.0542-0543). One (MNHN 1998.0542) was hidden under dead leaves on the ground, in direct proximity to several *K. pulchra*. The other (MNHN 1998.0543) was perched on a leaf at an height of 1.70 m, on the same shrub on which we collected some ranids, *Rana (Sylvirana) nigrovittata* (Blyth, 1856) (MNHN 1998.0514-0515), and rhacophorids, *Rhacophorus leucomystax* (Gravenhorst, 1829) (MNHN 1998.0516-0518). When alive, both specimens of *K. baleata* exactly matched the coloration of the specimen illustrated by MANTHEY & GROSSMANN (1997:56). In alcohol, the body became grey with a bluish brown pattern, cream white spots on limbs, and a light greyish underside.

Phuket Province: On 4 September 1997, on Phuket Island, two of us (C.C. & O.P.) discovered, while investigating at dusk a small puddle in Ban Kata (7° 49' N, 98° 19' E), a juvenile *K. baleata* (MNHN 1998.0541). In the same puddle, situated in a highly disturbed biotope between a road and a secondary forest of palm and banana trees, we caught some other microhylids, *Kaloula pulchra* Gray, 1831, (MNHN 1998.0501-0502), *Microhyla ornata* (DUMÉRIL & BIBRON, 1841) (MNHN 1998.0504-0507), *Micryletta inornata* (Boulenger, 1890) (MNHN 1998.0509), and some ranids, *Limnonectes limnocharis* (GRAVENHORST, 1829) (MNHN 1998.0510-0513) and *Phrynoglossus martensii* Peters, 1867 (MNHN 1998.0508). While these other anurans, and particularly *K. pulchra*, were very numerous, *K. baleata* was represented only by this single specimen. Its coloration in life was very similar to that of the specimen illustrated by MANTHEY & GROSSMANN (1997:56), although its dorsal pattern contrasted less and its yellow spots at the basis of the limbs

were less bright. In alcohol, the ground color became uniformly dark brown, with a uniformly light greyish underside, and the yellow spots on arms, thighs and heels faded to greyish.

Trang Province: On Khao Chong, on 5 September 1986, three of us (A.D., J.N. & A.O.), intrigued by the presence, within the familiar and noisy chorus of *K. pulchra*, of an uncommon call evokating that of the European discoglossid toad *Bombina variegata* (LINNAEUS, 1758), scrutinized a small artificial puddle filled with decayed vegetation. Among numerous microhylids (*K. pulchra*, *Micryletta inornata*), ranids (*Phrynoglossus martensii*) and rhacophorids (*Rhacophorus leucomystax*), two adult calling males of *K. baleata* (MNHN 1987.2723-2724) were caught. The coloration in life of these specimens can be described as follows: MNHN 1987.2723, upper surface very dark brown with a discreet darker pattern, a bright yellow spot near axilla and another on the basis and underside of thigh, throat black, chest and belly grey, iris light golden; MNHN 1987.2724, upper surface greyish brown with distinct darker pattern, yellow spots on inner side of bases of arms and thighs, orange spots on their outer sides, rear of thighs speckled with bright yellow, iris clear golden with numerous melanophores. In alcohol, the specimens became uniformly bluish brown, with cream white spots on base of arm and thigh, no light spot on heel; rear side of thigh dark brown with cream to light brown spots; throat black, chest and belly light brown with lighter spots.

While the dorsal pattern is more or less distinct according to the specimens and faintly marked in adults, the light spots on the limbs remain well visible and are diagnostic for the species identification.

Table 1. Measurements of Thai specimens of *Kaloula baleata* (Müller, 1836) (in mm.)

Collection number	Sex	Snout-vent length	Head width	Head length	Tibia length
MNHN 1987.2723	Adult male	53.8	18.3	13.9	19.9
MNHN 1987.2724	Adult male	56.0	18.5	15.4	19.5
MNHN 1998.0541	Juvenile female	22.4	8.2	6.9	8.1
MNHN 1998.0542	Juvenile female	19.5	6.6	5.3	7.2
MNHN 1998.0543	Juvenile male	15.2	6.1	4.7	5.8

Kaloula baleata, described from Krawang (Java), has a wide distribution, ranging from the Andaman Island through West Malaysia to Borneo, Sumatra and Pulau Nias, the Lesser Sunda Islands and the Philippines (FROST, 1985; MANTHEY & GROSSMANN, 1997). The closest localities to our new ones are situated in peninsular Malaysia, where the species is known from Taman Negara (Kuala Tahan), Pahang (PARKER, 1934: 89; BERRY, 1975: 114) and Pulau Tioman, Pahang (DENZER *ET AL.*, 1989).

On this basis, the discovery of the species in the Phang-Nga Wildlife Breeding Station near Phang-Nga City constitutes a major but not surprising northwards extension in the peninsula by 4° of latitude.

In southern Thailand, *Kaloula baleata* seems very uncommon or of very seasonal occurrence (rainy season), contrary to *K. pulchra* which occurs in strict syntopy at each of the three locations known so far for *K. baleata* in Thailand. Notably, the species was not found during the batrachological survey of Phuket and Phang-Nga provinces by FRITH (1977), while this author reported *K. pulchra* as extremely common. However, since our specimens were living in dense humid forest as well as in highly disturbed habitat, one could expect that the species will be found in every province of southern Thailand.

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REFERENCES

- BERRY, P.Y. 1975. *The Amphibian Fauna of Peninsular Malaysia*. Tropical Press, Kuala Lumpur, i-x+1-130.
- DENZER, W., U. MANTHEY AND C. STEIOF. 1989. Erstnachweis microhylider Frosche auf Pulau Tioman-West-Malaysia. *Sauria* 11 (2): 27-30.
- FRITH, D.W. 1977. A preliminary list of the Amphibia of Phuket Island and adjacent mainland, Peninsular Thailand. *Nat. Hist. Bull. Siam Soc.* 26: 189-199.
- FROST, D.R. 1985. *Amphibian Species of the World. A Taxonomic and Geographical Reference*. Allen Press & The Association of Systematics Collections, Lawrence, Kansas, i-v+1-732.
- MANTHEY, U. AND W. GROSSMANN. 1997. *Amphibien & Reptilien Südostasiens*. Natur und Tier - Verlag, Matthias Schmidt, Münster, 1-512.
- NUTPHAND, W. 1989. Bull Frogs or Burrowing Frogs. *Thai Zoological Center, Bangkok* 4 (41): 57-68. (In Thai).
- PARKER, H.W. 1934. *A Monograph of the Frogs of the Family Microhylidae*. British Museum, London, i-viii+1-208.
- SUVATTI, C. 1950. *Fauna of Thailand*. Department of Fisheries, Bangkok, i-ii+1-1100.
- TAYLOR, E.H. 1962. The amphibian fauna of Thailand. *Univ. Kansas Sci. Bull.* 43 (8): 265-599.

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