

## ***Barbourula kalimantanensis* Iskandar, 1978 – a new record for central Kalimantan, Indonesian Borneo (Amphibia: Anura: Discoglossidae)**

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**ABSTRACT** – The frog *Barbourula kalimantanensis* Iskandar, 1978, previously known only from two specimens from West Kalimantan, is recorded from a river in Central Kalimantan, approximately 124 km from the type locality. A mountain range, tertiary in origin, separates the two localities. A photograph of a live specimen is presented here for the first time.

**T**HE Indonesian discoglossid *Barbourula kalimantanensis* was described by Iskandar (1978) based on one male specimen (holotype: Museum Zoologicum Bogoriense (MZB), Bogor, Indonesia, MZB Amph. 2330) collected by S. Wirjoatmodjo and T.R. Roberts. The species was then re-described based on a second (female) specimen (Zoological Reference Collection (ZRC), National University of Singapore ZRC 1.3219) collected by M. Kottelat (Iskandar 1995). Both are from the Melawi river basin area, West Kalimantan (male: 0° 44' S, 111° 40' E, female: 0° 36' 44" S, 111° 47' 22" E). Its only generic relative, *B. busuangensis*, occurs in the Philippine Islands of Palawan and Busuanga. *Barbourula kalimantanensis* is distinguished from the latter by diagnostic morphological characters, such as a straight margin to the web of the fingers (concave in *B. busuangensis*), a head that is flattened anteriorly (distinct nasal prominences giving a more rounded snout in *B. busuangensis*) and a more rugose skin (Iskandar, 1978). As there are only two published records, any new information on this species is desirable. Here we report the occurrence of *B. kalimantanensis* in Central Kalimantan for the first time, based on an individual from the Sungai [= river] Tengkalap, between the tributaries of the Sungai Autan (1° 26' 05.9" S, 111° 24' 31.8" E) and Sungai Kuli (1° 25' 25" S, 111° 25' 30.2" E).

### **MATERIALS AND METHODS**

During a biodiversity survey expedition in an area of primary rain forest in the Belantikan River

basin, Central Kalimantan, one of us (ES) captured a single individual of *B. kalimantanensis* (Figure 1). Its snout-vent length (SVL) was measured and photographs were taken before it was returned to the river. The specimen was not collected as the biodiversity inventory methods utilised were non-invasive. Minimal habitat disturbance in the Belantikan region was desirable as the area is known for its endangered species, including the third largest known population of the Bornean Orang utan (*Pongo pygmaeus wurmbii*).

The frog was found in 60 cm of water under pebbles in a 20 metre wide fast-flowing (riffle) area of the Tengkalap River, between the Autan and Kuli tributaries at an altitude of 200 m, 8<sup>th</sup> May 2005, 12:05 hr local time. An SVL measurement (to 0.1mm) was obtained using a digital caliper gauge. Photographs and descriptions of the holotype (Iskandar, 1978) and the second specimen (Iskandar, 1995, Inger & Stuebing, 2005) were used for identification. Specimens of *B. busuangensis* (1, ex., SVL: 40.6 mm, BMNH 1977.1202, 13 km SW Iwahig, ca. 300 ft, Palawan Island, Philippines, coll. Q. Alcala 29<sup>th</sup> April 1961; 1, ex., SVL: 47.2 mm., BMNH 1977.1203, 13 km. S.S.W. Iwahig, Palawan Island, Philippines, coll. Q. Alcala 1<sup>st</sup> May 1961; 1, ex., SVL: 85.7 mm, BMNH 1980.410, Dimaniang, Busuanga Island, Philippines, coll. H. Hoogstraal, 21<sup>st</sup> March 1947; 1, ex., SVL: 66.6 mm, BMNH 1982.410, Singai, Busuanga Island, Philippines, coll. A.W. Herre, 21<sup>st</sup> June 1940) in the collections of the Natural History Museum, London (BMNH) were examined for comparison by one of the authors (SS).



**Figure 1.** Dorsal view of *Barbourula kalimantanensis*, (SVL: 90mm) from Tengkalap River, Belantikan River basin, Central Kalimantan. © YAYORIN.

### Examination and comparisons

The overall flattened appearance, extremely depressed head, skin folds along the sides of the body and lower limbs, completely webbed fingers and rugose skin with tubercles and spinules on the dorsum indicated that the individual was unmistakably a species of *Barbourula*. When compared to *B. busuangensis*, the lack of a concave excision in the web of the fingers and a more flattened snout without prominent nares showed it to belong to *B. kalimantanensis*. In alcohol, the colour of this species is uniform black dorsally; brownish black with brown (male) or yellow (female) mottling ventrally (Iskandar, 1995). The live specimen (Figure 1) was uniform black with brown mottling on the flanks and sides of the limbs. The underside was brown with brown mottling. An SVL of 90 mm is larger than either of the two other

**Figure 2.** Map of Borneo illustrating type locality (A): Melawi River basin, West Kalimantan and new locality (B): Belantikan River basin, Central Kalimantan.



known specimens (female 78.0 mm SVL, male 68.0mm SVL). The identification of the individual as *B. kalimantanensis* was confirmed by Prof. Djoko T. Iskandar.

### DISCUSSION

A snout-vent length (SVL) of 90mm recorded for this individual is greater than that for either of the two known specimens. The female (ZRC 1.3219) at 78 mm SVL is the larger of the two. The size of the Belantikan individual indicates that it could possibly be female. However, proper assessments cannot be made about possible sexual size dimorphism, the presence/absence of anal claspers (the status of which is unknown for the Belantikan individual) and a lighter or darker ventral colouration as possible secondary sex characters in *B. kalimantanensis* (Iskandar, 1995) without more specimens.

The record of this species from the Belantikan region represents a range extension of approximately 124 km from the type locality (Figure 2). The Melawi (West Kalimantan) and Belantikan basins may represent distinct sub-populations. The Tengkalap River is situated in the foothills of the Schwaner Mountain chain, formed from continental basement rock tertiary in origin

(MacKinnon *et. al.*, 1996). The potential 15 million year isolation of the Belantikan population from those of the Melawi basin has possible implications for the status of *B. kalimantanensis* in central Kalimantan. Further surveys to obtain specimens for systematic and ecological information (almost nothing is known of the habits of this species) are thus extremely desirable. Unfortunately, the Belantikan area has been designated a logging concession by the Indonesian government. Biodiversity surveys by organisations such as Yayasan (Orang utan Foundation Indonesia) can provide information on the presence of endangered and little-known species such as *B. kalimantanensis* that can be useful in conservation-related decisions. In this way it is hoped the Belantikan area will become a protected ecosystem in the future.

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## Recent observations of the Montserrat galliwasp, *Diploglossus montisserrati*

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**T**HE Montserrat galliwasp *Diploglossus montisserrati* (Underwood, 1964) is a large skink-like lizard, endemic to the island of Montserrat, and the only representative of the Anguidae in the Lesser Antilles (Malhotra & Thorpe, 1999). It is considered critically endangered (Day, 1996) and extremely rare because it is only known from a single locality, and until recently had not been observed since the original specimen was collected (Censky &

Kaiser, 1999). Due to the absence of sightings of the species, and the catastrophic impact of a volcanic eruption during the mid 1990s on the extent and quality of its forest habitat, the galliwasp was considered potentially extinct. However, on August 28<sup>th</sup> 1998, a specimen was opportunistically found in an area known as Woodlands Springs (62.2156E, 16.7269N) (P. Murrain and K. Buley, pers. comm.). This site lies on the western flank of the Centre Hills, a 12 km<sup>2</sup>