

New record of *Macrobrachium gua* (Chong, 1989) (Crustacea Palaemonidae) from Sintang, West Kalimantan, Indonesia

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ABSTRACT

A new record of freshwater prawn of the genus *Macrobrachium* Bate, 1868 (Crustacea Palaemonidae) was founded in West Kalimantan, Sintang District, Kelam Permai Subdistrict, Indonesia. One ovigerous female specimen was collected in Lebak creeks, Ransi Pendek village on July 2015. *Macrobrachium gua* (Chong, 1989) from Sintang can be distinguished from others by morphological character, including egg size, teeth of ventral margin, length of carpus, length of merus, length of finger and palm as a chela part. *Macrobrachium gua* was found under rocks in a surface river with black-tea-colour waters and dense vegetation.

KEY WORDS

Creek; egg size; *Macrobrachium*; morphological character; Sintang.

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INTRODUCTION

Suborder Caridea occur in all aquatic habitats, they exist in marine to freshwater ecosystems (Grave et al., 2008). There are three families of Caridea freshwater species: Palaemonidae, Atyidae and Alpheidae. Genus *Macrobrachium* Bate, 1868 (Palaemonidae) is extremely important for food market and is widely cultivated around the world (Wowor et al., 2004). *Macrobrachium* shows a relatively high species richness, from fresh to brackish environments (Guo & He, 2008). Based on available literature, in Brunai Darussalam near Kalimantan, *Macrobrachium* includes only three species (Choy, 1991); however, in a subsequent study this number has been updated to fourteen (Wowor & Choy, 2001). In East Kalimantan, two new species have been reported (Wowor & Short, 2007): *Macrobrachium urayang* Wowor and Short, 2007 and *M. kelianense* Wowor and Short, 2007; in West

Kalimantan, there are only a few reports about *Macrobrachium* species. *Macrobrachium* or river shrimps, freshwater prawn (see Rashid et al., 2013) and river prawn (see Kingdom & Erundu, 2013) have complex live histories, some species being amphidromous (Bowles et al., 2000).

Sintang is a city plenty of rivers, the largest of which are Kapuas and Melawi. Most species of *Macrobrachium* are considered to be found at freshwater habitats (Dimmock, 2004) as Kapuas and Melawi or creeks formed from both rivers. The occurrence of *Macrobrachium* in West Kalimantan has been poorly reported. This paper reports the new record of *Macrobrachium gua* (Chong, 1989) from Sintang, West Kalimantan, Indonesia.

MATERIAL AND METHODS

Study area, West Kalimantan, Sintang District,

Indonesia, was selected based on information provided from local fishermen or community (Oliveira, 2011). Specimens were collected from creeks, captured using local tools, “bubu” and “kemansai” (i.e. traps made of plaited bamboo). Beside that, hand net was used in the stream area. The species of collected specimens were identified by observing and measuring the rostrum, telson and carapace shape using key identification by Wowor et al. (2004). Images of collected specimens were taken using a Sony dsc-wx350 digital camera. The specimens were preserved in 70% alcohol, then replaced by 96% alcohol, in laboratory.

RESULTS

Macrobrachium gua (Chong, 1989)

EXAMINED MATERIAL. West Kalimantan, Sintang District: Kelam Permai Subdistrict. Ransi Pendek Village. About 2 km from Kelam Hill. One ovigerous female. coll. Fani Irwan, Novese Tantri, 27.VII.2015.

TYPE OF MATERIAL. West Kalimantan, Sintang: 1 female, coll. Fani Irwan, 27.VII.2015.

DIAGNOSIS. Ventral of carapace has 1 to 3 teeth (observed specimen has 2 teeth), carapace has hepatic spine, chela of second pereopod not similar in shape and size, finger was covered by soft and dense pubescence, carpus was shorter than merus, all of the body, from carapace to telson, showed spot-and-line pattern, influenced by the environment around the creek.

DISTRIBUTION. Indo-west pacific. East Malaysia, Sabah. Gumantong cave (Chong, 1989).

REMARKS. A total of 18 specimens belonging to five species were collected. *M. gua* was represented by one female (Fig. 5). Fresh specimens of *M. gua* have a blade-like rostrum and the carpus shorter than merus in the second pereopods. There are six abdominal somites, as in another Caridean, in *M. gua* the second abdominal segment covers the first and third segment. Normally, ventral margin rostrum of *M. gua* has 1 to 3 teeth, but the specimen found in Lebak creek has 2.

The following measurements of specimens presented in figures 2–5 were obtained: length of

rostrum 0.26 mm (Fig. 4), length of body 39 mm, length of telson 0.22 mm, length of egg 1.27 mm (Fig. 2), length of chela 7.35 mm, length of finger 2.93 mm and length of palm 3.81 mm (Fig. 3). Cornea of the eye was black and stood out, the rostrum was short, chela was normal or slender, major second pereopod has a finger as long as palm.

DISCUSSION

Macrobrachium gua was firstly reported in Sabah, Malaysia. The name of “*gua*” is adopted from the Malay name for cave, in allusion to habitat where the specimens were collected (Chong, 1989). In Indonesia, we found *M. gua* (Chong, 1989) in small creek near Bukit Kelam Sintang area. The existence of the *M. gua* was reported on the river outside cave (in Indonesia) and in river inside cave (in Gumantong) East Malaysia which indicates that *M. gua* includes troglophilus specimens.

Several discoveries of new species of freshwater prawn in Indonesia, such as *M. keliaense* and *M. urayang* (Wowor & Short, 2007) in East Kalimantan and the new record of *M. gua* in West Kalimantan, increase the list of freshwater prawns diversity in Indonesian waters.

Macrobrachium gua has a high commercial potential and can be cultivated in freshwater throughout the world. As a fishery target of freshwater



Figure 1. Map of Sintang District. Province of Kalimantan. Red circle indicates the location where the specimen was collected, near from Kelam Hill.



Figures 2–5. *Macrobrachium gua*. Figure 2: egg; Figure 3: chela, the finger as long as palm; Figure 4: carapace and rostrum; Figure 5: fresh specimens of *M. gua*, female ovigerous. Scale bar: 1 mm.

prawn aquaculture, biological information of this species is needed for its sustainable management. Exploration in biological aspects of *M. gua* is open for future studies.

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