



**DISTRIBUTION OF *Charybdis (Archias) padangensis* Leene & Buitendijk, 1952
(CRUSTACEA: DECAPODA: BRACHYURA) IN THE WATERS OF SUMATRA
AND JAVA**

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ABSTRACT

Until this decade, *Charybdis (Archias) padangensis* was only from Padang, West Sumatra. It was reported first and the only one in 1952. We obtained several crab samples based on the by-catch from daily fishermen in several locations. Based on morphological identification, we obtained several *Charybdis (Archias) padangensis* individuals from two locations in Sumatra and one location in Java. The results of this research add to data on the distribution of the species, which was previously only known from the locality type.

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Introduction

Brachyura or crabs are common inhabitants of coastal waters of all islands in Indonesia, where around 1400 species have been found (Hutomo & Kasim Moosa, 2005); 24 of these species have been found on the West coast of Sumatra (Stephenson, 1975; Gultom, 2012; Larosa et al., 2013). Sibolga is one of the areas on the West Coast of Sumatra, with a highly productive ecosystem declared Indonesia's national fishery center. This region and its surroundings have complex marine and coastal ecosystems, such as estuaries, bays,

and the open sea. This open sea probably functions as a bridge for various species of marine invertebrates, including Brachyura, to disperse between the Western coast of Sumatra and the Southern coast of Java through the current sea (Susanto et al., 2001) as long as in the planktonic larvae phase (Anger, 2001).

The Portunidae family is spread across Indonesian waters (Stephenson, 1972; Stephenson, 1975; Leene and Buitendijk, 1952; (Imai et al., 2004); Pratiwi and Widyastuti, 2018), some originating from

Sumatra Island, namely *Portunus granulatus*, *Lissocarcinus orbicularis*, *Portunus rugosus*, *Portunus sanguinolentus*, *Portunus trilobatus*, *Portunus emarginatus*, *Portunus haanii*, *Portunus minutus*, *Charibdis anisodon*, *Charybdis goaensis*, *Cycloachelous granulatus*, and *Charybdis(Archias) padangensis* (Leene and Buitendijk, 1952; Stephenson, 1972; Stephenson, 1975; (Hanim et al., 2020a, 2020b)). *Charybdis (Archias) padangensis* is a species that has been rediscovered for the first time since its description (this study).

This contribution aims to update *Charybdis (Archias) padangensis* distribution and improve our understanding of their occurrence, which was only known from one location in Indonesia and also as the only source of information in the world (Leene and Buitendijk, 1952). This result will be essential for future analyses and actions to conserve this species.

Materials and Methods

Sampling was conducted in several areas in Western and Eastern coast of Sumatra and Southern and Northern coast of Java (Table 1). The samples are the by-catch of fishermen. The sample was then fixed using 70% ethanol during fieldwork, and then replaced with 96% ethanol for long storage. Specimen was deposited in the specimen room of Biology Department at IPB University. Species confirmation is carried out by observing several morphological characters, which are key to identification (see Leene and Buitendijk, 1952). In addition, morphological descriptions are made again to ensure that the species used is correct to the species being compared. All specimen was documented using Canon power shoot camera.

Table 1. The sampling location of *Charybdis(Archias) padangensis* in Sumatra and Java

No	Date	Location	The occurrence of targeted species
1	27-28 January 2018	Sibolga City ^a	+
2	17-22 November 2018	Natal District, Mandailing Natal Regency ^a	+
3	21-23 August 2019	Pangandaran Regency ^b	+
4	January 2018, 24-25 June 2018	Langkat Regency ^c	-
3	25-28 January 2018	Medan Belawan District, Medan City ^c	-
4	28 January 2018	Sialang Buah, Serdang Bedagai Regency ^c	-
8	24-25 Maret 2019	Pelabuhan Ratu District, Sukabumi Regency ^b	-
9	27 February-7 Maret 2019	Seribu Islands ^d	-
11	5-7 November 2018	Pamanukan District, Subang Regency ^d	-

Notes: ^aWestern coast of Sumatra, ^bSouthern coast of Java, ^cEastern coast of Sumatra, ^dNorthern coast of Java

Results and Discussion

Charybdis (Archias) padangensis Leene & Buitendijk, 1952 (Fig. 1)



Figure 1. *Charybdis (Archias) padangensis* (male, from Sibolga)

Examined materials. 2 males (CW 5.5 cm, CL 2.6 cm; CW 4.6 cm, CL 2.3 cm) 1 female (CW 4.4 cm, CL 2.2 cm) Sibolga City, 4 males (CW 5.2 cm, CL 2.5 cm; CW 6.7 cm, CL 3.2 cm; CW 3.9 cm, CL 1.9 cm; CW 2.9 cm, CL 1.5 cm) 1 female (CW 4.0 cm, CL 2.0 cm) Mandailing Natal Regency, 1 male (CW 3.9 cm, CL 2.05 cm), 1 female (CW 4.5 cm, CL 1.9 cm), Pangandaran Regency.

Diagnosis. Carapace transversely hexagonal, first three anterolateral teeth rounded and tapering towards the posterior. Frontal teeth very short compared to frontal teeth of the genus *Charybdis* in general.

Description. First anterolateral teeth truncate, last anterolateral teeth tapered and its measure three times larger than previous. Median tooth rounded, without submedian and lateral teeth that clearly separated, but only looks like one lobe with a truncate.

Inner orbital lobe the shortest lobe in the frontal carapace. Carapace smooth and convex with posterior angular. Mesogastric ridge and epibranchial ridge present, frontal ridge rarely visible. Anterior merus cheliped with two sharp spines and many fine teeth, anterior carpus with one sharp spine that larger in size. Manus with one blunt spine at base. Posterior end of merus in swimming leg with one sharp spine.

Remarks. This species similar with *Charybdis phippinensis* which was reported by Ward, (1941), but there are several differences in the arrangement of the front teeth, and differences in the number of spines on the manus/palm of cheliped.

Distribution. Indonesia: Sibolga, Mandailing Natal, and Pangandaran (this study), Padang (previous study) (Fig. 2).

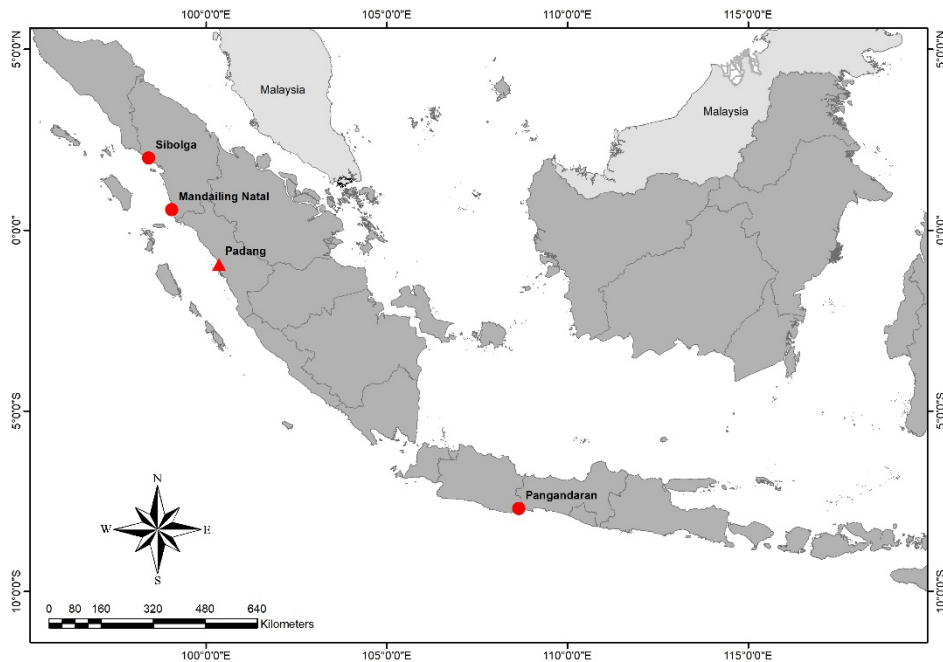


Figure 2. New distribution area of *Charybdis (Archias) padangensis* and the locality type. Sibolga and Mandailing Natal (Sumatra), Pangandaran (Java) (this study). Padang (Sumatra) (type locality, previous study).

Charybdis (Archias) padangensis appeared to be more commonly found on the coastline that faces the Indian Ocean

(Western coast of Sumatra and Southern coast of Java) than the area that faces the Malacca Strait and Java Sea, and this could

be related to their habitat requirement (Pratiwi, 2010; Widyastuti, 2016; Pratiwi, 2017). However, it does not mean that this species is not found there. This result indicates that the sampling for this species in areas facing the Malacca Strait and the Java Sea needs to continue, including in other places that have yet to be recorded.

Conclusions

This study added the distribution of *Charybdis (Archias) padangensis* outside the locality type, namely Sibolga City, Mandailing Natal Regency in Sumatra, and Pangandaran Regency in Java.

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