

Short Communication

Clarification note on taxonomic identification of *Atergatis ocyroe* (Herbst, 1801) (Crustacea: Decapoda: Xanthidae): New distributional record from the Port Blair coast, Andaman & Nicobar Islands, India

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Received 04 September 2018; revised 30 October 2018

A survey was conducted to study the distribution of brachyuran crabs along the coast of south Andaman Island during 2015-2018. The investigation confirmed the occurrence of *Atergatis ocyroe* (Herbst, 1801) from the Port Blair Coast of Andaman & Nicobar Islands, India. From a comprehensive study of standard literature, it was evident that *A. ocyroe* was misidentified as *A. floridus* and these two species do not co-exist in the same geographical area. Hence, the existence of *A. floridus* in Andaman and Nicobar Islands is doubtful. The confirmed distributional record of *A. ocyroe* across the Indian Ocean is provided and discussed with its taxonomy, and detailed description along with photograph and line diagram is provided in this study.

[Keywords: Andaman & Nicobar Islands, *Atergatis ocyroe*, New distributional record, Xanthidae]

Introduction

In India, a total of 931 species of brachyuran crabs have been reported¹. Among them, Xanthidae is one of the most diverse families consisting of 140 species and 48 genera¹. *Atergatis floridus* (Linnaeus, 1767) belong to the family Xanthidae and is commonly known as 'shawl crab' because of shawl like fine reticulated mark on the surface of the carapace². It is a poisonous crab as it may contain lethal neurotoxin (tetrodotoxin; TTX)³. The *Atergatis ocyroe* (Herbst, 1901) was earlier considered as the junior synonym of *Atergatis floridus* (Linnaeus, 1767) but Ng & Davie (2007)² revised the taxonomy of *Atergatis floridus* (Linnaeus, 1767) and recognized *Atergatis ocyroe* (Herbst, 1801) as a valid species. These two species can be very easily distinguished by colour pattern on the surface of carapace i.e. *A. floridus* (Linnaeus, 1767) with shawl-like fine reticulated mark whereas, *A. ocyroe* (Herbst, 1901) with large blotches or spots². The splitting of

A. ocyroe (Herbst, 1801) and *A. floridus* (Linnaeus, 1767) has created an uncertainty about the distribution of these two species. To know the proper geographical distribution of these two species reassessment is necessary. The objective of the present study is to verify and confirm the identity of the concerned species in Andaman and Nicobar Islands.

Material and methods

The specimen was collected from the rocky intertidal region of Burmanallah which is located at the east coast of Port Blair, Andaman and Nicobar Islands. Hand picking method was followed for collecting the specimen. For preservation, 10 % formalin was used. Standard literature was used for taxonomic identification^{2,4}. After identification of specimen, photographs were taken and line diagrams were prepared. The specimen was deposited at Zoological Survey of India, National Zoological Collections of A & N Regional Centre, Port Blair. The distributional map of *A. ocyroe* is prepared on the basis of the present study and the available literature showing confirm occurrence of the species.

Results

During the period of study (January 2015 - June 2018) five individuals of *A. ocyroe* were collected at low-waterline of the rocky intertidal region of Burmanallah, South Andaman Islands (Fig. 1). The occurrence of *A. ocyroe* is reported as new distributional record to the Andaman & Nicobar Islands.

Systematics

Order – Decapoda Latreille, 1802
Infra-order – Brachyura Linnaeus, 1758
Family – Xanthidae Mac Leay, 1838
Subfamily – Zosiminae Alcock, 1898
Genus – *Atergatis* De Haan, 1833
Atergatis ocyroe (Herbst, 1801)

Material examined

One female specimen (ZSI/ANRC-20309) (CL - 30.59 mm, CW - 45.32 mm), Burmanallah, South Andaman Islands, India (2nd May 2018; 92° 43' 892" E, 11° 35' 225" N).

Description

Carapace sub-oval and remarkably convex; carapace length about 2/3rd of greatest breadth of

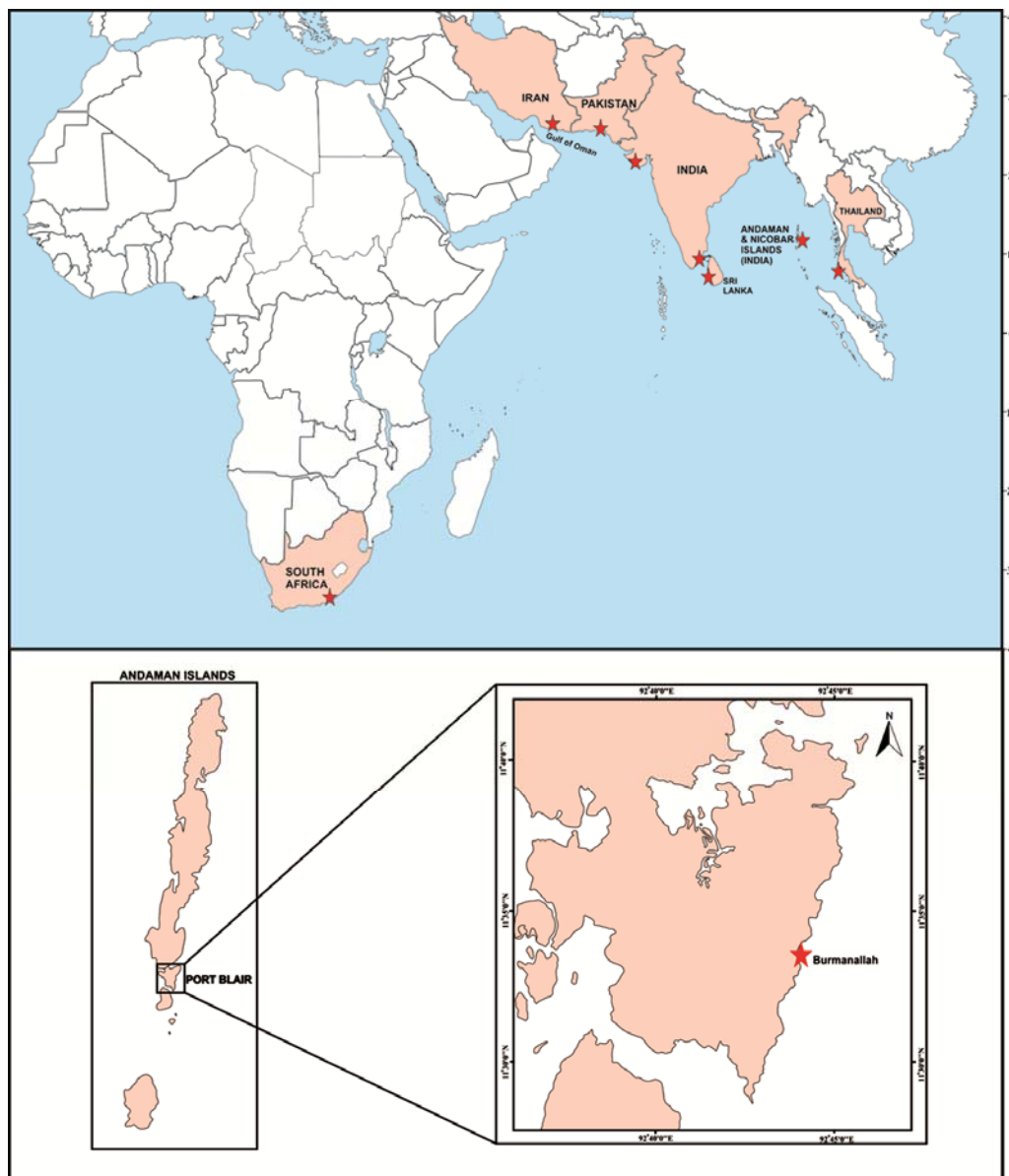


Fig. 1 — Map showing confirm distributional record of *Atergatis ocyroe* (Herbst, 1801) across the Indian Ocean with a new distributional record at Burmanallah coast of south Andaman Islands.

carapace; regions not well defined; surface smooth, hair-free, lumpy and with large blotches and/or spots (Figs. 2a, 3a). Front bi-lobed; nearly $1/4^{\text{th}}$ of greatest breadth of carapace and roughly make a semicircle with the anterolateral margin. Orbit small, round margin with two fissures. Eyestalk thick, very short and never exceed beyond the orbital margin. Antennule folded horizontally and remains concealed under the roof of the front. Antenna with very short flagella. Pterygostomial region with a smooth surface. Anterolateral border very strongly arched with a keel-

like edge which cut into three broad lobes by fine fissures, the third lobe broader than the second lobe and the first least broad; a well-defined blunt tooth at the epibranchial angle. Cheliped massive and subequal, the right one slightly larger than left one; upper border of merus crest-like, inner and outer surface smooth but faint reticulated structure can be observed on outer surface; carpus with smooth and considerably convex outer surface; the upper margin of dactylus crest-like, a longitudinal channel on outer surface of both dactylus and fixed finger, both finger



Fig. 2 — *Atergatis ocyroe* (Herbst, 1801) scale bar 1 cm (a) dorsal view (b) ventral view

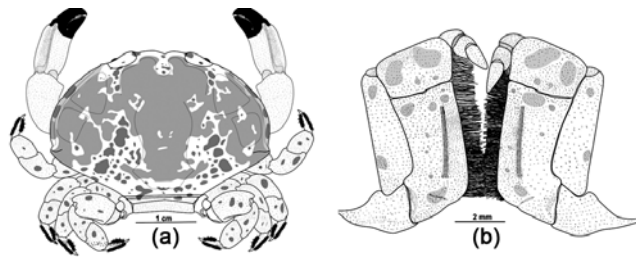


Fig. 3 — *Atergatis ocyroe* (Herbst, 1801) (a) dorsal view, scale bar 1 cm (b) external maxillipeds, scale bar 2 mm.

with interlocking teeth. External maxillipeds without hair on the surface but inner border densely lined with small hairs especially in ischium; ischium longitudinally rectangular; and the length of ischium twice the length of merus (Figs. 2b, 3b). Walking leg laterally compressed; the merus of first pair of leg slightly wider than merus of last pair, merus breadth of 2nd and 3rd pair of legs equal to each other and less wider than that of 1st and last pair of legs; a small patch of dense setae on the distal part of lower border of propodus; the upper and lower border of dactylus also densely covered with setae.

Key to identification of *Atergatis floridus* and *A. ocyroe*

Carapace suboval, convex; surface smooth, lumpy; regions poorly indicated; a blunt tooth at epibranchial angle 1

1. A fine reticulated shawl-like color pattern on the surface of carapace; branchial region of the carapace comparatively more swollen; ischium of the third maxilliped comparatively more quadrate ***A. floridus***

- Large spots or blotches on carapace; branchial region of the carapace comparatively lower; ischium of the third maxilliped clearly more longitudinally rectangular ***A. ocyroe***

A comparative taxonomic account of *A. floridus* and *A. ocyroe*

Characters	<i>A. floridus</i>	<i>A. ocyroe</i>
Carapace	A fine reticulated shawl-like color pattern on the surface of carapace.	Large spots or blotches on carapace.
Branchial region	Branchial region of the carapace comparatively more swollen.	Branchial region of the carapace comparatively lower.
Ischium	Ischium of the third maxilliped comparatively more quadrate.	Ischium of the third maxilliped clearly more longitudinally rectangular.
Distribution	South east Asia (except Andaman sea), West Pacific and Australia	Northern and western Indian Ocean.

Discussion

There are very few confirmed distributional records of *Atergatis ocyroe* (Herbst, 1801) across the Indian Ocean. Ng & Davie² reported from Phuket (Thailand), Pakistan, Sri Lanka, South Africa, Gulf of Mannar (India); Ghotbeddin and Naderloo⁴, and Naderloo *et al.*⁵ reported from the Gulf of Oman (Iran); Trivedi and Vachhrajani⁶ from Saurashtra coast of Gujarat state, (India) (Fig. 1).

According to Ng & Davie² all Southeast Asia (with the exception of the Andaman Sea and perhaps the west coast of Sumatra), West Pacific and Australia are *A. floridus* and records from northern and western Indian Ocean are *A. ocyroe*. He also suggested that to ascertain precise geographical boundaries between the two species, more work needs to be done especially in the area of Andaman Sea and the beginning of Straits of Malacca, perhaps Parts of Northern Australia and isolated islands in the Indian Ocean. So in the present work, an attempt was made to provide a new distributional record of *A. ocyroe* across the Andaman Sea. The specimens of *A. ocyroe* collected from Port Blair coast well agree with the description of Ng & Davie² and Ghotbeddin & Naderloo⁴. The absence of a shawl-like fine reticulated mark and presence of large blotches on carapace confirm its identity.

Conclusion

This study confirms the occurrence of *A. ocyroe* in Andaman Islands and report as new record to this region. Based on standard literature, it was observed that *A. ocyroe* and *A. floridus* do not co-exist in the same geographical area. Hence, the occurrence of *A. ocyroe* in Port Blair coast creates a question

mark on the existence *A. floridus* in Andaman & Nicobar Islands.

Acknowledgment

Authors are thankful to the Authorities of Pondicherry University for providing the necessary facilities to carry out this work and University fellowship to Balakrishna Meher. Authors also show their sincere gratitude to Zoological survey of India, Andaman and Nicobar Regional Centre, Port Blair for providing help during the study.

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