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## A rare occurrence of Malawi blue crab in south-east arm of Malawi lake, Central Africa (14° 01' 19.36'S 34° 49' 24.79'E and 14° 01' 27.31'S 34° 49' 26.31'E)

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### Abstract

The present study starts a first step toward a broader understanding of crustacean biodiversity of trophic interactions within South-east Arm of Malawi lake. "Malawi blue crab", *Potamonautes lirrangensis* (Rathbun, 1904) have found to be South-east of Arm of Malawi lake. The occurrence of the present specimen *Potamonautes lirrangensis* (Rathbun, 1904) was made on nearshore sites in and around Cape Maclear on the northwestern part of the Nankumba Peninsula, Lake Malawi (part of Lake Malawi National Park). The first sampling site, Otter Point (14° 01' 19.36'S 34° 49' 24.79'E and 14° 01' 27.31'S 34° 49' 26.31'E) is exposed to wind and wave action and exhibited a rock-sand transition at a depth of 5 to 10 m.

**Keywords:** Malawi blue crab - *Potamonautes lirrangensis* - cape maclear- malawi-central Africa

### Introduction

The primary authors to indulge the freshwater crab fauna of Africa as a complete were [1, 2, 3, 4, 5] has been assessed the standard taxonomic description group of references. Genus *Potamonautes* belongs to the Potamonautidae [6] a family that is prevalent to the Afro-tropical region with legislatures in continental Africa and Madagascar [7, 8, 9]. While examining the crustacean catches of *Potamonautes lirrangensis* [1] of 'Malawi blue crab' of Malawi are dealt with [10, 5, 11] and it was reported at Cape Maclear, Malawi. According to [10] has reviewed the taxonomic revisions of the freshwater crabs of southern Africa (Angola, Botswana, Lesotho, Mozambique, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe) consent precise descriptions of their diversity, geographical dispersal patterns and management status. The southern African region have reported to nineteen species of freshwater crabs all belonging to the genus *Potamonautes* (family Potamonautidae). In connection with very poor analysis of other Afro-tropical regions such as East Africa (35 species, three genera) [5, 12, 13, 14, 15, 16], Central Africa (24 species, five genera) [5, 17, 18, 19], West Africa (33 species, seven genera) [7] and Madagascar (only fourteen species, but seven genera) [8, 16, 20]. According to [21] has reviewed that the biodiversity of global freshwater assessment crab diversity, a total number of 1,476 species in 14 families was reported from all geographical region (except Antarctica), counting 1,306 species in eight exclusively freshwater families viz., (Pseudothelphusidae, Trichodactylidae, Potamonautidae, Deckeniidae, Platythelphusidae, Potamidae, Gecarcinucidae and Parathelphusidae). South-east Arm of Lake Malawi, only one freshwater crab species of *Potamonutes lirrangensis* [1, 22, 23] and also occurs in Lake Tanganyika. According to [24, 21, 25] has been reviewed that the freshwater crabs play a vital role in different trophic/sub-tropical regions within aquatic ecosystems. The most dominant group species in particular are central Africa (47 species), east Africa (44 species), West Africa (26 species), southern Africa (28 species) and Madagascar (15 species) [26]. Southern Africa are including like Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe [26]. In addition, *P. lirrangensis* (Fig1, 2, 3) have collected from Lake Malawi, and this specimen were preserved in biology laboratory at DMI St. John the Baptist University, Republic of Malawi, Central Africa.

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### Taxonomy

Class: Crustacea

Order: Decapoda

Family: Potamonutidae

Genus: *Potamonautes* MacLeay, 1838

Species: *lirrangensis*

*Potamonautes lirrangensis*<sup>[1]</sup> (Fig 1, 2)

*Potamon* (*Potamonautes*) *lirrangensis*<sup>[1]</sup>, pl. 14, fig. 8

*Potamon* (*Potamonautes*) *lirrangensis*<sup>[2]</sup> 169; 1921: 413–415, pl. 25, 26, fig. 3, fig. 8.

<sup>[27]</sup>: 404; 1929: 374-348; <sup>[29]</sup> 188-189, fig. 1.

*Potamon* (*Potamonautes*) *orbitospinus*<sup>[28]</sup> 250-251, pl. 16, fig. 1.

*Potamonautes orbitospinus*<sup>[30]</sup>: 439, 1936: fig. 18.

*Potamonautes lirrangensis*<sup>[31]</sup>: 188-189, fig. 24

*Potamon orbitospinus*<sup>[4]</sup>: 218

*Potamonautes* (*Lirranpotamonautes*) *lirrangensis*<sup>[32]</sup>: 268-270, pl. XVI, fig. 2a-d, fig. 38, 39, 83

*Potamonautes lirrangensis*<sup>[22]</sup>: 23-25, pl. 5a-d, fig. 41-51, 153-154, 177; <sup>[33]</sup>: 171.

### Size

An adult female crab *P. lirrangensis*<sup>[1]</sup> the total length for 39 mm and weighing was 47.4 gm

### Type locality

The occurrence of the present specimen *Potamonautes lirrangensis*<sup>[1]</sup> was made on nearshore sites in and around Cape Maclear on the north-western part of the Nankumba Peninsula, Lake Malawi (part of Lake Malawi National Park), between, Otter Point (14° 01' 19.36'S 34° 49' 24.79'E and 14° 01' 27.31'S 34° 49' 26.31'E) at a depth of 5-10 m.

### Distribution

Genus *Potamonautes*<sup>[35]</sup> With 84/145 species, the largest and most cosmopolitan genus is the entire Afrotropical zone and it is found to be in all five regions of continental Africa, distributed throughout sub-Saharan Africa from the Cape to Cairo and from Senegal to the Horn of Africa. This common and widespread species is found in Lake Malawi, Lake Kivu, the upper Congo River Basin and Malagarasi River in the Democratic Republic of the Congo, Malawi, Rwanda, and Tanzania. The occurrence of the present specimen *Potamonautes lirrangensis*<sup>[1]</sup> was made on nearshore sites in and around Cape Maclear on the northwestern part of the Nankumba Peninsula, Lake Malawi (Part of Lake Malawi National Park). The first sampling site, Otter Point (14° 01' 19.36'S 34° 49' 24.79'E and 14° 01' 27.31'S 34° 49' 26.31'E) is exposed to wind and wave action and exhibited a rock-sand transition at a depth of 5 to 10 m.

### Description

Postfrontal crest distinct complete; grooves on posterior part of carapace deep; exorbital tooth large forward pointing spine, epibranchial tooth small spine; anterolateral margin behind epibranchial tooth curving strongly outward, then curving inward over posterolateral margin, lined by either large granules or small teeth; vertical sulcus on ischium of third maxilliped faint; thoracic sternal sulcus s3/s4 complete, deep at sides, shallow across middle; dactylus of major cheliped of adult male broad, curved; first carpal tooth on carpus of cheliped large sharp spine; second carpal tooth sharp spine smaller than first tooth; ventral margins of merus of pereopod

1 both heavily granulated, distal meral tooth sharp spine; dorsal membrane broadest at medial margin, narrow at lateral margin.

### Remarks

The present and direct examination of the adult female *Potamonautes lirrangensis*<sup>[1]</sup> (total length 39 mm and weight about 47.4 gm) from cape Maclear, Malawi.<sup>[5, 28]</sup> was provided plates with the dorsal view of the full description of this species. The complete taxonomy was described by<sup>[28]</sup> for *P. lirrangensis*, it has been confirmed that the present specimen is being accepted here.<sup>[22]</sup> has been reviewed that the specimen, was recorded Lake Malawi, North of Monkey Bay under 91 m of water, female (Dt on 05.04.1972); Lake Malawi, Monkey Bay, among rock in sand with little vegetation, male (cw 51.4 mm), (Dt on 24.03.1968); and Lake Malawi, east and northeast of Monkey Bay, Lake Malawi, male (cw 46.5 mm), (23.05.1968). In the freshwater aquarium trade it is sometimes sold under the synonym *Potamonautes orbitospinus*. *P. lirrangensis* cares a home-grown fishery in Lake Malawi, and this species is well represented in museum collections of Biology Laboratory, South-east Arm of Malawi Lake.

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### Family potamonautidae



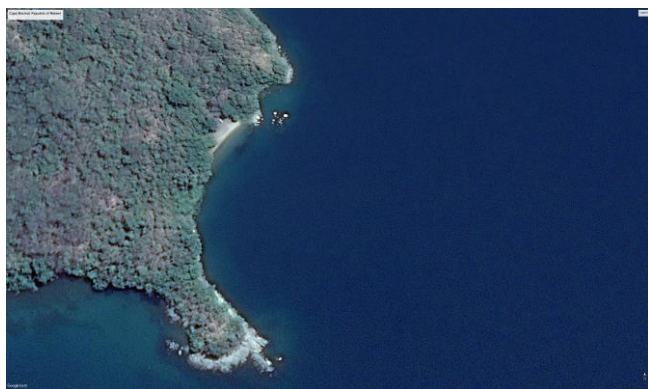
Fig 1: *Potamonautes lirrangensis* (Rathbun, 1904)- Female Crab

### Dorsal View



Fig 2: *Potamonautes lirrangensis* (Rathbun, 1904) - Female Crab

### Ventral View



**Fig 3:** Overview map of the Cape Maclear on the North-Western part of the Nankumba Peninsula, Lake Malawi (part of Lake Malawi National Park). The first sampling site, Otter Point (14° 01' 19.36'S 34° 49' 24.79'E and 14° 01' 27.31'S 34° 49' 26.31'E)

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