

PRIMER REGISTRO DE *ALPHEUS LOTTINI* GUERIN, 1830 (DECAPODA, ALPHEIDAE) EN AGUAS OCEANICAS CHILENAS

FIRST RECORD OF ALPHEUS LOTTINI GUERIN, 1830 (DECAPODA, ALPHEIDAE) IN CHILEAN OCEANIC WATERS.

Marco A. Retamal¹ & María.E. Navarro²

ABSTRACT

The first record of *Alpheus lottini* Guérin, 1830. In Chilean Oceanic waters is presented. It is the second record of the family Alpheidae from Easter island.

KEYWORDS: Easter island, Crustacea, Decapoda, Alpheidae.

RESUMEN

Se presenta el primer registro en aguas chilenas oceánicas de *Alpheus lottini* Guérin. Es el segundo registro de la familia Alpheidae en Isla de Pascua.

PALABRAS CLAVES: Isla de Pascua, Crustacea, Decapoda, Alpheidae.

INTRODUCTION

Due to the length of the Chilean coast and the fact that Chile owns insular territories stretching into tropical oceanic waters far from the Humboldt Current influence, it is possible to find some organisms that have zoogeographical distribution quite different from those which are identified off continental Chile.

Six species that belong to the following genera from the family Alpheidae are found in Chile: *Betaeus*, *Synalpheus*, *Alpheus* y *Alpheopsis*.

The species habits of this family are the hard substrata along the coast; some of the most associated to Phaeophyta. *Alpheus lottini* lives only on heads of *Pollicipora*, together with *Trapezia* crabs (Decapoda, Xanthidae).

The species *Alpheus lottini* has been recorded from the Tropical Indian -Pacific region. It is very

common in the Hawaiian archipelago (Banner, 1953), (Banner & Banner, 1966).

MATERIAL EXAMINED

One specimen (male) of *Alpheus lottini* Guérin, 1830 of 2,8 cm total length, was captured at 4 m of depth among other decapods which live on the branches of the coral *Pollicipora* off Anakena Bay in Easter Island. The material was identified from samples collected a cruise of P.O.I. (Programa Oceano Político Integrado) The Project is conducted by the Chilean Navy around the insular territories of Chile: Juan Fernández Archipelago, Easter Island, Salas y Gómez islands.

DESCRIPCION

According Banner (1953), there exist morphological differences between specimens of this species, so we can mention the supraorbital tooth, only

¹ Facultad de Ciencias Naturales y Oceanográficas. Universidad de Concepción. Casilla 160-C, Concepción Departamento de Oceanografía, Fax: 56-41 225400.

² Universidad de la Frontera, Temuco.

on one side of the body, differences in the ratio of the segments of the islet of the de second pair of pereopods, of the dactyl of the biggest chelae and in the length of the rostrum and scaphocerite.

There is a thin and sharp rostrum (Figs. 1 and 2), reaching almost the distal end of the antennule segment. The base of the rostrum is wide, depressed, and it lacks a dorsal carina; is extended in the frontal region beyond the eyes and it is separated of the carapace by a deep and narrow notch on each side. The anterior margin of the orbital "hood" is ligh. There exists a short and sharp orbital tooth, that has about a third the rostral length. It advances from the upper surface of the orbital "hood" directly up the eyes, a little turned towards the center.

The antennule stalk shows a section of first and second articles, the second segment is longer than wide; third segment is shorter than the second. The well - developed stylocerite bears a spine that reaches almost as far as the middle of the second antennule segment. The scaphocerite bears a spine that reaches a little bit further the antennule stalk, and this part is narrow, scaly and clearly shorter (Fig. 1 and 2).

The biggest chela is compressed (Fig. 3) and clear, lacking a furrow or crests. It is, as longer as wide; its fingers have a length about a third of the chelipod whole length. The meropodite bears an upper and a lower internal corners obtuses. It advances from the lower internal margin 4 to 5 spines. The smallest chela (Fig. 4) almost as long as the biggest chela, and as long as wide. The palm or propodite bears an obtuse tooth on the internal face of the dactylopodite joint. The fingers are a little shorter than the palm; the dactylopodite is widely turned in its end and it cross with immovable finger (propodite) when are closed. The meropodite with a sub -sharp upper distal projection, and on its lower margin bears several movable spines. The second pair of pereopods have a multisegmented carpus with a ratio 10: 5 : 4 : 4: 8 articles. Nevertheless this is not true for all the specimens and it may vary (Fig. 5). The carpus is heavy with the third and fourth articles wider than long. The third pereopod is robust (Fig. 6), its ischiopodite is armed with movable spines, the meropodite is unarmed, as long as wide; the carpopodite is shorter than the meropodite and, its lower margin develops like a tooth; propodite with 5 - 7 movable spines on the lower margin; dactylopodite (Figs. 7, 8), is heavy, obtuse, compressed with thick longitudinal ridges on the internal surface; the spines development follow

around of the end as a obtuse salient "hard chitin nail", the end is reinforced with another salient of hard chitin "foot of horse shaped".

The lower and rear parts of the dactyl face near to the "nail", are made of soft and flexible chitin.

Geographical and bathymetric distribution

The species is found in Easter Island, Chile, in the Indian Ocean from Mozambique to Indonesia, also has been recorded from the Red Sea; in the Pacific Ocean it extends southward as far as New Zealand and northward as far as Japan. It is distributed through the Pacific eastward as far as the California Gulf. Its known bathymetric range varies from 10 to 52 m.

Bioecological observations

This species is easily identified by the unusual dactyl. It is found between the main branches of alive corals of *Pollicipora*. This shrimp, when alive, is almost red - orange with black longitudinal fringes on the dorsal surface of the caparace and abdomen, with its upper and upper - lateral of the chelae bearing red stains.

CONCLUSIONS

Alpheus lottini is the Chilean representative species of Alpheidae that lives into tpical waters around Easter Island, a Chilean oceanic island placed far about 4000 km from continental Chile.

The family Alpheidae extends along chilean coasts: from Cabo de Hornos (*Betaeus truncatus*), in the Magellanian Province as far as Arica in the Chilean Peruvian Province (*Alpheus inca* Wicksten and Méndez, 1981), living usually from the intertidal zone to 55 m. Nevertheless *Alpheus lottini*, on the other hand, lives down to 73 m depth.

REFERENCES

- BANNER, A.H. 1953. The Crangonidae, or Snapping Shrimp, of Hawaii. Pacific Science. 7 : 1-144.
- BANNER, A.H. & D.M. BANNER. 1966. The Alpheid Shrimp of the Gulf of Thailand and adjacent waters. The Siam Society Monograph Series, 3, (VI): 1 -168
- WICKSTEN, M. & M. MÉNDEZ. 1981. *Alpheus inca*: a new snapping shrimp (Caridea: Alpheidae) from western South America. Journal of Crustacean Biology, 1 (1): 137 - 142.

Fecha de recepción: 29.12.98

Fecha de aceptación: 11.10.01

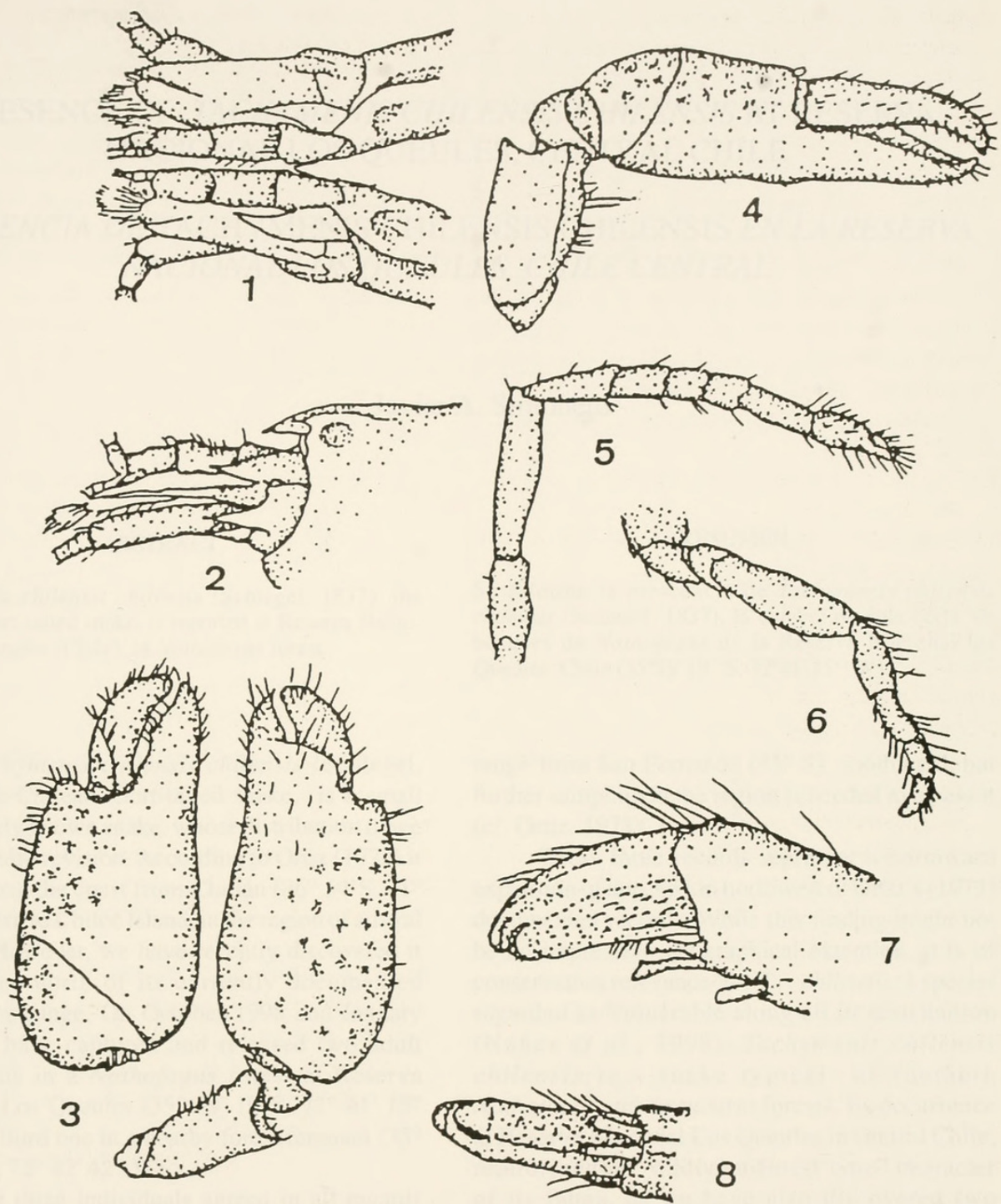


FIGURE 1-8. *Alpheus lottini* Guérin, 1830. 1 and 2 : anterior region dorsal and lateral aspect; 3: lateral aspect of large chela of female and medial aspect of large cheliped of female, 4: lateral aspect of the small cheliped; 5 second leg; 6: third leg, dactylus, inferior and posterior surfaces; 7: and 8 the portions shaded with dashed lines are of thin chitin. Appendages drawn from several specimens, so relative size is not indicated (In :Banner, A.H. 1953)

FIGURA 1-8. *Alpheus lottini* Guérin, 1830: 1, 2 Región anterior, vista dorsal y lateral. 3 Chela mayor de la hembra, vista lateral y mediana; 4:quelipodo mas pequeño, vista lateral 5 segundo pereiópodo; 6: tercer pereiópodo; 7: vista inferior del III dactilopodito; 8: vista posterior inferior del III dactilopodito. No se señala escala por cuanto los apéndices fueron dibujados de diferentes especímenes. (In: Banner, A. H. 1953)



Retamal, Marco A and Navarro, María E. 2001. "Primer registro de *Alpheus lottini* Guerin, 1830 (Decapoda, Alpheidae) en aguas oceánicas Chilenas." *Gayana* 65, 215–217.

View This Item Online: <https://www.biodiversitylibrary.org/item/89192>

Permalink: <https://www.biodiversitylibrary.org/partpdf/82145>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.