

ECOLOGICAL AND SYSTEMATIC STUDIES ON THE GENUS *Alcirona* HANSEN, WITH SPECIAL REFERENCE TO *Alcirona krebsii* IN BRAZILIAN WATERS
(ISOPODA-CIROLANIDAE)

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ABSTRACT

The isopod *Alcirona krebsii* (Isopoda-Cirolanidae) was found in Brazilian waters from Cape Orange (State of Amapá) to Itamaracá (State of Pernambuco). This species is very common in calcareous algae bottom, occasionally on reef or sand bottoms, between, 0,15 to 172 meters.

INTRODUCTION

The purpose of the present paper is to complete the knowledge of the species *Alcirona krebsii* Hansen in the Brazilian waters. There are few references available about this species and sometimes they do not give sufficient data concerning to the taxonomy and ecology. We are now trying to solve some taxonomic problems, completing the original description of the species and also presenting intraspecific variations and comments. We had also opportunity to make a comparison between our specimens and the specimens from the U.S. National Museum, gently loaned by Dr. Thomas E. Bowman.

More than ten (10) species of this genus are known at present. Three of them are recorded from

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West Indies, been *Alcirona krebsii* Hansen, referred for the first time to the Brazilian waters.

This study is based on material from dredgings by the "Almirante Saldanha" Oceanographical Ship of the Brazilian Navy and from bottom samples of Itamaracá/Pernambuco.

Ecological data, such as position, depth, bottom type and number of specimens are given for each station.

Other information on the area studied can be found in the papers of the Departamento de Oceanografia da Universidade Federal de Pernambuco. Trab. Oceanogr. da Universidade Federal de Pernambuco, Recife, 9/13, 1970/72.

Alcirona krebsii Hansen, 1890
(Figs. 2 e 3)

Alcirona krebsii Hansen. - Richardson, 1905, p. 157-158, figs. 137 a-b; 138 a-c and 139 a-p.

Alcirona hirsuta. - Koenig (not Moore, 1902), 1972, p. 241-242; Coelho & Koenig, 1972, p. 254.

Material examined - 1 m, 1 f, off Cape Orange, Amapá, GEOMAR Sta. 206, 05°09'ON, 050°42'OW, 172 m - 2m, 1 f, off Tocantins Mouth, Pará, SALDANHA Sta. 2529, 01°02'ON, 047°11'5W, 44 (40) m - 1 f, off Cape Gurupi, Pará, GEOMAR Sta. 28, 00°20'ON, 046°03'5W, 51 m, sand - 1 m, off Piauí SALDANHA Sta. 1730, 02°37'OS, 041°27'5W, 21 m, calcareous algae - 1 m, off Aracati, Ceará, SALDANHA Sta. 1693, 03°30'OS, 037°56'5W, 49 m, calcareous algae and organogenic material - 1 f, 1 f ov, off Itamaracá, Pernambuco, ITAMARACÁ Sta. 43, 07°45'12S, 034°48'36W, 1,6 m, calcareous algae - 1 m, 1 f ov, off Itamaracá, Pernambuco, ITAMARACÁ Sta. 70, 07°46'24S, 034°48'42W, 1,9 m, calcareous algae - 1 m, 1 f, off Itamaracá, Pernambuco, ITAMARACÁ Sta. 92, 07°46'00S, 034°47'42W, 0,15-0,65 m, reefs.

1 m, Panama Bay, 19.02.1912 (U.S.N.M., utilized for comparison).

Obs: m, male; f, female; ov, ovigerous.

Description - (based on a male from GEOMAR Sta 206 and after Richardson, 1905, modified).

Head with rounded anterior margin, wider than long, with a faint line that extends from one eye to the other (this characteristic can be seen in Richardson, 1905, Fig. 137, but she doesn't mention it on her description). The line is convex forward and interrupted midway by an angle (Fig. 2c). The eyes are small and situated in the antero-lateral part of the head. The frontal lamina is narrow and pentagonal. The first pair of antennae has the peduncle with 2 articles. The second being longer and narrower than the first. The flagellum of the first antennae has 8 articles with tufts of setae mainly on the last articles. The second pair of antennae has the peduncle with 5 articles: the first article is twice as long as the second (this being the shortest); the third is as long as the first; the fourth is twice as long as the third and the fifth is twice as long as the fourth. The flagellum of the second antennae has 17 articles and has some tufts of setae on all articles. The maxilliped is composed of seven articles.

The first pereonite is the longest and the seventh the shortest. The coxae of pereonites 2 and 3 have the post-lateral angles rounded and crossed by a longitudinal carina. The coxae of the other pereonites have progressively more acute post-lateral angles and the carinae become more oblique posteriorly; the seventh coxa extends up to the end of the third abdominal segment and is crossed by an oblique carina. The posterior margin of pereonites 2-7 are covered with golden brown hairs and with tubercles. The body surface is wrinkled. We can also observe rows of stiff hairs on the posterior margin of thoracic epimera 2-7.

The abdomen is composed of 6 segments, the first is partially concealed by the seventh thoracic segment. The entire abdomen is densely covered with stiff golden brown hairs and tubercles. The inner branch of the uropoda is broad and widely

rounded. The outer branch is as long as the inner branch, half as wide and with narrow extremity. Both branches have stiff hairs on the dorsum and spines and setae on the posterior margins.

The first 3 pairs of legs are prehensile, the last 4 pairs ambulatory.

Intraspecific variations. - RICHARDSON (1905, pages 157-158) describes her specimens from West Indies as having the flagellum of the first antennae with 18 articles and the second antennae with 39 articles (but 35 articles in key on p. 157). The material used for comparison, proceeding from Panama Bay and identified by RICHARDSON, has the flagellum of the first antennae with 12 articles and the second antennae with 32 articles. The material examined has a reduced number of articles: the flagellum of the first antennae has from 6 to 11 articles and the second antennae from 14 to 20 articles.

The tuberculation on the thoracic and abdominal segments is more prominent on adults; young individuals being only slightly tuberculated.

There is also some variation in the localization of hair tufts. Some specimens have tufts at the posterior margin of pereonites 2-7, while others have hairs only on the last 3 pereonites.

Our specimens captured at shallow waters showed also a smaller length size.

Measurements. -

Length - 7.0 mm - Width 3.0 mm (largest specimen)

Length - 4.0 mm - Width 2.0 mm (smallest specimen)

Ecology. - The species has been collected from shallow and deep waters (0.15 - 172 meters), mostly on calcareous algae bottoms and rarely on sand and reef bottoms.

Discussion. - RICHARDSON (1905) reported the presence of hair tufts on the last three pereonites and all segments of the abdomen, but she did not mention the presence of tuberculations on these

segments.

The material studied has tuberculations on the thoracic and abdominal segments; abdominal segments are only sparsely tuberculated. This agrees with MENZIES & GLYNN'S (1968) observations on specimen from Puerto Rico and which had been determined by RICHARDSON. They stated: "This specimen showed hair tufts on peraeonal somites 2-7 inclusive, and showed six distinct pleonal somites as illustrated by for *krebsii* but the peraeonal and pleonal somites were strongly tuberculate at the margins and the dorsum of the pleotelson was only sparsely tuberculate".

According to MENZIES & GLYNN (1968), HANSEN confused two species in his description of *Alcirona krebsii*, since he illustrated a male (RICHARDSON 1905, p. 158, fig. 137) with 5 abdominal segments and a female (RICHARDSON 1905, p. 159, fig. 139), with 6 segments. According to MENZIES & GLYNN, one of HANSEN'S specimens would belong to a species not described yet.

The author believes that there is only one species. The comparative study between Brazilian specimens and the material from Panama Bay showed variations from 4-6 in the number of abdominal segments. The first and second abdominal segments may be completely covered by the seventh thoracic segment, depending on how much the abdomen is stretched. MENZIES & GLYNN may have not considered this fact.

NORDENSTAM (1946) compared *A. maldivensis* Stebbing from the Indopacific Region with West Indian *A. krebsii* Hansen and could not find any specific difference between them. Since specimens of *A. maldivensis* Stebbing were not available for comparison, this hypothesis could not be confirmed in the present study. Obviously if both are identical, *A. krebsii* Hansen would be distributed in the Atlantic, Indian and Pacific Ocean.

KOENING (1972, pages 241-242) reported the presence of *Alcirona hirsuta* Moore in the Brazilian

coast. The comparative study between the species received from the U.S.N.M. and the Brazilian specimens revealed that the species previously identified as *A. hirsuta* Moore was in reality *A. krebsii* Hansen, extending now the distribution of this species along the Brazilian coast.

Distribution. - It is certain that the species inhabits the eastern Pacific: Panama Bay (material used for comparison) and the western Atlantic: West Indies and the Brazilian coast between Cape Orange, Amapá and Itamaracá, Pernambuco.

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RESUMO

O isópodo *Alcirona krebsii* (Isopoda-Cirolanidae) foi encontrado nas costas do Brasil, desde o Cabo Orange, Amapá, até Itamaracá, Pernambuco. Esta espécie é encontrada de preferência nos fundos de algas calcárias, ocasionalmente nos arrecifes e fundos de areia, entre 0,15-172 metros de profundidade.

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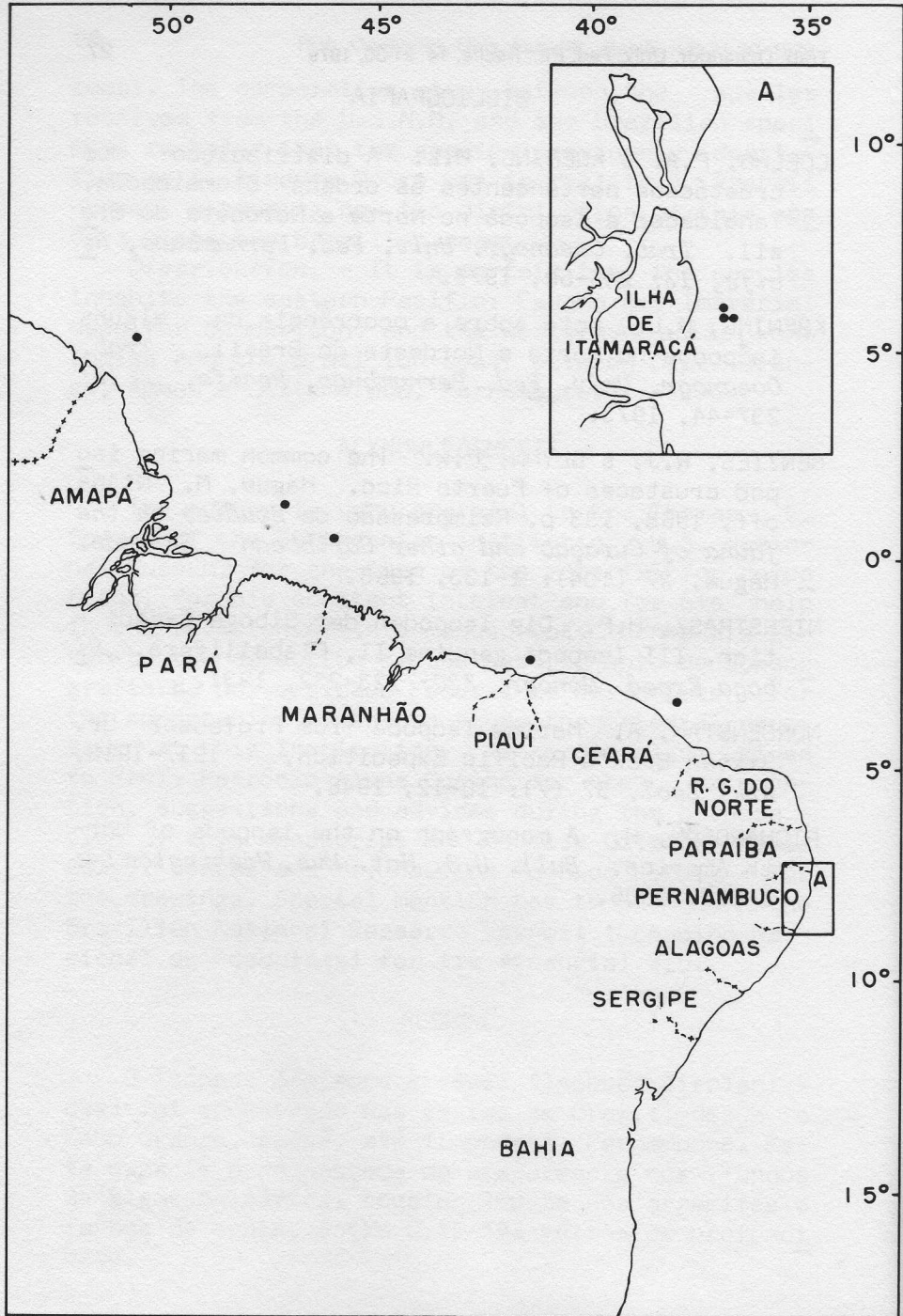


Fig. 1 - Map of the studied area showing sampling stations with *Alcirona krebsii*.

Fig. 2 - *Alcirona krebsii* Hansen, 1890.

- a - whole male, dorsal view (length 7 mm, without antennae, width 3 mm);
- b - whole male, lateral view;
- c - dorsal view of the head.

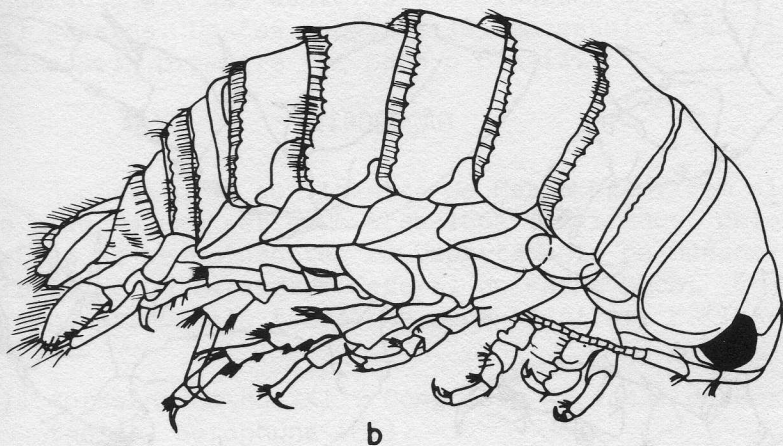
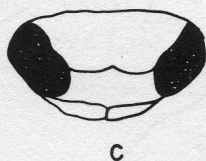
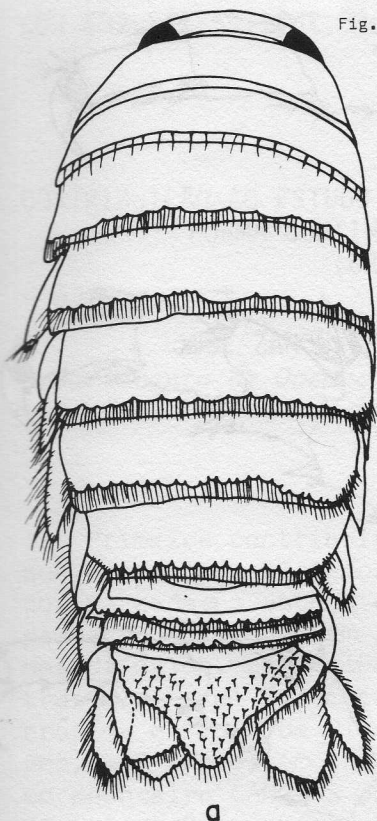


Fig. 3 - *Alcirona krebsii* Hansen, 1890.

- a - first peraeopod;
- b - second peraeopod;
- c - third peraeopod;
- d - fourth peraeopod;
- e - fifth peraeopod;
- f - sixth peraeopod;
- g - seventh peraeopod.

