

Shrimps collected in the Northeast of Brazil during the REVIZEE Program (Decapoda: Caridea)

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Abstract

During oceanographic prospecting, accomplished by the Research Vessel “Natureza” they were collected, until now, five species of shrimps: *Acanthephyra eximia* Smith, 1884 (Oplophoridae); *Heterocarpus ensifer* A. M. Edwards, 1881; *Heterocarpus oryx* A. M. Edwards, 1881; *Plesionika edwardsii* (Brandt, 1851) and *Plesionika ensis* (A. M. Edwards, 1881) (Pandalidae). Only *H. oryx* has potential importance, which is, mainly related to its great size and weight. Only after the evaluation of this stock, it will be possible to confirm the viability of its exploitation. However, it may be emphasized that the depth range where this occurs (between 114 and 780 m), can be an obstacle to its capture, in commercial patterns.

Key words: Shrimps, REVIZEE NE Program, Decapod Systematic

Introduction

The need of the fauna inhabitant's knowledge of the Exclusive Economic Zone (ZEE) of Brazil, led to implantation of the REVIZEE NE Program, of fundamental political-economic and strategic importance, because it has as objective the rising of the potential of the alive resources of this zone, what will allow to assure its occupation and use.

Like this being, the Centro de Pesquisa e Extensão Pesqueira do Nordeste do Brasil (CEPENE), responsible for the execution of some oceanographic campaigns, in the ambit of the REVIZEE NE Program, inside of its work strategy, it accomplished samples between the 100 and 780 meters isobats, what propitiated the obtaining of an excellent zoological pile.

It is presented, in the moment, a list of the collected species of shrimps, trying to verify if exists, among these, some with potential importance, and in which depth it occurs.

Material and Methods

The collects were made through bottom traps, among 93 and 625 depth meters, off the States of Paraíba to Bahia, during the second semester of 1999.

The specimens were captured during oceanographic prospecting, accomplished by the Research Vessel “Natureza”, as part of the activities of the REVIZEE NE Program, under the responsibility of the Centro de Pesquisa e Extensão Pesqueira do Nordeste do Brasil (CEPENE), and identified according Crosnier and Forest (1973), Pequignat (1970) and Takeda (1983). The adopted classification obeyed the one that preconize Bowman and Abele (1982); the species are deposited in the carcinological collection of CEPENE.

Results

Family Oplophoridae A. Milne Edwards, 1881

Acanthephyra eximia Smith, 1884

Material examined - Paraíba: Cruise 1, station 12, 4 females (3 ovigerous), 540 m. Sergipe: Cruise 3, station 65, 1 male, 360 m. Bahia: Cruise 3, station 55, 6 females (5 ovigerous), 5 males, 415 m.

Range - Western Atlantic: east of United States, Bermuda, Bahamas, Gulf of Mexico, Brazil (Sergipe). Eastern Atlantic. Mediterranean. Indo-Pacific (Bate, 1888; Crosnier and Forest, 1973; Chace, 1986)

Family Pandalidae Haworth, 1825

Heterocarpus ensifer A. Milne Edwards, 1881

Material examined - Paraíba: Cruise 1, station 4, 24 females (12 ovigerous), 4 males, 340 m. Bahia: Cruise 3, station 49, 3 males, 430 m.

Range - Western Atlantic: North Carolina, Antilles, Gulf of Mexico, Suriname, Brazil (from Amapá to Maranhão States). Eastern Atlantic. Indo-Pacific (Crosnier and Forest, 1973; Ramos-Porto *et al.*, 1997b; Ramos-Porto *et al.*, *in press*)

Remarks - The current registration enlarges the knowledge of the distribution of this species, in south direction, until Bahia State.

According to Holthuis (1980), *H. ensifer* occurs between 146 and 885 m, in muddy bottom.

Heterocarpus oryx A. Milne Edwards, 1881

Material examined - Pernambuco: Cruise 5, station 117, 9 females (5 ovigerous), 1 male, 490 m.; station 118, 31 females (6 ovigerous), 114 m. Sergipe: Cruise 3, station 66, 2 females (1 ovigerous), 1 male, 560 m; station 69, 2 females, 1 male, 200 m; station 70, 22 females (12 ovigerous), 21 males, 780 m. Cruise 4, station 77, 14 females, 8 males, 300 m.

Range - Western Atlantic: Gulf of Mexico, Brazil (Rio Grande do Norte) (Pequegnat, 1970; Ramos-Porto and Coelho, 1998).

Remarks - The current registration enlarges the knowledge of the distribution of this species, in south direction, until Sergipe State.

Plesionika edwardsii (Brandt, 1851)

Examined material - Pernambuco: Cruise 1, station 17, 1 ovigerous female, 95 m; station 20, 4 ovigerous female, 200 m. Cruise 4, station 86, 2 females, 3 males, 238 m; station 89, 1 male, 332 m; station 94, 1 female, 1 male, 270 m. Sergipe: Cruise 2, station 26, 1 female, 430 m; station 28, 1 male, 250 m; station 30, 2 ovigerous females, 340 m; station 32, 1 male, 340 m; station 33, 1 male, 500 m; station 35, 1 male, 340 m; station 37, 1 ovigerous female, 430 m; station 38, 1 ovigerous female, 1 male, 260 m; station 39, 1 ovigerous female, 104 m. Cruise 3, station 67, 3 females (2 ovigerous), 3 males, 430 m.

Range - Western Atlantic: North Carolina, Bahamas, Gulf of Mexico, Suriname. Eastern Atlantic. Mediterranean (Pequegnat, 1970; Crosnier and Forest, 1973; Holthuis, 1980; Takeda, 1983).

Remarks - The current registration enlarges the knowledge of the distribution of this species, in south direction, until Sergipe State.

Plesionika ensis (A. Milne Edwards, 1881)

Material examined - Paraíba: Cruise 1, station 4, 5 females, 340 m.

Range - Western Atlantic: Florida, Gulf of Mexico, Antilles, Brazil (Alagoas). Eastern Atlantic. Indo-Pacific (Bate, 1888; Crosnier and Forest, 1973; Holthuis, 1980; Ramos-Porto and Coelho, 1998).

Discussion

The fauna of shrimps from deep waters in the Brazilian coast is relatively not very well-known, except some registrations, like the ones told by Bate (1888), starting from the studies of the crustaceans collected during the “Challenger” Expedition; by Moreira (1901), that refers species mentioned by Bate (*op cit.*); and by Holthuis (1971), that studied *Glyphocrangonidae* from the Western Atlantic.

More recently, though, some species collected in deep waters in Southwestern Atlantic were registered; information about this fauna can be found in the papers of D’Incao (1995; 1998); Ramos-Porto *et al.* (1997a; 1997b); Silva *et al.* (1997); Ramos-Porto *et al.* (1997) and Ramos-Porto *et al.* (1998a; 1998b; 1998c).

On the other hand, among the species mentioned in the present work, *H. oryx* just possesses potential importance, tied up mainly to its size (among 135 and 185 mm of total length) and weight (between 7,7 and 37,5 g); it may be adverted, even so, that only after the evaluation of this stock the viability of its exploitation can be verified and that the depth range where this inhabits (between 114 and 780 m), perhaps constitute a difficulty to its capture, in commercial patterns.

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References

- Bate, C. S. 1888. Report on the Crustacea Macrura collected by H. M. S. Challenger during the years 1873-1876. *In: The Voyage of H. M. S. Challenger. Zoology v. 29, Text.* New York, Johnson Reprint Corporation, 1965. 1-942 p. Reimpressão da ed. 1888.
- Bowman, T. E. and Abele, L. G. 1982. Classification of the recent Crustacea. *In: Abele, L. G. The Biology of Crustacea. Systematics, the fossil record, and biogeography.* New York, Academic Press, 1, cap. 1: 1-25 p.
- Chace Jr., F. A. 1986. The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Phyllipine Expedition, 1907-1910, Part 4: families Ophloporidae and Nematocarcinidae. *Smithsonian Contribution to Zoology, Washington, 432: 1-82 p.*
- Crosnier, A. and Forest, J. 1973. Les crevettes profondes de l’Atlantique Oriental tropical. *Faune Tropicale, Paris, 19: 1-409 p.*
- D’Incao, F. 1995. Taxonomia, padrões distribucionais e ecológicos dos Dendrobranchiata (Crustacea: Decapoda) do Brasil e Atlântico Ocidental. Curitiba, 1995. 365 p. Tese (Doutorado em Ciência), Universidade Federal do Paraná
- D’Incao, F. 1998. Malacostraca. Eucarida. Dendrobranchiata. *In: Young, P. S. (Ed). Catalogue of Crustacea of Brazil.* Rio de Janeiro: Museu Nacional. 311-321 p. (Série Livros n.6).
- Holthuis, L. B. 1971. The Atlantic shrimps of the deep-sea Genus *Glyphocrangon* A. Milne Edwards, 1881. *Bulletin of Marine Science, Miami, 21(1): 267-373 p.*
- Holthuis, L. B. 1980. FAO species catalogue. Shrimps and prawns of the world. An annotated catalogue of species of interest to fisheries. Roma: FAO Fisheries Synopsis, 1(125): 1-271 p.
- Moreira, C. 1901. Contribuição para o conhecimento da fauna brasileira. *Crustáceos do Brasil.* Arquivos do Museu Nacional, Rio de Janeiro, 11: 1-151 p.
- Pequegnat, L. H. 1970. Deep-sea caridean shrimps with descriptions of six new species. *Texas A. and M University Oceanographic Studies. I. Contribution on the Biology of the Gulf of Mexico, 4: 59-123 p.*
- Ramos-Porto, M. and Coelho, P. A. 1998. Malacostraca. Eucarida. Caridea. *In: Young, P. S. (Ed). Catalogue of Crustacea of Brazil.* Rio de Janeiro: Museu Nacional, 325-350 p. (Série Livros n.6)
- Ramos-Porto, M.; Silva, K. C. A. and Cintra, I. H. A. 1997a. Registro de *Glyphocrangon spinicauda* A. Milne Edwards, 1881, na plataforma continental do Estado do Amapá, Brasil. *In: Encontro de Zoologia do Nordeste, 11. Fortaleza, 1997. Abstracts 19 p.*
- Ramos-Porto, M.; Silva, K. C. A. and Cintra, I. H. A. 1997b. Ocorrência de espécies da família Pandalidae

- na plataforma continental Norte do Brasil. *In: Encontro de Zoologia do Nordeste*, 11. Fortaleza, 1997. Abstracts 20 p.
- Ramos-Porto, M.; Silva, K. C. A.; Cintra, I. H. A.; Viana, G. F. S.; Nylander-Silva, N. C. and Gonçalves, L. M. 1997. Espécies de camarões carídeos capturados durante o Programa REVIZEE/Norte/Brasil (Crustacea: Decapoda). *In: Congresso Brasileiro de Engenharia de Pesca*, 10, Guarapari-ES, Proceedings, Guarapari-ES, 423-429 p.
- Ramos-Porto, M.; Silva, K. C. A.; Viana, G. F. S.; Cintra, I. H. A. 1998a . Registro de *Aristeus antillensis* (A. Milne Edwards and Bouvier, 1909) na costa Norte brasileira. (Crustacea: Decapoda: Aristeidae). *In: Congresso Brasileiro de Zoologia*, 22, 1998, Recife, Abstracts, Recife, Sociedade Brasileira de Zoologia, 1998, 74 p.
- Ramos-Porto, M.; Silva, K. C. A.; Viana, G. F. S.; Cintra, I. H. A.; 1998b. *Psalidopus barbouri* (Crustacea: Decapoda) em águas do litoral Norte brasileiro. *In: Congresso Brasileiro de Zoologia*, 22, 1998, Recife, Abstracts, Recife, Sociedade Brasileira de Zoologia, 1998, 100 p.
- Ramos-Porto, M.; Silva, K. C. A.; Viana, G. F. S.; Cintra, I. H. A. 1998c. Camarões de profundidade coletados na costa Norte do Brasil (Crustacea: Penaeidea e Caridea). *In: Congresso Brasileiro de Zoologia*, 22, 1998, Recife, Abstracts, Recife, Sociedade Brasileira de Zoologia, 1998, 101 p.
- Ramos-Porto, M.; Silva, K. C. A.; Viana, G. F. S.; Cintra, I. H. A. *In press*. Camarões de profundidade coletados na costa Norte do Brasil durante o Programa REVIZEE (Crustacea: Penaeidea e Caridea). *Trabalhos Oceanográficos da Universidade Federal de Pernambuco*, Recife.
- Silva, K. C. A.; Ramos-Porto, M. and Cintra, I. H. A. 1997. Ocorrência de espécies de Penaeidae em águas da costa Norte do Brasil (Crustacea: Decapoda). *In: Encontro de Zoologia do Nordeste*, 11. Fortaleza, 1997. Fortaleza, 1997, Abstracts 20 p.
- Takeda, M. 1983. Crustaceans and mollusks trawled off Suriname and French Guiana. Tokyo, Japan Marine Fishery Resource Research Center, 354 p.

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