



Occurrence of the white anglerfish, *Lophiodes beroe* Caruso, 1981 (Lophiiformes: Lophiidae), in Brazilian waters.

MATHEUS MARCOS ROTUNDO¹ & TEODORO VASKE JÚNIOR²

¹Acervo Zoológico da UNISANTA (AZUSC), Rua Oswaldo Cruz, 266 - Bloco B - 3º andar/ sala B-31A CEP:11045-907, Santos SP. Email: mmrotundo@unisanta.br

²Laboratório de Elasmobrânquios, UNESP, Praça Infante Dom Henrique s/n CEP: 11330-900 São Vicente SP Email: vaske@ig.com.br

Abstract. One specimen of the lophiid white anglerfish, *Lophiodes beroe* was collected for the second time in Brazilian waters, which far extends the limit distribution of the species to southeastern region (25°00'08''S).

Key Words: New record, ichthyofauna, trawl fishery, upper slope, Southwestern Atlantic

Resumo. Ocorrência do peixe-pescador-branco, *Lophiodes beroe* Caruso, 1981 (Lophiiformes: Lophiidae), em águas brasileiras. Um espécime do peixe-pescador-branco, *Lophiodes beroe* foi coletado pela segunda vez em águas brasileiras, o que amplia o limite de distribuição da espécie para a região sudeste do Brasil (25°00'08''S).

Palavras-chave: Novo registro, ictiofauna, pesca de arrasto, talude superior, Atlântico sudoeste

Lophiiformes are known as anglerfishes due to the *illicium* and the *esca*, a pendulous fleshy structure modified from the first spine of the dorsal fin that are used as false bait for capture of preys. With the exception of the Neoceratiidae, all families of this order show this structure, varying widely in shape, size, and presence of the *esca*, among other characters (Nelson 2006). The Lophiidae is represented by four genera and twenty five species (Caruso 1983), where *Lophius* is the most important genus due to its commercial value.

In Brazilian waters the main species of the family, the monkfish, *Lophius gastrophysus* Miranda Ribeiro, 1915, recently became a target species of deep waters fishing fleet in the southern and southeastern regions (Perez *et al.* 2002a,b; Perez *et al.* 2003a,b; Perez & Wharlich 2005, Valentim *et al.* 2007, 2008). *Lophius gastrophysus* occurs from North Carolina (USA) to Argentina in waters usually between 40 and 180 m, but also occur up to 660 m deep (Figueiredo *et al.* 2002), and is captured by deepwater gillnet fishery and as bycatch of shrimp fishery (Wharlich *et al.* 2004, Valentim *et al.* 2007). Another genus, *Lophiodes* contains 13 species

(Caruso 1985, Froese & Pauly 2009). Costa *et al.* (2007) reported about the occurrence of *Lophiodes beroe* in Brazilian waters, during a deep exploratory-fishing cruise performed by the R/V *Thalassa*, between 11°S and 22°S in 2000, but the authors just cite its presence without any further explanation. The main diagnostic characteristics that differs *Lophiodes beroe* from the similar *L. gastrophysus* are the body slightly narrow than *L. gastrophysus*, and the gill openings of *Lophiodes* that are very large and extends not only behind the pectoral fin, but in front of it as well (Caruso 1985) (Fig. 1). In *Lophius* gill opening is more restricted, being located below and behind the pectoral fin. Also, the pectoral fin shape in *Lophiodes* is narrow and paddle-like, with a relatively low number of rays (14-21), whilst in *Lophius* the pectoral fin is broad and fan-like, with a relatively high number of rays (22-28). In the present report, one specimen was also captured by the R/V *Solency Moura* (CEPSUL-IBAMA) in the position 25°00'08''S;45°27'38''W straight ahead Ilha Comprida, São Paulo state, southeastern-Brazil, 99.5 m deep along the upper slope coast (Fig. 2). Our specimen measured

157 mm total length, with 18 pectoral fin rays. In the description of the species, Caruso (1981) observes that *L. beroe* inhabits the Western North Atlantic, with northern distribution at 24°24'N. According Caruso *et al.* (2007), *L. beroe* attains a maximum size of 300 mm, commonly observed with 150 mm, restricted in region between Southeastern USA and northern coast of South America. The present sample extends the South American limit of the species to more than 3500 km in straight line to 25°S, in southeastern Brazil.

Although *L. beroe* attains smaller lengths than *L. gastrophysus*, both are similar in shape, which may cause confusion during identification onboard by the fishermen, and so, individuals of *L. beroe* may be normally included as part of the commercial catches of *L. gastrophysus*. In this way, it is probable that the species range can be even extended for southernmost waters.

The specimen is stored in the Zoological collection of Santa Cecília University (UNISANTA) - AZUSC 2632.

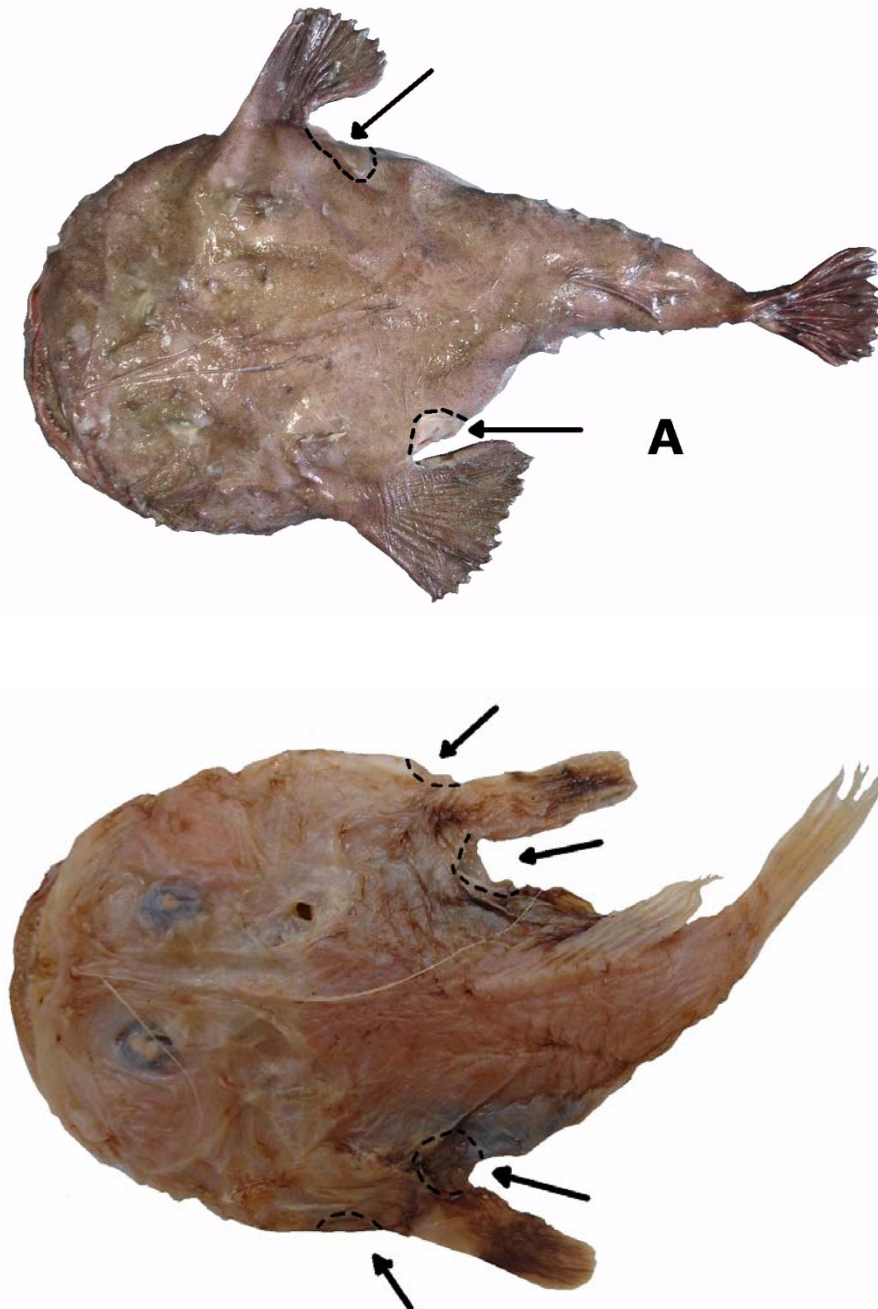


Figure 1. Dorsal view and main differences between one monkfish (A), *Lophius gastrophysus* (400 mm total length) and the white anglerfish (B), *Lophiodes beroe* (AZUSC 2632, 157 mm total length). Arrows indicate the gill openings that are very large and extends in front of the pectoral fin in *L. beroe*. The paddle-like shape of the pectoral fin is also evident in *L. beroe*.

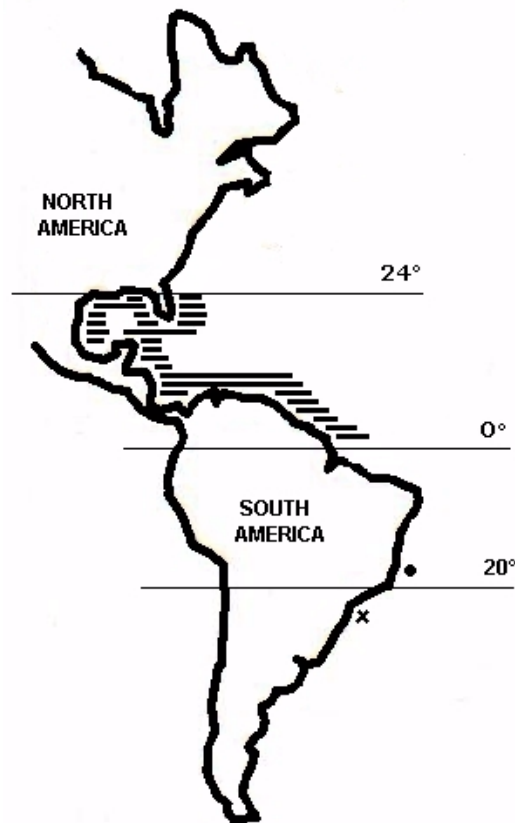


Figure 2. Distribution of *Lophiodes beroe* in the Atlantic coast (dashed area). Limit of the northern distribution (24°24'N); record of the R/V Thalassa (2000) (●); present study (x).

Acknowledgments

The authors are grateful to Dr. Otto Bismarck Fazzano Gadig who provided support in the UNESP-CLP laboratories, and to the crew of the R/V Soloncy Moura (CEPSUL-IBAMA) during samples.

References

- Caruso, J. H. 1981. The systematics and distribution of the lophiid anglerfishes: I. A revision of the genus *Lophiodes* with the description of two new species. *Copeia*, 1(3): 522–549.
- Caruso, J. H. 1983. The systematics and distribution of the lophiid anglerfishes. II. Revisions of the genera *Lophiomus* and *Lophius*. *Copeia*, 1:11–30.
- Caruso, J. H. 1985. The systematics and distribution of the lophiid anglerfishes. III. Intergeneric Relationships. *Copeia*, 4: 870–875.
- Caruso, J. H., Ross, S. W., Sulak, K. J. & Sedberry, G. R. 2007. Deep-water chaunacid and lophiid anglerfishes (Pisces:Lophiiformes) off the south-eastern United States. *Journal of Fish Biology*, 70:1015–1026.
- Costa, P. A. S., Braga, A. C., Melo, M. R. S., Nunan, G. W. A., Martins, A. S. & Olavo, G. 2007. Assembléias de teleósteos demersais no talude da costa central brasileira. P 87–107. In Costa, P. A. S., Olavo, G. & Martins, A. S. (Eds.) **Biodiversidade da fauna marinha profunda na costa central brasileira** – Rio de Janeiro : Museu Nacional. 184 p.
- Figueiredo J. L., Santos A.P., Yamaguti N., Bernardes R.A. & Rossi-Wongtschowski C. L. D. B. 2002. **Peixes da zona econômica exclusiva da região sudeste-sul do Brasil: Levantamento com rede de meia-água**. Ed. EDUSP: Imprensa de São Paulo. 242 p.
- Froese, R. & Pauly, D. (eds) 2009. **FishBase, World Wide Web electronic publication**; www.fishbase.org, version (03/2009).
- Nelson, J.P. 2006. **Fishes of the World**, 4th ed. John Wiley & Sons, New Jersey, 601 p.
- Perez J. A. A. & Wahrlich R. 2005. A bycatch assessment of the gillnet monkfish *Lophius gastrophysus* fishery off southern Brazil. *Fisheries Research*, 72: 81–95.
- Perez, J. A. A., Pezzuto, P. R., Andrade, H. A., Schwingel, P. R., Rodrigues-Ribeiro, M. & Wahrlich, R. 2002a. O Ordenamento de uma nova pescaria direcionada ao peixe-sapo (*Lophius gastrophysus*) no Sudeste e Sul do Brasil. *Notas Técnicas FACIMAR*, 6: 65–83.

- Perez, J. A. A., Pezzuto, P. R., Schwingel, P. R., Wahrlich, R., Lopes, F. R. A., Andrade, H. A. & Ribeiro, M. R. 2002b. Análise da pescaria do peixe-sapo *Lophius gastrophysus* no Sudeste e Sul do Brasil - Ano 2001. **Ações Prioritárias ao Desenvolvimento da Pesca e Aquicultura no Sul do Brasil**. Convênio MAPA/SARC/DPA/03/2001.
- Perez, J. A. A., Wahrlich, R., Pezzuto, P. R. & Lopes, F. R. A. 2003a. Estrutura e dinâmica da pescaria do peixe-sapo *Lophius gastrophysus* no Sudeste e Sul do Brasil. **Boletim do Instituto de Pesca**, 28 (2): 205–231.
- Perez, J. A. A., Wahrlich, R., Pezzuto, P. R., Schwingel, P. R., Lopes, F. R. A., & Rodrigues-Ribeiro, M. 2003b. Deep-sea fishery off southern Brazil: recent trends of the Brazilian fishing industry. **Journal of the Northwest Atlantic Fisheries Sciences**, 31: 1–18.
- Valentim, M. F. M., Vianna, M. & Caramaschi, E. P. 2007. Length structure of monkfish, *Lophius gastrophysus* (Lophiiformes, Lophiidae), landed in Rio de Janeiro. **Brazilian Journal of Aquatic Science and Technology**, 11(1):31-36.
- Valentim, M. F. M., Caramaschi, E. P. & Vianna, M. 2008. Feeding ecology of monkfish *Lophius gastrophysus* in the south-western Atlantic Ocean. **Journal of the Marine Biological Association of the United Kingdom**, 88(1): 205–212. doi:10.1017/S0025315408000301
- Wahrlich, R., Perez, J. A. A. & Lopes, F. R. A. 2004. Aspectos tecnológicos da pesca do peixe-sapo (*Lophius gastrophysus*) com rede de emalhar no sudeste e sul do Brasil. **Boletim do Instituto Pesca**, 30: 87–98.

Received February 2009

Accepted April 2009

Published online June 2009