PANAMJAS
Pan-American Journal of Aquatic Sciences

Scientific Note

First record of the Roudi escolar *Promethichthys prometheus* (Cuvier, 1832) (Teleostei: Gempylidae), off São Pedro and São Paulo Archipelago, Brazil

DANIELLE VIANA[1*], MARIANA R. A. PORTO[1], TEODORO VASKE JÚNIOR[2,] FABIO HAZIN[1]

[1]*Universidade Federal Rural de Pernambuco, Departamento de Pesca e Aquicultura, Rua Dom Manoel de Medeiros, S/N, Recife, PE, Brasil. CEP: 52171-900. * E-mail: vianadl@yahoo.com*
[2]*Universidade Santa Cecília, Laboratório de Pesquisas Biológicas, Rua Oswaldo Cruz, 277, Boqueirão, Santos-SP, Brasil.CEP: 11045-907.*

Abstract. To date, two species of the fish family Gempylidae have been reported from the Saint Peter and Saint Paul Archipelago. This note reports for the first time the record of the Roudi escolar *Promethichthys prometheus* (Cuvier, 1832) from night catches made by fishing vessels operating in the region.

Keywords: new occurrence, teleost, benthopelagic fish, Atlantic Ocean, oceanic island

Resumo. Primeiro registro do Peixe-coelho Promethichthys prometheus (Curvier, 1832) (Teleostei: Gempylidae), no Arquipélago de São Pedro e São Paulo, Brasil. Até o momento, duas espécies de peixes da família Gempylidae foram registradas no ASPSP. Esta nota reporta, pela primeira vez, o registro do peixe-coelho Promethichthys prometheus (Cuvier, 1832) a partir de capturas noturnas efetuadas por barcos de pesca que operam na região.

Palavras chave: nova ocorrência, teleósteo, espécie bentopelágica, Oceano Atlântico, ilha oceânica

The Roudi escolar, *Promethichthys prometheus* (Cuvier, 1832) (Gempylidae), is a benthopelagic marine fish with a worldwide distribution in tropical and warm temperate waters (Lorenzo & Pajuelo 1999). During the day, it often stays in deep waters, moving at night to shallower waters searching for food, preying mainly on benthic crustaceans, cephalopods and planktonic teleosts (Nakamura & Parin 1993). According to Schneider (1990) and Lorenzo and Pajuelo (1999), the species is found between 100 and 800 m depth, while for Cervigon *et al*. (1992), it lives between 300 and 400 m. The Roudi escolar has a moderately elongated and compressed body, a lower jaw extending slightly longer than the upper jaw, and strong and long teeth. The first dorsal fin usually has 17, 18 or, more rarely, 19 spines and 17 to 20 rays, with a length measuring almost three times more than the base of the second dorsal fin (Nakamura 1981). The anal fin usually has 2 spines and 15 to 17 rays. The total number of vertebrae ranges from 33 to 35. Its color ranges from gray to copper brown with blackish fins, in specimens with more than 40 cm standard length, and yellow with black tips, in smaller specimens. The oral and gill cavities are also black (Nakamura & Parin 1993).

São Pedro and São Paulo Archipelago (SPSPA), located in the mid-equatorial Atlantic Ocean (00° 55'02 "N and 029° 20'42" W), at 510 nautical miles from the Brazilian northeast coast (Rio Grande do Norte State), is an important fishing ground inside the Exclusive Economic Zone (EEZ) of northeast Brazil (Viana et al. 2008). The Roudi escolar was never mentioned in checklists of the fishes from the SPSPA area (Lubbock & Edwards 1981, Oliveira *et al*. 1997, Feitoza *et al*. 2003, Vaske

Jr. *et al*. 2005, Vaske Jr. *et al.* 2006, Vaske Jr. *et al.* 2008). The first specimen recorded in the SPSPA was caught using hand line as a fishing gear between 100 and 250 m depth, in December 2008. According to the fisherman, the species is sporadically caught in the region, being called locally as "espada-preta", but it is not reported in fishing logbooks. In 2010, however, there was a significant increase in catches of Roudi escolar in that area, enabling biological studies on its reproductive biology and feeding habits. Since August 2012, 87 biological samples had already been collected. All those individuals were females, ranging from 58 to 109 cm TL, reaching larger sizes than those reported by Nakamura and Parin (1993) (100 cm) and Pajuelo & Lorenzo (1995) (80 cm), and than those theoretically calculated as the maximum length for the species by Cheung *et al*. (2005) for the Canary Islands (91.9 cm to 94.0 cm). Before this record, the unique species of Gempylidae recorded in São Pedro and São Paulo Archipelago were *Ruvettus pretiosus* (Cocco, 1829) and *Gempylus serpens* (Cuvier, 1829) (Oliveira *et al*. 1997; Feitoza *et al*. 2003; Vaske Jr. *et al*. 2006; Vaske Jr. *et al*. 2008) (Figure 2).

One specimen of *P. prometheus* from SPSPA was photographed and its main morphometric measurements recorded according to Causse & Hauteceur (2006) (Table I). The specimen used for identification was 72 cm in total length and 1.666 kg. It was stored frozen and thawed in the laboratory, showing natural colors with a general dark grey body, with darker edges with single lateral line, descending obliquely below 4th or 5th dorsal spine to a little ventral to the midline of body and ending on caudal. A total of 33 vertebrae were counted.

Studies related to the ecology of the Roudi escolar are scarce, with most of them being restricted only to records of first occurrence, except for Lorenzo & Pajuelo (1995), who evaluated the reproductive cycle and growth of the species in the Canary Islands. Information on the biology of *P. prometheus* is therefore of fundamental importance to fill the gap that currently exists. The diet and reproduction of the species are still under investigation with no conclusive results.

Figure 1. *Promethichthys prometheus* caught in Saint Peter and Saint Paul Archipelago, Brazil. (Photo: Mariana Porto).

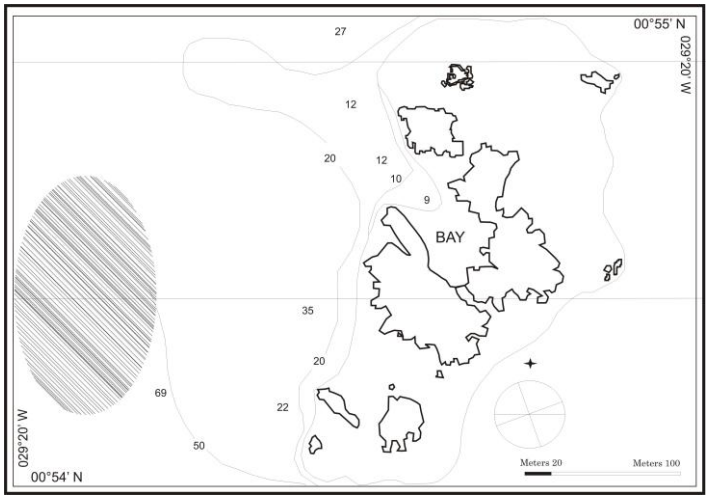

Figure 2. Collection site (shaded area) of *Promethichthys prometheus* off Saint Peter Saint Paul Archipelago, Brazil (Viana *et al*., 2012).

Table I. Body proportions (cm) and meristic counts of *Promethichthys prometheus* caught in São Pedro and São Paulo Archipelago. Characters indicated by * were given as percentage of the total length.

Morphological character	Specimen from SPSPA	Causse & Hauteceur (2006)
First dorsal fin	18	18+1
Anal fin	15	16+2
Pectoral fin	14	14
Total length (mm)	760	371
Fork length	93.4*	90.8*
Standard length	86.2*	85.7*
Anal length	63.2*	63.9*
Head length	24.3*	25.5*
Jaw length	14.5*	
Length of muzzle	9.2*	
Eye diameter	5.3*	5.9*
Preorbital length	11.8*	10.6*
Dorsal fin base	42.1*	22.6*
Pelvic fin length	17.1*	23.8*
Caudal fin length	19.7*	
Anal fin length	13.2*	
Body depth	18.4*	13.2*

Acknowledgments

The present study was made possible by funding from the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Fundação de Amparo à Ciência e Tecnologia do Estado de Pernambuco (FACEPE) and Secretaria da Comissão Interministerial para os Recursos do Mar (SECIRM).

References

Campos, T. F. C., Petta, A. R., Theye, T., Sichel, S. E., Simões, L. S. A., Srivastava, N. K., Motoki, A., Virgens Neto, J. & Andrade, F. G. G. 2009. Posição ímpar do Arquipélago de São Pedro e São Paulo na diversidade geológica da Terra. *In*: Viana, D., Hazin, F. & Carvalho, M. A. (Eds.) **O Arquipélago de São Pedro e São Paulo: 10 anos de Estação Científica**. SECIRM, Brasília, Brasil, 368 p. Acessible at: https://www.mar.mil.br/secirm/publicacao/arquipe.pdf. Accessed 02/02/2012.

Causse, R. & Hautecoeur, M. 2006. Confirmation de la présence de *Neoepinnula orientalis* et *Promethichthys prometheus* (Gempylidae) dans l'océan Pacifique centre-ouest. **Cybium**, 30(1): 87-89.

Cervigón, F., Cipriani R., Fischer, W., Garibaldi, L., Hendrickx, M., Lemus, A. J., Márquez, R., Poutiers, J. M., Robaina, G. & Rodriquez, B. 1992. Fichas FAO de identificación de especies para los fines de la pesca. **Guía de campo de las especies comerciales marinas y de aquas salobres de la costa septentrional de Sur América**. FAO, Rome, Italy, 513 p.

Cheung, W. W. L., Pitcher, T. J. & Pauly, D. 2005. A fuzzy logic expert system to estimate intrinsic extinction vulnerabilities of marine fishes to fishing. **Biological Conservation**, 124: 97-111.

Elbaraasi, H., Elmariami, M., Elmeghrabi, M. & Omar, S. 2007. First record of oilfish, *Ruvettus pretiosus* (Actinopterygii, Gempylidae), off the coast of Benghazi, Libya (Southern Mediterranean). **Acta Ichthyologica et Piscatoria**, 37: 67-69.

Feitoza, B. M., Rocha, L. A., Luiz-Júnior, O. J.,

Floeter, S. R. & Gasparini, J. L. 2003. Reef fishes of St. Paul's Rocks: new records and notes on biology and zoogeography. **Aqua, Journal of Ichthyology and Aquatic Biology**, 7(2): 61-82.

Lorenzo, J. M. & Pajuelo, J. G. 1999. Biology of a deep benthopelagic fish, roudi escolar *Promethichthys prometheus* (Gempylidae) off the Canary Islands. **Fisheries Bulletin**, 97: 92-99.

Lorenzo, J. M. & Pajuelo, J. G. 1995. Parameters of the roudi escolar *Promethichthys prometheus* (Pisces: Gempylidae) off the Canary Islands. **Fisheries Research**, 24: 65-71.

Nakamura, I. & Parin, N. V. 1993. FAO species catalogue. Snake mackerels and cutlassfishes of the world (families Gempylidae and Trichiuridae). An annotated and illustrated catalogue of the snake mackerels, snoeks, escolars, gemfishes, sackfishes, domine, oilfish, cutlassfishes, scabbardfishes, hairtails, and frostfishes known to date. **FAO Fisheries Synopsis**, 15(125): 1-136.

Oliveira, G. M., Evangelista, J. E. V. & Ferreira, B. P. 1997. Considerações sobre a biologia e a pesca no Arquipélago de São Pedro e São Paulo. **Boletim Técnico Científico do CEPENE**, 5(1): 1-16.

Schneider, W. 1990. FAO species identification sheets for fishery purposes. **Field guide to the commercial marine resources of the Gulf of Guinea**. FAO, Rome, Italy, 268 p.

Vaske Jr., T., Lessa, R. P. T., Ribeiro, A. C. B., Nóbrega, M. F., Pereira, A. A. & Andrade, C. D. P. 2006. A pesca comercial de peixes pelágicos no Arquipélago de São Pedro e São Paulo, Brasil. **Tropical Oceanography**, 34(1): 31-41.

Vaske Jr. T., Lima, K. L., Ribeiro, A. C. B. & Lessa, R. 2008. Record of the St. Helena deepwater scorpionfish, *Pontinus nigropunctatus* (Günther) (Scorpaeniformes: Scorpaenidae), in the Saint Peter and Saint Paul Archipelago, Brazil. **Pan-American Journal of Aquatic Sciences**, 3(1): 46-48.

Viana, D. L., Hazin, F. H. V., Nunes, D., Carvalho, F., Véras, D. & Travassos, P. 2008. Wahoo *Acanthocybium solandri* fishery in the Vicinity of Saint Peter and Saint Paul Archipelago, Brazil, from 1998 to 2006. **Collective Volume Scientific Papers - ICCAT**, 62(5): 1662-1670.

Viana, D. L., Travassos, M., Porto, M., Vaske,. T. & Hazin, F. 2012. Diet of the oilfish *Ruvettus pretiosus* (Perciformes: Gempylidae) in the Saint Peter and Saint Paul Archipelago, Brazil. **Brazilian Journal of Oceanography**, 60(2):183-190.

Received February 2012
Accepted August 2012
Published online November 2012