



<http://dx.doi.org/10.11646/zootaxa.3937.2.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:E654E1ED-708D-4537-A7EC-8FFF8EC2DCF4>

***Scyliorhinus ugoi*, a new species of catshark from Brazil (Chondrichthyes: Carcharhiniformes: Scyliorhinidae)**

KARLA D. A. SOARES^{1,4}, OTTO F. B. GADIG² & ULISSES L. GOMES³

¹Universidade de São Paulo, Instituto de Biociências, Departamento de Zoologia, Rua do Matão, Trav. 14, no. 101, São Paulo, SP, CEP 05508-900, Brazil. E-mail: karlad.soares@yahoo.com.br

²Laboratório de Pesquisa de Elasmobrânquios, Universidade Estadual Paulista 'Júlio Mesquita Filho', Campus Experimental do Litoral Paulista, Departamento de Biologia Marinha, Praça Infante Dom Henrique, s/n, Parque Bitaru, São Vicente, SP, CEP 11330-900, Brazil. E-mail: gadig@clp.unesp.br

³Laboratório de Taxonomia de Elasmobrânquios, Universidade do Estado do Rio de Janeiro, Instituto de Biologia, Departamento de Zoologia, Rua São Francisco Xavier, 524, Maracanã, Rio de Janeiro, RJ, CEP 20550-900. E-mail: ulisseslg@uerj.br

⁴Corresponding author

Abstract

A new species of catshark (Carcharhiniformes, Scyliorhinidae), *Scyliorhinus ugoi* sp. nov., is described from off North-eastern and Southeastern Brazil. The new species is closest to the *Scyliorhinus haeckelii/besnardii* group and *S. hesperius* but differs in background coloration, head width, sexual maturity, and in cranial and body proportions.

Key words: Scyliorhinidae, *Scyliorhinus ugoi* sp. nov., dark freckled catshark, southwestern Atlantic Ocean, Brazil

Introduction

The genus *Scyliorhinus* Blainville 1816, consists of 15 species whose geographical distribution covers all seas, from cold to tropical waters, except the Antarctic and Southeastern Indian Ocean. Species of this genus live in close association with the substrate, from coastal regions to the edge of the continental shelf, reaching depths of about 2,000 m (Bigelow & Schroeder, 1948; Springer, 1966, 1979; Compagno *et al.*, 2005).

According to Springer (1979) and Compagno (1984), *Scyliorhinus* presents the following characters: color pattern with dark dorsal saddles, clear and/or dark blotches, supraorbital crest present, small snout, small lower labial furrow and upper labial furrow absent, and second dorsal fin smaller than first. There is a small flap that slightly overlaps the lower lip at each corner of the mouth, the outer edge of which may extend anteriorly, from the corner of the mouth for a short distance, giving the impression that an upper labial furrow is present.

Scyliorhinus is most diverse in the western Atlantic and at least three species are listed as occurring in the Brazilian coast, as follows: *S. haeckelii* Miranda Ribeiro, 1907, distributed from Venezuela to Argentina (Compagno, 1984; Figueiroa, 2011), *S. besnardii* Springer & Sadowsky, 1970, found in southeastern Brazil to Argentina (Springer & Sadowsky, 1970, Springer, 1966, 1979; Figueiroa, 2011), and *S. hesperius* Springer, 1966, recorded from Honduras in the Caribbean Sea to the Brazilian central coast (Gadig & Gomes, 2003). But because of their great similarity and lack of exclusive characters, *S. haeckelii* and *S. besnardii* are treated here as the *S. haeckelii/besnardii* group (Gadig, 2001; Gomes *et al.*, 2010; Soares, 2014). However, Soares (2014) has found that *S. hesperius* of Gadig & Gomes (2003) and *Scyliorhinus* sp. of Gomes *et al.* (2010) represent a new species occurring from northeastern Brazil to Rio de Janeiro state; this species is herein described.

Material and methods

Abbreviations and methodology for body measurements followed Compagno (2001) with addition of the

(30–34), *S. comoroensis* (45) and *S. capensis* (48), but do not differ appreciably from counts for *S. retifer*, *S. boa*, *S. hesperius* and *S. haeckelii/besnardii* (Springer & Sadowsky, 1970; Springer, 1979; Compagno, 1988b; Soares, 2014).

The occurrence of *S. hesperius* in the uppermost slope (274–457 m in depth) of the Atlantic from Central America to Brazil (Gadig & Gomes, 2003) is an error of identification and refers, in fact, to *S. ugoi* (Soares, 2014). Beyond the differences in color pattern, *S. ugoi* has a larger head, with preorbital length 6.4% TL and head length 19.5–20.3% TL vs. 4.9–5.3% TL and 18.9% TL in *S. hesperius*, respectively. The mouth is also larger in *S. ugoi*, its width 9.0–9.7% TL vs. 7.0–7.5 in *S. hesperius*, as is its anal base length at 7.7–8.2% TL vs. 5.7–7.7% TL in *S. hesperius* (Springer, 1979; Soares, 2014).

It is apparent from the comparisons presented above that *S. ugoi* is not particularly close to its geographically nearest congener, *S. haeckelii/besnardii* of the southwestern Atlantic Ocean, and is differentiated from *S. hesperius* of Central America by color pattern and body proportions.

Acknowledgements

The authors wish to acknowledge José Lima Figueiredo, Aléssio Datovo (MZUSP) and Lynne Parenti (USNM) for the loan of specimens used in this work. We also acknowledge Herculano Alvarenga (MHNT) for the radiographs of some specimens and Alan Moraes (Laboratory of Electronical Microscopy, UERJ) for help with the SEM. Marcelo Carvalho (IBUSP) is thanked for extensive review of the manuscript. The first and second authors are supported by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes) and Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), respectively.

References

- Bigelow, H.B. & Schroeder, W.C. (1948) *Fishes of the Western North Atlantic. Part I. Lancelets, Cyclostomes and Sharks. Memoirs Sears Foundation*. Yale University, New Haven, 576 pp.
- Compagno, L.J.V. (1970) Systematics of the genus *Hemitriakis* (Selachii: Carcharhinidae), and related genera. *Proceedings of California Academic Sciences*, Series 4, 38, 63–98.
- Compagno, L.J.V. (1984) FAO species catalogue. Vol. 4. Sharks of the world: An annotated and illustrated catalogue of shark species known to date. Part 2. Carcharhiniformes. *FAO Fisheries Synopsis*, no. 125, 4, 251–655.
- Compagno, L.J.V. (1988a) *Sharks of the Order Carcharhiniformes*. Princeton University Press, 467 pp.
- Compagno, L.J.V. (1988b) *Scyliorhinus comoroensis* sp. n., a new catshark from the Comoro Islands, western Indian Ocean (Carcharhiniformes, Scyliorhinidae). *Bulletin Museum National d'Histoire Naturelle*, 10 (3), 603–625.
- Compagno, L.J.V. (2001) *Sharks of the world. An annotated and illustrated catalogue of shark species known to date. Vol. 2. Bullhead, mackerel and carpet sharks (Heterodontiformes, Lamniformes and Orectolobiformes)*. FAO Species Catalogue for Fishery Purposes, Rome, 269 pp.
- Compagno, L.J.V., Dando, M. & Fowler, S. (2005) *Sharks of the world*. Princeton University Press, Princeton, 368 pp.
- Figuerola, D.E. (2011) Clave ilustrada de ágnatos y peces cartilaginosos de Argentina y Uruguay. In: Wöhler, O.C., Cedrola, P.Y. & Cosseau, M.B. (Eds.), *Contribuciones sobre biología, pesca y comercialización de tiburones en la Argentina. Aportes para la elaboración del Plan de Acción Nacional*. Consejo Federal Pesquero, Buenos Aires, Argentina, pp. 25–74.
- Gadig, O.B.F. (2001) *Tubarões da costa brasileira*. Unpubl. PhD thesis, Universidade Estadual Paulista 'Júlio Mesquita Filho', Rio Claro, São Paulo, 343 pp.
- Gadig, O.B.F. & Gomes, U.L. (2003) Classe Chondrichthyes. In: Menezes, N.A., Buckup, P.A., Figueiredo, J.L. & Moura, R.L. (Eds.), *Catálogo das espécies de peixes marinhos do Brasil*. Museu de Zoologia da Universidade de São Paulo, São Paulo, pp. 21–22.
- Gomes, U.L., Signori, C.N., Gadig, O.B.F. & Santos, H.R.S. (2010) *Guia para Identificação de Tubarões e Raias do Rio de Janeiro*. Technical Books, Rio de Janeiro, 234 pp.
- Jungersen, H.F.E. (1899) *On the apendices genitales in the greenland shark Somniosus microcephalus (Bl. Schn.) and another selachians*. Danish Ingolf Expedition, Bianco Luno, Copenhagen, 88 pp.
- Shirai, S., Hagiwara, S. & Nakaya, K. (1992) *Scyliorhinus tokubee* sp. nov. from Izu Peninsula, Southern Japan (Scyliorhinidae, Elasmobranchii). *Japanese Journal of Ichthyology*, 39 (1), 9–16.
- Soares, K.D.A. (2014) *Estudo taxonômico das espécies de Scyliorhinus do grupo haeckelii/besnardii (Carcharhiniformes, Scyliorhinidae) das regiões Sudeste e Sul do Brasil (Oceano Atlântico Sul Ocidental)*. Unpubl. Master's thesis, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 208 pp.

- Springer, S. (1966) A review of Western Atlantic catsharks, Scyliorhinidae, with descriptions of a new genus and five new species. *Fishery Bulletin, United States Fish and Wildlife Service*, 65 (3), 581–624.
- Springer, S. (1979) A revision of the catsharks, Family Scyliorhinidae. *NOAA Technical Report NMFS*, 422, 1–97.
- Springer, S. & Sadowsky, V. (1970) Subspecies of the western Atlantic catshark, *Scyliorhinus retifer*. *Proceedings of the Biological Society of Washington*, 83 (7), 83–98.

APPENDIX. Comparative material.

Scyliorhinus ugoi: 5 specimens. UERJ 1426, female, 513 mm TL (off Bahia, Central Brazilian coast); UERJ 1722, adult female, 600 mm TL (off Salvador, Bahia, Central Brazilian coast); UERJ 1723, female, 427 mm TL (Central Brazilian coast, between Pernambuco and northern Rio de Janeiro); UERJ 1726, adult female, 597 mm TL (Central Brazilian coast, between Pernambuco and northern Rio de Janeiro); UNESP-CLP 0093, adult female, 580 mm TL (Bahia, Northeastern Brazil).

Scyliorhinus boa: 9 specimens. USNM 186195.1, male, 350 mm TL (6°29'N 52°30'W, French Guiana); USNM 186195.2, male, 315 mm TL (6°29'N 52°30'W, French Guiana); USNM 186195.3, female, 285 mm TL (6°29'N 52°30'W, French Guiana); USNM 204378, female, 435 mm TL (11°15'N 68°13'W, Caribbean Venezuela); USNM 221565.1, female, 425 mm TL (11°50'N 73°5'W, Caribbean Colombia); USNM 221565.2, female, 350 mm TL (11°50'N 73°5'W, Caribbean Colombia); USNM 221565.3, male, 376 mm TL (11°50'N 73°5'W, Caribbean Colombia); USNM 221566, male, 210 mm TL (11°58'N 69°30'W, Caribbean Venezuela); USNM 221567, male, 205 mm TL (11°31'N 64°11'W, Caribbean Venezuela).

Scyliorhinus haeckelii/besnardii: 92 specimens. MNRJ 494, male, 317 mm (Ilha Rasa, Rio de Janeiro, Southeastern Brazil); MZUSP 9963, female, 329 mm TL (35°18'S 52° 32'W, Uruguay); MZUSP 9965, male, 361 mm TL (35°18'S 52° 32'W, Uruguay); MZUSP 9966, male, 169 mm TL (35°18'S 52° 32'W, Uruguay); MZUSP 37282, female, 280 mm TL (23°05'S 41° 59'W, São Paulo, Southeastern Brazil); MZUSP 37283, male, 356 mm TL (23°05'S 41° 59'W, São Paulo, Southeastern Brazil); MZUSP 37284, male, 391 mm TL (23°10'S 43°05'W, São Paulo, Southeastern Brazil); MZUSP 37284, female, 355 mm TL (23°10'S 43°05'W, São Paulo, Southeastern Brazil); UERJ 71.1, female, 394 mm TL (Southeastern Brazil); UERJ 71.2, male, 364 mm TL (Southeastern Brazil); UERJ 1489, male, 491 mm TL (Southeastern Brazil); UERJ 1574, female, 371 mm TL (off Paraná, Southern Brazil); UERJ 1496.1, female, 361 mm TL (Itajaí, Santa Catarina, southern Brazil); UERJ 1496.2, female, 367 mm TL (Itajaí, Santa Catarina, southern Brazil); UERJ 1573, female, 297 mm TL (off Paraná, southern Brazil); UERJ 1689, male, 566 mm TL (Southeastern Brazil); UERJ 1690, female, 467 mm TL (Southeastern Brazil); UERJ 1691, male, 522 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 1692, male, 389 mm TL (Southeastern Brazil); UERJ 1693, male, 469 mm TL (Cabo Frio, Rio de Janeiro, Southeastern Brazil); UERJ 1695, female, 494 mm TL (Southeastern Brazil); UERJ 1696, female, 451 mm TL (Southeastern Brazil); UERJ 1697, male, 491 mm TL (Southeastern Brazil); UERJ 1698, male, 454 mm TL (Southeastern Brazil); UERJ 1699, female, 400 mm TL (Cabo Frio, Rio de Janeiro, Southeastern Brazil); UERJ 1701, female, 405 mm TL (Cabo Frio, Rio de Janeiro, Southeastern Brazil); UERJ 1703, male, 451 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 1704, male, 425 mm TL (Southeastern Brazil); UERJ 1705, female, 450 mm TL (Cabo Frio, Rio de Janeiro, Southeastern Brazil); UERJ 1706, female, 422 mm TL (Cabo Frio, Rio de Janeiro, Southeastern Brazil); UERJ 2202, male, 444 mm TL (Southeastern Brazil); UERJ 2208, male, 216 mm TL (Southeastern Brazil); UERJ 2232.1, female, 341 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.2, female, 304 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.3, female, 348 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.4, male, 383 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.5, male, 321 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.6, male, 341 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.7, male, 415 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.8, male, 337 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.9, male, 293 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.10, male, 318 mm TL (Southeastern Brazil); UERJ 2232.11, female, 334 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.12, female, 326 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.13, male, 325 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.14, female, 334 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.15, female, 305 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.16, male, 314 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.17, male, 296 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.18, male, 274 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.19, male, 368 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.20, female, 323 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.21, male, 353 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.23, male, 416 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.24, female, 241 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.25, female, 326 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.26, female, 305 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.27, female, 277 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.28, female, 308 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.33, male, 315 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.39, female, 299 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2233.7, female, 348 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2233.13, female, 366 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2233.14, female, 250 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.29, female, 370 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.30, male, 344 mm TL (Rio de Janeiro, Southeastern Brazil); UERJ 2232.31, female, 269 mm TL (Rio