

Species of the Genus *Seriolella* (Centrolophidae) in Southwest Atlantic Waters

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Abstract Two species of *Seriolella* were examined to confirm their distribution in the southwest Atlantic: *S. porosa* and *S. caerulea*, both described by Guichenot in 1848. The former is considered a synonym of *S. punctata* (Bloch et Schneider, 1801) by some authors, and the second has received several names. Both species live on the Pacific and Atlantic sides of South America. Distribution data suggests that *S. caerulea* occurs in deeper waters than *S. porosa*.

In the southwest Atlantic the family Centrolophidae is represented by four species: *Centrolophus niger* (Gmelin, 1788); *Ichthyos australis* Haedrich, 1966; *Seriolella caerulea* Guichenot, 1848; and *Seriolella porosa* Guichenot, 1848. The first three are also present off Tasmania and New Zealand (McDowall, 1982).

This paper examines the validity of *S. porosa* based on morphological and meristic characters, confirms the presence of *S. caerulea* in Argentine shelf waters and analyzes distributional data for both species in the above-mentioned area.

Material and Methods

Examination was made of 188 specimens of *Seriolella porosa* obtained in Patagonian waters during two cruises in August and October 1985 by R/V "Dr. E. L. Holmberg" and one cruise in December 1985 by R/V "Capitán Oca Balda."

Two specimens of *S. caerulea* were examined: INIDEP 429, 238 mm SL, 48°58'S, 63°24'W, 133 m depth, R/V "Walther Herwig," October 1978; INIDEP 294, 265 mm SL, 37°09'S, 54°54'W, 87 m depth, F/V "Turquesa," October 1979. The register numbers correspond to the Ichthyological Collection of the Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP).

Morphometric and meristic data were taken from each specimen and ranges, means and variances for each meristic character of *S. porosa* determined.

Data from 32 research cruises were analysed to determine the distribution of *S. porosa*: 10 cruises by R/V "Shinkai Maru" (1978-1979); 5 by R/V "Walther Herwig" (1978); 1 by R/V "Capitán Cánepa" (1981); 9 by R/V "Dr. E. L. Holmberg" (1981-1985) and 7 by R/V "Capitán Oca Balda" (1985-1987). The distribution of *S. caerulea* was determined from Norman (1937), Gosztanyi (1981), Menni and López (1979), Menni et al. (1981), Inada (1986) and two specimens in the INIDEP ichthyological collection.

Seriolella porosa Guichenot, 1848

Seriolella punctata (not of Bloch and Schneider, 1801): Stehmann and Lenz, 1973 (in part) (Argentina and Chile); Gosztanyi and Menni, 1978 (Argentina); Bellisio et al., 1979 (Argentina); Gosztanyi, 1981 (Argentina); Menni et al., 1981 (Argentina); McDowall, 1982 (in part) (Argentina and Chile); Menni and Gosztanyi, 1982 (Argentina); Menni et al., 1984 (Argentina and Uruguay).

Seriolella porosa: Guichenot, 1848 (Chile); Berg, 1895 (Argentina); Pozzi and Bordinale, 1935 (Argentina); Hart, 1947 (Argentina); Ringuet and Aramburu, 1960 (Argentina and Uruguay); Haedrich, 1967 (Perú and Chile); Chirichigno et al., 1982 (Perú and Chile); Ojeda, 1982 (Chile); Nakamura, 1986 (Perú and Chile).

Berg (1895) examined specimens from Santa Cruz (Argentina) and identified them as *S. porosa* Guichenot, 1848. Norman (1937) followed this, extending

the species' distribution to the Atlantic and Pacific South American coasts and to Australia and New Zealand. Hart (1947), in his report on trawling surveys on the Patagonian continental shelf, mentioned that *S. porosa* was captured at only one station (44°38'S, 64°15'W; 90m) and commented that it was probably a pelagic and coastal species.

Haedrich (1967) and Haedrich and Horn (1969) treated *S. punctata* and *S. porosa* as distinct species and discussed their similarities in morphometric and meristic characters. Haedrich (1967) commented on the low probability of such a coastal species traversing the distance between South America and Australia, and mentioned the need for a more precise revision of *S. porosa*, *S. punctata* and *S. dobula* (Günther, 1869). The last mentioned was considered as a synonym of *S. porosa* and *S. punctata* by Regan (1902) and Haedrich (1967), respectively.

Stehmann and Lenz (1973) considered *S. porosa* to be a synonym of *S. punctata*. Based on an examination of Australian, Chilean and Argentine specimens, they considered that the species was represented by three populations, in the Tasman Sea, off the coasts of Chile and Perú, and off Argentina. Two hypothesis were proposed for such a distribution pattern: 1) possible migration or passive transport of eggs and juvenile stages and/or 2) the secondary separation of a common "*punctata* type" ancestor, originally distributed around the Gondwana continent, during the Cretaceous and Tertiary periods (considered to be the most likely hypothesis).

McDowall (1982) examined only New Zealand material, but included Patagonia in the distribution of *S. punctata*, following Stehmann and Lenz (1973) in considering *S. porosa* as a synonym of *S. punctata*. More recently, Nakamura (1986) examined Chilean specimens and recognized *S. porosa* for Chile and Perú. He mentioned that Stehmann and Lenz

(1973) synonymized this species with *S. punctata* whereas Haedrich (1967) recognized both species, but did not explain the reason for his own decision.

Comparing Guichenot's original description and the information given by McDowall (1982) and Nakamura (1986) with our own, the most important differences between New Zealand and South American types in morphological and meristic characters, are as follows. a) Morphology: in the New Zealand type the pelvic fins are below the pectoral fin base, whereas in the South American type they are behind that base; basibranchial teeth are present in the New Zealand type but not so in the South American. b) Meristic characters: according to the data in Table 1, the major difference is in the number of spines in the first dorsal fin (VII-IX in the New Zealand type vs. VI-VII in the South American); in the second dorsal and anal fins the range is wider in the South American type, but there is a complete overlap with the New Zealand type; around three pyloric caeca in the New Zealand type and always four in the South American.

On the basis of these considerations, *S. porosa* may be considered a valid species. However, it is evident that *S. porosa* and *S. punctata* are very similar in morphology and coloration and the hypothesis of a common "*punctata* type" ancestor proposed by Stehmann and Lenz (1973) is reasonable.

Seriolella caerulea Guichenot, 1848

McDowall (1980) determined the synonymy (adopted in this paper) and indicated the distribution of this species. The following synonymy applies to specimens from South American waters.

Palinurichthys griseolineatus: Norman, 1937 (Argentina);

Table 1. Meristic characters of *Seriolella porosa*: range, mean (\bar{x}), variance (S^2) and number of observations of each character (n)

Meristic characters	<i>S. porosa</i>				<i>S. punctata</i> *	
	Range	\bar{x}	S^2	n	Range	n
First dorsal fin	VI-VII	6.21	0.16	187	VII-IX	16
Second dorsal fin	36-43	39.89	3.32	187	35-39	16
Pectoral fins	18-22	20.26	0.59	188	19-22	17
Anal fin	III, 21-27	24.62	1.10	187	III, 21-24	16
Gill rakers	19-24	21.70	0.65	188	20-22	17
Vertebrae	25	25.00	0.00	188	25	20

* Data given by McDowall (1982).

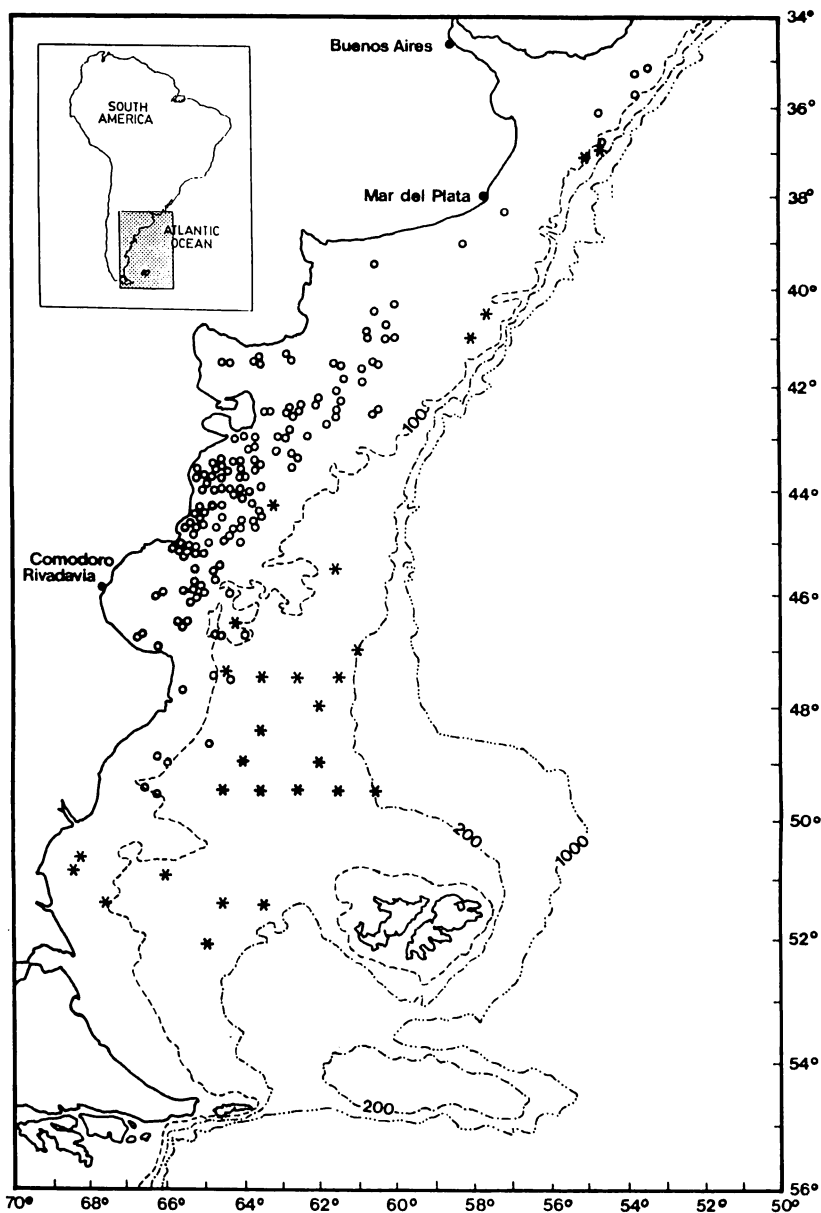


Fig. 1. Geographical distribution of *Seriolella porosa* (○) and *S. caerulea* (*) in Southwest Atlantic waters.

Hart, 1947 (Argentina); Ringuet and Aramburu, 1960 (Argentina and Uruguay).
Palinurichthys caeruleus: Norman, 1937 (Argentina); Hart, 1947 (Argentina); Ringuet and Aramburu, 1960 (Argentina and Uruguay).
Schedophilus griseolineatus: Haedrich, 1967 (Southwest Atlantic); Menni and López, 1979 (Argentina); Menni et al., 1981 (Argentina); Gosztonyi, 1981 (Argentina);

Chirichigno et al., 1982 (Perú and Chile); Menni and Gosztonyi, 1982 (Argentina); Menni et al., 1984 (Argentina).
Seriolella caerulea: Guichenot, 1848 (Juan Fernandez Island); McDowall, 1980 and 1982 (Pacific and Atlantic South American coasts); Inada, 1986 (Argentina and Chile).

McDowall (1982) suggested that a specimen from Juan Fernández Island was not *S. caerulea*, because it had only 25 vertebrae instead of the usual 26. Following Norman (1937), McDowall (1982) reserved the name *S. caerulea* for the species with 26 vertebrae. The INIDEP specimens also had 26 vertebrae and other characters also agreed with the descriptions of McDowall (1980, 1982) and Inada (1986) for *S. caerulea*. Accordingly, the presence of this species in Argentinean waters is confirmed.

Field key for the Southwest Atlantic species of the genus *Seriolella*

1. Depth of body more than three times in body length; eye horizontal diameter greater than snout length*S. porosa*
2. Depth of body less than three times in body length; eye horizontal diameter equal to snout length*S. caerulea*

Discussion

The information regarding the distribution of *Serirolella porosa* and *S. caerulea* on the Argentine shelf between 35° and 53°S is shown in Figure 1. *S. porosa* occurs from 35° to 49°S, usually in less than 100 m depth, whereas *S. caerulea* occurs from 36° to 52°S, commonly below 100 m depth. Thus, although there is a broad latitudinal overlap, differences in depth range result in the two species rarely occurring together.

There are differences also in species abundance. Trawl captures of *S. caerulea* are occasional and usually comprise only a few specimens, although Menni and López (1979) reported an exceptional catch of 160 kg. In contrast, up to 280 kg/haul of *S. porosa* has been taken. According to Argentine commercial statistics, 660 t of *S. porosa* were landed in 1990, but no landings of *S. caerulea*.

Inada (1986) wrote of *S. caerulea*: "In Argentina, it is distributed on the continental shelf at depths of about 150 m from 50° to 52°S." Nevertheless, the corresponding figure does not show that distribution.

Comparison of distribution and abundance data for *S. caerulea* from Southwest Atlantic waters with that in McDowall (1980) for New Zealand, shows that in the latter region the species is present in deeper waters and seems to be much more abundant.

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南西大西洋の *Seriolella* 属 (イボダイ科) の再検討

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南西大西洋における *Seriolella* 属の *S. porosa* Guichenot, 1848 と *S. caerulea* Guichenot, 1848 の分布を調査した結果、前者よりも後者の方が深所に生息することが明らかになった。*S. porosa* は、*S. punctata* (Bloch et Schneider, 1801) のシノニムと考える研究者もいるが、両者は別種と考えられる。*S. caerulea* と *S. porosa* は南アメリカの大西洋側にも太平洋側にも分布する。