

New records and range extensions of reef fishes in the Western South Atlantic, with comments on reef fish distribution along the Brazilian coast

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ABSTRACT. New occurrences of 11 species of reef fishes are reported for the western South Atlantic, range extensions are recorded for additional 37 reef species along the Brazilian coast, and the distribution of reef ichthyofauna along the eastern coast of South America is commented upon.

KEY WORDS. Western South Atlantic, Brazilian ichthyofauna, reef fishes, new records, range extensions, latitudinal trends

There is no reliable, recent compilation of the Brazilian marine ichthyofauna, not even for a particular geographical area, despite the continuous and well succeeded efforts of FIGUEIREDO (1978), FIGUEIREDO & MENEZES (1978, 1980) and MENEZES & FIGUEIREDO (1980, 1985) for southeastern Brazil, and two major contributions by ROUX (1973, 1979) for the whole Brazilian coast. As an immediate consequence, no one knows exactly which and how many fish species are recorded for the Brazilian coast, nor what is the reported range of most marine fishes in this region of the western South Atlantic.

In recent years there has been a steady increase of new records of marine fishes on the Brazilian coast, especially of reef species (ROSA 1980; LUBBOCK & EDWARDS 1981; KOIKE & GUEDES 1981; RAMOS & VASCONCELLOS-FILHO 1989; MOURA 1995; GUIMARÃES 1996a,b; ROCHA *et al.* 1998). The presence of previously unrecorded species indicate that the Brazilian reef ichthyofauna is considerably richer and an estimation of number, composition and distribution of species is still far from being obtained.

In this paper, we report on new occurrences of 11 species of reef fishes in the western South Atlantic, record range extensions of additional 37 species, and comment upon the distribution and composition of the Brazilian reef ichthyofauna. Some of the species presented herein had been listed in a popular account on

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Brazilian marine fishes (CARVALHO-FILHO 1992) and on a recent paper (ROCHA *et al.* 1998) without, however, any reference to specimens, these species being thus substantiated as new occurrences in the present paper.

MATERIAL AND METHODS

Most of the material reported in this study was sporadically collected since 1980 by divers at several localities from the State of Maranhão (about 00°52'S) south to the State of Espírito Santo (about 20°45'S), the southern limit of the intense coral reef growth in the western South Atlantic, and from the State of Espírito Santo south to the State of Santa Catarina (about 27°09'S), the southern limit of rocky reefs along the Brazilian coast. Collections were made also on the oceanic islands of the Atol das Rocas, Fernando de Noronha Archipelago, and Trindade Island.

Specimens examined are deposited at the Museu de Zoologia, Universidade de São Paulo (MZUSP), Museu de História Natural, Universidade Estadual de Campinas (ZUEC); Departamento de Sistemática e Ecologia, Universidade Federal da Paraíba (UFPB), and Laboratório de Ictiologia Geral e Aplicada, Universidade Federal do Rio de Janeiro (UFRJ). The specimens are presented from northern to southern localities. Coordinates are given when a locality first appears within the text, both latitude and longitude for oceanic islands, and only latitude for coastal localities including continental islands.

For each specimen, collection number, number of specimens in parentheses, standard length in millimeters (total length for eels and shark embryo), locality, date of collection, and collectors are given and depth at collection site is also presented when available. Taxonomic arrangement follows NELSON (1994).

RESULTS AND DISCUSSION

Ophichthidae

***Myrichthys breviceps* (Richardson, 1848)**

Specimens examined. BRAZIL, *Espírito Santo*: Guarapari (Meaípe, 20°45'S, tidepool), ZUEC 3066 (1), 295 mm, 1-VII-1996, C. Sazima, J.L. Gasparini & I. Sazima *leg.*; *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 24°06'S), MZUSP 45652 (1), 720 mm, 27-IV-1993, R.L. Moura *leg.*

Remarks. Represents a south range extension of the sharptail eel, previously reported at about 15°S (MCCOSKER *et al.* 1989).

***Ophichthus ophis* (Linnaeus, 1758)**

Specimens examined. BRAZIL, *São Paulo*: Santos (Laje de Santos, 24°19'S, 21 m), MZUSP 44649 (1), 919 mm, 21-III-1992, R.L. Moura *leg.*

Remarks. The spotted snake eel was previously recorded south of the State of Rio de Janeiro, southeastern Brazil (MCCOSKER *et al.* 1989). This eel is expected to occur further south, at least to the State of Santa Catarina, based on its abundance on the State of São Paulo coast, from where our specimen was obtained.

Congridae

***Heteroconger longissimus* Günther, 1870**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 16 m), MZUSP 49456 (1), 443 mm, 1-III-1996, I. Sazima, R.L. Moura & C. Sazima *leg.*.

Remarks. The known southernmost record for the Caribbean brown garden eel was the Caribbean (SMITH 1989). Our specimen has 157 vertebrae, which is at the lower range (157-179) of vertebral counts for both Eastern and Western Atlantic specimens (SMITH 1989; GONZÁLEZ-LORENZO *et al.* 1995). *Heteroconger halis* (Böhlke) is a junior synonym of *H. longissimus* (SALDANHA *et al.* 1986; GONZÁLEZ-LORENZO *et al.* 1995).

Bythitidae

***Stygnobrotula latebricola* (Böhlke, 1957)**

Specimens examined. BRAZIL, *Espírito Santo*: Guarapari (Ilha Escalvada, 20°42'S, 19 m), ZUEC 2740 (1), 74.3 mm (tip missing), 26-VII-1994, D.A. Jório & J.L. Gasparini *leg.*.

Remarks. Represents a south range extension, as the southernmost record of the black brotula was at Salvador (about 13°S), State of Bahia, northeastern Brazil (ALMEIDA 1973).

Antennariidae

***Antennarius multiocellatus* (Valenciennes, 1837)**

Specimens examined. BRAZIL, *Pernambuco*: Arquipélago de Fernando de Noronha (03°56'S, 32°24'W), MZUSP 46345 (1), 72.3 mm, IV-1990, A. Carvalho Filho *leg.*; *Rio Grande do Norte*: Atol das Rocas (03°50'S, 33°49'W, tidepool), MZUSP 48229 (1), 13.7 mm, 16-XII-1994-10-I-1995, R.L. Moura & C.L.B. Francini *leg.*; *Espírito Santo*: Guarapari (Enseada de Perocão, 20°40'S, 10 m), ZUEC 2748-2750 (3), 76.5-105.6 mm, V-1995, D.A. Jório *leg.*.

Remarks. This is the first record in oceanic islands in the western South Atlantic and a south range extension for the longlure frogfish, previously recorded south to Salvador, State of Bahia (PIETSCH & GROBECKER 1987).

Ogcocephalidae

***Halieutichthys aculeatus* (Mitchill, 1818)**

Specimens examined. BRAZIL, *Espírito Santo*: Linhares (Foz do Rio Doce, 19°42'S, 60 m), MZUSP 51316 (1), 54.2 mm, XI-1984, J.L. Gasparini *leg.*.

Remarks. First substantiated record in the western South Atlantic (ROUX 1973). The record of *Halieutichthys caribbaeus* Garmann, 1897 for the Brazilian coast (ROUX 1973) probably refers to this species. The previous southernmost record for the pancake batfish was in the Caribbean (BRADBURY 1967; BÖHLKE & CHAPLIN 1968).

Holocentridae

Plectropops retrospinis (Guichenot, 1853)

Specimens examined. BRAZIL, *Pernambuco*: Arquipélago de Fernando de Noronha, MZUSP 46336 (2), 77.1 mm, VII-1995, A. Carvalho Filho leg.; *Espírito Santo*, Guarapari, (Ilhas Rasas, 20°40'S, 22 m), ZUEC 3104 (1), 84.1 mm, 8-VII-1996, D.A. Jório leg.; *São Paulo*, São Sebastião (Praia de Toque-Toque, 23°50'S), MZUSP 46993 (1), 55.5 mm, II-1987, A. Carvalho Filho leg.

Remarks. First substantiated record for the cardinal soldierfish in the western South Atlantic (CARVALHO-FILHO 1992; ROCHA et al. 1998); previous records south to Venezuela (MAGO-LECCIA 1965).

Serranidae

Liopoproma carmabi (Randall, 1963)

Specimens examined. BRAZIL, *Espírito Santo*: Guarapari (Ilha Escalvada, 16m), MZUSP 44934 (1), 58.5 mm, 3-VIII-1986, J.L. Gasparini & F. Pavan leg.; Guarapari (Ilhas Rasas, 27 m), ZUEC 2648 (1), 48.0 mm, 24-X-1995, D.A. Jório & J.L. Gasparini leg.

Remarks. The known southernmost record for the candy basslet was in the Caribbean (RANDALL 1963, 1983).

Serranus baldwini (Evermann & Marsch, 1900)

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 15 m), MZUSP 45619 (1), 52.0 mm, 29-IV-1993, R.L. Moura leg.; Santos (Laje de Santos, 12 m), MZUSP 43479 (1), 43.4 mm, 21-IV-1991, R.L. Moura leg.; Itanhaém (Ilha da Queimada Grande, 24°29'S, 10 m), MZUSP 43480 (1), 50.8 mm, 20-IX-1991, R.L. Moura leg.

Remarks. Represent a south range extension, as the southernmost record for the lantern bass was the State of Rio de Janeiro (MENEZES & FIGUEIREDO 1980). It is expected to occur further south at least to the State of Santa Catarina, since this is one of the most abundant small serranids on the coastal islands of the State of São Paulo.

Rypticus bistrispinus (Mitchill, 1818)

Specimens examined. BRAZIL, *Bahia*: Arembepe (12°47'S), MZUSP 46382 (1), 74.4 mm, 10-VI-1985, A. Carvalho Filho leg.; *Rio de Janeiro*: Arraial do Cabo (Praia do Forno, 22°58'S), MZUSP 47483 (2), 64.6 and 62.1 mm, 16-V-1991, C.E.L. Ferreira leg.

Remarks. Represent a south range extension, as the southernmost record for this soapfish was northern Brazil, about 01°50'S (COURTENAY 1967).

Rypticus randalli Courtenay, 1967

Specimens examined. BRAZIL, *Santa Catarina*: Porto Belo (27°09'S), MZUSP 46648 (1), I-1988, A. Carvalho Filho leg.

Remarks: The southernmost record for this soapfish was the State of São Paulo, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

Opistognathidae

***Opistognathus aurifrons* (Jordan & Thompson, 1905)**

Specimens examined. BRAZIL, *Espirito Santo*: Vitória (20°17'S), MZUSP 46541 (1), XII-1990, A. Carvalho Filho *leg.*; Guarapari (Ilha Escalvada, 16 m), ZUEC 2739 (1), 60.2 mm, VII-1995, D.A. Jório & J.L. Gasparini *leg.*; *Rio de Janeiro*: Armação dos Búzios (Praia dos Ossos, 22°45'S), MZUSP 49070 (1), 62.9 mm, IX-1987, A. Carvalho Filho *leg.*

Remarks. The yellowhead jawfish was previously recorded south to the State of Alagoas, northeastern Brazil (RAMOS 1994).

Priacanthidae

***Heteropriacanthus cruentatus* (Lacépède, 1801)**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Praia de Baraqueçaba, 23°49'S), MZUSP 46260 (1), 56.2 mm, I-1991, A. Carvalho Filho *leg.*; São Sebastião (Arquipélago dos Alcatrazes), ZUEC 2732 (1), 80.1 mm, &-IV-1996, I. Sazima, R.L. Moura & C. Sazima *leg.*

Remarks. Although the presence of the glasseye snapper would be expected in southeastern Brazil, no specimens were previously reported from the area between the State of Rio de Janeiro in Brazil and Argentina (FIGUEIREDO & MENEZES 1980; STARNES 1988).

Apogonidae

***Apogon americanus* Castelnau, 1855**

Specimens examined. BRAZIL, *Rio de Janeiro*: Arraial do Cabo (Praia do Forno, 6 m), MZUSP 47486 (1), 70.2 mm, 8-II-1991, C.E.L. Ferreira *leg.*; *São Paulo*: Ubatuba (Ilha Anchieta, 23°32'S, 8 m), ZUEC 2709 (1), 83.1 mm, 24-II-1996, I. Sazima, R.L. Moura & C. Sazima *leg.*; Santos (Laje de Santos, 5 m), MZUSP 45641 (1), 76.7 mm, 21-II-1992, R.L. Moura *leg.*

Remarks. Previously recorded south to Bahia, northeastern Brazil (GILBERT 1977). Specimen ZUEC 2709 was brooding eggs orally [see CHARNEY (1976) and BLUMER (1982) for parental care in other species within the genus].

***Apogon quadrisquamatus* Longley, 1934**

Specimens examined. BRAZIL, *Rio de Janeiro*: Cabo Frio (Praia dos Anjos), MZUSP 46139 (1), 38.8 mm, XII-1989, A. Carvalho Filho *leg.*; Parati (Ilha Comprida, 23°13'S), MZUSP 46196 (2), 41.6 and 43.9 mm, VII-1992, A. Carvalho Filho *leg.*; *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 6 m), MZUSP 45631 (3), 38.2 and 42.7 mm, 18-V-1991, R.L. Moura *leg.*

Remarks. First substantiated record for the western South Atlantic (CARVALHO-FILHO 1992); previous southernmost record on the northern coast of South America (BÖHKLE & RANDALL 1968).

***Astrapogon puncticulatus* (Poey, 1867)**

Specimens examined. BRAZIL, *Rio de Janeiro*: Arraial do Cabo (Ilha de Cabo Frio, 7 m); MZUSP 47487 (2), 37.9 and 42.0 mm, 3-V-1990, C.E.L. Ferreira leg.; *São Paulo*: Ubatuba (Ilha Anchieta, 8 m), ZUEC 2710-2711 (2), 33.9 and 34.4 mm, 24-II-1996, I. Sazima, R.L. Moura & C. Sazima leg.; São Sebastião (Arquipélago dos Alcatrazes, 4 m), MZUSP 49455 (1), 21.3 mm, 29-II-1996, II-1996, I. Sazima, R.L. Moura & C. Sazima leg..

Remarks. Previously recorded south to the State of Bahia, northeastern Brazil (GILBERT 1977). Specimen ZUEC 2710 was brooding eggs orally.

***Astrapogon stellatus* (Cope, 1869)**

Specimens examined. BRAZIL, *Rio Grande do Norte*: Atol das Rocas, MZUSP 48924 (2), 22.6 and 31.2 mm, 22-VII-1995, R.S. Rosa & R.L. Moura leg.; *Rio de Janeiro*: (Baía da Ilha Grande, 23°07'S), UFRJ 3518 (1), 1995, R.Z.P. Guimarães leg..

Remarks. Previous southernmost record was at an offshore locality in northeastern Brazil (RAMOS 1994).

***Phaeoptyx pigmentaria* (Poey, 1861)**

Specimens examined. BRAZIL, *Rio de Janeiro*: Arraial do Cabo (Praia do Forno, 13 m), MZUSP 47491 (2), 49.0 and 50.3 mm, 20-X-1990, C.E.L. Ferreira leg.; Cabo Frio (Praia dos Anjos), MZUSP 46137 (2), 43.3 and 44.4 mm, XII-1989, A. Carvalho Filho leg..

Records. Previously recorded south to the State of Bahia, northeastern Brazil (ALMEIDA 1973).

Haemulidae

***Anisotremus moricandi* (Ranzani, 1840)**

Specimens examined. BRAZIL, *Espírito Santo*: Vitória (Ilha do Boi, 20°19'S, 9 m), ZUEC 2743 (1), 139.5 mm, 09-III-1988, J.L. Gasparini leg.; Guarapari (Ilha Escalvada, 12 m), MZUSP 51317 (1), 151.2 mm, 26-I-1997, I. Sazima, C. Sazima, J.L. Gasparini & R.L. Moura leg..

Remarks. Previously recorded south to the State of Bahia, northeastern Brazil (ACERO & GARZÓN 1982).

Sciaenidae

***Equetus lanceolatus* (Linnaeus, 1758)**

Specimens examined. BRAZIL, *Pernambuco*: Arquipélago de Fernando de Noronha, MZUSP 46322 (1), 24.4 mm, 20-23-VI-1985, A. Carvalho Filho leg.; *Rio de Janeiro*: Parati, MZUSP 46147 (1), 24.0 mm, VII-1994, A. Carvalho Filho leg..

Remarks. First record for the jackknife fish in an oceanic island in the western South Atlantic (CHAO 1978; MENEZES & FIGUEIREDO 1980). MZUSP 46147 is the southernmost specimen in collections known to us. Despite extensive collections on the State of São Paulo coast, no specimens of the jackknife fish were obtained

whereas the cubbyu, *Pareques acuminatus* (Bloch & Schneider, 1801), was very common. We guess the unsubstantiated record of *E. lanceolatus* for the State of Rio Grande do Sul, southern Brazil (LEMA 1979) is based on *P. acuminatus*.

Chaetodontidae

***Chaetodon ocellatus* Bloch, 1787**

Specimens examined. BRAZIL, *Rio de Janeiro*: Parati, MZUSP 46153 (1), 47.4 mm, VII-VIII-1991, A. Carvalho Filho *leg.*.

Remarks. Previous southernmost record for the spotfin butterflyfish in northeastern Brazil (MENEZES & FIGUEIREDO 1985).

Pomacanthidae

***Centropyge aurantonotus* Burgess, 1974**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 12 m), MZUSP 45636 (1), 60.1 mm, 28-V-1993, R.L. Moura *leg.*.

Remarks. Previously recorded south to the State of Rio de Janeiro, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

Cirrhitidae

***Amblycirrhitus pinos* (Mowbray, 1927)**

Specimens examined. BRAZIL, *Bahia*: Salvador (12°58'S), MZUSP 46826 (1), 65.8 mm, 09-VI-1993, C.L. Sampaio *leg.*; *Espírito Santo*: Guarapari (Ilha Escalvada, 10 m), ZUEC 3111 (1), 71.9 mm, X-1996, J.L. Gasparini & V. C. Vidal *leg.*; *Rio de Janeiro*: Cabo Frio, MZUSP 46127 (1), 65.9 mm, II-1991, A. Carvalho Filho *leg.*.

Remarks. First substantiated record for the western South Atlantic (CARVALHO-FILHO 1992; ROCHA *et al.* 1998), since the redspotted hawkfish was previously recorded south to Venezuela (MAGO-LECCIA 1965; RANDALL 1983).

Pomacentridae

***Chromis jubauna* Moura, 1995**

Specimens examined. BRAZIL, *Espírito Santo*: Guarapari (Ilhas Rasas, 18m), MZUSP 44940 (1), 29.2 mm, XII-1992, D.A. Jório & J.L. Gasparini *leg.*; Maratás (Mar do Bom Nome, 21°09'S), ZUEC 2736 (1), 34.1 mm, 10-IV-1996, D.A. Jório *leg.*.

Remarks. Previously known only from Cabo Frio in the State of Rio de Janeiro, and coastal islands off the State of São Paulo (MOURA 1995).

***Chromis scotti* Emery, 1968**

Specimen examined. BRAZIL, *Maranhão*: São Luís (Recifes Manoel Luís, 00°52'S), MZUSP 53089 (1), 57.6 mm, VI-1998, R.L. Moura, R.B. Francini, M.C.M. Rodrigues, F.S. Motta & A. Carvalho Filho *leg.*.

Remarks. First record for the western South Atlantic (MOURA 1995).

***Microspathodon chrysurus* (Cuvier & Valenciennes, 1830)**

Specimens examined. BRAZIL, *Alagoas*: Maceió (Ponta Verde, 09°38'S), MZUSP 46361 (1), 82.5 mm, IX-1989, A. Carvalho Filho *leg.*; *Bahia*: Camaçari, (Praia de Busca Vida, 12°45'S), MZUSP 47634 (2), 34.1 and 46.5 mm, 2-VI-1984, C.L. Sampaio *leg.*; Salvador, (Amaralina), MZUSP 46674 (1), 122.2 mm, II-1991, C.L. Sampaio *leg.*; *Espírito Santo*: Vitória (Ilha da Trindade), ZUEC 2696 (1), 128.6 mm, 8-IX-1995, J.L. Gasparini *leg.*.

Remarks. First substantiated record for the western South Atlantic (FERREIRA *et al.* 1995; ROCHA *et al.* 1998) including an oceanic island; previously recorded south to Venezuela (CERVIGÓN 1966). Along the Brazilian coast definitely associated to growths of *Millepora* coral.

***Stegastes fuscus* (Cuvier, 1830)**

Specimens examined. BRAZIL, *Santa Catarina*: Porto Belo, MZUSP 46566 (1), 64.9 mm, I-1988, A. Carvalho Filho *leg.*.

Remarks. Previously recorded south the State of São Paulo, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

***Stegastes variabilis* (Castelnau, 1855)**

Specimens examined. BRAZIL, *Santa Catarina*: Porto Belo, MZUSP 46555 (1), 55.1 mm, I-1988, A. Carvalho Filho *leg.*; MZUSP 46632 (1), 49.2 mm, same data as MZUSP 46555.

Remarks. Previously recorded south the State of São Paulo, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

Labridae

***Halichoeres bathyphilus* (Beebe & Tee-Van, 1932)**

Specimens examined. BRAZIL, *Santa Catarina*: Porto Belo, MZUSP 46554 (1) 114.0 mm, I-1988, A. Carvalho Filho *leg.*.

Remarks. Previously recorded south to the State of São Paulo, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

***Halichoeres brasiliensis* (Bloch, 1791)**

Specimens examined. BRAZIL, *Maranhão*: São Luís (Recifes Manoel Luís), MZUSP 53170 (1), 200.0 mm, VI-1998, R.L. Moura, R.B. Francini, M.C.M. Rodrigues, F.S. Motta & A. Carvalho-Filho *leg.*.

Remarks. Represents a north range extension; previously recorded as *H. radiatus* (Linnaeus, 1758), from the State of Paraíba, northeastern Brazil (ROCHA *et al.* 1998) south to the State of São Paulo, southeastern Brazil, (MENEZES & FIGUEIREDO 1985; SAZIMA *et al.* 1999). *Halichoeres irideus* Starks, 1900 is a junior synonym.

***Halichoeres bivittatus* (Bloch, 1791)**

Specimens examined. BRAZIL, *Bahia*: Ilha de Itaparica (12°53'S), MZUSP 46355 (1), 79.5 mm, VII-1992, A. Carvalho Filho *leg.*; *Rio de Janeiro*: Angra dos Reis (23°02'S), MZUSP 46190 (1), 132.0 mm, II-1992, A. Carvalho Filho *leg.*.

Remarks. First substantiated record for the slippery dick in the western South Atlantic (ROCHA *et al.* 1998). RANDALL & BÖHLKE (1965) mentioned the slippery dick from Brazil without any precise locality.

***Halichoeres maculipinna* (Müller & Troschel, 1848)**

Specimens examined. BRAZIL, *Espírito Santo*: Vitória (Ilha da Trindade, tidepool), ZUEC 3135 (2), 38.5-46.1 mm, 25-VIII-1995, J.L. Gasparini & R.S. Floeter *leg.*.

Remarks. Previous southernmost known locality in northeastern Brazil, according to RANDALL & BÖHLKE (1965) and MENEZES & FIGUEIREDO (1985) who also comment on a small juvenile from Rio de Janeiro, southeastern Brazil, as possibly belonging to this species. We recorded this wrasse at several localities along the coast of the State of Espírito Santo.

***Thalassoma noronhanum* (Boulenger, 1890)**

Specimens examined. BRAZIL, *Bahia*: Salvador, MZUSP 46823 (1), 61.0 mm, 9-VI-1993, C.L. Sampaio *leg.*; *Espírito Santo*: Vitória (Ilha da Trindade, 4 m), ZUEC 2684, 100.8 mm, 15-VIII-1995, J.L. Gasparini *leg.*; Guarapari (Ilha Escalvada, 2-3m), MZUSP 44666 (2), 104.0 and 113.0 mm, 26-VI-1987, J.L. Gasparini *leg.*; São Paulo: Santos (Laje de Santos, 5 m), ZUEC 3146 (2), 59.2 and 80.4 mm, 17-XI-1996, R.L. Moura & J.L. Gasparini *leg.*.

Remarks. Previously recorded from St Paul's Rocks (00°55'N, 29°20'W), the Fernando de Noronha Archipelago, Atol das Rocas and northeastern coast of Brazil (BOULENGER 1890; LUBBOCK & EDWARDS 1981; RAMOS 1994; ROCHA *et al.* 1998). Specimens identified as *T. bifasciatum* (Bloch, 1791) from northeastern Brazil (RAMOS & VASCONCELOS-FILHO 1989) were examined by us and actually belong to *T. noronhanum*. Records of *T. bifasciatum* along the Brazilian coast are based on misidentifications (RAMOS & VASCONCELOS-FILHO 1989; RAMOS 1994) or even guesses (CARVALHO-FILHO 1992).

Scaridae

***Cryptotomus roseus* Cope, 1871**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 10 m), MZUSP 45646 (1), 79.0 mm, 28-VI-1993, R.L. Moura *leg.*.

Remarks. Previously recorded south to the State of Bahia, the type locality (COPE 1871). Additional records for Brazilian scarids will be dealt with in another paper, since several taxonomic problems were detected regarding the parrotfishes from the western South Atlantic.

Tripterygiidae

***Enneanectes altivelis* Rosenblatt, 1960**

Specimens examined. BRAZIL, *Rio Grande do Norte*: Atol das Rocas, MZUSP 48897 (12), 10.8-27.1 mm, XII-1994, R.S. Rosa & R.L. Moura *leg.*; *Bahia*: (Arquipélago de Abrolhos, 18°01'S), MZUSP 51315 (1), 24.1 mm, off State of

Bahia, 10-15-I-1997, I. Sazima, C. Sazima, J.L. Gasparini & R.L. Moura *leg.*; *Espírito Santo*: Guarapari (Ilha Escalvada), MZUSP 51320 (4), 20.2-24.0 mm, 26-I-1977, I. Sazima, C. Sazima, J.L. Gasparini & R.L. Moura *leg.*; *Rio de Janeiro*: (Baía da Ilha Grande, 23°08' S), UFRJ 3493 (1), R.Z.P. Guimarães *leg.*

Remarks. Represents a south range extension of the lofty triplefin in the western South Atlantic, and the first record in a Brazilian oceanic island; previously recorded at Paraíba, northeastern Brazil (ROCHA *et al.* 1998).

Dactyloscopidae

***Storrsia olsoni* Dawson, 1982**

Specimens examined. BRAZIL, *Rio Grande do Norte*: Atol das Rocas, MZUSP 48265 (3), 20.8-29.7 mm, 16-XII-1994-10-I-1995, R.L. Moura & C.L.B. Francini *leg.*

Remarks. Represents a range extension, since this stargazer was known only from the holotype from the Fernando de Noronha Archipelago (DAWSON 1982).

Labrisomidae

***Paraclinus nigripinnis* (Steindachner, 1867)**

Specimens examined. BRAZIL, *Santa Catarina*: Porto Belo, MZUSP 46638 (3), 23.6-42.0 mm, Porto Belo, I-1988, A. Carvalho Filho *leg.*

Remarks. Previously recorded south to the State of São Paulo, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

Chaenopsidae

***Emblemariopsis signifera* (Ginsburg, 1942)**

Specimens examined. BRAZIL, *São Paulo*: Ubatuba (Ilha da Vitória, 23°44'S), MZUSP 46414 (4), 16.2-19.0 mm, 10-I-1993, J.M. Nogueira *leg.*; Santos (Laje de Santos, 8 m), MZUSP 44608 (2), 20.7 and 25.2 mm, 6-I-1991, R.L. Moura *leg.*; Itanhaém (Ilha da Queimada Grande), MZUSP 44610 (1), 19.5 mm, 15-VI-1991, R.L. Moura *leg.*

Remarks. Previously recorded south to Angra dos Reis, State of Rio de Janeiro (MENEZES & FIGUEIREDO 1985). This species is expected to occur further south, at least to the State of Santa Catarina, since it is still abundant on the São Paulo State coast, from where our specimens were obtained.

Blenniidae

***Ophioblennius atlanticus* (Cuvier & Valenciennes, 1836)**

Specimens examined. BRAZIL, *Espírito Santo*: Guarapari (Três Ilhas), ZUEC 1952 (1), 100.7 mm, 7-II-1987, J.L. Gasparini *leg.*; *São Paulo*: Santos (Laje de Santos, 8 m), MZUSP 44607 (1), 60.0 mm, 6-I-1991, R.L. Moura *leg.*

Remarks. Previously recorded south to the State of Bahia, northeastern Brazil and the Ilha da Trindade, off State of Espírito Santo (SPRINGER 1962; MENEZES & FIGUEIREDO 1985).

Eleotridae

***Erotelis smaragdus* (Valenciennes, 1837)**

Specimens examined. BRAZIL, *Espírito Santo*: Serra (Nova Almeida, 20°04'S), MZUSP 51314 (1), 78.9 mm, 14-IX-1980, J.L. Gasparini *leg.*.

Remarks. Previously recorded south to the State of Bahia, northeastern Brazil (MENEZES & FIGUEIREDO 1985).

Gobiidae

***Bathygobius mystacium* Ginsburg 1947**

Specimens examined. BRAZIL, *Espírito Santo*: Serra (Praia de Manguinhos, 20°11'S, tidepool), ZUEC 2661-2674 (14), 20.3-40.4 mm, 18-III-1985, C. Zamprogno *leg.*.

Remarks. First substantiated record for the island frillfin in the western South Atlantic (CARVALHO-FILHO 1992); previous southernmost record in the Caribbean (GINSBURG 1947; BÖHLKE & CHAPLIN 1968).

***Coryphopterus glaucofrenum* Gill, 1836**

Specimens examined. BRAZIL, *Rio de Janeiro*: Parati (Ilha Comprida), MZUSP 46200 (1), 36.4 mm, VII-1992, A. Carvalho Filho *leg.*; *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 15 m), MZUSP 44606 (1), 49.4 mm, 26-IV-1991, R.L. Moura *leg.*; Itanhaém (Ilha da Queimada Grande, 18 m), MZUSP 44605 (1), 45.5 mm, 15-VI-1991, R.L. Moura *leg.*.

Remarks. Previously recorded south to Angra dos Reis, State of Rio de Janeiro (MENEZES & FIGUEIREDO 1985). This fish is expected to occur further south, at least to the State of Santa Catarina, since it is one of the commonest gobies on the sand of reef habitats on islands along the coast of the São Paulo State.

***Gnatholepis thompsoni* Jordan, 1902**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes), MZUSP 46728 (1), 62.5 mm, 15-IV-1994, R.L. Moura *leg.*.

Remarks. Previously recorded from the Atol das Rocas and continental northeastern Brazil south to the State of Pernambuco (MENEZES & FIGUEIREDO 1985; RAMOS 1994).

***Gobionellus saepepallens* Gilbert & Randall, 1968**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Praia de Baraqueçaba), MZUSP 46215 (3), 26.7-29.3 mm SL, I-1993, A. Carvalho Filho *leg.*.

Remarks. Previously recorded in the western South Atlantic from the State of Rio de Janeiro (GUIMARÃES 1996b). Specimens from the State of Bahia were previously identified as *Gobionellus comma* Gilbert & Randall, 1979 (MENEZES & FIGUEIREDO 1985).

***Parrella macropteryx* Ginsburg, 1939**

Specimens examined. BRAZIL, Santa Catarina: Porto Belo, MZUSP 46663 (30), 24.1-41.9 mm, I-1988, A. Carvalho Filho *leg.*.

Remarks. This goby is recorded from the Caribbean (Cuba), and São Sebastião, southeastern Brazil (MENEZES & FIGUEIREDO 1985).

Microdesmidae

***Microdesmus bahianus* Dawson, 1973**

Specimens examined. BRAZIL, *Alagoas*: Maceió (Ponta Verde, 09°39'S, tidepool), MZUSP 49210 (1), 51.2 mm, 14-XII-1973, N.A. Menezes *leg.*.

Remarks. Represents a north range extension. This wormfish was described from Arembepe, State of Bahia, northeastern Brazil by DAWSON (1973), who also commented upon a Martinique specimen (ANSP 103427) as possibly belonging to this species.

***Ptereleotris helenae* (Randall, 1968)**

Specimens examined. BRAZIL, *São Paulo*: São Sebastião (Arquipélago dos Alcatrazes, 8 m), MZUSP 45743 (1), 71.5 mm, 27-IV-1993, R.L. Moura *leg.*.

Remarks. First substantiated record in the western South Atlantic (CARVALHO-FILHO 1992), since the southernmost record for the hovering goby was in the Caribbean (RANDALL 1968; HUMANN 1994).

Acanthuridae

***Acanthurus coeruleus* Bloch & Schneider, 1801**

Specimens examined. BRAZIL, *São Paulo*: Ubatuba (Ilha Anchieta), MZUSP 50569 (1), 225.0 mm, II-1996, H. Gallo *leg.*.

Remarks. Previously recorded south to the State of Rio de Janeiro, southeastern Brazil (RANDALL 1983).

Reef fish distribution in the eastern coast of South America

Along the Brazilian coast, reef habitats range from offshore reefs in the State of Maranhão to rocky reefs on the coast of the State of Santa Catarina, the southernmost limit of rocky reef bottoms under permanent influence of the warm Brazil Current (EVANS *et al.* 1985; STRAMMA 1989). Reef fish assemblages on the eastern coast of South America are composed by: 1) circuntropical and Pan-Atlantic species (BRIGGS 1960); 2) species widely distributed in the Western tropical Atlantic; 3) species occurring on the eastern and northern coast of South America (BLASIOLA 1976), and 4) Brazilian Province endemics (GREENFIELD 1988, 1989; MOURA 1995; SAZIMA *et al.* 1997, 1998).

There is a steadily growing evidence that a sizable portion of the Brazilian reef ichthyofauna is endemic to the western South Atlantic (GREENFIELD 1988, 1989; MOURA 1995; SAZIMA *et al.* 1997, 1998). Of special interest is the fact that some supposedly Caribbean reef fish species recorded for the Brazilian coast proved later to be undescribed species endemic to the Brazilian Province (SAZIMA *et al.* 1997, 1998). Additional revisionary studies will probably show that the same is true for some species dealt with in the present paper.

Oceanic islands off Brazil harbor a considerable number of endemic species, which are very abundant locally (EDWARDS & LUBBOCK 1983a; ROSA & MOURA 1997). The Saint Paul's Rocks harbor 12 endemic shore fish species and share 6

species only with islands of the Mid Atlantic Ridge (LUBBOCK & EDWARDS 1981; EDWARDS & LUBBOCK 1983b). The two insular groups within the Fernando de Noronha Ridge, Atol das Rocas and the Fernando de Noronha Archipelago, present a very similar shore fish fauna, with about four endemic shore fish species (MOURA & ROSA 1997). The ichthyofauna of the Trindade and Martin-Vaz islands is very poorly known (MIRANDA-RIBEIRO 1919; ANDREATA & SÉRET 1995), but at least one endemic locally abundant shore fish species is present.

Although there is a considerable homogeneity in the composition of reef fish faunas within the Brazilian Province, there are some latitudinal trends possibly related to salinity, bottom type, and temperature. The northern limit of reef fish distribution within the Province is poorly known, due to an almost complete lack of collections along the coast of northern Brazil. Offshore reefs of the State of Maranhão, such as the Parcel Manoel Luís, represent the northern outposts of this fauna, separated from the Southern Caribbean by hypossaline waters (ALLERSMA 1971) and mud bottoms (ARAGNO 1971) off the mouths of the Mearim, Amazon and Orinoco rivers. Only a small number of reef fish species occur on the "stepping stones" (offshore sponge bottoms) between these two areas (COLLETTE & RUTZLER 1977).

The largest coral reef assemblage along the Brazilian coast is located in the Archipelago of Abrolhos, off the southern State of Bahia (HETZEL & CASTRO 1994; LEÃO *et al.* 1988) and, as a consequence, the greatest reef fish species richness is expected to occur in this area, in spite of the very few fish collections from there. A preliminary study carried out by the authors in the Abrolhos area yielded about 150 reef fish species (unpubl. data).

From the coast of Bahia through Santa Catarina there is a latitudinal decrease in the number of coral (LEÃO *et al.* 1988) and reef fish species, probably related to water temperature and bottom configuration, the reef habitats gradually changing from coral reefs to rocky bottom with sparse coral heads. Very few reef fish species (*e.g. Chromis jubauna, Ribeiroclinus eigenmanni*) occur exclusively in the cooler waters south to the rich coral reef growth limits with increasing seasonal influence of the Falklands Current (STRAMMA 1989; MOURA 1995).

At its southernmost limit, the reef fish fauna is very impoverished and most species remain restricted to the continental islands off Santa Catarina (unpubl. data). Within this transition area, only juveniles of some reef fish species are found and occasional occurrences south to Argentina and Uruguay (ASTARLOA & FIGUEIROA 1995; LUENGO 1968) are based on stray individuals, probably recruited south of their habitual distribution range (ZAVALA-CAMIN 1986). From Santa Catarina south, hard bottom occurs only in occasional and sparse patches, and the cool and turbid waters of the Falklands Current (LEMA *et al.* 1980) represent a serious obstacle for the establishment of permanent reef fish communities.

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