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ON SOME MARINE FISHES REPORTED FROM ARGENTINA AND URUGUAY, HITHERTO UNNOTICED OR INCORRECTLY INCLUDED BY THE LOCAL ICHTHYOLOGICAL COMMUNITIES

Sobre algunos peces marinos registrados en Argentina y Uruguay hasta ahora no reportados o incorrectamente incluidos por las comunidades ictiológicas locales

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Abstract. Details are provided on nine marine fish species from the Exclusive Economic Zone (EEZ) of Argentina and twelve from Uruguay which so far have remained unnoticed by the respective local ichthyological communities. Also, 13 species are proposed to be excluded from national lists of Argentina and/or Uruguay after proving that so far no evidence-based records seem to exist from the respective EEZ, but only from international waters or the EEZ of a neighbor country. Arguments are provided why any national list of marine biodiversity should only contain species for which evidence-based records from the own EEZ have been published.

Keywords. Marine fishes, Argentina, Uruguay

Resumen. Se brindan detalles sobre nueve especies de peces marinos de la Zona Económica Exclusiva (ZEE) de Argentina y doce de Uruguay que hasta el momento han pasado desapercibidas para las respectivas comunidades ictiológicas locales. Asimismo, se propone excluir 13 especies de los listados nacionales de Argentina y/o Uruguay luego de comprobarse que hasta el momento no parecen existir registros basados en evidencia de la ZEE respectiva, sino solo de aguas internacionales o de la ZEE de un país vecino. Se proporcionan argumentos por los que cualquier lista nacional de biodiversidad marina debería contener únicamente especies para las que se hayan publicado registros basados en pruebas de la propia ZEE.

Palabras clave. Peces marinos, Argentina, Uruguay

INTRODUCTION

Since the times of Carlos Berg there have been efforts to generate lists of the marine fishes of both, Argentina and Uruguay. Berg (1895) was the first to undertake this task and the reason why he combined both marine ichthyofaunas in a single work was his very personal professional background. During not even two years he tried to organize the collection of fishes at the Natural History Museum at Montevideo and from there moved across the river to inherit Burmeister's position at what today is known as the Museo Argentino de Ciencias Naturales. Having worked with fishes in both institutions he was the first local scientist able to publish on the fishes of both countries.

Nevertheless, he was not the first to report on the fishes found off the Atlantic coast of southern South America. Numerous expeditions originating from Europe and the United States have collected specimens in this area of which most are still available in the collections of the northern hemisphere. In the 19th century the most important collections of recent fishes were hosted in Paris, London, and Vienna and it is impossible to study the first records of fishes from the sea along that coast without getting acquainted with names as Cuvier and Valenciennes, Günther, Boulenger, and Steindachner from Europe, or men from the US like Eigenmann or Jordan. Yet, also smaller museums have received voucher specimens from Argentina and Uruguay during the 18th and 19th centuries and the results of southern collecting efforts have been presented by e.g. Jenyns, Perugia, Lönnberg, Garman etc.

During the first half of the 20th century many local researchers entered the local stages of marine ichthyology: Lahille, Marini, Pozzi, and MacDonagh in Argentina, and Devincenzi and de Buen in Uruguay.

Simultaneously ichthyologists as Nor-

man, Regan, Thompson, Fowler, Ginsburg, Hubbs, etc. were still working on the collections done during expeditions of famous vessels as *Albatross*, *Challenger*, *Scotia*, etc. conducted in the previous century. The work on the voucher specimens from past voyages was not even finished when the *Discovery* expedition achieved the biggest collection in that area. Actually it was not only the *Discovery*, but mainly her support vessel *William Scoresby* which covered the area off Patagonia and around the Malvinas (Falkland Islands).

From the 1960s onwards not only new local players as Ringuelet, Angelescu, R. López, Nani, and Cousseau started their careers, but also a new era of international collaboration was initiated. While before foreign research vessels conducted independent collections, now the northern countries started to cooperate with local authorities and research institutes, taking local ichthyologists aboard and partly sharing the collected specimens. The German research vessel *Walther Herwig* conducted five expeditions in the Argentine Sea between 1966 and 1978, and local ichthyologists and researchers from other fields have been part of the scientific crews during the 1970s onboard of the Japanese vessels *Shinkai Maru*, *Orient Maru*, and *Kaiyo Maru*. The former Soviet Union collaborated with the vessels *Akademik Knipovich*, *Professor Mesyatsev*, and *Akademik Kurchatov*, but also obtained numerous voucher specimens from commercial fishing vessels as the *Ob'* and the *Gizhiga*. When this era of joint expeditions came to an end half of a professional life had passed, some retired researchers were replaced by the members of a new ichthyological generation as Menni, Gosztonyi, Vaz-Ferreira, Nion, Castello, Chiamonte, García, etc.

Many of this generation co-authored publications on the scientific materials collected during the the joint expeditions in

the 1960s and 70s. This fruitful scientific collaboration somehow vanished in the 1980s and apparently not only personal contacts broke, but also ichthyologists from Argentina and Uruguay did not become aware any longer of news published on the southern specimens collected during earlier decades. Especially the contributions of their Russian colleagues remained unnoticed. An excellent overview on the above only superficially mentioned expeditions and other aspects on the history of marine ichthyology in Argentina has been presented by Angelescu and Sánchez (1995). Loureiro et al. (2018) provided a summary on the development of ichthyological research in Uruguay.

The purpose of this contribution is to add fish species to the national lists of Argentina and Uruguay based on so far overlooked evidence-based records from the respective Exclusive Economic Zones which in part may have remained unnoticed due to the above mentioned breach of personal contacts after the era of joint expeditions.

METHODS

For every species the currently valid name, the original name and the currently recognized systematical position are provided following Fricke et al. (2023a,b). For information on type localities, primary type specimens and publications please refer to Fricke et al. (2023a). All yellow pins in the satellite figures have been set at the most precise geographical position possible, in most cases taken from the expeditions' station lists. The white lines show the respective Exclusive Economic Zones (EEZ) as applicable limits for fisheries and conservation measures. The extensions to 350-miles-zones are not shown since any rights of exploitation on or below the bottom of the sea are irrelevant for the distribution of fish species.

Abbreviations. AUCFZ, Argentine-Uru-

guayan Common Fishing Zone / Zona Común de Pesca Argentino-Uruguaya; BMNH, British Museum of Natural History, London, Great Britain; CBD, Convention on Biological Diversity; EEZ-AR, Exclusive Economic Zone of Argentina; EEZ-BR, Exclusive Economic Zone of Brazil; EEZ-CL, Exclusive Economic Zone of Chile; EEZ-UY, Exclusive Economic Zone of Uruguay; ISH, Institut für Seefischerei, Hamburg, Germany (collection now at ZMH); LACM, The Natural History Museum of Los Angeles County, USA; MACN, Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina; MLP, Museo de La Plata, Argentina; MNHM, Museo Nacional de Historia Natural, Montevideo, Uruguay; MZUSP, Universidade de São Paulo, Museu de Zoologia, Brazil; nm, nautical miles; USNM, United States National Museum (Smithsonian), Washington D.C., USA; ZIN, Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia; ZISP see ZIN; ZMH, Zoologisches Museum Hamburg, Germany; ZMUC, Zoologisk Museum, Københavns Universitet, Copenhagen, Denmark; ZVC-P, Peces, Departamento de Zoología Vertebrados, Universidad de Montevideo, Uruguay.

RESULTS

Geographical positions mentioned in literature appear as an abstract set of numbers and probably only very few persons are able to visualize such conceptual information in their mind's eye. For most of us only the display in a map or satellite image does allow to recognize if a given position lies within a defined area as e.g. an EEZ. In times of open-source information as the geographical points defining an EEZ and of publicly and freely available tools as GoogleEarth we are now able to depict information with an accuracy that was impossible to achieve for earlier researchers. Applying these modern

techniques allows us to significantly improve the correctness of maritime biodiversity lists.

In the present contribution we can unveil 9 species from Argentina and 12 species from Uruguay which were not included in the publications of Carrera (1976), Menni et al. (1984), López et al. (1996), Nion et al. (2002), Menni and Lucifora (2007), Cousseau et al. (2010), Nion et al. (2016), Cousseau and Rosso (2019), Cousseau et al. (2020), and Mabragaña and Cousseau (2021), and which so far apparently remained unnoticed by local ichthyologists in Argentina and/or Uruguay.

Achieving this new precision of depicted data, a side effect is that species which have been included erroneously in national lists without evidence-based records from the respective EEZ can be identified and excluded from these lists. In the last of the below sections 13 species are identified as having been erroneously included in the national lists of Argentina and/or Uruguay.

All the below provided records have been published either as type specimens, within generic revisions, or as explicit first records authored by contemporary authorities. Nevertheless, future examinations of the respective collection lots may result in different determinations and require updating the affected faunal lists.

Exclusive Economic Zone of Argentina Figures 12-13

Careproctus cactiformis Andriashev, 1990

Careproctus cactiformis Andriashev, 1990
(Figure 1)

Perciformes: Liparidae

Holotype from EEZ-AR: ZIN 37446, Ob' station 480, 43°30'S 59°34'W, 16.Jun.1958

Chernova (1998): type catalog

Careproctus fueguensis Matallanas and Piacentino, 2019

Careproctus fueguensis Matallanas and Piacentino, 2019

Perciformes: Liparidae

Holotype from EEZ-AR: MACN 9514, Bridges Islands, Beagle Channel, 54°52.3'S 68°16.56'W, 16.Jan.1990

Careproctus leptorhinus Andriashev and Stein, 1998

Careproctus leptorhinus Andriashev and Stein, 1998 (Figures 2-3)

Perciformes: Liparidae

Holotype from EEZ-AR: LACM 10453-4, *Eltanin* station 105T, 55°41'S 60°55'W, 17.Jul.1962

Careproctus zispi Andriashev and Stein, 1998

Careproctus zispi Andriashev and Stein, 1998 (Figures 4-5)

Perciformes: Liparidae

Holotype from EEZ-AR: LACM 10426-2, *Eltanin* station 973, 55°18'S 64°47'W, 11.Feb.1964

Paratypes from EEZ-AR: LACM 10426-3 (2), ZISP 50911 (1) (ex LACM 10426-2), collected with holotype

Chernova (1998): type catalog

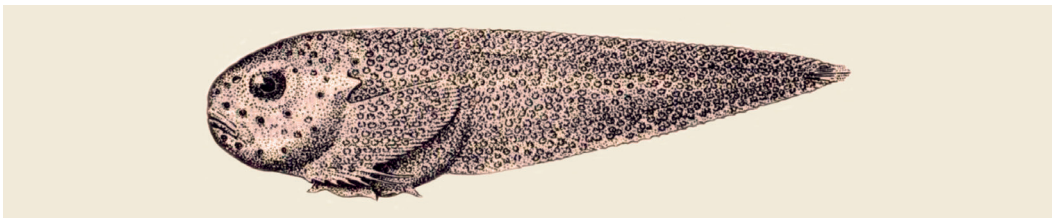
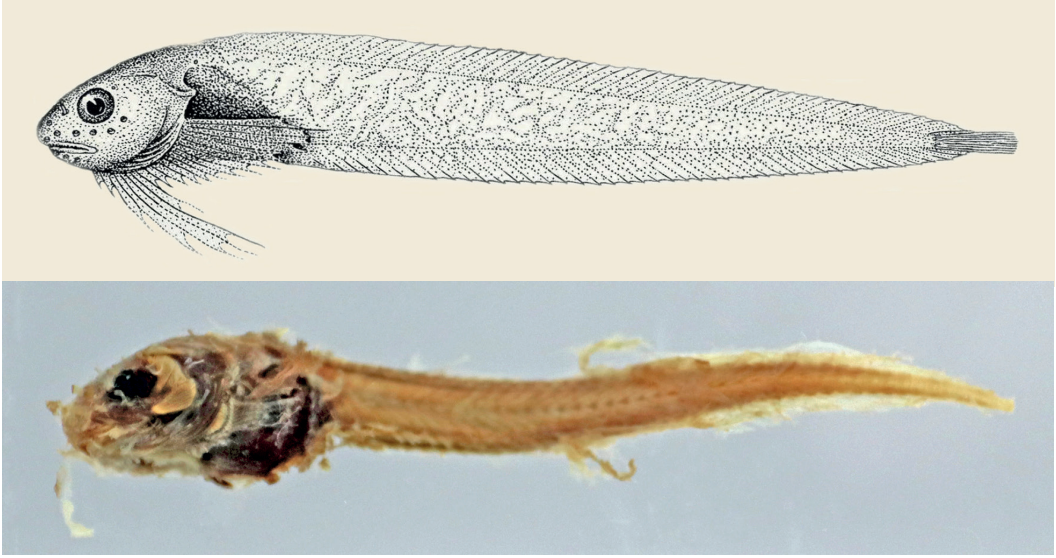
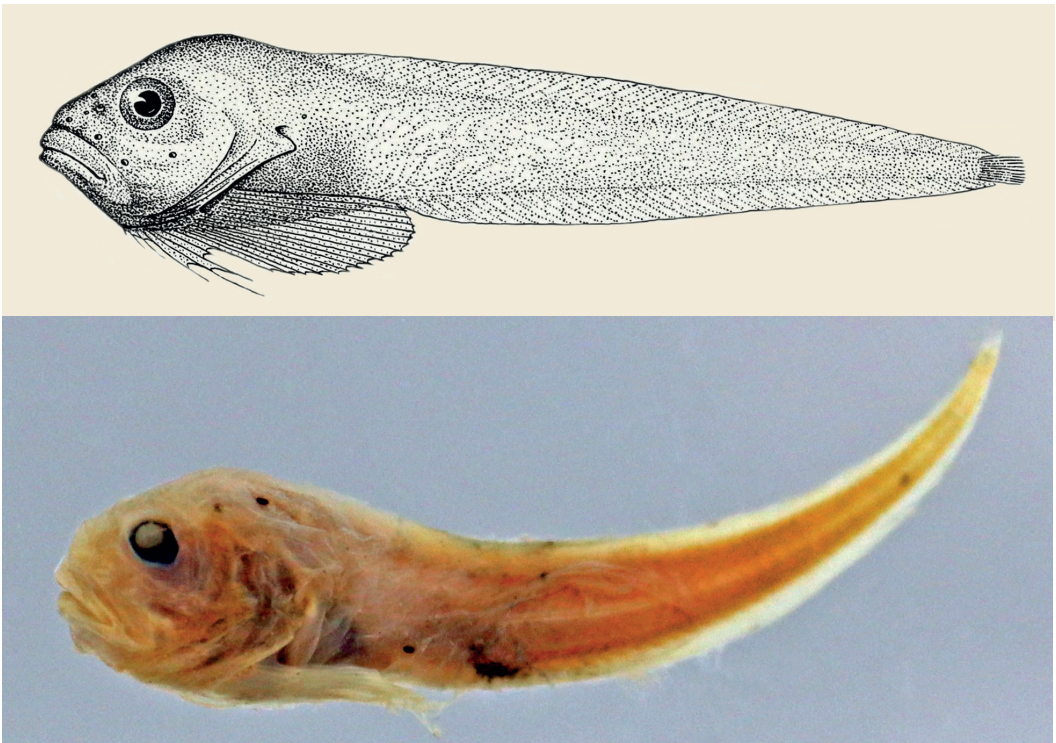


Figure 1 - *Careproctus cactiformis*, drawing from Andriashev (1990).



Figures 2-3 - *Careproctus leptorhinus*, drawing from Andriashev and Stein (1998) and holotype LACM 10453-4.



Figures 4-5 - *Careproctus zispi*, drawing from Andriashev and Stein (1998) and holotype LACM 10426-2.

***Guttigadus latifrons* (Holt and Byrne, 1908)**

Laemonema latifrons Holt and Byrne, 1908

Gadiformes: Macrouroidei: Moridae

Non-type specimen from EEZ-AR: ZMH 115584 (1) (ex ISH 389-1978), *Walther Herwig* station 676/78, 43°48'S 59°32'W, depth 520-570 m, 22.Jun.1978

Markle and Meléndez (1988) mentioned the specimens from *Walther Herwig* station 676/78 with doubts on a possible 'mix-up' of either determination or locality data. Subsequently Meléndez and Markle (1997) stated that "correspondence with

ISH curator, M. Stehmann, plus a new record from the Indian Ocean suggest that the species is more widely distributed than previously thought, and that the southwestern Atlantic record is valid". However, this specimen may need to be looked at again.

***Nototheniops nudifrons* (Lönnberg, 1905)**

Notothenia mizops var. *nudifrons* Lönnberg, 1905 (Figures 6-7)

Perciformes: Nototheniidae: Nototheniinae
Non-type specimen from EEZ-AR: ZMH



Figures 6-7 - *Nototheniops nudifrons*, drawing from Lönnberg (1905) and alive by Valerie Loeb, NOAA Photo Library, Wikimedia, File:Lepidonotothen nudifrons.jpg.

120228 (1) (ex ISH 484-1981), *Walther Herwig* expedition, Ushuaia, Beagle Channel, 07.Mar.1981

Stehmann and Balushkin (1993) presented the explicit first record from north of the subantarctic area for this species sub *Lindbergichthys nudifrons*. Cousseau et al. (2020) list the occurrence in Chilean waters, leaving the respective column for records from Argentina empty.

***Paraliparis aspersus* Andriashev, 1992**

Paraliparis aspersus Andriashev, 1992 (Figures 8-9)

Perciformes: Liparidae

Holotype from EEZ-AR: ZMH 25330 (ex ISH 477-78), *Walther Herwig* station 804/78, 54°38'S 61°49'W, 15.Aug.1978

Paratype from EEZ-AR: ZISP 49951 (1) (ex ISH 541-78), WH 903/78, 43°49.04'S 59°31.4'W, 08.Sep.1978

Chernova (1998): type catalog

***Patagolycus melastomus* Matallanas and Corbella, 2012**

Patagolycus melastomus Matallanas and Corbella, 2012

Perciformes: Zoarcidae: Lyconinae

Paratypes from EEZ-AR: BMNH 1936.8.26.962-973 (212), *Discovery* expedition, *William Scoresby* station 812, 51°16'15"S 68°52'W (mean of haul 51°15.5'-17'S 68°54'-50'W), 10.Jan.1932

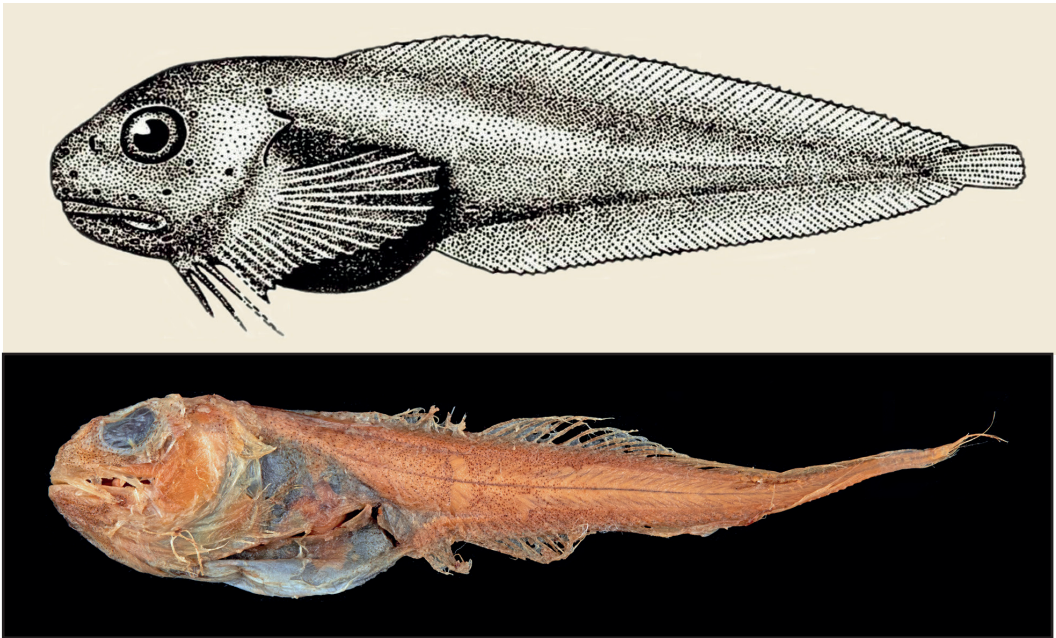
***Volodichthys herwigi* (Andriashev, 1991)**

Careproctus herwigi Andriashev, 1991 (Figures 10-11)

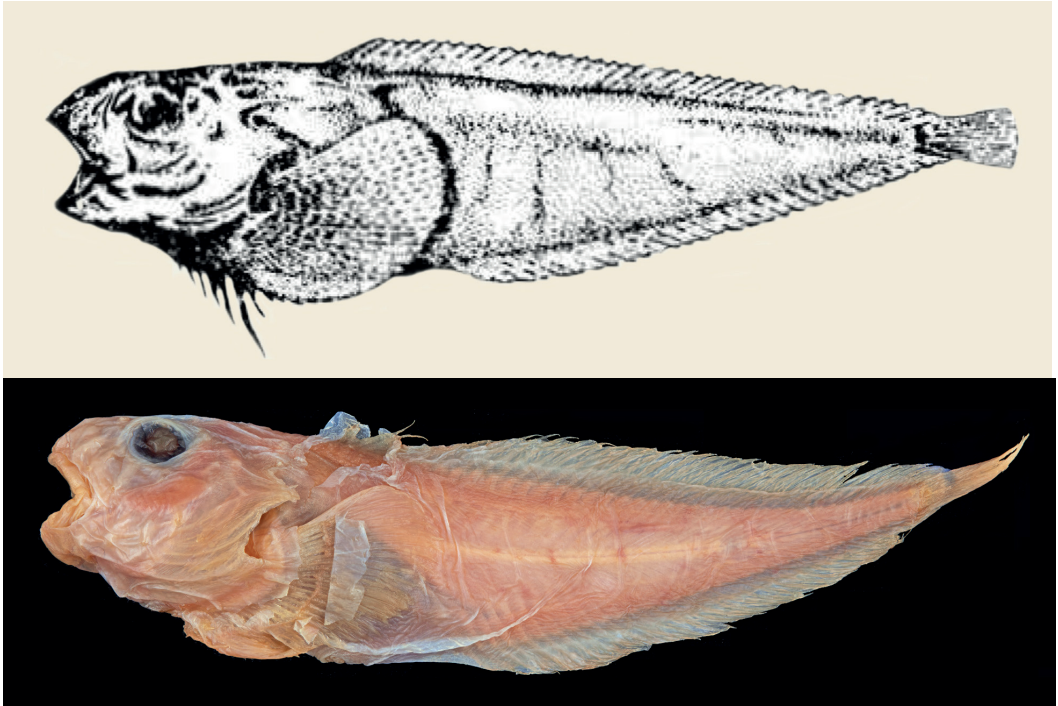
Perciformes: Liparidae

Holotype from EEZ-AR: ZMH 25367 (ex ISH 262-71), *Walther Herwig* station 329/71, 41°13'S 56°51'W, 22.Feb.1971

Balushkin (2012) erected the genus *Volodichthys* and proposed the new combination.



Figures 8-9 - *Paraliparis aspersus*, drawing from Andriashev (1992) and holotype ZMH 25330.



Figures 10-11 - *Volodichthys herwigi*, drawing from Andriashev (1991) and holotype ZMH 25367.

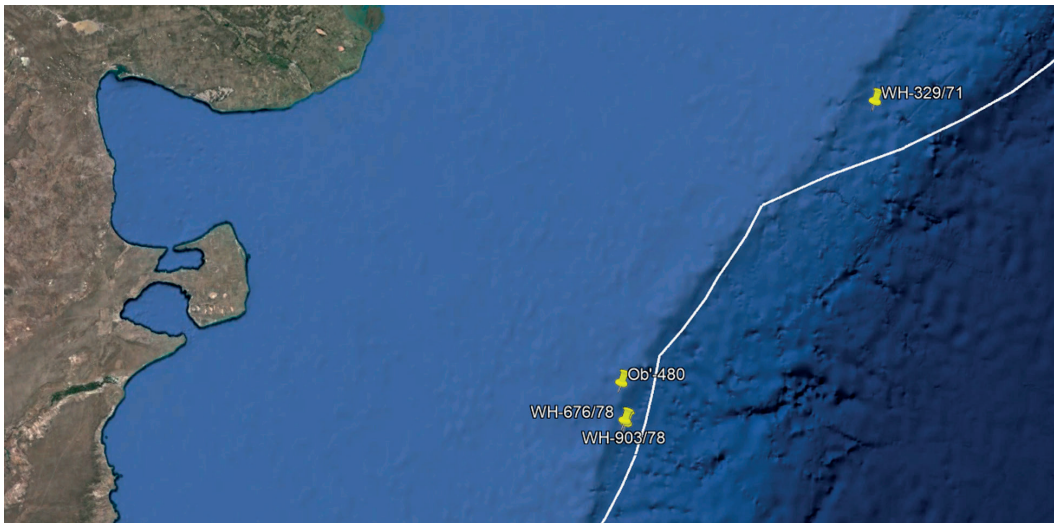


Figure 12 - Collection sites of the German research vessel *Walther Herwig* (WH) and the *Ob'* from Russia (Ob'). Type localities of *Volodichthys herwigi* at WH-329/71 and of *Careproctus cactiformis* at Ob'-480/58. Paratype locality of *Paraliparis aspersus* at WH-903/78. *Guttigadus latifrons* was collected at WH-676/78.

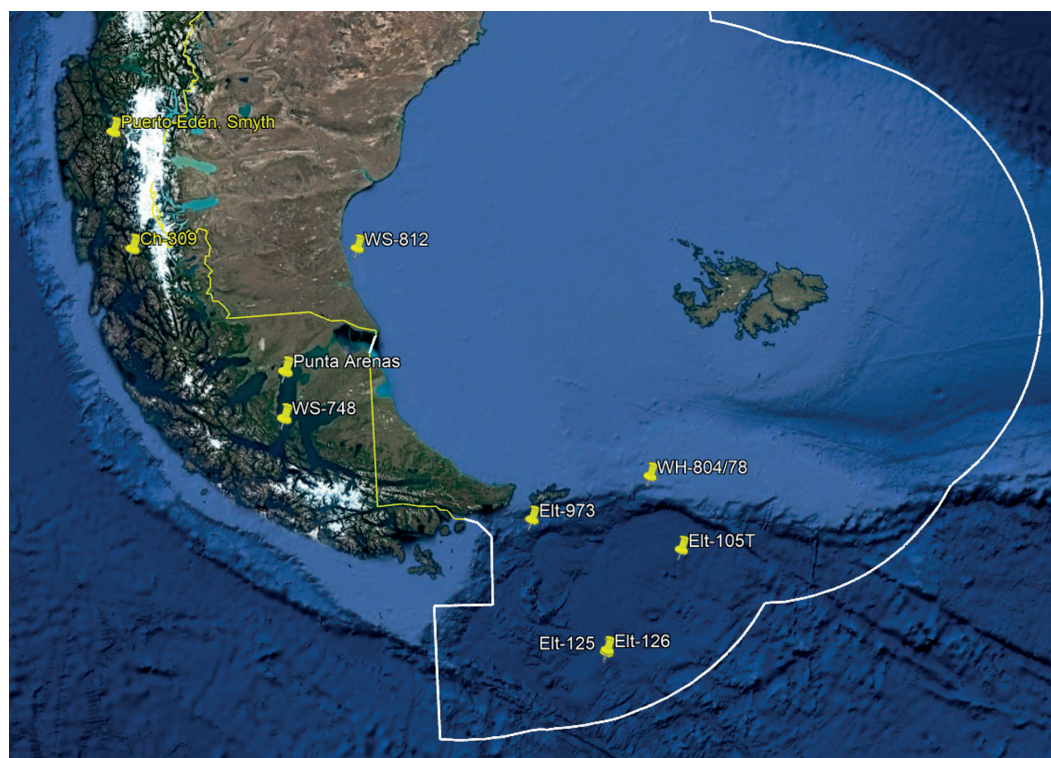


Figure 13 - Collection sites of the German research vessel *Walther Herwig* (WH), the *Eltanin* from Russia (Elt), and the *William Scoresby* (WS) forming part of the British *Discovery* expedition. Type localities of *Paraliparis aspersus* at WH-804/78, of *Careproctus leptorhinus* at Eit-105T/62, and of *Careproctus zispi* at Eit-973/64. Paratype locality of *Patagolyculus melastomus* at WS-812. Collection sites of *Labichthys yanoi* at Eit-125 and Eit-126. Four leftmost localities are the collection sites in waters of Chile mentioned below.

Exclusive Economic Zone of Uruguay (Figures 27-28)

Avocettina acuticeps (Regan, 1916)

Leptocephalus acuticeps Regan, 1916

Anguilliformes: Nemichthyidae

Non-type specimens from EEZ-UY: ZMH 103559 (3) (ex ISH 984/66), *Walther Herwig* station 197/66, 35°56'S 52°33'W, 30.May.1966 | ZMH 106243 (3) (ex ISH 1698/68), *WH* 30/68, 36°37'S 51°32'W, 16.Feb.1968 | ZMH 106261 (2) (ex ISH 2195/68), *WH* 30/68, 36°37'S 51°32'W, 16.Feb.1968

Records of ZMH 103559 and ZMH 106243 from Nielsen and Smith (1978). ZMH 106261 so far unpublished.

Avocettina paucipora Nielsen and Smith, 1978

Avocettina paucipora Nielsen and Smith, 1978 (Figure 14)

Anguilliformes: Nemichthyidae

Paratype specimen from EEZ-UY: ZMH 25403 (1) (ex ISH 2195/68), *Walther Herwig* station 30/68, 36°37'S 51°32'W, 16.Feb.1968

Benthalbella elongata (Norman, 1937)

Scopelarchus elongatus Norman, 1937 (Figure 15)

Aulopiformes: Scopelarchidae

Non-type specimens from EEZ-UY: ZMH 106131 (1) (ex ISH 1684/68), *Walther Herwig* station 30/68, 36°37'S 51°32'W, 16.Feb.1968

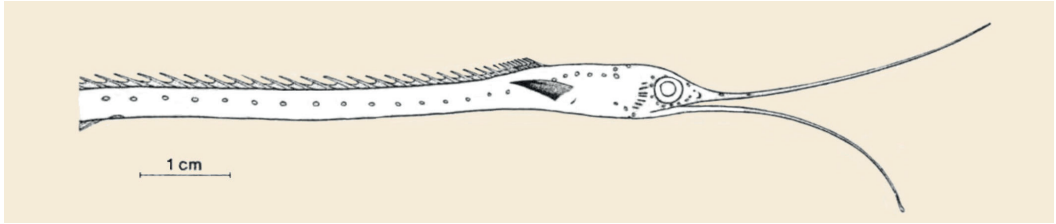


Figure 14 - Head of a female paratype of *Avocettina paucipora*. Complete specimen is 51.5 cm long. Drawing from Nielsen and Smith (1978).

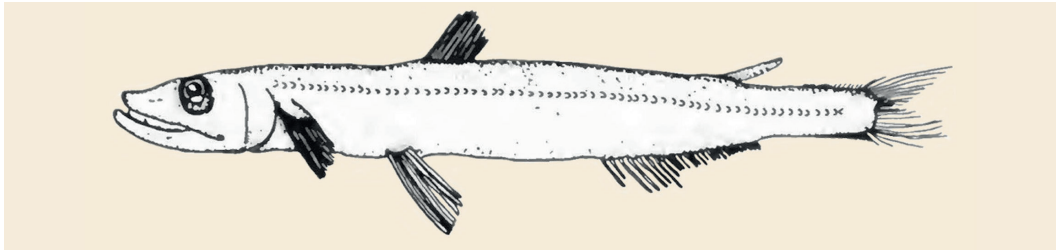


Figure 15 - *Benthabella elongata*, drawing from Johnson (1974, fig.20A, after Andriashev).

Johnson (1974:76) listed ISH 1684/68 under the examined material without providing details on the collection locality. These could be replenished for this lot from the species' occurrence record in Fishbase and have been confirmed by Ralf Thiel, ZMH.

***Coryphaenoides affinis* Günther, 1878**

Coryphaenoides affinis Günther, 1878 (Figures 16-17)

Gadiformes: Macrouridae

Syntypes from EEZ-UY: BMNH 1887.12.7.134-135 (2), *Challenger* station 323, 35°39'S 50°47'W, deep sea east of Río de la Plata mouth, depth 1900 fathoms (3475 m), 28.Feb.1876

***Diaphus meadi* Nafpaktitis, 1978** (Figure 18)

Diaphus meadi Nafpaktitis, 1978

Myctophiformes: Myctophidae: Diaphinae
Paratypes from EEZ-UY: USNM 216998 (2), *Atlantis II*, 36°45'S 53°06'W, 18-19.Mar.1967

***Echiodon cryomargarites* Markle, Williams and Olney, 1983**

Echiodon cryomargarites Markle, Williams and Olney, 1983 (Figure 19)

Ophidiiformes: Carapidae: Carapinae

Paratypes from EEZ-UY: ZMH 24979 (4) (ex ISH 1108/66), *Walther Herwig* station 230/66, 35°04'S 52°15'W, 12.Jun.1966 | ZMH 24981 (1) (ex ISH 1554/66), *WH* 428/66, 34°48'S 52°02'W, 28.Jul.1966

***Himantolophus appellii* (Clarke, 1878)**

Aegaeonichthys appellii Clarke, 1878 (Figure 20)

Lophiiformes: Himantolophidae

Non-type specimen from EEZ-UY: ZMUC P922218 (1) (ex ISH 1711/68), 36°37'S 51°32'W

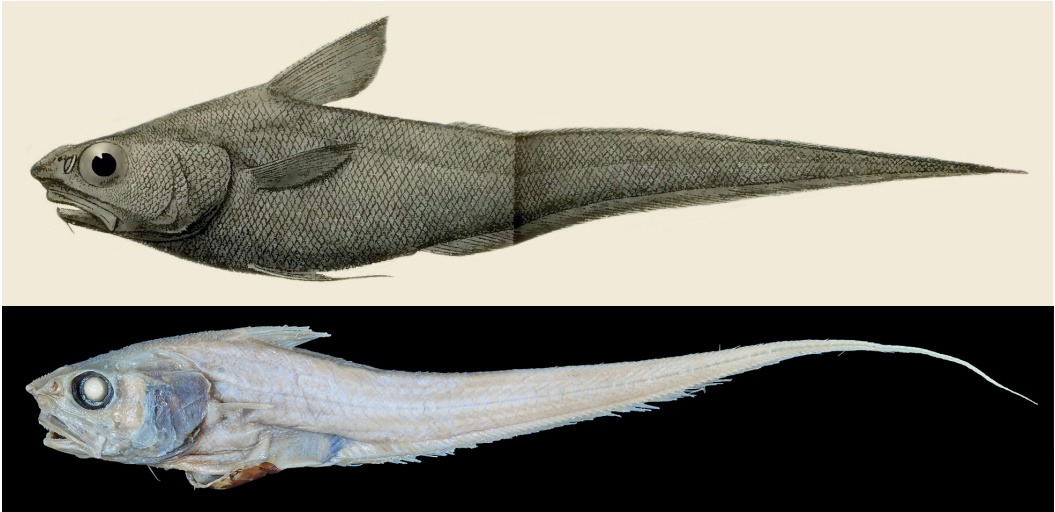
Record from Bertelsen and Krefft (1988). Coordinates correspond to *Walther Herwig* station 30/68.

***Ichthyococcus australis* Mukhacheva, 1980**

Ichthyococcus australis Mukhacheva, 1980 (Figure 21)

Stomiiformes: Phosichthyidae

Non-type specimen from EEZ-UY: ZMH



Figures 16-17 - *Coryphaenoides affinis*, drawing from Günther (1887) and syntype BMNH 1887.12.7.134-5. Drawing swapped horizontally. Drawing originally double-page spread, scan showing the fold. Photo retrieved from online database of BMNH fish collection.

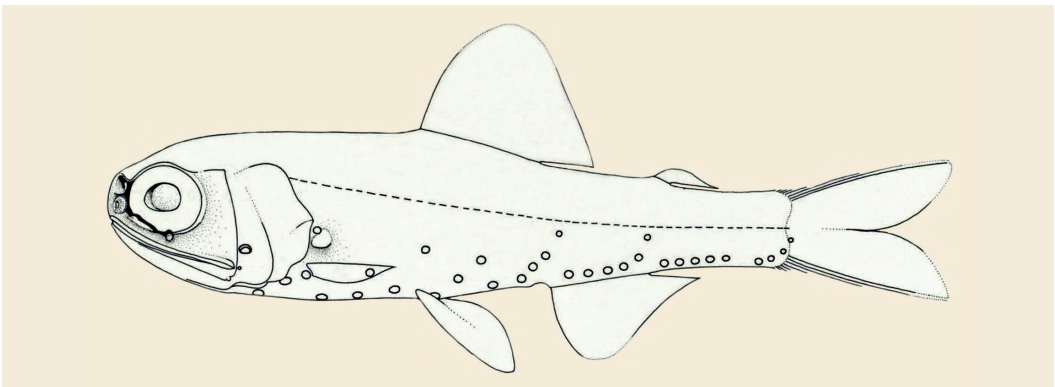


Figure 18 - *Diaphus meadi*, drawing of the holotype from Nafpaktitis (1978).

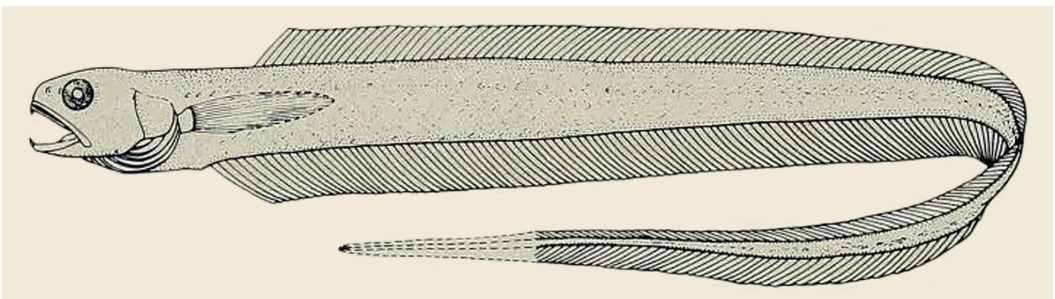


Figure 19 - *Echiodon cryomargarites*, drawing of a female paratype from Markle et al. (1983).

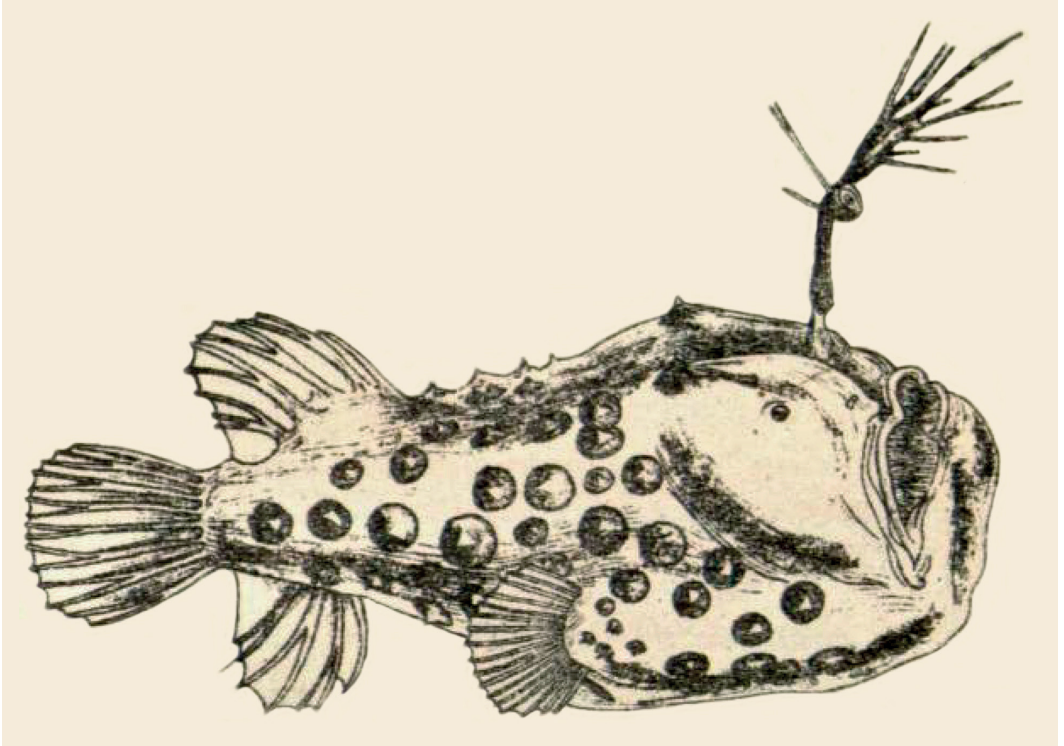


Figure 20 - *Himantolophus appellii*, drawing of holotype from Clarke (1878).

103692 (1) (ex ISH 941/66), *Walther Herwig* station 197/66, 35°56'S 52°33'W, 30.May.1966

Record from Krefft (1983).

***Kali indica* Lloyd, 1909**

Kali indica Lloyd, 1909 (Figures 22-23)

Scombriformes: Chiasmodontidae

Non-type specimen from EEZ-UY: ZMH 106821 (1) (ex ISH 683/68), *Walther Herwig* station 30/68, 36°37'S 51°32'W, 16.Feb.1968

Record from Johnson and Cohen (1974).

***Monolene antillarum* Norman, 1933**

Monolene antillarum Norman, 1933 (Figures 24, 25, 27)

Carangiformes: Pleuronectoidei: Bothidae

Non-type specimens from EEZ-UY: ZIN 55116 (3), *Akademik Knipovich* trawl 230, 35°17'S 52°29'W, 12.Apr.1965, depth 400 m

Record from Voronina and Zhukov (2021). Figueiredo and Menezes (2000) and Menezes and Figueiredo (2003) mentioned a distribution of *Monolene antillarum* off Uruguay, but the species has not been included in national lists for Uruguay (Nion et al. 2002, 2016). The determination of ZIN 55116 from the EEZ-UY is supported by additional yet unpublished specimens of *M. antillarum* hosted in the collections of Hamburg and Sao Paulo: ZMH 104822 (ex ISH 1560-1966) from *Walther Herwig* station 429/66, MZUSP 72266 from *Profesor W. Besnard* station 1920, MZUSP 72273 from PWB 1872, and MZUSP 72276 and 72280 from PWD 1881.

***Nemamyxine krefftii* McMillan and Wisner, 1982**

Nemamyxine krefftii McMillan and Wisner, 1982

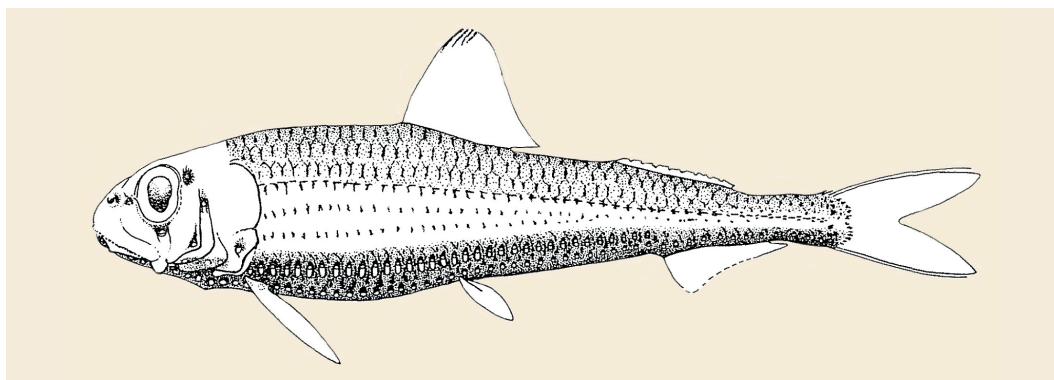
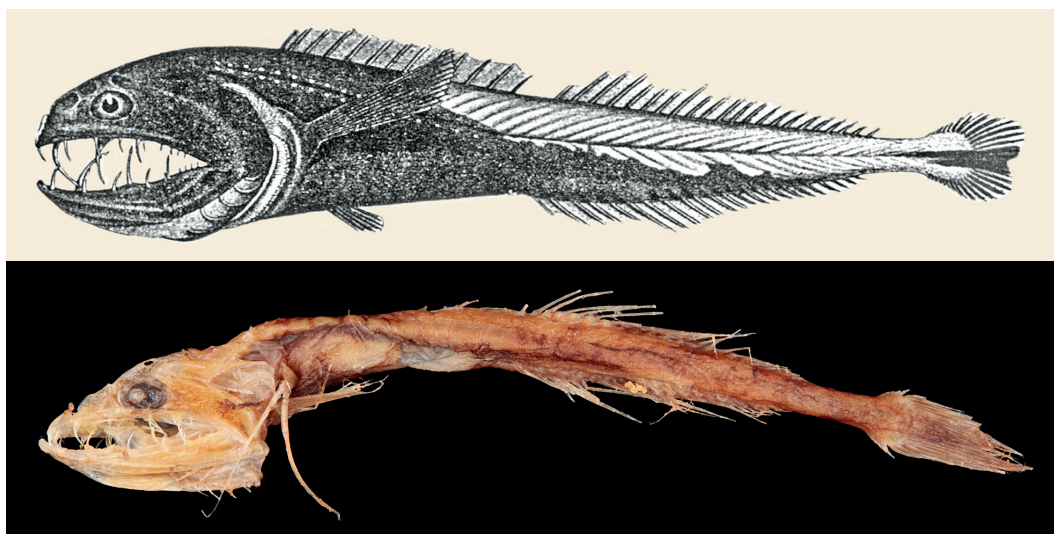


Figure 21 - *Ichthyococcus australis*, drawing from Krefft (1983, fig.1).



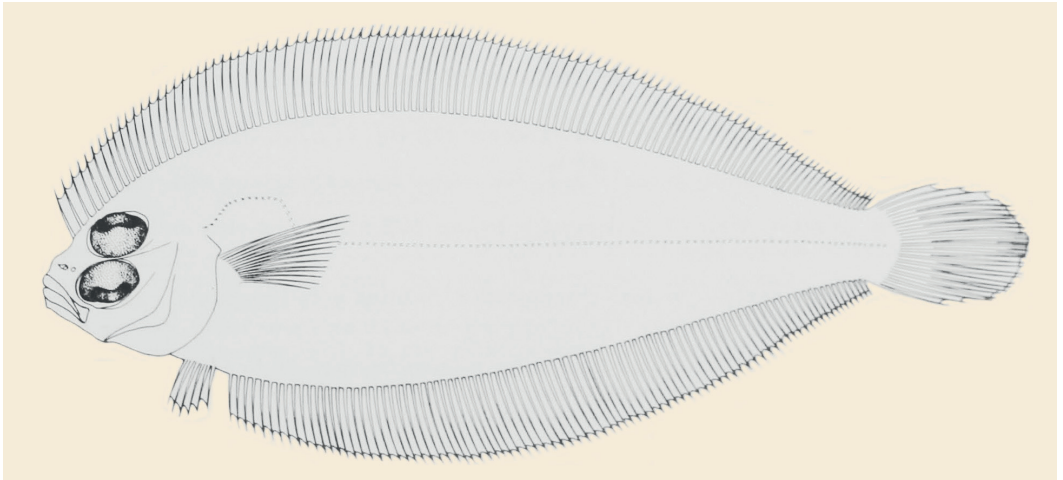
Figures 22-23 - *Kali indica*, drawing of holotype from Lloyd (1909) and specimen ZMH 106821. Drawing swapped horizontally.

Myxiniiformes: Myxinidae: Myxiniinae
 Holotype from EEZ-UY: ZMH 25161 (ex
 ISH 1144-1966), *Walther Herwig* station
 244/66, 36°51'S 54°01'W, 14.Jun.1966
 Krefft (1987): type catalog. Mincarone
 (2001) has informed about four additional
 non-type specimens from the EEZ-UY.

***Urophycis mystacea* Miranda Ribeiro,
 1903**

Urophycis mystacea Miranda Ribeiro, 1903
 (Figures 26-27)

Gadiformes: Gadoidei: Phycidae
 Non-type specimen from EEZ-UY: MZUSP
 60676 (3), *Profesor W. Besnard* station 1920,
 35°18'S 52°32'W | MZUSP 60929 (1), *PWB*
 1870, 35°51'S 53°06'W | MZUSP 60936 (1),
PWB 1873, 35°10'S 52°46'W
 Records from Lemes et al. (2016). Figueire-
 do and Menezes (1978) and Menezes (2003)
 mentioned a distribution of *Urophycis mys-
 tacea* for Uruguay, but the species has not
 been included in the Uruguayan lists by
 Nion et al. (2002, 2016).



Figures 24-25 - *Monolene antillarum*, drawing from Gutherz (1967, fig.5) and holotype BMNH 1932.12.31.15-16. Photo retrieved from online database of BMNH fish collection.

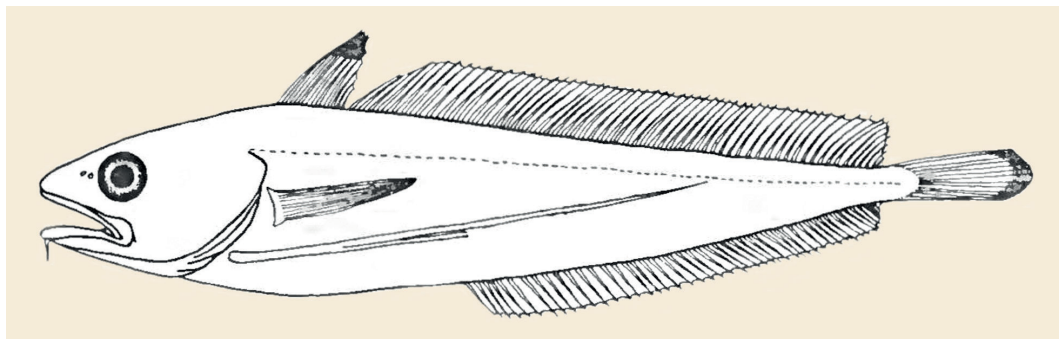


Figure 26 - *Urophycis mystacea*, drawing from Figueiredo and Menezes (1978, fig.76)



Figure 27 - Collection sites of *Monolene antillarum* and *Urophycis mystacea* in the EEZ-UY by the research vessels *Akademic Knipowitsch* (AKni) from Russia, *Profesor W. Besnard* (PWB) from Brazil, and *Walther Herwig* (WH) from Germany. All stations for *Monolene antillarum* right along the upper edge of the continental slope.

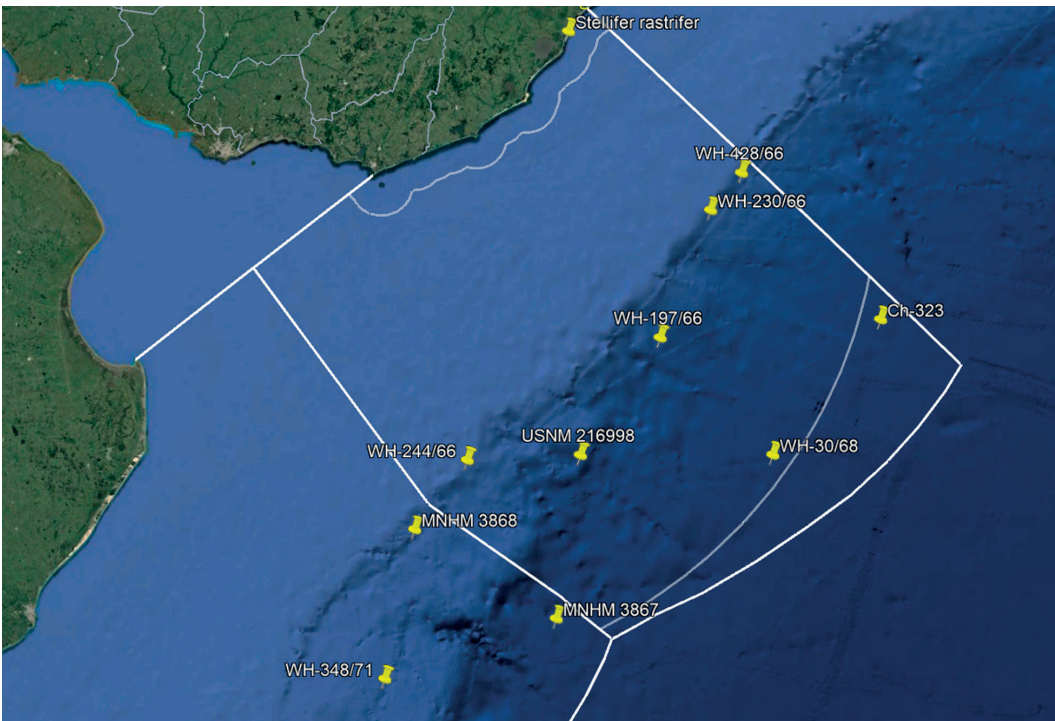


Figure 28 - Collection sites of the research vessels *Challenger* (Ch) and *Walther Herwig* (WH) in the EEZ-UY and the northern part of EEZ-AR, as well as of specimens housed in MNHM and USNM. Blue lines show the outer limit of the AUCFZ in the EEZ-UY and the Uruguayan 12-miles-zone, respectively.

No rose without a thorn

It is relatively easy to add species to national or regional lists as only individual awareness for evidence-based records is necessary to do so (see above). Much more complicated is the case for negative records. Despite any provided proofs and arguments, to delete a species from such lists may be an issue of collective acceptance and/or others' individual willingness to deal with established, yet changing concepts. These differing concepts may be found in systematical, taxonomical, or nomenclatural opinions, but also in the understanding of marine territorial limits.

The expression "Argentine Sea" (Mar Argentino) is the denomination for a diffuse area East of the southern coast of South America without defined limits and hence, is not congruent with the Exclusive Economic Zone of Argentina. Just as despite their names the "Indian Ocean", the "Irish Sea", or the "Gulf of Mexico" are partly but not exclusively under the respective jurisdiction of the eponymous countries.

This conception is being confirmed from an official position, the very government of Argentina: *'The sector of the Southwestern Atlantic Ocean that covers the shallowest portion of the Argentine continental margin is known as the Argentine Sea. This is a historical and cultural denomination, and therefore does not imply a reference to the maritime areas of sovereignty or jurisdiction of the Argentine Republic'* (Montero 2023). Also, the term 'Mar Argentino' is applied to denominate an ecoregion (Ogden et al. 2014, Bergmann 2017), rather than an area with comprehensible and internationally recognized limits.

In addition to the international waters, which by their mere denomination are not part of any EEZ, in the cases of Argentina and/or Uruguay there is a special issue that needs to be considered: the Argentine-Uruguayan Common Fishing Zone (AUCFZ).

Recently the mere existence of the AUCFZ, essentially a bilateral commercial treaty, was proposed as the reason to include fishes reported from the 'Uruguayan shelf' in the list of Argentina's marine fishes (Mabragaña and Cousseau 2021; Bauni et al. 2022) and *vice versa* (Nion et al. 2016). This approach is to be denied for various reasons:

Conservation measures require jurisdictional range. In view of the tremendous speed of extinction of species we are facing today, the international efforts to protect our biodiversity are crucial. The legal aspects of these international efforts are founded in the *Convention on Biological Diversity* (CBD) and the subsequent *Nagoya Protocol* and *Aichi Biodiversity Targets*, as approved by Argentina, Uruguay and their respective neighbors. To protect marine ichthyological diversity and ensure sustainability of fish stocks each nation may apply tools as licensing of vessels, mesh widths, closed seasons, establishment of protected areas, no-fishing zones etc. Obviously the control and sanctioning of any of these regulating conditions is restricted to the area covered by the national jurisdiction, *viz.* the respective EEZ as the marine continuation of a national territory.

Although in the AUCFZ-treaty the two neighbors have agreed on conditions that allow the fishing fleet of the other party to unconditionally work in the partner's sector, neither has given up its national sovereignty on and the governance of national jurisdiction in its respective EEZ. This is made obvious by the fact that both nations agreed on the possibility to issue fishing licences to vessels under third countries' flags for their side of the limiting line. This makes it impossible to protect biodiversity by unilaterally enforce any of the above invoked measures in the other party's area of the AUCFZ.

Ichthyofaunal biodiversity is much more than the species targeted by fisheries.

The very purpose of the AUCFZ-treaty is directed towards the commercial fisheries of both countries. However, the ichthyofaunal diversity is composed of a majority of species which have no commercial value. Not only that commercial fisheries are not interested in these species, many of these fishes cannot be targeted for technical reasons by these vessels. Due to e.g. mesh width of nets very small pelagic fishes (myctophids, cyclothones, etc.) may, if at all, only be found as stoma content of bigger ones. Commercial vessels are either unable to fish in depths of 4000 meters and even deeper in the easternmost areas of the AUCFZ or, even if they were, fishing in these depths would not be profitable. Also, in a strip of approximately 60 nm along the coast the application of bottom trawl nets is prohibited and therefore many species of demersal fish cannot be taken. Summarizing, making reference to the other party's area of the AUCFZ is an inappropriate tool for any issue of ichthyological diversity beyond commercial exploitation.

In addition to the few groups of commercially exploited organisms affected by the AUCFZ-treaty (fishes, squids, molluscs) there are many other taxa (corals, plancton, jellyfish, sea squirts, algae, mammals, etc.) composing the marine biodiversity of any given area. If not treating all groups equally then the national biodiversity lists for high level taxa would be covering different areas and not be based on congruent data.

Topographical mismatch: EEZ ≠ AUCFZ.

There is yet another very practical reason why ichthyologists from both countries should not consider records from the respective other party's part of the AUCFZ as if that would be part of their own range of influence, *viz.* EEZ: the areas are simply not identical. Following the AUCFZ-treaty the

easternmost strips along the respective outer limits of the EEZs towards international waters are not, neither are the 12-miles-zones along the shores. The syntype locality of *Coryphaenoides affinis* (see above) is found within the EEZ-UY but towards the open Atlantic outside the AUCFZ (Ch-323 in figure 28). On the other hand *Stellifer rastrifer* was cited for Argentina by Mabragaña and Cousseau (2021) with reference to Segura et al. (2009), who reported the species from a locality not even 1,4 km from the beach of northern Uruguay. As this locality is found within the 12-miles-zone of Uruguay (Figure 28) and thus, not in the AUCFZ, not even if following the 'trans-border fishing industry approach' *Stellifer rastrifer* should be included in a list for Argentina.

The assertion of Mabragaña and Cousseau (2021) that only species from the continental shelf off Uruguay have been included for Argentina should be taken with caution. When for example one follows the chain of references from Mabragaña and Cousseau (2021) to Cousseau et al. (2020) to Menni et al. (1984) to Krefft (1968) the inclusion of *Luciosudis normani* for Argentina results to be based on 15 specimens obtained at *Walther Herwig* station 30/68 (Figure 28), located off Uruguay above a depth of >2000 m, some 80 nm beyond the upper edge of the continental slope.

Organisms reported from the so called 'adjacent areas', as international waters or the EEZ of neighbors, cannot be protected under national jurisdiction and hence, biodiversity driven species lists for marine organisms (as e.g. Mabragaña and Cousseau 2021) should be restricted to evidence-based records known from the respective own national EEZ. Comparing the AUCFZ with an example from the northern hemisphere, probably everybody could imagine the utter chaos in national faunal lists if Finland or Sweden would include marine fishes from off Greece or Italy in their national lists just

because the EEZ of all members of the European Union form one common fisheries zone, giving vessels from Scandinavia the right to fish in parts of the Mediterranean Sea.

Every species is having limits towards all directions in its distribution, which by our current knowledge may still be unknown to us or which may be changing just now due to the global climate change. Fishes typical for the tropical Atlantic off Brazil may reach the extreme North of Uruguay and Patagonian species may reach up to Mar del Plata, but including the first for Argentina or the latter for Uruguay does actually impede our understanding of specific distributional limits. The same should be applied on fishes from Pacific or Magellanic environments in Chilean waters, which have been listed for Argentina without any evidence-based record from the EEZ-AR.

Freshwater ichthyologist from both countries have understood that “biological species inventory and distribution data are essential for many human activities and are part of the requirements of the *Convention on Biological Diversity* which proposes that each country should have accurate and up-to-date lists of its fauna and flora” (Terán et al. 2020).

Consequently the following species shall not be included in the national lists of marine fishes of Argentina and/or Uruguay as long as no evidence-based records are known from either of the respective EEZs:

***Anthias menezesi* Anderson and Heemstra, 1980**

Anthias menezesi Anderson and Heemstra, 1980

Perciformes: Anthiidae

Cousseau and Rosso (2019) and Mabragna and Cousseau (2021) listed *A. menezesi* for Argentina, the latter with reference to Menni et al. (1984), who listed this species for Uruguay, referring to Anderson

and Heemstra (1980). These authors described the new species, along with other type specimens, based on paratypes from *Walther Herwig* stations 441/66 and 44/68, mentioning ‘off Uruguay’ for both collection sites. This statement proved to be erroneous as both stations are located in the EEZ-BR (Figure 30). Nion et al. (2002, 2016) probably followed Menni et al. (1984).

***Aulotrachichthys atlanticus* (Menezes, 1971)**

Paratrachichthys atlanticus Menezes, 1971

Trachichthyiformes: Trachichthyidae

Krefft (1976) has reported the species from ten stations of the research vessel *Walther Herwig*, being the three most southern stations located at 34°14'S 51°40'W (WH 441/66), 34°01'S 47°39'W (WH 28-II/68), and 35°12'S 49°17'W (WH 29-I/68), all within or just outside the EEZ-BR (Figure 30).

Menni et al. (1984) included this species referring to Krefft (1976) with a clear comment: “Esta especie del sur de Brasil...”. Despite this acclaration Nion et al. (2002, 2016), Cousseau and Rosso (2019), and Mabragna and Cousseau (2021) listed the species for Uruguay or Argentina, the latter with reference to Menni et al. (1984).

***Calliclinus geniguttatus* (Valenciennes, 1836)**

Clinus geniguttatus Valenciennes, 1836

Blenniiformes: Labrisomidae

Lönnerberg (1907) reported on *Clinus geniguttatus* found in the Smyth Channel, followed by Pozzi and Bordalé (1935) with a listing from Punta Arenas, both located in the Magellanic area of Chile (Figure 13). Ringuet and Arámburu (1960) included the species with no restraint in their list of marine fishes of Argentina. With references to Lönnerberg (1907) and Pozzi and Bordalé (1935), Menni et al. (1984a) characterized the species as “limítrofe”. Despite Menni’s acclaration, Cousseau and Rosso (2019) and

Mabragaña and Cousseau (2021) listed the species for Argentina, the latter with reference to Menni et al. (1984).

***Euprotomicroides zantedeschia* Hulley and Penrith, 1966**

Euprotomicroides zantedeschia Hulley and Penrith, 1966

Squaliformes: Dalatiidae

This dwarf deep sea shark was described from West of Cape Town, South Africa, from a single specimen (Hulley and Penrith 1966). Krefft (1980) and Stehmann and Krefft (1988) informed about the then second ever obtained specimen, collected at 35°00.6'S 40°01'W, station 109-I/76 of the German research vessel *Walther Herwig*. Although this position is located some 920 km from the nearest point of EEZ-UY and approx. 1360 km from Punta del Este, the species was included regardless by Nion et al. (2002) in their list of the marine fishes of Uruguay.

To the closest point of the EEZ-AR the distance is approx. 1180 km and the closest point of terrestrial Argentina is over 1500 km away.

Stehmann et al. (2016) provided a complementary description based on the third and fourth specimens, both collected in the Pacific Ocean some 2200 km West of the Chilean coast. Ever since no additional material was found and for the time being we only know this species from the four mentioned specimens, all of them collected not even somehow close to the Atlantic coast of South America (Figure 29).

Menni and Lucifora (2007) mentioned the species in their working list of cartilaginous fishes from Argentina and Uruguay, but with reference to the southwest Atlantic locality made the statement that this species “no corresponde estrictamente a una fauna local”. Regardless, Nion et al. (2016), Cousseau and Rosso (2019), and Mabragaña and Cousseau (2021) included *Euprotomicroides*

zantedeschia in their respective lists of marine fishes from Argentina or Uruguay.

***Halicampus crinitus* (Jenyns, 1842)**

Syngnathus crinitus Jenyns, 1842

Syngnathiiformes: Syngnathoidei: Syngnathidae: Syngnathinae

Dawson (1978) demonstrated that Jenyns' type locality of 'Bahía Blanca' was a *lapsus calami*, as Darwin collected the holotype of this species at the Brazilian city of (Salvador do) Bahia, and corrected the type locality respectively. This species is distributed between Florida and the state of Santa Catarina (Guimarães 1999) but has never been collected at more southern localities. Thus, all listings for Argentina, as e.g. sub *Micrognathus crinitus* by Herald (1942), Menni et al. (1984, referring to Jenyns) and Cousseau and Rosso (2019), and sub *Halicampus crinitus* by Mabragaña and Cousseau (2021, referring to Menni et al.), must be treated as erroneous.

***Herwigia krefftii* (Nielsen and Larsen, 1970)**

Bathylaco krefftii Nielsen and Larsen, 1970

Alepocephaliformes: Alepocephalidae

Nielsen and Larsen (1970) described this species based on a holotype from off southern Brazil (34°01'S 47°39'W, *Walther Herwig* station 28-II/68, Figure 30) and a paratype from the Canary Islands. To these Nielsen (1972) added 14 specimen from 5 locations on the tropical Mid-Atlantic ridge. In addition to the holotype no further specimens from the Southwest Atlantic seem to be known.

With reference to Nielsen (1972), Menni et al. (1984) mentioned the species for Uruguay. This was probably a *lapsus calami* as only the type location off southern Brazil would have made sense when considering this species for Uruguay and Menni et al. (1984) should have referred to Nielsen and Larsen (1970).

Subsequently Nion et al. (2002, 2016), Cousseau and Rosso (2019), and Mabragaña and Cousseau (2021) listed the species for Uruguay or Argentina, the latter with reference to Menni et al. (1984).

***Labichthys yanoi* (Mead and Rubinoff, 1966)**

Avocettinops yanoi Mead and Rubinoff, 1966
Anguilliformes: Nemichthyidae

Nieddu (2017) published an explicit first record for this species from 'aguas uruguayas' based on two specimens (MNHM 3867, 3868) obtained at 37°50'S 53°10'W and 37°20'S 54°24'W, respectively. Nieddu was in error about the factual positions of these coordinates, as both are located in the EEZ-AR (Figure 28), making the only presumed existing record for this species from the EEZ-UY obsolete.

Nieddu also referred to a specimen of *L. yanoi* collected within the EEZ-AR at *Walther Herwig* station 348/71 (Figure 28), and another one from international waters collected at 43°05'S 54°39'W, *Kaiyo Maru* station 33.

In addition to these specimens Nielsen and Smith (1978) examined specimens from the extreme southern area within the EEZ-AR collected at the *Eltanin* stations 125 and 126 (Figure 13).

Hence, the presence of *Labichthys yanoi* in the EEZ-AR is well founded on several voucher specimens, while from the EEZ of Uruguay so far no record seems to exist.

***Lycodapus australis* Norman, 1937**

Lycodapus australis Norman, 1937
Perciformes: Zoarcoidei: Zoarcidae: Lycodapinae

Menni et al. (1984) and Cousseau et al. (2020) provide reference to Norman's (1937) holotype and paratypes from *Discovery* station WS-748 in Chile's Strait of Magellan (Figure 13). Mabragaña and Cousseau (2021) made reference to Cousseau et

al. (2020), while Cousseau and Rosso (2019) included the species for Argentina without reference to their source of information. There seems to be no published record of this species from waters of Argentina.

***Oneirodes notius* Pietsch, 1974**

Oneirodes notius Pietsch, 1974

Lophiiformes: Oneirodidae

The species was described by Pietsch (1974) based on type specimens from circum-polar subantarctic waters, among which two of the paratypes have been obtained from international waters in the southwestern Atlantic Ocean (39°19'S 48°02'W, *Walther Herwig* station 354-II/71, and 39°47'S 43°30'W, *WH 358-III/71*). Station 354-II/71, the closer of the two, is located nearly 850 km (455 nm) off Mar del Plata and some 430 km (235 nm) from the nearest point of the EEZ-AR.

With reference to Pietsch (1974), Menni et al. (1984) included the species for Argentina, followed by Cousseau and Rosso (2019) and Mabragaña and Cousseau (2021), the latter referring to Menni et al. (1984). In a global scale the paratype localities could certainly be considered as being part of the 'Mar Argentino' (see above), yet no specimens are known from the EEZ-AR (Figure 30).

***Ophthalmolycus macrops* (Günther, 1880)**

Lycodes macrops Günther, 1880

Perciformes: Zoarcoidei: Zoarcidae: Lycodapinae

In this case we see two parallel chains of references from Argentine authors: a recent one from Mabragaña and Cousseau (2021) to Gosztanyi (1977) and Cousseau et al. (2020), and another one from Menni et al. (1984) to Pozzi and Bordalé (1935) to (probably) Lahille (1908).

Mere listings for Argentina. Lahille (1908): sub *Lycodes m.* ref. to Günther (1880); Pozzi and Bordalé (1935); Ringuélet and Arámb-

uru (1960); Menni et al. (1984a): ref. to Pozzi and Bordalé (1935); Chebez and Padilla (1999); Cousseau and Rosso (2019); Cousseau et al. (2020): ref. to Gosztonyi (1977); Mabragaña and Cousseau (2021): ref. to Gosztonyi (1977) and Cousseau et al. (2020).

Type localities from EEZ-CL. Günther (1880): holotype, *Challenger* station 309; Norman (1937): sub *Ophthalmolycus m.*, “only known from the type”; Gosztonyi (1977): examined holotype, “Only known from the type locality, north of the western entrance to the Magellan Strait.”

At the end either way of following references only leads to Günther’s holotype from *Challenger* station 309 (Figure 13). Independently from the early Argentinean authors, also Norman (1937) only referred to Günther’s description. No evidence-based record ever seems to have been mentioned from EEZ-AR.

***Patagonotothen thompsoni* Balushkin, 1993**

Patagonotothen thompsoni Balushkin, 1993
Perciformes: Notothenioidei: Nototheniidae: Nototheniinae

Mabragaña and Cousseau (2021) gave reference to Balushkin (1993) and Cousseau et al. (2020), the latter also to Balushkin (1993), who described the species based on a holotype and a paratype collected at Puerto Edén in the Smyth Channel (Figure 13). Even when sailing the shortest possible way through the channel system of southern Chile, Puerto Edén is over 500 nm away from the closest drop of the EEZ-AR.

***Pristipomoides freemani* Anderson, 1966**

Pristipomoides freemani Anderson, 1966
Acanthuriformes: Lutjanidae: Etelinae

Should a species collected off Haiti be included in the list of marine fishes for the US-state of Florida just because it was, without indication of evidence, mentioned for Cuba? When considering the similar distances from

Buenos Aires or Mar del Plata to the southernmost localities in the EEZ-BR (Figure 30), this fictitious example illustrates what happened to *Pristipomoides freemani* and other species (see above *Anthias menezesi* and *Aulotrachichthys atlanticus*).

Menni et al. (1984) listed *P. freemani* for Uruguay, not mentioning a distribution off Argentina, with reference to Menezes and Figueiredo (1980). Subsequently this species was listed for Argentina by Cousseau and Rosso (2019) and Mabragaña and Cousseau (2021), the latter referring to Menni et al. (1984), and for Uruguay by Nion et al. (2002, 2016). None of these authors provided a reference linked to the respective species account, but Menezes and Figueiredo (1980) at least included the paper of Anderson (1972) in their list of bibliography. Later Menezes et al. (2003) included references to Anderson (1972) and Menezes and Figueiredo (1980) directly under their species account of *Pristipomoides freemani*.

Anderson (1972) in fact published on an assumed distribution of this species for Uruguayan waters, providing a record from *Walther Herwig* station 227/66. The author’s assignment of this locality to Uruguay was erroneous as this collection site of the German research vessel is located in the EEZ-BR at 33°57’S 51°27’W (Figure 30). To our current knowledge this position is the southernmost record known for this species and for the time being there seems to be no evidence for a distribution in waters off Uruguay, and much less off Argentina.

***Synagrops bellus* (Goode and Bean, 1896)**

Hypoclydonia bella Goode and Bean, 1896
Acropomatiformes: Synagropidae

This species was included in the lists of marine fishes from both, Argentina and Uruguay (Nion et al. 2002, 2016) referring to inapplicable literature records.

Mabragaña and Cousseau (2021) included the species for Argentina with refer-

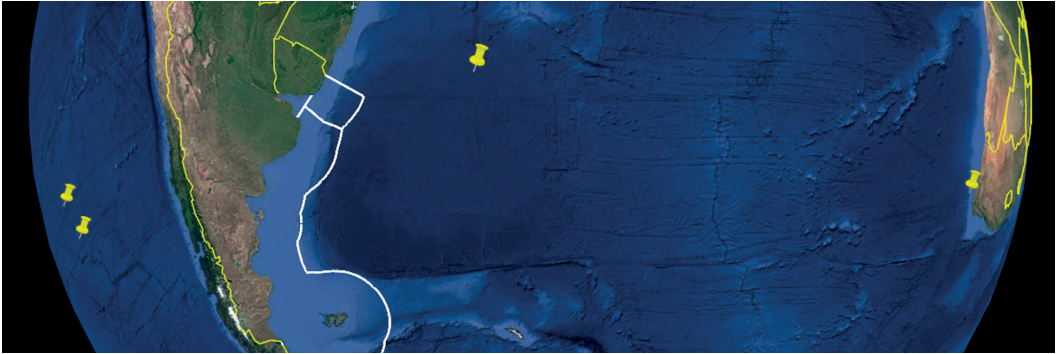


Figure 29 - Collection sites of the only four ever obtained specimens of the dwarf shark *Euprotomicroides zantedeschia*.



Figure 30 - Stations of Walther Herwig where *Anthias menezesi*, *Aulotrachichthys atlanticus*, *Herwigia kreffti*, *Oneirodes notius*, and *Pristipomoides freemani* were collected.

ence to Singh-Renton et al. (2015) who reported *Synagrops bellus* for Argentina and Uruguay, referring on their part to Robins and Ray (1986), Mejia et al. (2001), and Heemstra and Yamanoue (2002). Those authors did not mention a distribution so far south, but stated instead: 'North Carolina and northern Gulf of Mexico to

northern South America' (Robins and Ray 1986), 'Western Atlantic from Canada and Bermuda to Rio Grande do Sul' (Mejia et al. 2001), and 'Bermuda, Canada to Florida, northern Gulf of Mexico, Suriname' (Heemstra and Yamanoue 2002). Tracking the references down the line there are no initial mentions for Uruguay or Argentina.

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