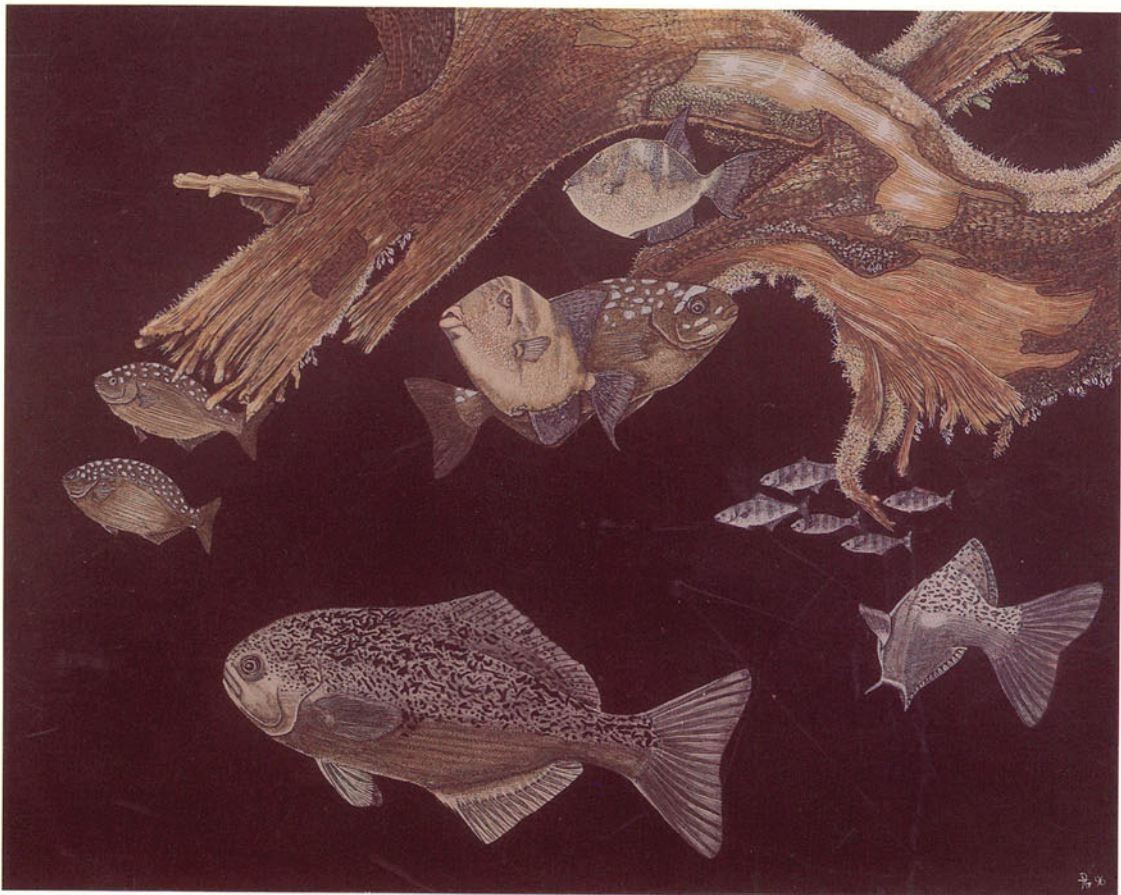


# Marine Fishes of the Azores

ANNOTATED CHECKLIST AND BIBLIOGRAPHY

Ricardo Serrão Santos, Filipe Mora Porteiro  
& João Pedro Barreiros



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COVER/ CAPA: Illustration by Paula Gaspar (scratchboard and water colour). Drift wood in open sea with several fish species associated: *Schedophilus ovalis*, *Kyphosus* sp., *Balistes carolinensis* and *Naucrates ductor* (based on underwater photographs by R. S. Santos).

Ilustração de Paula Gaspar (*scratchboard* e aguarela). Tronco de árvore em oceano aberto com várias espécies de peixes associadas: *Schedophilus ovalis*, *Kyphosus* sp., *Balistes carolinensis* e *Naucrates ductor* (baseado em diversos diapositivos de R. S. Santos).

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## annotated checklist and bibliography

*A Catalogue of the Azorean Marine Ichthyodiversity*

Ricardo Serrão Santos, Filipe Mora Porteiro  
& João Pedro Barreiros

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*This work is a tribute to Prof. José Ávila Martins  
in recognition to his devotion for the build up  
and strengthening of marine research in the  
University of the Azores.*



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## MARINE FISHES OF THE AZORES: AN ANNOTATED CHECKLIST AND BIBLIOGRAPHY.

RICARDO SERRÃO SANTOS, FILIPE MORA PORTEIRO & JOÃO PEDRO BARREIROS

SANTOS, RICARDO SERRÃO, FILIPE MORA PORTEIRO & JOÃO PEDRO BARREIROS 1997. Marine fishes of the Azores: An annotated checklist and bibliography. *Arquipélago*. Life and Marine Sciences Supplement 1: xxiii + 242pp. Ponta Delgada. ISSN 0873-4704. ISBN 972-9340-92-7.

A list of the marine fishes of the Azores is presented. The list is based on a review of the literature combined with an examination of selected specimens available from collections of Azorean fishes deposited in museums, including the collection of fish at the Department of Oceanography and Fisheries of the University of the Azores (Horta). Personal information collected over several years is also incorporated. The geographic area considered is the Economic Exclusive Zone of the Azores. The list is organised in Classes, Orders and Families according to Nelson (1994). The scientific names are, for the most part, those used in *Fishes of the North-eastern Atlantic and the Mediterranean* (FNAM) (Whitehead *et al.* 1989), and they are organised in alphabetical order within the families. Clofnam numbers (see Hureau & Monod 1979) are included for reference. Information is given if the species is not cited for the Azores in FNAM. Whenever available, vernacular names are presented, both in Portuguese (Azorean names) and in English. Synonyms, misspellings and misidentifications found in the literature in reference to the occurrence of species in the Azores are also quoted. The 460 species listed, belong to 142 families; 12 species are cited for the first time for the Azores. Details are given for 23 other species cited for the first time for the Azores in the Red Book of Portuguese Vertebrates (ICN 1993). Fifty-four ambiguous and/or exceptional occurrences are included in an appendix. A second appendix contains the remaining corrections to the checklist of fish included in ICN (1993). The paper concludes with a synthesis and an annotated indexed bibliography of the marine fishes of the Azores. Most references are available through the library of the Department of Oceanography and Fisheries of the University of the Azores.

SANTOS, RICARDO SERRÃO, FILIPE MORA PORTEIRO & JOÃO PEDRO BARREIROS 1997. Peixes marinhos dos Açores: Lista de espécies e bibliografia anotadas. *Arquipélago*. Ciências Biológicas e Marinhas Suplemento 1: xxiii + 242pp. Ponta Delgada. ISSN 0873-4704. ISBN 972-9340-92-7.

No presente trabalho apresentamos uma lista dos peixes marinhos dos Açores. Esta lista é baseada numa revisão da literatura combinada com o estudo de espécimes depositados nas colecções de alguns museus, incluindo a colecção de peixes do Departamento de Oceanografia e Pescas da Universidade dos Açores (Horta). Informações pessoais e conhecimentos adquiridos ao longo dos anos, são também incorporados. A área geográfica considerada é a da Zona Económica Exclusiva dos Açores. A lista está organizada em Classes, Ordens e Famílias, ordenadas segundo Nelson (1994). Os nomes científicos dos géneros e das espécies são, na sua maioria,

## *Santos, Porteiro & Barreiros*

adoptados da obra *Fishes of the North-eastern Atlantic and the Mediterranean* (FNAM) (Whitehead *et al.* 1989), e estão organizados por ordem alfabética dos géneros e espécies. Os números Clofnam (vd. Hureau & Monod 1979) são referidos na ficha das espécies, assim como a indicação se a espécie não é citada para os Açores no FNAM. São fornecidas as designações vernaculares das espécies nos Açores. Os sinónimos e as ortografias e identificações incorrectas, referidos na literatura para os Açores são também incluídos nas fichas das espécies. Das 460 espécies referidas, pertencentes a 142 famílias, 12 são citadas pela primeira vez para os Açores. As informações referentes a outras 23 espécies, referidas pela primeira vez para os Açores no Livro Vermelho dos Vertebrados de Portugal (ICN 1993), são elucidadas. Cinquenta e quatro espécies de ocorrência excepcional e/ou ambígua são incluídas num primeiro apêndice. Num segundo apêndice são incluídas as restantes correções à lista de peixes publicada em ICN (1993). O artigo termina com uma síntese de conclusões e uma bibliografia anotada e classificada sobre os peixes marinhos dos Açores. A maioria destas referências estão disponíveis através da Biblioteca do Departamento de Oceanografia e Pescas da Universidade dos Açores.

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## INTRODUCTION

The Archipelago of the Azores, located between 37°- 40° latitude North and 24°- 32° longitude West is the most isolated and extensive island group in the north-eastern Atlantic. The islands are of volcanic origin. They are situated at the edge of the mid-Atlantic ridge at the junction of the American, Eurasian and African tectonic plates. Their formation probably commenced in the late Miocene and has continued to the present time. It is still uncertain if the islands of the Azores were formed at the mid-Atlantic ridge, and then drifted away, or if they are intraplate products (Nunn 1994).

Santos *et al.* (1995c) review of the main aspects of marine research and conservation in the Azores highlighted the need for comprehensive catalogues of the marine fauna and flora and point out the importance of the Azores as a natural biogeographic laboratory.

The fishes of the Azores have been widely and regularly studied since the nineteenth century (see Martins 1990 and Santos *et al.* 1995c). Most of the earlier research was land-based scientific expeditions (e.g. the *Voyage d'Exploration Scientifique aux îles Açores* on the behalf of His Majesty the King of Portugal in the year of 1857: see Drouët 1858, 1861a,b; and the German expedition lead by Simroth: see Hilgendorf 1888b) and oceanographic cruises of major historical and scientific relevance. These include the round of the World cruise of the British H. M. S. “*Challenger*” (see Tizard *et al.* 1885)<sup>1</sup>, the cruises by the American steamer “*Albatross*” (see Goode & Bean 1895), the French ships “*Travailleur*” and “*Talisman*” (Vaillant 1888), the Norwegian steamer “*Michael Sars*”

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<sup>1</sup> During the major oceanographic expedition of the H. M. S. “*Challenger*” a few stations were made in the region of the Azores in the summer of 1873. The ship also made two stops, one in Faial and the other in São Miguel. However, the only fish species that seem to have been collected in the area was *Cupiceps gracilis*. No deep-sea fishes were mentioned by Günther (1887) from the Azores.

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(see Murray & Hjort 1912), the yachts “*Hirondelle*”, “*Princesse-Alice*” and “*Hirondelle II*” (see e.g. Richard 1900, 1934; Albert I<sup>er</sup> de Monaco 1904), the Royal Danish research ship “*Dana*” (see Jespersen & Tåning 1934) and the Swedish four-masted motor-schooner MS “*Albatross*” (see Christiansson 1957 and Pettersson 1957). The fishes collected during these cruises were studied by some of the most prominent ichthyologists of the 19th and 20th centuries.

The cruises promoted by Prince Albert I<sup>er</sup> of Monaco on his yachts concentrated on the Azores region. They contributed to the development of international scientific co-operation at both the national (see e.g. Carpine-Lancre & Saldanha 1992) and regional (see e.g. Ferreira 1937b) levels and they lead to the enhancement and growth of several branches of physical and natural marine sciences in mainland Portugal and in the Azores (see Saldanha *et al.* -eds.- 1992).

Fishes of the Azores have also been reported by expeditions which have stopped and collected specimens in the Azores: e.g. the *United States Eclipse Expedition to West Africa* in 1889 (see Fowler 1919) and the *Deutschen Südpolar- Expedition* in 1901-1903 (see Lampe 1914), and other cruises in the North Atlantic including the *Sargasso Sea Eel Expedition* in 1979 of the F.R.V. “*Anton Dohrn*” (see Post & Tesch 1982), the fifth cruise of the French R/V “*Président-Théodore-Tissier*” in 1936, the exploratory fishing cruise of the R/V “*Delaware*” in 1963 (Haedrich 1964), and several cruises to study bathypelagic fishes of the U. S. A. R/V “*Atlantis II*” and R/V “*Chain*” (see Backus & Craddock 1977).

Few nineteenth century Portuguese scientists referred to fishes from the Azores. F. B. Capello (1871a,b,c) initiated a catalogue of the fish deposited at the Museum of Lisbon but died before concluding that work. Thus despite the broad all-encompassing titles, he mentioned on two specimens of *Hippocampus* sp. from the Azores. His work was followed by A. R. P. Guimarães, who became the first Portuguese scientist to document Azorean fishes (Guimarães 1882, 1884). Also deserving attention are Ramos (1869), an army physician, who compiled a list of fish of the Azores strictly based on Drouët (1861b) and A. da S. Sampaio, another doctor of medicine whose book is dedicated to the Terceira Island and gives a long list of fishes, some of which were new (Sampaio 1904). Despite having some historical interest these two works were not innovative and taxonomically questionable.

The field of Azorean ichthyology was enriched by the work of two resident para-taxonomists, the Azorean priest Ernesto Ferreira, who published several important and carefully prepared papers on selected groups of fishes of the Azores (e.g. Ferreira 1937a, 1938, 1939, 1942) and B. L. Collins an officer of the Western Union Company based in Horta (Faial), who compiled a complete list of the fishes of the Azores, based on a review of literature and a few new additions (Collins 1954). Collins, while working on the fishes of the Azores, maintained a close correspondence and exchange of specimens with G. E. Maul of the Museu Municipal do Funchal. Maul was the professional ichthyologist who supervised the list of marine fishes published by Collins and gave Collins many identifications, corrections and much general advice. The Portuguese zoologist from Porto, Augusto Nobre, also visited the Azores. His work on the fishes of the Azores was published in notes and books (Nobre 1924, 1930, 1935).

These and a few other less known works constitute the basic information available used in many general publications (e.g. Briggs 1974) about the fishes of the Azores.

Except for a few works (e.g. Ramalho 1929c, Frade 1931c, Ferreira 1932) the ichthyological literature of the Azores until recently dealt solely with taxonomy and checklists. Only recently

Azorean ichthyology expanded into new areas of research (see Bibliography). In particular, research on deep-sea fish ecology and fisheries has gained new momentum now that the research vessel “*Arquipélago*” became permanently available in the Azores (see Silva 1995, Silva & Menezes 1995a,b, Silva *et al.* 1995).

Despite this emphasis on taxonomy, we have found many inaccuracies in the available lists of Azorean fishes (see e.g. Hureau -ed.- 1996) which show that an updated annotated checklist of the marine fishes of the Azores is needed. The most complete checklist to date was included in the third volume of the Red Book of Portuguese Vertebrates (ICN 1993) and it constitutes a preliminary compilation of species made in the scope of the present paper. Since 1993 a few corrections and additions have been made.

The present work is based on a thorough examination of the literature and examination of collections from several museums (see below and Acknowledgements) and from the Department of Oceanography and Fisheries (University of the Azores). Unfortunately some specimens that were once deposited in *Museu Carlos Machado* (Ponta Delgada, Azores) and in *Museu Bocage* (Lisbon, Portugal) have been lost. The authors plan to follow this work with an illustrated catalogue of the marine fishes of the Azores.

## MATERIAL AND METHODS

The fishes in this list are grouped in Classes, Orders and Families following Nelson (1994). The higher nomenclature also follows Nelson (1994). The specific names used for the most part of the fishes follow Whitehead *et al.* (1989), and they are organised alphabetically within each family.

Vernacular names are given in Portuguese and in English. The major references for Portuguese names were: Drouët 1861b, Ramos 1869, Sampaio 1904, Nobre 1924, 1930, Ferreira 1937a, 1938, 1939, 1940, Collins 1954, Martins 1982b and Sanches 1986a. The pre-Linnean work of the historian and naturalist, Gaspar Frutuoso (1522-1591) [Frutuoso 1983] was considered (see Azevedo 1991). Our own knowledge concerning popular names is also incorporated. A few vernacular names were created. Wheeler (1992) and Robins *et al.* (1991) were major sources of information concerning English vernacular names in use in the British Isles, the United States, and Canada. Whitehead *et al.* -eds.- (1989) was a secondary source of information, when a name was not available in one of the above references.

The geographic area considered is the Azorean Economic Exclusive Zone -EEZ- (Fig. 1).

The **Clofnam number** (see Hureau & Monod -eds.- 1979 and Whitehead *et al.* -eds.- 1989) and the non-citation of a species for the Azores in FNAM (Whitehead *et al.* -eds.- 1989) are always indicated for each species. If a species, genus and/or family are not included in FNAM, the respective Clofnam number field is empty.

**Synonyms, misspelling** and/or **misidentifications** (given in alphabetical order) of a species for the Azores are given in a separated field, together with the name of the author and the year of publication. Clofnam was the main reference for initial standardisation of synonymy and nomenclature.

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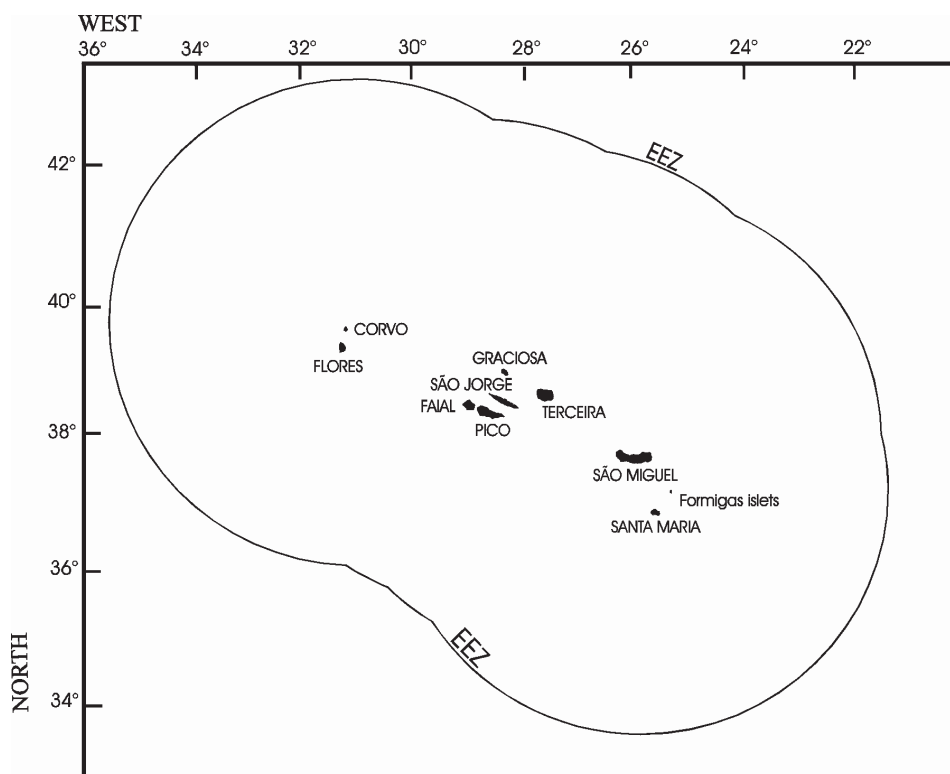


Figure 1. The Archipelago of the Azores and its Economic Exclusive Zone (EEZ).

The **References for the Azores** section gives citations for each species for the Azores in chronological order.

If a record of a species is of primary order, that is the reference includes specimens that were directly studied/observed by the author, the symbol ° follows the citation (e.g. Hilgendorf 1888°). Otherwise, the reference is of secondary and is based on another author. A decision was made to also include works dealing with studies applied to other regions (e.g. Guitel 1904, Cadenat 1937, Dooley *et al.* 1985) and reviews (e.g. Grey 1956, Taborsky 1994) as secondary references. This decision was based on the assumption that these references reflect an extension of the Azorean ichthyology.

Whenever necessary, special notes and discussions are included in a field called **Remarks**.

Species of questionable occurrence and/or coastal species whose occurrence is exceptional are listed in a separate **Appendix**. These species should not be considered as belonging to the Azorean fish fauna before further convincing evidence is found to confirm their occurrence in the area. Each case is discussed in the respective **Remarks** field.

The following works were either partially or totally omitted from the **References for the Azores** section for the following reasons:

- i. Clofnam and FNAM are considered in a separated field;
- ii. ICN (1993) is omitted in part because it was compiled by two of the present authors (RSS and FMP) as a preliminary result of the present work. Corrections to the checklist of marine fishes included in ICN (1993) are considered in a separated appendix;
- iii. Lloris *et al.* (1991) was not included since this paper does not contain original information for the Azores and is based solely on FNAM and copies its omissions and inaccurate citations.
- iv. Richard (1905b, 1911, 1912, 1913, 1934) are compilations of lists of stations and diverse information concerning Albert I<sup>er</sup> of Monaco's oceanographic cruises. Most of the information dealing with fishes has been treated in several special monographs by prominent ichthyologists.
- v. Undergraduate theses (*i.e. teses de licenciatura*).

Exceptions were made: i) when a species record appears for the first time in any of the references mentioned above, ii) when there was only one endorsed reference for the species and/or, iii) in the case of Richard's papers mentioned above, when the work contains first or only reference concerning the collection of the species by Prince of Monaco's scientific cruises.

The **Bibliography** includes all the references cited in the checklist. Moreover, it also incorporates other references which give information on the life history aspects of Azorean fishes. These have not been included in the section **References for the Azores** because scientific nomenclature were not used. There are several papers on fisheries biology in this category (e.g., Pereira 1984). Each reference included in the bibliography is classified in to subjects. Whenever justified, other comments are added. The bulk of these references is available at the Library of the Department of Oceanography and Fisheries of the University of the Azores.

The abbreviations used are conform Leviton *et al.* (1985). The following appear throughout the paper:

AVG- Aquário Vasco da Gama (Dafundo, Portugal); BMNH- Natural History Museum (London, UK); DOP/UA- Departamento de Oceanografia e Pescas (University of the Azores, Portugal); IOS- Institute of Oceanographic Sciences (UK); ISH (Institut für Seefischerei, Hamburg, Germany); MB- Museu Bocage (Lisboa, Portugal); MCM- Museu Carlos Machado (Ponta Delgada, Azores, Portugal); MCZ- Museum of Comparative Zoology, Harvard University (Cambridge, USA); MMF- Museu Municipal do Funchal (Madeira, Portugal); MNHN- Museum National d'Histoire Naturelle (Paris, France); MOM- Musée Océanographique du Monaco (Monaco); USNM- National Museum of Natural History, Smithsonian Institution (Washington DC, USA); WHOI- Woods Hole Oceanographic Institution (Woods Hole, USA); ZIL- Academy of Sciences, Zoological Institut (St. Petersburg, Russia).

*Marine fishes of the Azores*

**CHECKLIST**

**Class CHONDRICHTHYES**

**Order CHIMAERIFORMES**

**Chimaeridae**

Order 3- Chimaeriformes. Family 4- Chimaeridae.

*Chimaera monstrosa* Linnaeus, 1758

quimera  
rabbit-fish, rat fish

**Clofnam number:** 26.1.1.

**References for the Azores:** Vaillant 1888°; Goode & Bean 1895; Neuville 1900°; Richard 1900, 1910; Brauer 1906; Roule 1912°, 1919°; D’Ancona 1931; Fowler 1936; Ferreira 1939; Poll 1947; Collins 1954; Albuquerque 1954-1956; Collignon & Aloncle 1972; Wheeler 1978; Sanches 1986b; Arruda 1992.

*Hydrolagus pallidus* Hardy & Stehmann, 1990

ghost shark

**Clofnam number:** 26.2.-. Species not included in FNAME.

**Synonyms, misspellings, misidentifications:** *Hydrolagus mirabilis* by Saldanha 1994.

**References for the Azores:** Saldanha 1994°; Van Dover *et al.* 1996°; Saldanha & Biscoito in press b°.

**Remarks:** The citation for the Azores of *Hydrolagus mirabilis* (Collett, 1904) (Clofnam: 26.2.2.) by Saldanha (1994) was found to be a misidentification of *Hydrolagus pallidus* (Saldanha & Biscoito in press b) .

**Order ORECTOLOBIFORMES**

**Rhincodontidae**

Order 5- Orectolobiformes. Family 13- Rhincodontidae.

*Rhincodon typus* Smith, 1829

pintado, tubarão baleia  
whale shark

**Clofnam number:** --.---.---. Family not included in FNAME.

**References for the Azores:** ICN 1993; Santos *et al.* 1994b, 1995c; Pinho & Pereira 1995b.

**Remarks:** In the Azores individuals are commonly observed by tuna fishing boats, since tuna aggregate close to whale sharks. The whale shark, or “pintado” (dappled) as it is known in the Azores, is often found basking at the surface.

**Order CARCHARHINIFORMES**

**Pseudotriakidae**

Order 6- Carcharhiniformes. Family 16- Pseudotriakidae.

*Pseudotriakis microdon* Capello, 1868

mamôna  
false cat shark

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**Clofnam number:** 12.1.1.

**References for the Azores:** Ferreira 1939<sup>o</sup>; Collins 1954; Compagno 1984; Sanches 1986b.

**Remarks:** Fowler (1936) erroneously records this species for the Azores based on a 275cm TL specimen of *Pseudotriacis microdon* captured by Albert I<sup>er</sup> of Monaco (1904) on bottom long-line at 1,477m, 7 miles SW of Sal Island (16°34'N, 23°03'15''W), station 1,210 (Richard 1934) which is in Cape Verde. This specimen was studied by Jaquet (1905). Albuquerque's (1954-1956) citation for the Azores is based entirely on Fowler (1936).

### Triakidae

Order 6- Carcharhiniformes. Family 18- Triakidae.

*Galeorhinus galeus* (Linnaeus, 1758)

cação  
tope

**Clofnam number:** 13.3.1. Species noted for the Azores in F NAM with a question mark.

**Synonyms, misspellings, misidentifications:** *Engaleus galeus* by Roule 1919; *Eugaleus galeus* by Guiart 1935; *Galeus canis* by Hilgendorf 1888b, *G. galeus* by Ferreira 1939, *Scillium griseum* by Sampaio 1904.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Roule 1919<sup>o</sup>; Sampaio 1904; Guiart 1935; Fowler 1936; Ferreira 1939<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976<sup>o</sup>, 1990<sup>o</sup>; Martins 1982b; INIP 1985a<sup>o</sup>,b<sup>o</sup>,c<sup>o</sup>; Dias & Monteiro 1986<sup>o</sup>; Sanches 1986b; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Krug 1995; Silva *et al.* 1994<sup>o</sup>, 1995<sup>o</sup>; Silva & Menezes 1995a<sup>o</sup>,b<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>.

### Carcharhinidae

Order 6- Carcharhiniformes. Family 20- Carcharhinidae.

*Carcharhinus galapagensis* (Snodgrass & Heller, 1905)

Galapagos shark

**Clofnam number:** 13.1.-. Species not included in F NAM.

**References for the Azores:** Brum & Azevedo 1995<sup>o</sup>.

**Remarks:** Three young specimens of what could be either *Carcharhinus galapagensis* or the dusky shark *C. obscurus* (Lesueur, 1818) (Clofnam: 13.1.6.) were caught on the 17 July, 1988 in Formigas islets by the anglers Lex Snoeys and Jan Rovers on the big game fishing boat "Albacora"-Pescatur-. Photographs are deposited at DOP. *C. galapagensis* and *C. obscurus* can not be easily distinguishable on the base of external characters. *C. galapagensis* is said to occur around oceanic islands, while *C. obscurus* is said to occur at continental margins. *C. obscurus* was cited for the Azores in ICN (1993).

*Carcharhinus longimanus* (Poey, 1865)

marracho; tubarão  
oceanic whitetip shark

**Clofnam number:** 13.1.5.

**Synonyms, misspellings, misidentifications:** *Carcharias lamia* by Ferreira 1939.

**References for the Azores:** Ferreira 1939<sup>o</sup>; Collins 1954; Compagno 1984; Sanches 1986b.

*Galeocerdo cuvieri* (Péron & Lesueur, 1822)

tubarão tigre  
tiger shark

**Clofnam number:** 13.2.1. Species not cited for the Azores in F NAM.

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**References for the Azores:** ICN 1993.

**Remarks:** Based on a specimen (169cm TL., 20.5 kg TW) caught in Varadouro, Faial Island in 4 October, 1991 by F/V "Guernica" (longlining for swordfish) and a second specimen (H. M. Silva, pers. com.) caught off Faial by a fishing boat (longlining for swordfish). Jaws deposited at DOP (not numbered).

*Prionace glauca* (Linnaeus, 1758)

tintureira, tubarão azul  
blue shark

**Clofnam number:** 13.8.1.

**Synonyms, misspellings, misidentifications:** *Carcharias glaucus* by Hilgendorf 1888b, Sampaio 1904, Belloc 1934, Ferreira 1937a, 1939, Collins 1954; *Galeus glaucus* by Roule 1919; *Glyphis glaucus* by Fowler 1936, Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Roule 1919°; Belloc 1934; Fowler 1936; Ferreira 1937a, 1939°; Bigelow & Schroeder 1948; Collins 1954; Albuquerque 1954-1956; Parin 1970; Wheeler 1978; Martins 1982b; Compagno 1984; Martin 1986°; Sanches 1986b; Arruda 1992; Pinho & Pereira 1995a°; Silva & Menezes 1995b°; Santos *et al.* 1995a; Silva *et al.* 1995°; Menezes 1996°.

*Sphyrna zygaena* (Linnaeus, 1758)

cornuda, peixe martelo, tubarão-  
martelo  
smooth hammerhead

**Clofnam number:** 14.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Cestracion zygaena* by Roule 1919, *Squalus zygoena* by Sampaio 1904; *Zygoena zygoena* by Ferreira 1939.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Roule 1919°; Fowler 1936°; Ferreira 1939°; Bigelow & Schroeder 1948; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Sanches 1986b; Arruda 1992.

**Remarks:** The Bigelow & Schroeder (1948) inference that Brian (1908) cites *Zygaena malleus* for the Azores is based on a confusion of localities. Brian (1908) cites the species for Cape Verde and alludes to the Azores only in regard to a copepod parasite *Alebion carchariae*, by stating: "Une forme qui lui ressemble, et qui pourrais être synonyme ou du moins une variété, a été appelée par Van Beneden (1892) *Caligeria difficilis*, provenant des Açores".

## Order LAMNIFORMES

### Odontaspidae

Order 7- Lamniformes. Family 21- Odontaspidae.

*Odontaspis ferox* (Risso, 1810)

smalltooth sand tiger; ragged-tooth  
shark

**Clofnam number:** 5.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993.





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**Remarks:** One female (835mm TL) caught by R/V “Arquipélago” on 12 April, 1996 at 38°06’N, 27°13’W, at 1050-1100m (G. Menezes and A. Silva, pers. com.).

*Centroscymnus cryptacanthus* Regan, 1906

shortnose velvet dogfish

**Clofnam number:** 16.4.3.

**References for the Azores:** New record.

**Remarks:** One female (978mm TL) caught by R/V “Arquipélago” on 24 March, 1997 at 38°03’N, 29°22’W, at 1150-1200m (G. Menezes and A. Silva, pers. com.).

*Dalatias licha* (Bonnaterre, 1788)

gata-lixia, gato

darkie charlie, kitefin shark

**Clofnam number:** 16.10.1.

**Synonyms, misspellings, misidentifications:** *Dalathias licha* by Martins 1982b; *Scyliorhinus licha* by Muzavor & Westhaus 1981, *Scymnorhinus licha* by Saldanha 1977, Wheeler 1978, Silva 1983, Shcherbachev *et al.* 1985; *S. lichia* by Ferreira 1939.

**References for the Azores:** Cadenat 1937°; Ferreira 1939°; Bigelow & Schroeder 1948; Collins 1954; Clarke 1956°; Dias *et al.* 1976°, 1990°; Saldanha 1977; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; Compagno 1984; Shcherbachev *et al.* 1985; Dias & Monteiro 1986°; Sanches 1986b; Silva 1986a°,b, 1987°, 1992; Dias 1991°; Clarke & Martins 1995°; Santos *et al.* 1994b, 1995a,c; Silva *et al.* 1995°; Isidro 1996; Menezes 1996°.

**Remarks:** Sampaio (1904) and Ribeiro (1936) include in their lists *Scyllium catulus* and *scyllium catulus*, respectively, with the common name “lixia”, noting that it is caught for industrial purposes. “Lixa” is the common name for *Dalatias licha*. The designation used by Ribeiro (1936) must be a misspelling of *Scyllium catulus*, a synonym of *Scyliorhinus stellaris* (Linnaeus, 1758) (Clofnam: 11.1.2.). Sampaio (1904) and Ribeiro (1936) were surely alluding to *Dalatias licha*. The specimen referred by Clarke (1956) and identified by Bernard Collins was found in the stomach of a sperm whale caught in 16 September, 1955.

*Etmopterus princeps* Collett, 1904

great lanternshark

**Clofnam number:** 16.6.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Saldanha & Bischoito in press b°.

*Etmopterus pusillus* (Lowe, 1839)

lixinha da fundura, quelmazinha

smooth lanternshark

**Clofnam number:** 16.6.3.

**References for the Azores:** Roule 1912°, 1919°; Fowler 1936; Ferreira 1939; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°; Compagno 1984; INIP 1985a°,b°; Dias & Monteiro 1986°; Sanches 1986b; Dias 1991°; Menezes 1996°.

**Remarks:** Saldanha & Bischoito (in press b) observed a shark which seem to agree with *Etmopterus pusillus*, at Menez Gwen (37°50’N, 31°31’W). They state that a definite record would be depend on a captured specimen.

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*Etmopterus spinax* (Linnaeus, 1758)

lixinha da fundura, quelmazinha  
velvet belly

**Clofnam number:** 16.6.1.

**Synonyms, misspellings, misidentifications:** *Spinax niger* by Richard 1905b.

**References for the Azores:** Richard 1905b°; Brian 1912°; Roule 1912°, 1919°; Fowler 1936; Ferreira 1939; Collins 1954; Albuquerque 1954-1956; Compagno 1984; Sanches 1986b; Silva *et al.* 1995°; Menezes 1996°.

*Oxynotus paradoxus* Frade, 1929

kite-fin shark, sailfin roughshark

**Clofnam number:** 15.1.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Azevedo & Brum in press°.

*Scymnodalatias garricki* Kukuyev & Konovalenko, 1988

Azores dogfish

**Clofnam number:** ---.---.---. Genus not included in FNAM.

**References for the Azores:** Kukuyev & Konovalenko 1988°.

**Remarks:** One specimen (ZIL 48190) caught in 1977 by the RTM “Bakhchisaray” on the North Atlantic Ridge, 40°22'N, 30°10'W, at 300m depth.

*Squaliolus laticaudus* Smith & Radcliffe, 1912

dwarf shark

**Clofnam number:** 16.4.3.

**References for the Azores:** New record.

**Remarks:** One female (275mm TL) caught by R/V “Arquipélago” on 24 March, 1997 at 38°02'N, 29°21'W, at 700-750 m (G. Menezes and A. Silva, pers. com.).

### Centrophoridae

Order 9- Squaliformes. Family 32- Centrophoridae.

*Centrophorus granulosus* (Schneider, 1801)

quelma  
gulper shark

**Clofnam number:** 16.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Neuville 1897°; Ferreira 1939; Collins 1954; INIP 1985a°; Sanches 1986b; Dias 1991°.

*Centrophorus squamosus* (Bonnaterre, 1788)

lixa de escama  
leafscale gulper shark

**Clofnam number:** 16.7.1.

**Synonyms, misspellings, misidentifications:** *Lepidorhinus squamosus* by Roule 1919, Fowler 1936, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888b°; Roule 1912°, 1919°; Fowler 1936; Ferreira 1939; Collins 1954; Grey 1956; Albuquerque 1954-1956; Collignon & Aloncle 1972; Compagno 1984; Sanches 1986b; Arruda 1992.

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*Deania calceus* (Lowe, 1839) pífaro, pife, sapata, tutia  
birdbeak dogfish, shovel nosed  
shark

**Clofnam number:** 16.5.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Acanthidium calceus* by Roule 1919, Guiart 1935, Albuquerque 1954-1956, Dias *et al.* 1976; *Centrophorus calceus* by Roule 1912, Ferreira 1939, *Deania calcea* by Saldanha 1991, Gonçalves 1994.

**References for the Azores:** Richard 1905b°; Roule 1912°, 1919°; Guiart 1935; Fowler 1936; Ferreira 1939°; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°; Saldanha 1977°, 1991; INIP 1985a°,b°,c°; Sanches 1986b; Dias 1991°; Gonçalves 1994°; Saldanha 1995°.

**Remarks:** *Daenia calceus* is questionably cited by Van Dover *et al.* (1996).

*Deania profundorum* (Smith & Ratcliffe, 1912) sapata

**Clofnam number:** 16.5.-. Species not included in FNAM.

**References for the Azores:** Silva *et al.* 1995°; Menezes 1996°.

## Order RAJIFORMES

### Torpedinidae

Order 12- Rajiformes. Family 37- Torpedinidae.

*Torpedo (Tetronarce) nobiliana* Bonaparte, 1835 arraia, raia, tremelga  
electric ray, Atlantic torpedo

**Clofnam number:** 20.1.3.

**Synonyms, misspellings, misidentifications:** *Torpedo hebetans* by Hilgendorf 1888b, Ferreira 1939; *T. nobiliana* by Fowler 1936, Collins 1954, Bigelow & Schroeder 1953.

**References for the Azores:** Hilgendorf 1888b°; Fowler 1936; Ferreira 1939; Collins 1954; Albuquerque 1954-1956; Bigelow & Schroeder 1953; Sanches 1986b; Arruda 1992.

**Remarks:** The occurrence of this species in the Azores was recently confirmed by a specimen (87cm TL) captured on 27 September, 1994 at Condor Bank by F/V “Três Rosas”. Photographs are deposited at DOP archives.

### Rajidae

Order 12- Rajiformes. Family 41- Rajidae.

*Raja (Leucoraja) fullonica* Linnaeus, 1758 arraia, raia, raia pregada  
shagreen ray

**Clofnam number:** 21.1.13. Species not cited for the Azores in FNAM.

**References for the Azores:** Dias *et al.* 1976°, 1990°; INIP 1985a°; Sanches 1986b; Dias 1991°; Silva *et al.* 1995°; Menezes 1996°.

*Raja (Raja) brachyura* Lafont, 1873 arraia, raia, raia pontuada  
blonde ray

**Clofnam number:** 21.1.3. Species not cited for the Azores in FNAM.

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**Synonyms, misspellings, misidentifications:** *Raja oculata* by Fowler 1936.

**References for the Azores:** Fowler 1936<sup>o</sup>; Collins 1954.

*Raja (Raja) clavata* Linnaeus, 1758  
arraia, raia, raia lenga  
thornback ray, roker

**Clofnam number:** 21.1.4. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Raia clavata* by Sampaio 1904, Belloc 1934, Ferreira 1939.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Sampaio 1904<sup>o</sup>; Belloc 1934; Fowler 1936; Ribeiro 1936; Ferreira 1939<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; INIP 1985a<sup>o</sup>,b<sup>o</sup>,c<sup>o</sup>; Dias & Monteiro 1986<sup>o</sup>; Sanches 1986b; Dias *et al.* 1990<sup>o</sup>; Dias 1991<sup>o</sup>; Dias & Cascalho 1991; Arruda 1992; Wirtz 1994<sup>o</sup>; Silva & Menezes 1995a<sup>o</sup>,b<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Menezes 1996<sup>o</sup>.

*Raja (Raja) maderensis* Lowe, 1839  
arraia; raia

**Clofnam number:** 21.1.5. Species cited for the Azores in FNAM with a question mark.

**Synonyms, misspellings, misidentifications:** *Raia maderensis* by Regan 1903, Sampaio 1904, Ribeiro 1936, Ferreira 1939; *R. maderenses* by Ribeiro 1936.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Fowler 1936; Ferreira 1939<sup>o</sup>; Collins 1954; Sanches 1986b; Arruda 1992.

**Remarks:** This species is questioned in Arruda (1992) and in ICN (1993).

*Raja (Rajella) bigelowi* Stehmann, 1978  
arraia; raia  
Bigelow's ray

**Clofnam number:** 21.1.17b.

**Synonyms, misspellings, misidentifications:** *Raia ackleyi* by Ferreira 1939; *Raja ackleyi* by Roule 1912, 1919, Fowler 1936, Collins 1954; *R. acklegii* by Albuquerque 1954-1956; *Raja bathyphila* by Stehmann 1971.

**References for the Azores:** Roule 1912<sup>o</sup>, 1919<sup>o</sup>; Fowler 1936; Ferreira 1939; Collins 1954; Albuquerque 1954-1956; Stehmann 1971<sup>o</sup>, 1978<sup>o</sup>, 1995<sup>o</sup>; Sanches 1986b.

**Remarks:** Bigelow & Schroeder (1953) suspected that Roule's specimen was not *Raja ackleyi* "...because dermal armature diff. and color plain...". Stehmann (1971, 1973) first treated the species as *Raja bathyphilla* Holt & Byrne, 1908 (Clofnam: 21.1.17a) but later, Stehmann (1978) described it as a new species *R. bigelowi*. *Raja bathyphila* is questioned in ICN (1993).

### Dasyatidae

Order 12- Rajiformes. Family 44- Dasyatidae.

*Dasyatis pastinaca* (Linnaeus, 1758)  
ratão, rato do mar, uja, uje  
stingray

**Clofnam number:** 22.1.1.

**Synonyms, misspellings, misidentifications:** *Trygon pastinaca* by Hilgendorf 1888b, Ferreira 1939; *Dasyatis pastinacea* by Nash *et al.* 1990.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Fowler 1936; Ferreira 1939<sup>o</sup>; Collins 1954; Dias *et al.* 1976<sup>o</sup>, 1990<sup>o</sup>; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; INIP 1985b<sup>o</sup>,c<sup>o</sup>; Sanches 1986b; Barreiros 1990<sup>o</sup>;



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Azores (p. 293), the geographic localities given are the coast of Normandy and the Caribbean. In the same section, (p. 306) there is a note on Article IV (wrongly identified as *Article V*) that does not mention the occurrence of the species in the Azores. The caption for Plate XVII (p. 320) is, however, specific in regards to the Azores: "Le poisson représenté sur cette Planche, a peu de ressemblance avec nos Raies, on le nomme aux Açores, *Raie cornue*; les Caraïbes lui on donné le nom de *Mobular*, qui, je crois dans leur langue, veut dire *Diable*, parce que le poisson qui est quelque fois fort grand, a l'air effrayant; les yeux sont placés sur les côtés à l'origine de ses cornes, comme on le voit à la *Figure 1*, la gueule & les ouïes se voyent à la face de dessous, *Fig. 2*."

*Myliobatis aquila* (Linnaeus, 1758) arreião, ratão  
eagle ray

**Clofnam number:** 23.1.1.

**Synonyms, misspellings, misidentifications:** *Leiobatus aquila* by Roule 1912, 1919.

**References for the Azores:** Hilgendorf 1888b°; Roule 1912°, 1919°; Fowler 1936; Ferreira 1939°; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Sanches 1986b; Patzner *et al.* 1990°, 1992°; Arruda 1992; Gonçalves *et al.* 1995°.

## Class ACTINOPTERYGII

### Order ALBULIFORMES

#### Halosauridae

Order 22- Albuliformes. Family 66- Halosauridae.

*Aldrovandia phalacra* (Vaillant, 1888)

halosaur

**Clofnam number:** 88.3.1.

**Synonyms, misspellings, misidentifications:** *Aldrovandia phalacrus* Goode & Bean 1895, Perrier 1903, by Albuquerque 1954-1956; *Halosauropsis phalacrus* by Fowler 1936; *H. macrochir* by Vaillant 1888; *Halosaurus phalacrus* by Vaillant 1888, 1919, Brauer 1906, Roule 1919, Ferreira 1942, Collins 1954.

**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895°; Perrier 1903; Brauer 1906; Roule 1919°; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Grey 1956; Harrisson 1966; McDowell 1973a; Maul 1976; Arruda 1992.

**Remarks:** According to McDowell (1973) the juvenile identified by Vaillant (1888) as *Halosauropsis macrochir* is a misidentification of *A. phalacra*.

*Halosauropsis macrochir* (Günther, 1878)

halosaur

**Clofnam number:** 88.2.1.

**Synonyms, misspellings, misidentifications:** *Aldrovandia macrochir* by Zugmayer 1933, Roule & Angel 1933, Grey 1956, Harrisson 1966; *A. macrochira* by Albuquerque 1954-1956; *Halosaurus macrochir* by Vaillant 1888, Richard 1900, Brauer 1906, Collins 1954.

**References for the Azores:** Vaillant 1888°, 1919°; Collett 1896a°; Joubin 1905; Richard 1900, 1910; Brauer 1906; Roule 1919°; Koefoed 1927; Roule & Angel 1933°; Zugmayer 1933°; Fowler 1936;

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Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Grey 1956; Harrisson 1966; Geistdoerfer *et al.* 1971<sup>o</sup>; McDowell 1973a<sup>o</sup>; Arruda 1992.

### *Halosaurus johnsonianus* Vaillant, 1888

halosaur

**Clofnam number:** 88.1.2.

**References for the Azores:** Collett 1896a<sup>o</sup>; Richard 1900, 1910; Brauer 1906; Vaillant 1919<sup>o</sup>; Koefoed 1927; Fowler 1936; Collins 1954; Grey 1956; Harrisson 1966; Saldanha 1977; Arruda 1992.

**Remarks:** Saldanha (1977) says the following in regard to his citation of this species: "*Un fâcheux accident survenu à cet exemplaire lors de son expédition par la poste le mit en très mauvais état (la tête, en particulier, a été écrasée). Nous croyons cependant pouvoir attribuer à l'espèce en référence étant donnée quelques caractéristiques encore observables*".

### *Halosaurus ovenii* Johnson, 1863

halosaur

**Clofnam number:** 88.1.1.

**Synonyms, misspellings, misidentifications:** *Halosaurus ovenii* by Vaillant 1888, Albuquerque 1954-1956; *H. (Halosaurus) ovenii* by McDowell 1973a.

**References for the Azores:** Vaillant 1888<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Harrisson 1966; McDowell 1973a; Maul 1976; Arruda 1992.

## Notacanthidae

Order 22- Albuliformes. Family 67- Notacanthidae.

### *Polyacanthonotus rissoanus* (Filippi & Verany, 1859)

smallmouth spiny eel

**Clofnam number:** 89.2.1.

**Synonyms, misspellings, misidentifications:** *Macdonaldia rostrata* by Roule 1919, Fowler 1936, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Roule 1919<sup>o</sup>; Fowler 1936; Collins 1954; Albuquerque 1954-1956; McDowell 1973b.

**Remarks:** Saldanha & Bischoito (in press b<sup>o</sup>) refer to *Polyacanthonotus* cf. *rissoanus* stating that many of their observations of *Polyacanthonotus* could also correspond to *P. challengerii* (Vaillant, 1888) (Clofnam: 89.2.2.).

## Order ANGUILLIFORMES

### Anguillidae

Order 23- Anguilliformes. Family 68- Anguillidae.

### *Anguilla anguilla* (Linnaeus, 1758)

eiró, enguia, iró  
eel

**Clofnam number:** 71.1.1.

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**Synonyms, misspellings, misidentifications:** *Anguilla canariensis* by Drouët 1958, 1861a,b; Ramos 1869; Sampaio 1904; *A. vulgaris* by Hilgendorf 1888b, Nobre 1924; *Leptocephalus Anguillae vulgaris* by Lea 1913; *Muraena anguilla* by Fowler 1936.

**References for the Azores:** Drouët 1858°, 1861a°,b°; Ramos 1869; Günther 1870°; Hilgendorf 1888b°; Vaillant 1888, 1898°; Collett 1896a°; Sampaio 1904°; Lea 1913; Nobre 1924°; D'Ancona 1929; Fowler 1936; Ferreira 1934°, 1938°; Ege 1939; Poll 1947; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Martins 1982b; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Azevedo 1995.

**Remarks:** Vaillant (1898) mentions a specimen of *Anguilla anguilla* measuring 90cm and weighing between 1.5 and 2 kg, taken from a stomach of a sperm whale by Afonso Chaves and sent to the *Musée d'Histoire Naturelle de Paris*.

### Chlopsidae

Order 23- Anguilliformes. Family 71- Chlopsidae.

*Chlopsis bicolor* Rafinesque, 1810

congrinho bicolor

bicoloured false moray, bicolor eel

**Clofnam number:** 77.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** Two specimens (235-247mm TL) caught at Condor Bank (270m) by F/V "Guernica" on 22 March, 1983 (DOP 47).

### Muraenidae

Order 23- Anguilliformes. Family 73- Muraenidae.

*Anarchias euryurus* Lea, 1913

**Clofnam number:** 73.3.1.

**Synonyms, misspellings, misidentifications:** *Uropterygius atlanticus* by Vaillant 1919; *U. grassii* by Fowler 1936.

**References for the Azores:** Vaillant 1919°; Fowler 1936.

*Enchelycore anatina* (Lowe, 1841)

moreia víbora, víbora

fangtooth moray

**Clofnam number:** 73.2.1.

**Synonyms, misspellings, misidentifications:** *Lycodontis anatinus* by Fowler 1936; *Muraena anatina* by Hilgendorf 1888b, Ferreira 1938, Collins 1954, Albuquerque 1954-1956; *Murena anatina* by Ferreira 1938.

**References for the Azores:** Hilgendorf 1888b°; Ferreira 1938; Collins 1954; Albuquerque 1954-1956; Dooley *et al.* 1985; Böhlke *et al.* 1989; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Arruda 1992; Azevedo 1995; Silva *et al.* 1995°; Menezes 1996°.

*Gymnothorax unicolor* (Delaroche, 1809)

moreão, moreia castanha

brown moray

**Clofnam number:** 73.2.2.

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**Synonyms, misspellings, misidentifications:** *Gymnothorax* sp. by Saldanha 1980; *Lycodontis unicolor* by Fowler 1936, Harmelin & Harmelin-Vivien 1979, Martins 1982b, Dooley *et al.* 1985, Dias 1991; *L. unicolor* by INIP 1985c; *Murena unicolor* by Ferreira 1938; *Muraena unicolor* by Regan 1903, Nobre 1930, 1935, Albuquerque 1954-1956, Collins 1954, *M. unicolore* by Sampaio 1904.

**References for the Azores:** Sampaio 1904<sup>o</sup>; Vaillant 1919<sup>o</sup>; Fowler 1936; Ferreira 1938; Nobre 1924<sup>o</sup>, 1930, 1935; Collins 1954; Albuquerque 1954-1956; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Saldanha 1980<sup>o</sup>, 1982b, 1995<sup>o</sup>; Martins 1982b; Dooley *et al.* 1985; INIP 1985c<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Ré 1990<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994b, 1995c; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; Gonçalves 1993; Azevedo 1995; Barreiros 1995<sup>o</sup>; Gonçalves *et al.* 1995<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>.

**Remarks:** *Muraena grisea* is cited by Drouët (1861b), Ramos (1869) and Hilgendorf (1888b). This could be a synonym of either *Gymnothorax unicolor* or *Muraena augusti*, since Drouët (1861b) and Ramos (1869) note that the local name is “moreão”.

*Muraena augusti* (Kaup, 1856)

moreão, moreia preta  
black moray

**Clofnam number:** 73.1.-. Species not included in FNAME.

**Synonyms, misspellings, misidentifications:** *Murena augusti* by Ferreira 1938.

**References for the Azores:** Regan 1903<sup>o</sup>; Ferreira 1938; Collins 1954; Saldanha 1980<sup>o</sup>; Dooley *et al.* 1985; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1992<sup>o</sup>; Azevedo 1995<sup>o</sup>; Barreiros 1995<sup>o</sup>; Santos *et al.* 1994b, 1996.

**Remarks:** See previous remark. Both Krug (1995) and Silva *et al.* (1994) refer to *Muraena augusti* as “moreão”. “Moreão” is a name that applies both to *M. augusti* and to *Gymnothorax unicolor*, this latter being more abundant. The two species are not differentiated on landings.

*Muraena helena* Linnaeus, 1758

moreia, moreia pintada  
moray eel, Mediterranean moray

**Clofnam number:** 73.1.1.

**Synonyms, misspellings, misidentifications:** *Murenophis helena* by Fowler 1936; *Murena helena* Ferreira 1938.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Fowler 1936; Ferreira 1938; Nobre 1924<sup>o</sup>, 1930<sup>o</sup>; Ribeiro 1936; Cadenat 1937<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974<sup>o</sup>; Wheeler 1978; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Martins 1982b; Dooley *et al.* 1985; INIP 1985b<sup>o</sup>,c<sup>o</sup>; Dias & Monteiro 1986<sup>o</sup>; Barreiros 1990<sup>o</sup>, 1995<sup>o</sup>; Dias *et al.* 1990<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994b, 1995c; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; DOP 1993<sup>o</sup>; Gonçalves 1993; Gonçalves *et al.* 1995<sup>o</sup>; Krug 1995; Silva *et al.* 1994<sup>o</sup>, 1995<sup>o</sup>; Azevedo 1995; Silva & Menezes 1995a<sup>o</sup>,b<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>.

## Synphobranchidae

Order 23- Anguilliformes. Family 74- Synphobranchidae.

*Ilyophis blachei* Saldanha & Merrett, 1982

**Clofnam number:** 87.3.2. Species not cited for the Azores in FNAME.

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**References for the Azores:** Saldanha & Biscoito in press b°.

### *Histiobranchus bathybius* (Günther, 1877)

deep water arrowtooth eel

**Clofnam number:** 87.2.1.

**Synonyms, misspellings, misidentifications:** *Histiobranchus infernalis* by Zugmayer 1933, Fowler 1936; *Synaphobranchus infernalis* by Bruun 1937, Albuquerque 1954-1956, Grey 1956.

**References for the Azores:** Zugmayer 1933°; Fowler 1936; Bruun 1937°; Albuquerque 1954-1956; Grey 1956.

**Remarks:** Only leptocephali were studied by Bruun (1937).

### *Simenchelys parasitica* (Gill MS) Goode & Bean, 1879

snubnosed eel

**Clofnam number:** 72.1.1.

**Synonyms, misspellings, misidentifications:** *Conchognatus grimaldii* by Collett 1889a, Belloc 1949; *Simenchelis parasiticus* by Goode & Bean 1895, Collins 1954; *Simenchelys grimaldii* by Arruda 1992, *S. parasiticus* by Collett 1896a, Perrier 1903, Albert I<sup>er</sup> de Monaco 1904, Richard 1900, 1910, Brauer 1906, Vaillant 1919, Zugmayer 1911b, Jaquet 1920, Barnard 1925, Fowler 1936, Ferreira 1938, Albuquerque 1954-1956.

**References for the Azores:** Collett 1889a°; Goode & Bean 1895; Perrier 1903; Albert I<sup>er</sup> de Monaco 1904°; Richard 1900, 1910; Brauer 1906; Zugmayer 1911b°; Vaillant 1919°; Jaquet 1920; Barnard 1925; Fowler 1936; Ferreira 1938; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Saldanha 1977; Robins & Robins 1989; Arruda 1992; Saldanha & Biscoito in press b°.

### *Synaphobranchus kaupi* Johnson, 1862

congrinho, moreão

Kaup's arrowtooth eel, northern  
cutthroat eel

**Clofnam number:** 87.1.1.

**Synonyms, misspellings, misidentifications:** *Leptocephalus Synaphobranchi pinnati* by Lea 1913; *Synaphobranchus pinnatus* by Vaillant 1888, 1919, Goode & Bean 1895, Collett 1896a, Zugmayer 1911b, Roule 1919, Koefoed 1927; Zugmayer 1933; Guiart 1935, Nobre 1935, Bruun 1936, 1937, Fowler 1936, Ferreira 1938, Collins 1954, Albuquerque 1954-1956; *S. p. parvipinnis* by Belloc 1949.

**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895; Collett 1896a°; Zugmayer 1911b°; Lea 1913; Roule 1919°; Koefoed 1927; Zugmayer 1933°; Guiart 1935; Nobre 1935; Bruun 1936, 1937; Fowler 1936; Ferreira 1938; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Grey 1956; Wood & Williams 1974°; Saldanha 1980°; INIP 1985a°,b°; Dias 1991°; Arruda 1992; Gonçalves & Santos 1994°; Silva & Menezes 1995a°; Menezes 1996°; Saldanha & Biscoito in press b°.

**Remarks:** Vaillant (1919) cites an unidentified *Synaphobranchus* sp., caught at station 621 (730m). The specimens studied by Bruun (1937) were leptocephali from many stations.

## Ophichthidae

Order 23- Anguilliformes. Family 75- Ophichthidae.

### *Apterichthys caecus* (Linnaeus, 1758)

congrinho da areia  
European finless eel

## *Santos, Porteiro & Barreiros*

**Clofnam number:** 86.2.1.

**Synonyms, misspellings, misidentifications:** *Sphagebranchus caecus* by Ferreira 1938.

**References for the Azores:** Ferreira 1938°; Pereira & Aguiar 1979°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1991°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda *et al.* 1992°; Santos *et al.* 1994a; Azevedo 1995; Saldanha 1995.

**Remarks:** The citation by Ferreira (1938) is based on his observation of a specimen at Museu Carlos Machado in São Miguel. *Sphagebranchus caecus* is a synonym of *Apterichthys anguiformis* (Peters, 1877) (Clofnam: 86.6.1) and of *A. caecus*. As the first species is not known to occur in the Azores, Ferreira's (1938) record should be considered the first record of *A. caecus* for the Azores.

### **Derichthyidae**

Order 23- Anguilliformes. Family 77- Derichthyidae.

*Derichthys serpentinus* Gill, 1884

**Clofnam number:** 83.1.1. Not cited for the Azores in FNAM.

**References for the Azores:** Post & Tesch 1982°.

### **Nemichthyidae**

Order 23- Anguilliformes. Family 79- Nemichthyidae.

*Avocettina infans* (Günther, 1878)

avocet snipe-eel

**Clofnam number:** 76.3.1.

**Synonyms, misspellings, misidentifications:** *Nemichthys infans* by Vaillant 1888.

**References for the Azores:** Vaillant 1888°; Ferreira 1938; Collins 1954; Albuquerque 1954-1956.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Nemichthys curvirostris* (Stromman, 1896)

spotted snipe eel

**Clofnam number:** 76.1.2.

**References for the Azores:** Nielsen & Smith 1978°; Smith & Nielsen 1989.

*Nemichthys scolopaceus* Richardson, 1848

slender snipe-eel

**Clofnam number:** 76.1.1.

**Synonyms, misspellings, misidentifications:** *Nemichthys scolopacea* by Fowler 1936.

**References for the Azores:** Murray & Hjort 1912°; Roule & Bertin 1929°, 1931; Fowler 1936; Roule & Angel 1933°; Belloc 1938; Ferreira 1938; Albuquerque 1954-1956; Koefoed 1955°; Nielsen & Smith 1978°; Wheeler 1978; Post & Tesch 1982°.

### **Congridae**

Order 23- Anguilliformes. Family 80- Congridae.

*Ariosoma balearicum* (Delaroche, 1809)

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balearic conger, bandtooth conger

**Clofnam number:** 82.2.1.

**References for the Azores:** ICN 1993; Wirtz 1994°.

**Remarks:** Albuquerque (1954-1956) cites this species as occurring in the Azores based on Fowler (1936) who mentions a leptocephalus (*Leptocephalus congrimuraena balearicae*) captured off the Azores at 38°58'N, 45°59'W (see Roule 1919). This species was included in DOP's fishes checklist by Peter Wirtz based on underwater observation of the species.

**Conger conger** ([Artedi, 1738] Linnaeus, 1758)

congro, safio

conger eel

**Clofnam number:** 82.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Conger vulgaris* by Hilgendorf 1888b, Regan 1903; *Muraena conger* Drouët 1861b, Ramos 1869, Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b; Regan 1903°; Sampaio 1904°; Fowler 1936°; Ribeiro 1936; Cadenat 1937°; Ferreira 1938; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°, 1990°; Muzavor & Westhaus 1981; Martins 1982b; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Silva 1986a°,b, 1992, 1995°; Barreiros 1990°, 1995°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994b, 1995c; Wirtz 1990b°, 1994°; Dias 1991°; Dias & Cascalho 1991; Arruda 1992; Santos 1992a; Silva & Krug 1992°; Gonçalves 1993; Krug 1995; Nash *et al.* 1994a°; Silva *et al.* 1994°, 1995°; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°; Silva & Menezes 1995a°,b°; Isidro 1996; Menezes 1996°.

**Remarks:** According to Ferreira (1938) “safio” is the common name applied to juveniles.

**Paraconger macrops** (Günther, 1870)

congro da areia, ortiga

blackspot conger

**Clofnam number:** 82.4.1.

**Synonyms, misspellings, misidentifications:** *Conger macrops* Hilgendorf 1888b, Ferreira 1938, Collins 1954, Saldanha 1981.

**References for the Azores:** Hilgendorf 1888b°; Ferreira 1938; Collins 1954; Saldanha 1981°, 1982a; Arruda 1992; Wirtz 1994°.

**Pseudophichthys splendens** (Lea, 1913)

purplemouthed conger

**Clofnam number:** 82.5.1.

**Synonyms, misspellings, misidentifications:** *Pseudophichthys latedorsalis* by Roule 1916, 1919, Belloc 1949; *Promyllantor laterodorsalis* by Fowler 1936; Ferreira 1938, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Roule 1916°, 1919°; Fowler 1936; Ferreira 1938; Belloc 1949°; Collins 1954; Albuquerque 1954-1956.

### Nettastomatidae

Order 23- Anguilliformes. Family 81- Nettastomatidae.

**Facciolella oxyrhyncha** (Bellotti, 1883)

facciola's sorcerer

## *Santos, Porteiro & Barreiros*

**Clofnam number:** 80.2.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Facciolella oxyrinchus* by Smith & Castle 1982.

**References for the Azores:** Smith & Castle 1982°.

**Remarks:** Only leptocephali are cited by Smith & Castle (1982) for the Azores region. One adult specimen (65cm TL), found stranded at Porto Pim beach (Faial Island) on 9 January, 1996 (DOP 369).

### *Nettastoma melanurum* Rafinesque, 1810

blackfin sorcerer

**Clofnam number:** 80.1.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Leptocephalus urosema* n. sp. by Lea 1913; *Nettastoma melanura* by Roule 1919, Fowler 1936, Ferreira 1938, Collins 1954, Smith & Castle 1982.

**References for the Azores:** Lea 1913°; Roule 1919°; Fowler 1936; Ferreira 1938; Collins 1954; Smith & Castle 1982°.

**Remarks:** Only leptocephali are reported by Smith & Castle (1982).

## Serrivomeridae

Order 23- Anguilliformes. Family 82- Serrivomeridae.

### *Serrivomer beani* Gill & Ryder, 1884

Bean's sawtoothed eel

**Clofnam number:** 75.1.1.

**Synonyms, misspellings, misidentifications:** *Avocettina infans* by Fowler 1936; *Nemichthys infans* by Vaillant 1888; *Paraserrivomer hasta* by Roule & Angel 1931, 1933, Fowler 1936, Ferreira 1938, Collins 1954; *Serrivomer parabeani* by Bauchot-Boutin 1955; *S. Richardi* by Brauer 1906; *S. Richardii* by Goode & Bean 1895, Perrier 1903; *S. Richardü* by Ferreira 1938; *S. sector* by Roule & Bertin 1929.

**References for the Azores:** Vaillant 1888°; Goode & Bean 1895; Perrier 1903; Brauer 1906; Roule & Bertin 1929°; Roule & Angel 1931°, 1933°; Fowler 1936; Ferreira 1938; Collins 1954; Bauchot-Boutin 1955°; Post & Tesch 1982°; Tighe 1989; Arruda 1992; Bauchot *et al.* 1993°.

**Remarks:** Fowler (1936) lists *Serrivomer beanii* but he does not cite it for the Azores. *Paraserrivomer hasta* N. Sp. (sic!) is referred by Ferreira (1938) based on Perrier (1903). It is probable that this last author based his citation on Vaillant (1888). According to Roule & Angel (1931) an adult specimen caught at st. 3281 was labelled by Zugmayer as *Gavialiceps hasta*.

### *Serrivomer lanceolatooides* (Schmidt, 1916)

**Clofnam number:** 75.1.2. Included in F NAM as *Serrivomer brevidentatus* Roule & Bertin, 1929.

**References for the Azores:** Post & Tesch 1982°.

**Remarks:** *Serrivomer brevidentatus* is considered to be a junior synonym of *S. lanceolatooides* (Tighe 1989, based on Bauchot 1959). Tighe (1989) is also of opinion that *S. lanceolatooides* should probably be placed, together with a Indo-Pacific *Serrivomer* (*S. neocaledoniensis*), in a separate genus or sub-genus (eventually *Platuronides*).

## Marine fishes of the Azores

### Order SACCOPHARYNGIFORMES

#### Saccopharyngidae

Order 24- Saccopharyngiformes. Family 84- Saccopharyngidae.

##### *Saccopharynx ampullaceus* (Harwood, 1827)

gulper eel

**Clofnam number:** 69.1.2.

**Synonyms, misspellings, misidentifications:** *Saccopharynx flagellum* by Böhlke 1966.

**References for the Azores:** Böhlke 1966°; Nielsen & Bertelsen 1985°; Krefft 1987.

**Remarks:** Nielsen & Bertelsen (1985) state that the identification by Böhlke (1966) is dubious due to lack of the distal parts of the tail of the specimen. The occurrence of this species for the Azores was questioned in ICN (1993).

#### Eurypharyngidae

Order 24- Saccopharyngiformes. Family 85- Eurypharyngidae.

##### *Eurypharynx pelecanooides* Vaillant, 1882

pelican eel

**Clofnam number:** 70.1.1.

**Synonyms, misspellings, misidentifications:** *Eurypharynx richardi* by Bertin 1934; *Gastrostoma Bairdi* by Zugmayer 1933; *Leptocephalus pseudo-latissimus* by Bertin 1938.

**References for the Azores:** Bertin 1934°, 1938°; Roule & Angel 1933; Ferreira 1938; Albuquerque 1954-1956; Grey 1956; Post & Tesch 1982°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

### Order CLUPEIFORMES

#### Clupeidae

Order 25- Clupeiformes. Family 91- Clupeidae.

##### *Sardina pilchardus* (Walbaum, 1792)

petinga, sardinha  
pilchard, sardine

**Clofnam number:** 33.3.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Alausa pilchardus* by Vaillant 1919; *Clupea pilchardus* by Hilgendorf 1888b, Fage 1920; *C. pitchardus* by Sampaio 1904, Ribeiro 1936; *Sardinha pilchardus* by Collins 1954.

**References for the Azores:** Hilgendorf 1888b; Sampaio 1904°; Vaillant 1919°; Fage 1920°; Ramalho 1929c; Fowler 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Martins 1982b; Isidro 1988, 1990a°,b°; Nash *et al.* 1990°, 1994a°; Patzner *et al.* 1990°, 1992°; Ré 1990°; Arruda 1992; Santos *et al.* 1994a°; Azevedo 1995; Pinho *et al.* 1995; Santos & Nash 1995°; Isidro 1996.

### Order OSMERIFORMES

#### Microstomatidae

Order 32- Osmeriformes; Family 154- Microstomatidae.

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*Microstoma microstoma* (Risso, 1810)

slender argentine

**Clofnam number:** 46.3.1. Species not cited for the Azores in F NAM.

**Citations for the Azores:** Cohen 1960°; Porteiro *et al.* in prep.°.

**Remarks:** Recorded by Cohen (1960) for the Azores based on a single specimen caught at 36°53'N, 29°47'W (station 56 of "Michael Sars" expedition) but the record is not confirmed in subsequent papers of the author. The species is included in this checklist based on Porteiro *et al.* (in prep.).

**Bathylagidae**

Order 32- Osmeriformes; Family 155- Bathylagidae.

*Bathylagus bericoides* (Borodin, 1929)

**Clofnam number:** 47.1.1. Species not cited for the Azores in F NAM.

**Citations for the Azores:** Porteiro *et al.* in prep.°.

*Bathylagus greyae* Cohen, 1958

**Clofnam number:** 47.1.4. Species not cited for the Azores in F NAM.

**Citations for the Azores:** Porteiro *et al.* in prep.°.

**Opisthoproctidae**

Order 32- Osmeriformes. Family 156- Opisthoproctidae.

*Opisthoproctus grimaldii* Zugmayer, 1911

peixe-sola  
barreleyes

**Clofnam number:** 48.1.2.

**References for the Azores:** Roule & Angel 1933°; Fowler 1936; Albuquerque 1954-1956; Cohen 1964; Geistdoerfer *et al.* 1971°; Hamer *et al.* 1994°.

*Opisthoproctus soleatus* Vaillant, 1888

peixe-sola  
barreleyes

**Clofnam number:** 48.1.1.

**References for the Azores:** Albert I<sup>er</sup> de Monaco 1904°; Roule 1916°, 1919°; Schmidt 1918; Roule & Angel 1933°; Fowler 1936; Albuquerque 1954-1956; Cohen 1964.

**Alepocephalidae**

Order 32- Osmeriformes. Family 158- Alepocephalidae.

*Alepocephalus rostratus* Risso, 1820

Risso's smooth-head

**Clofnam number:** 30.1.1. Species not cited in F NAM for the Azores.

**Synonyms, misspellings, misidentifications:** *Bathytroctes rostratus* by Murray & Hjort 1912, Fowler 1936.

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**References for the Azores:** Vaillant 1888; Goode & Bean 1895; Perrier 1903; Brauer 1906; Murray & Hjort 1912; Koefoed 1927; Fowler 1936; Collins 1954; Grey 1956; Albuquerque 1954-1956; Maul 1976; Arruda 1992.

### *Bajacalifornia megalops* (Lütken, 1898)

bigeye smooth-head

**Clofnam number:** 30.4.1.

**References for the Azores:** Krefft 1985°.

**Remarks:** One specimen (76.5mm SL) caught by R/V “Anton Dohrn” cruise n° 2, St. 5865 (41°02’N, 23°52’W).

### *Bathylaco nigricans* Goode & Bean 1896

black warrior

**Clofnam number:** 30.4a.1.

**References for the Azores:** Markle & Quéro 1984°; Krefft 1985°.

### *Bathytroctes microlepis* Günther, 1878

smallscale smooth-head

**Clofnam number:** 30.4c.1.

**References for the Azores:** Markle & Quéro 1984°.

### *Bellocia koefoedi* (Parr, 1951)

Koefoed’s smooth-head

**Clofnam number:** 30.5.1. Species cited in F NAM south-west of the Azores.

**References for the Azores:** Porteiro *et al.* in prep.°.

**Remarks:** This species was cited for the Azores in ICN (1993) based in F NAM.

### *Conocara fiolenti* Sazanov & Ivanov, 1979

Fiolenti’s smooth head

**Clofnam number:** 30.6.4.

**References for the Azores:** Markle & Quéro 1984°.

**Remarks:** The two specimens collected by A. A. Glukov- PINRO, Murmansk, at 40°03’N, 27°11’W, constitute the maximum depths given for this species, 1,880 and 1,900m, respectively.

### *Conocara macroptera* (Vaillant, 1888)

longfin smooth-head

**Clofnam number:** 30.6.1.

**References for the Azores:** Roule 1916°, 1919°; Roule & Angel 1933°; Fowler 1936; Collins 1954; Albuquerque 1954-1956.

### *Conocara murrayi* (Koefoed, 1927)

Murray’s smooth-head

**Clofnam number:** 30.6.2.

**References for the Azores:** Markle & Quéro 1984.

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*Einara edentula* (Alcock, 1892)

toothless smooth-head

**Clofnam number:** 30.7.2.

**Synonyms, misspellings, misidentifications:** *Torictus atlanticus* by Geistdoerfer *et al.* 1971.

**References for the Azores:** Geistdoerfer *et al.* 1971°; Markle 1976°.

*Herwigia kreffti* (Nielsen & Larsen, 1970)

Kreffft's smooth-head

**Clofnam number:** 30.7a.1.

**References for the Azores:** Tortonese & Hureau 1979°.

**Remarks:** The citation of the species for the Azores by Tortonese & Hureau (1979) is based on a specimen deposited at the ISH.

*Photostylus pycnopterus* Beebe, 1933

starry smooth-head

**Clofnam number:** 30.11a.1.

**References for the Azores:** Krefft 1976°, 1985°.

*Rouleina attrita* (Vaillant, 1888)

softskin smooth-head

**Clofnam number:** 30.12.1.

**Synonyms, misspellings, misidentifications:** *Alepocephalus rostratus* by Fowler 1936; *Bathytroctes attritus* by Vaillant 1888, 1919, Goode & Bean 1895, Brauer 1906, Bertin 1940; *B. mollis* by Fowler 1936, Collins 1954; *Rouleina attritus* by Grey 1956; *Talismania mollis* by Roule 1916, 1919.

**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895°; Brauer 1906; Roule 1916°, 1919°; Fowler 1936; Bertin 1940°; Collins 1954; Grey 1956; Markle 1978°; Arruda 1992.

**Remarks:** Fowler (1936) considers the citation of *Bathytroctes attritus* by Vaillant (1888, 1919) as a synonym of *Alepocephalus rostratus*, an assignment which is dubious. The citation by Fowler (1936) of *A. rostratus* for the Azores is solely based on the synonym of Vaillant's *B. attritus* (= *Rouleina attrita*: see Markle 1978). Fowler's *A. rostratus* for the Azores must be considered a synonym of *Rouleina attrita*.

*Talismania mekistonema* Sulak, 1975

threadfin smooth-head

**Clofnam number:** 30.12a.2.

**References for the Azores:** Tortonese & Hureau 1979°.

**Remarks:** Known from a single specimen taken at 38°15'N, 27°07'W (IOS, Tortonese & Hureau 1979).

*Xenodermichthys copei* (Gill, 1884)

bluntsnout smooth-head

**Clofnam number:** 30.14.1.

**Synonyms, misspellings, misidentifications:** *Xenodermichthys socialis* by Collett 1896a, Joubin 1905, Richard 1900, 1910, Roule 1919, Fowler 1936, Ferreira 1942, Albuquerque 1954-1956.

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**References for the Azores:** Collett 1896a°; Joubin 1905; Richard 1900, 1910; Roule 1919; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Krefft 1985°; Arruda 1992.

### **Platyroctidae**

Order 32- Osmeriformes. Family 159- Platyroctidae.

*Normichthys operosus* Parr, 1951

multipore searsid

**Clofnam number:** 32.6.1.

**References for the Azores:** Matsui & Rosenblatt 1984°.

*Searsia koefoedi* Parr, 1937

Koefoed's searsid

**Clofnam number:** 32.1.1.

**Synonyms, misspellings, misidentifications:** *Bathyroctes rostratus* by Koefoed 1927.

**References for the Azores:** Koefoed 1927°; Parr 1960°; Sazonov 1976°; Matsui & Rosenblatt 1984°.

## Order STOMIIFORMES

### **Gonostomatidae**

Order 34- Stomiiformes. Family 167- Gonostomatidae.

*Bonapartia pedaliota* Goode & Bean, 1896

**Clofnam number:** 37.3.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Zaphotias photocephalus* by Roule & Angel 1933, Ferreira 1942, Belloc 1949.

**References for the Azores:** Roule & Angel 1933°; Ferreira 1942; Belloc 1949°; Fowler 1936; Albuquerque 1954-1956; Grey 1964; Mukhacheva 1976; Post 1985°.

*Cyclothone alba* Brauer, 1906

bristlemouth

**Clofnam number:** 37.4.2.

**Synonyms, misspellings, misidentifications:** *Cyclothone signata alba* by Murray & Hjort 1912.

**References for the Azores:** Murray & Hjort 1912°; Koefoed 1960°.

*Cyclothone braueri* Jespersen & Tåning, 1926

bristlemouth

**Clofnam number:** 37.4.3.

**Synonyms, misspellings, misidentifications:** *Cyclothone signata* by Zugmayer 1911b, Roule 1919, Roule & Angel 1930, Fowler 1936, Ferreira 1942, Collins 1954.

**References for the Azores:** Zugmayer 1911b°; Roule 1919°; Roule & Angel 1930°; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1960°; Geistdoerfer *et al.* 1971°; Saldanha 1977°.

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**Remarks:** Saldanha (1977) also cites another *Cyclothone* sp., that was unidentifiable due to its bad state of preservation, adding that the general appearance is different from *C. braueri*.

*Cyclothone livida* Brauer, 1902

bristlemouth

**Clofnam number:** 37.4.4. Species not cited for the Azores in FNAM.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>

*Cyclothone microdon* Günther, 1878

bristlemouth

**Clofnam number:** 37.4.5.

**Synonyms, misspellings, misidentifications:** *Neostoma quadrioculatum* by Vaillant 1888.

**References for the Azores:** Vaillant 1888<sup>o</sup>, 1919<sup>o</sup>; Murray & Hjort 1912<sup>o</sup>; Collett 1896a<sup>o</sup>; Richard 1905a<sup>o</sup>; Zugmayer 1911b<sup>o</sup>; Roule & Angel 1924<sup>o</sup>, 1930<sup>o</sup>, 1933<sup>o</sup>; Zugmayer 1933<sup>o</sup>; Fowler 1936; Bertin 1940<sup>o</sup>; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1960<sup>o</sup>; Geistdoerfer *et al.* 1971<sup>o</sup>; Arruda 1992.

*Cyclothone pallida* Brauer, 1902

bristlemouth

**Clofnam number:** 37.4.6.

**Synonyms, misspellings, misidentifications:** *Cyclothone microdon pallida* by Murray & Hjort 1912.

**References for the Azores:** Murray & Hjort 1912<sup>o</sup>; Fowler 1936; Koefoed 1960<sup>o</sup>; Geistdoerfer *et al.* 1971<sup>o</sup>.

*Cyclothone pseudopallida* Muckacheva, 1964

bristlemouth

**Clofnam number:** 37.4.7. Species not cited for the Azores in FNAM.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>

*Diplophos taenia* Günther, 1873

**Clofnam number:** 37.5.1. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** One specimen (120mm TL) caught by R/V “Arquipélago” with RMT8 on 21 August, 1994 at 36°56’N, 27°58’W (DOP 349).

*Gonostoma bathyphilum* (Vaillant, 1888)

bristlemouth

**Clofnam number:** 37.1.3.

**Synonyms, misspellings, misidentifications:** *Neostoma bathyphilum* by Vaillant 1888, Roule & Angel 1923; *Cyclothone bathyphila* by Goode & Bean 1895; *C. bathyphilum* by Roule 1919, Fowler 1936; *C. grandis* by Collett 1896b, Fowler 1936, Ferreira 1942, Belloc 1949; *Gonostoma bathyfilum* by Zugmayer 1933, Ferreira 1942; *G. grande* by Murray & Hjort 1912; *G. grandis* by Barnard 1925, Albuquerque 1954-1956.

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**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895; Collett 1896b; Murray & Hjort 1912°; Roule 1919°; Roule & Angel 1923°; Barnard 1925; Fowler 1936; Bertin 1940°; Ferreira 1942; Belloc 1949°; Collins 1954; Grey 1956; Albuquerque 1954-1956; Koefoed 1958°; Grey 1964; Post 1985°; Arruda 1992.

***Gonostoma denudatum*** Rafinesque, 1810

bristlemouth

**Clofnam number:** 37.1.1.

**References for the Azores:** Murray & Hjort 1912°; Roule & Angel 1930°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Koefoed 1958°; Dias *et al.* 1976°; Post 1985°.

***Gonostoma elongatum*** Günther, 1878

bristlemouth

**Clofnam number:** 37.1.4.

**Synonyms, misspellings, misidentifications:** *Cyclothone elongata* by Roule & Angel 1933, Zugmayer 1933, Ferreira 1942; *Gonostoma polyphos* by Roule & Angel 1933, Ferreira 1942; *G. rhodadenia* by Murray & Hjort 1912, Fowler 1936, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Murray & Hjort 1912°; Roule & Angel 1933°; Zugmayer 1933°; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1958°; Grey 1964; Geistdoerfer *et al.* 1971°; Post 1985°.

**Remarks:** Fowler (1936), Collins (1954) and Albuquerque (1954-1956) cite *Gonostoma rhodadenia* and *G. elongatum* as two distinct species.

***Margrethia obtusirostra*** Jespersen & Tåning, 1919

bristlemouth

**Clofnam number:** 37.7.1.

**References for the Azores:** Koefoed 1958°; Grey 1964; Mukhacheva 1976.

### Sternoptychidae

Order 34- Stomiiformes. Family 168- Sternoptychidae.

***Argyropelecus aculeatus*** Valenciennes, 1849

pai-velho  
hatchetfish

**Clofnam number:** 38.2.2.

**Synonyms, misspellings, misidentifications:** *Argyropelecus amabilis* by Schultz 1964; *A. Olfersii* by Collett 1897, Roule & Angel 1933; *A. acanthurus* by Fowler 1936.

**References for the Azores:** Valenciennes 1849°; Günther 1864°; Goode & Bean 1895; Collett 1897°, 1905°; Brauer 1906; Murray & Hjort 1912°; Jespersen 1915, 1934; Borodin 1931°; Zugmayer 1933°; Fowler 1936; Bertin 1940°; Collins 1954; Albuquerque 1954-1956; Koefoed 1962°; Schultz 1964°; Dias *et al.* 1976°; Pafort-Van Iersel 1981°; Arruda 1992.

**Remarks:** Schultz (1964) considers both *Argyropelecus amabilis* and *A. aculeatus*.

***Argyropelecus gigas*** Norman, 1930

pai-velho  
hatchetfish

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**Clofnam number:** 38.2.4.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

**Remarks:** This species was question marked for the Azores in ICN (1993).

*Argyropelecus hemigymnus* (Cocco, 1829)

pai-velho  
hatchetfish

**Clofnam number:** 38.2.1.

**References for the Azores:** Murray & Hjort 1912<sup>o</sup>; Jespersen 1915; Roule 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Roule & Angel 1924<sup>o</sup>; Borodin 1931<sup>o</sup>; Zugmayer 1933<sup>o</sup>; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1962<sup>o</sup>; Schultz 1964<sup>o</sup>; Baird 1971<sup>o</sup>; Pafort-Van Iersel 1981<sup>o</sup>.

**Remarks:** Baird (1971) refers the existence of two forms of body pigment that Badcock (1969) has shown to be variation in day/night pigment.

*Argyropelecus olfersi* (Cuvier, 1829)

pai-velho  
hatchetfish

**Clofnam number:** 38.2.5.

**Synonyms, misspellings, misidentifications:** *Argyropelecus olfersii* by Collett 1896a, Regan 1903, Nobre 1924, Fowler 1936, Albuquerque 1954-1956.

**References for the Azores:** Collett 1896a<sup>o</sup>; Brauer 1906; Regan 1903<sup>o</sup>; Murray & Hjort 1912<sup>o</sup>; Jespersen 1915; Roule 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Nobre 1924<sup>o</sup>, 1930; Zugmayer 1933<sup>o</sup>; Roule & Angel 1933<sup>o</sup>; Nobre 1935; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1962<sup>o</sup>; Schultz 1964; Baird 1971<sup>o</sup>; Pafort-Van Iersel 1981<sup>o</sup>.

**Remarks:** Fowler (1936, p. 244) mentions *A. Olfersii* for the region, wrongly based in Lütken (1892). In fact this author indicates that the distribution of the species ranges from 43°- 47°N, 23°- 27°W and does not allude to the 33°- 47°N range, as stated by Fowler (1936).

*Maurolicus amethystinopunctatus* Cocco, 1838

pearlsides

**Clofnam number:** 37.8.-. Species not included in FNAME.

**References for the Azores:** Vaillant 1919<sup>o</sup>; Collins 1954; Parin & Kobylansky 1996<sup>o</sup>.

**Remarks:** Parin & Kobylansky (1996) revalidated *Maurolicus amethystinopunctatus* Cocco, 1838, which they cite for the Azores, together with *M. muelleri*. This requires a reevaluation of Vaillant's (1919) *M. amethystino-punctatus* (also cited by Collins 1954) which was considered in Clofnam, among others, a synonym of *M. muelleri*.

*Maurolicus muelleri* (Gmelin, 1789)

pearlsides

**Clofnam number:** 37.8.1.

**Synonyms, misspellings, misidentifications:** *Maurolicus pennanti* by Fowler 1936.

**References for the Azores:** Fowler 1936; Albuquerque 1954-1956; Koefoed 1958<sup>o</sup>; Grey 1964; Dias *et al.* 1976<sup>o</sup>; Mukhacheva 1981; INIP 1985a<sup>o</sup>; Parin & Kobylansky 1996; Monteiro 1996<sup>o</sup>; Monteiro *et al.* 1996b<sup>o</sup>.

**Remarks:** see remark above.

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*Sternoptyx diaphana* Hermann, 1781

hatchetfish

**Clofnam number:** 38.1.1.

**Synonyms, misspellings, misidentifications:** *Stenoptyx diaphanus* by Collett 1896a.

**References for the Azores:** Valenciennes 1849°; Vaillant 1888°, 1919°; Collett 1896a°; Regan 1903°; Brauer 1906; Murray & Hjort 1912°; Roule 1919°; Zugmayer 1911b°, 1933°; Jespersen 1915; Roule & Angel 1924°, 1930°; Fowler 1936; Belloc 1938; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1962°; Haedrich 1964°; Schultz 1964; Geistdoerfer *et al.* 1971°; Pafort-Van Iersel 1981°; Arruda 1992.

*Sternoptyx pseudobscura* Baird, 1971

hatchetfish

**Clofnam number:** 38.1.2.

**References for the Azores:** Pafort-Van Iersel 1981°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Valenciennellus tripunctulatus* (Esmark, 1871)

**Clofnam number:** 37.11.1.

**Synonyms, misspellings, misidentifications:** *Vallenciennellus* sp. by Roule & Angel 1923.

**References for the Azores:** Murray & Hjort 1912°; Roule & Angel 1923°; Fowler 1936; Albuquerque 1954-1956; Koefoed 1958°; Grey 1964.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

### Photichthyidae

Order 34- Stomiiformes. Family 169- Photichthyidae.

*Ichthyococcus ovatus* Cocco, 1838

lightfish

**Clofnam number:** 37.6.1.

**References for the Azores:** Murray & Hjort 1912°; Roule & Angel 1924°, 1930°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Koefoed 1958°; Grey 1964; Krefft 1983.

**Remarks:** Krefft (1983) mentions the occurrence of the species at “southern parts of the Azores-Britannia Province”.

*Vinciguerria attenuata* (Cocco, 1838)

lightfish

**Clofnam number:** 37.12.1.

**Synonyms, misspellings, misidentifications:** *Maurolucus lucetius* by Ferreira 1942, *Vinciguerria lucetia* by Zugmayer 1911b, 1933, Murray & Hjort 1912, Fowler 1936, Roule & Angel 1924, 1930, 1933, Collins 1954.

**References for the Azores:** Zugmayer 1911b°, 1933°; Brauer 1906; Murray & Hjort 1912°; Roule & Angel 1924°, 1930°, 1933°; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Koefoed 1958°; Post 1985°.

*Santos, Porteiro & Barreiros*

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Vinciguerria nimbaria* (Jordan & Williams, 1895)

lightfish

**Clofnam number:** 37.12.2.

**Synonyms, misspellings, misidentifications:** *Maurolicus lucetius* by Ferreira 1942, *Vinciguerria lucetia* by Zugmayer 1911b, 1933, Murray & Hjort 1912, Roule & Angel 1924, 1930, 1933, Collins 1954.

**References for the Azores:** Zugmayer 1911b°, 1933°; Murray & Hjort 1912°; Roule & Angel 1924°, 1930°, 1933°; Fowler 1936; Ferreira 1942; Collins 1954; Koefoed 1958°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Vinciguerria poweriae* (Cocco, 1838)

lightfish

**Clofnam number:** 37.12.3.

**References for the Azores:** Koefoed 1958°.

## Stomiidae

Order 34- Stomiiformes. Family 170- Stomiidae.

*Aristostomias tittmanni* Welsh, 1923

loosejaw

**Clofnam number:** 43.2.3.

**References for the Azores:** Regan & Trewavas 1930°; Fowler 1936; Morrow 1964b.

*Astronesthes gemmifer* Goode & Bean, 1896

snaggletooth

**Clofnam number:** 39.1.3.

**References for the Azores:** ICN 1993; Porteiro *et al.* in prep.°.

*Astronesthes micropogon* Goodyear & Gibbs, 1970

snaggletooth

**Clofnam number:** 39.1.8. Species not cited for the Azores in F NAM.

**References for the Azores:** Porteiro *et al.* in prep.°.

*Astronesthes neopogon* Regan & Trewavas, 1929

snaggletooth

**Clofnam number:** 39.1.6. Species not cited for the Azores in F NAM.

**References for the Azores:** Porteiro *et al.* in prep.°.

*Astronesthes niger* Richardson, 1844

snaggletooth

**Clofnam number:** 39.1.1.

**References for the Azores:** Regan & Trewavas 1929°; Fowler 1936; Belloc 1938°; Albuquerque 1954-1956.

## Marine fishes of the Azores

### *Bathophilus nigerrimus* Giglioli, 1884

scaleless dragonfish

**Clofnam number:** 42.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Regan & Trewavas 1930°; Fowler 1936; Albuquerque 1954-1956.

### *Bathophilus vaillanti* (Zugmayer, 1911)

scaleless dragonfish

**Clofnam number:** 42.2.3. and 42.2.4.

**Synonyms, misspellings, misidentifications:** *Bathophilus metallicus* by Regan & Trewavas 1930, Koefoed 1956; *Trichostomias Alberti* by Roule & Angel 1931, 1933.

**References for the Azores:** Regan & Trewavas 1930°; Roule & Angel 1931°, 1933°; Fowler 1936; Albuquerque 1954-1956; Koefoed 1956°; Dias *et al.* 1976°.

**Remarks:** The Roule & Angel record (1931: p. 7 and 1933: p. 13) of a specimen caught at Bank Gorringe can not to be accurate if the coordinates of st. 3284 are 39°18'N, 35°24'30''W.

### *Chauliodus danae* Regan & Trewavas, 1929

Dana viperfish

**Clofnam number:** 40.1.2.

**References for the Azores:** Regan & Trewavas 1929°; Fowler 1936; Ege 1948°; Albuquerque 1954-1956; Koefoed 1956°; Geistdoerfer *et al.* 1971°.

### *Chauliodus sloani* Schneider, 1801

Sloane's viperfish

**Clofnam number:** 40.1.1.

**Synonyms, misspellings, misidentifications:** *Chauliodus sloanei* by Richard 1905a, Zugmayer 1911b, Murray & Hjort 1912, Roule 1919, Roule & Angel 1924, 1930, Regan & Trewavas 1929, Zugmayer 1933, Ferreira 1942; *C. s. sloanei* by Ege 1948, Koefoed 1956.

**References for the Azores:** Richard 1905a°; Zugmayer 1911b°; Murray & Hjort 1912°; Roule 1919°; Regan & Trewavas 1929°; Roule & Angel 1924°, 1930°; Zugmayer 1933°; Fowler 1936; Ferreira 1942; Ege 1948°; Collins 1954; Albuquerque 1954-1956; Koefoed 1956°; Morrow 1964a; Geistdoerfer *et al.* 1971°; Dias *et al.* 1976°.

### *Chirostomias pliopterus* Regan & Trewavas, 1930

scaleless dragonfish

**Clofnam number:** 42.3.1.

**References for the Azores:** Regan & Trewavas 1930°.

### *Eustomias furcifer* Regan & Trewavas, 1930

scaleless dragonfish

**Clofnam number:** 42.5.4. Species excluded from FNAM.

**References for the Azores:** Regan & Trewavas 1930°; Fowler 1936; Albuquerque 1954-1956.

### *Eustomias macrurus* Regan & Trewavas, 1930

scaleless dragonfish

*Santos, Porteiro & Barreiros*

**Clofnam number:** 42.5.-. Species not included in F NAM.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

*Eustomias obscurus* Vaillant, 1888

scaleless dragonfish

**Clofnam number:** 42.5.1.

**References for the Azores:** Vaillant 1888<sup>o</sup>; Goode & Bean 1895; Perrier 1903; Brauer 1906; Bertin 1940<sup>o</sup>; Ferreira 1942; Regan & Trewavas 1930<sup>o</sup>; Roule & Angel 1933<sup>o</sup>; Zugmayer 1933<sup>o</sup>; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Morrow & Gibbs 1964; Arruda 1992.

*Flagellostomias boureei* (Zugmayer, 1913)

scaleless dragonfish

**Clofnam number:** 42.6.1.

**Synonyms, misspellings, misidentifications:** *Eustomias Bourreei* by Zugmayer 1913, Belloc 1949; *Flagellostomias Bouréei* by Roule & Angel 1933, Ferreira 1942.

**References for the Azores:** Zugmayer 1913<sup>o</sup>; Regan & Trewavas 1930<sup>o</sup>; Roule & Angel 1933<sup>o</sup>; Fowler 1936; Ferreira 1942; Belloc 1949<sup>o</sup>; Morrow & Gibbs 1964; Geistdoerfer *et al.* 1971<sup>o</sup>.

*Idiacanthus fasciola* Peters, 1877

sawtailfish

**Clofnam number:** 44.1.1.

**Synonyms, misspellings, misidentifications:** *Stylophthalmus paradoxus* by Roule & Angel 1924.

**References for the Azores:** Regan & Trewavas 1930<sup>o</sup>; Roule & Angel 1924<sup>o</sup>, 1933<sup>o</sup>; Fowler 1936; Ferreira 1942; Gibbs 1964.

*Leptostomias gladiator* (Zugmayer, 1911)

scaleless dragonfish

**Clofnam number:** 42.8.1.

**Synonyms, misspellings, misidentifications:** *Leptostomias ramosus* by Regan & Trewavas 1930; *Melanostomias ramosus* by Fowler 1936.

**References for the Azores:** Regan & Trewavas 1930<sup>o</sup>; Fowler 1936.

*Malacosteus niger* Ayres, 1848

loosejaw

**Clofnam number:** 43.1.1.

**Synonyms, misspellings, misidentifications:** *Malacosteus choristodactylus* by Vaillant 1888, Murray & Hjort 1912, Ferreira 1942.

**References for the Azores:** Vaillant 1888<sup>o</sup>; Goode & Bean 1895<sup>o</sup>; Murray & Hjort 1912<sup>o</sup>; Roule 1919<sup>o</sup>; Fowler 1936; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Morrow 1964b; Arruda 1992.

**Remarks:** Ferreira (1942) mentions both *Malacosteus choristodactylus* and *M. niger* as two valid species.

*Melanostomias bartonbeani* Parr, 1927

scaleless dragonfish

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**Clofnam number:** 42.1.4.

**Synonyms, misspellings, misidentifications:** *Melanostomias spilorhynchus* by Regan & Trewavas 1930, Fowler 1936.

**References for the Azores:** Regan & Trewavas 1930°; Fowler 1936.

### *Melanostomias valdiviae* Brauer, 1902

**Clofnam number:** 42.1.1. Species not cited for the Azores in F NAM.

**References for the Azores:** Porteiro *et al.* in prep.°.

### *Photonectes braueri* (Zugmayer, 1913)

scaleless dragonfish

**Clofnam number:** 42.9.1.

**Synonyms, misspellings, misidentifications:** *Melanostomias Braueri* by Zugmayer 1913; *Photonectes (Dolichostomias) Braueri* by Roule & Angel 1933.

**References for the Azores:** Zugmayer 1913°; Roule & Angel 1933°; Fowler 1936; Albuquerque 1954-1956; Koefoed 1956°; Morrow & Gibbs 1964.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

### *Photonectes margarita* (Goode & Bean, 1896)

**Clofnam number:** 42.9.-. Species not included in F NAM.

**Synonyms, misspellings, misidentifications:** *Echiostoma Richardi* by Zugmayer 1913; *Photonectes (Trachinostomias) Richardi* by Roule & Angel 1933.

**References for the Azores:** Zugmayer 1913°; Roule & Angel 1933°.

### *Photostomias guernei* Collett, 1889

loosejaw

**Clofnam number:** 43.3.1.

**Synonyms, misspellings, misidentifications:** *Phostomia Guerni* by Nobre 1935; *Photostomias Guernei* by Collett 1889b 1896a, Lütken 1892, Richard 1900, Perrier 1903, Joubin 1905, Ferreira 1942, Belloc 1949; Arruda 1992, *Photostomis guerni* by Fowler 1936.

**References for the Azores:** Collett 1889b°, 1896a°; Lütken 1892; Goode & Bean 1895; Richard 1900; Perrier 1903; Joubin 1905; Murray & Hjort 1912°; Regan & Trewavas 1930°; Zugmayer 1933°; Nobre 1935; Fowler 1936; Ferreira 1942; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Koefoed 1956°; Morrow 1964b; Arruda 1992.

### *Stomias boa ferox* Reinhardt, 1843

scaly dragonfish, boa dragonfish

**Clofnam number:** 41.1.1.2.

**Synonyms, misspellings, misidentifications:** *Stomias boa* by Zugmayer 1911b, Murray & Hjort 1912, Roule & Angel 1933, Bruun 1936, Backus *et al.* 1970; *S. ferox* by Fowler 1936, Belloc 1938; Albuquerque 1954-1956.

## *Santos, Porteiro & Barreiros*

**References for the Azores:** Zugmayer 1911b°; Murray & Hjort 1912°; Ege 1934; Bruun 1936; Roule & Angel 1933°; Fowler 1936; Belloc 1938; Collins 1954; Albuquerque 1954-1956; Koefoed 1956°; Gibbs 1969; Backus *et al.* 1970°; Shcherbachev & Novikova 1976.

**Remarks:** Ege (1918a) states that *Stomia ferox* “was found at nearly all oceanic stations, between 28°52’ and 57°41’N. lat. ... on the cruise of the “*Michael Sars*” in the Atlantic in 1910”.

*Stomias brevibarbatus* Ege, 1918

**Clofnam number:** 41.1.2.

**References for the Azores:** Porteiro *et al.* in prep.°.

*Trigonolampa miriceps* Regan & Trewavas, 1930

**Clofnam number:** 42.10.1. Species not cited for the Azores in F NAM.

**References for the Azores:** Porteiro *et al.* in prep.°.

## Order AULOPIFORMES

### Aulopodidae

Order 36- Aulopiformes. Family 173- Aulopodidae.

*Aulopus filamentosus* (Bloch, 1792)

lagarto do alto

Mediterranean flagfin

**Clofnam number:** 50.1.1.

**References for the Azores:** Hilgendorf 1888b°; Nobre 1924°, 1930; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Maul 1976; Ehrich 1977; Dias & Monteiro 1986°; Silva & Menezes 1995b°; Arruda 1992; Silva *et al.* 1995°; Menezes 1996°.

### Chlorophthalmidae

Order 36- Aulopiformes. Family 174- Chlorophthalmidae.

*Chlorophthalmus agassizii* Bonaparte, 1840

olho-vivo

shortnose greeneye

**Clofnam number:** 55.1.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Aulopus Agassizi* by Vaillant 1888; *Chlorophthalmus agassizi* by Carvalho 1982.

**References for the Azores:** Vaillant 1888°; Goode & Bean 1895; Perrier 1903; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Maul 1976; Ehrich 1977; Carvalho 1982; Arruda 1992.

**Remarks:** Perrier (1903) mentions the occurrence of “*Chlorophthalmus Agassizii*” for the “Medit. et Atl. du sud des Açores”, without stating exact locations.

### Ipnopidae

Order 36- Aulopiformes. Family 175- Ipnopidae.

*Bathypterois dubius* Vaillant, 1888

peixe tripé

spiderfish



*Santos, Porteiro & Barreiros*

*Scopelarchus analis* (Brauer, 1902)

short fin pearleye

**Clofnam number:** 59.1.1.

**Synonyms, misspellings, misidentifications:** *Odontostomus perarmatus* by Roule 1916; *O. (Dissomma) perarmatus* by Roule 1919, Belloc 1949; *Scopelarchus anale* by Koefoed 1955.

**References for the Azores:** Roule 1916°, 1919°; Fowler 1936; Belloc 1949°; Albuquerque 1954-1956; Koefoed 1955°; Johnson 1974°.

**Notosudidae**

Order 36- Aulopiformes. Family 177- Notosudidae.

*Ahliesaurus berryi* Bertelsen, Krefft & Marshall, 1976

**Clofnam number:** 56.2.1.

**References for the Azores:** Bertelsen *et al.* 1976°.

**Remarks:** Only larvae were reported by Bertelsen *et al.* (1976).

*Scopelosaurus argenteus* (Maul, 1954)

waryfish

**Clofnam number:** 56.1.2.

**References for the Azores:** Bertelsen *et al.* 1976°.

*Scopelosaurus lepidus* (Krefft & Maul, 1955)

waryfish

**Clofnam number:** 56.1.3.

**References for the Azores:** Bertelsen *et al.* 1976°.

**Synodontidae**

Order 36- Aulopiformes. Family 178- Synodontidae.

*Bathysaurus ferox* Günther, 1878

**Clofnam number:** 52.1.1.

**Synonyms, misspellings, misidentifications:** *Bathysaurus agassizi* by Saldanha 1977; *Macristium chavesi* by Regan 1903, 1911, Fowler 1936, Berg 1946, Albuquerque 1954-1956.

**References for the Azores:** Regan 1903°, 1911; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Grey 1956; Saldanha 1977°.

**Remarks:** Fowler (1936) reports *Macristium chavesi*, based on a “damaged specimen apparently washed ashore in the sea of the Azores.” (p. 195), and *Bathysaurus ferox*, based in Murray & Hjort (1912) who listed a specimen caught in a station off the Azores.

*Bathysaurus mollis* Günther, 1878

**Clofnam number:** 52.1.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Saldanha 1977°, 1991; Pérès 1992.

## Marine fishes of the Azores

*Synodus saurus* (Linnaeus, 1758)

lagarto da costa, peixe lagarto  
Atlantic lizardfish

**Clofnam number:** 51.1.2.

**Synonyms, misspellings, misidentifications:** *Saurus saurus* by Collett 1896a, Roule 1919, Vaillant 1919, *S. trivirgatus* by Sampaio 1904.

**References for the Azores:** Collett 1896a°; Sampaio 1904°; Roule 1919°; Vaillant 1919°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Anderson *et al.* 1966; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°; Saldanha 1980°, 1995°; Patzner & Santos 1990a°,e°; Barreiros 1990°, 1995°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Nash *et al.* 1994a°; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** Ré (1990) and Wirtz (1994) also cite *Synodus synodus* (Linnaeus, 1758) (Clofnam: 51.1.1.) a species that does not occur in the Azores. Peter Wirtz's citation was an editorial mistake (P.Wirtz pers. com.).

### Paralepididae

Order 36- Aulopiformes. Family 180- Paralepididae.

*Arctozenus rissoi* (Bonaparte, 1840)

barracudina, white barracudina

**Clofnam number:** 63.4.1.

**Synonyms, misspellings, misidentifications:** *Paralepis rissoi* by Albuquerque 1954-1956; *P. rissoi krøyeri* by Ege 1930, 1953; *Sudis rissoi* by Fowler 1936.

**References for the Azores:** Ege 1930°, 1953°; Fowler 1936; Albuquerque 1954-1956; Rofen 1966a.

**Remarks:** In FNAM the species is listed as [*Notolepis*] *rissoi*. Only postlarvae are documented in the Azores.

*Lestidiops affinis* (Ege, 1930)

barracudina

**Clofnam number:** 63.2.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Paralepis affinis* by Ege 1930, Albuquerque 1954-1956.

**References for the Azores:** Ege 1930°; Albuquerque 1954-1956.

*Lestidiops jayakari* (Boulenger, 1889)

barracudina

**Clofnam number:** 63.2.3.

**Synonyms, misspellings, misidentifications:** *Lestidium pseudophyraenoides pseudophyraenoides* by Ege 1953; *Paralepis pseudophyraenoides* by Albuquerque 1954-1956; *P. p. thori* by Ege 1930; *Lestidiops jaykari pseudophyraenoides* by Rofen 1966a.

**References for the Azores:** Ege 1930°, 1953°; Albuquerque 1954-1956; Rofen 1966a.

*Lestidiops sphyrenoides* (Risso, 1820)

barracudina

**Clofnam number:** 63.2.1.

*Santos, Porteiro & Barreiros*

**Synonyms, misspellings, misidentifications:** *Lestidium sphyraenoides* by Ege 1953; *Paralepis sphyraenoides* by Ege 1930, Albuquerque 1954-1956.

**References for the Azores:** Ege 1930°, 1953°; Albuquerque 1954-1956.

*Macroparalepis affinis* Ege, 1933

barracudina

**Clofnam number:** 63.3.1.

**References for the Azores:** Ege 1957°; Rofen 1966a.

**Remarks:** Only postlarvae were cited for the Azores.

*Paralepis atlantica atlantica* Krøyer, 1868

barracudina, duckbill barracudina

**Clofnam number:** 63.1.2.

**Synonyms, misspellings, misidentifications:** *Paralepis brevis* by Ege, 1930.

**References for the Azores:** Ege 1930°, Haedrich 1964°.

**Remarks:** The specimen (98mm SL) noted by Haedrich (1964) was found in the stomach of an *Alepisaurus ferox*.

*Paralepis coregonoides* Risso, 1820

barracudina

**Clofnam number:** 63.1.1.

**Synonyms, misspellings, misidentifications:** *Sudis coregonoides* by Fowler 1936.

**References for the Azores:** Ege 1930°, 1932°, 1953°; Roule & Angel 1930°; Fowler 1936; Albuquerque 1954-1956; Haedrich 1964°; Rofen 1966a°; Post 1987°.

**Remarks:** Except for the specimen (123mm SL) reported by Haedrich (1964) from the stomach of an *Alepisaurus ferox*, all the other citations refer to postlarvae. According to Post (1987) the subspecies of *Paralepis coregonoides* are artificial since "(...) there is a permanent inflow between the Mediterranean and Atlantic populations (...)".

*Paralepis speciosa* Bellotti, 1878

barracudina

**Clofnam number:** 63.1.5. Species not cited for the Azores in FNAM.

**References for the Azores:** Porteiro *et al.* in prep.°.

**Remarks:** Known for the area from post-larvae specimens. See Porteiro *et al.* (in prep.) for details.

*Sudis hyalina* Rafinesque, 1810

barracudina

**Clofnam number:** 63.5.1.

**References for the Azores:** Shores 1969°.

**Remarks:** Known for the area from a single post-larvae specimen collected on 25 September, 1964, at 39°35'N, 31°00'W, by the R/V "Atlantis II" (Shores 1969). Recently a specimen (39cm TL) was caught on long-line at Açores Bank at 320m by the F/V "Pérola do Bom Jesus".

## Marine fishes of the Azores

### *Uncisudis quadrimaculata* (Post, 1969)

barracudina

**Clofnam number:** 63.6.-. Species not included in FNAM.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

**Remarks:** Known for the area from post-larvae specimens. See Porteiro *et al.* (in prep.) for details.

### **Anotopteridae**

Order 36- Aulopiformes. Family 181- Anotopteridae.

### *Anotopterus pharao* Zugmayer, 1911

**Clofnam number:** 64.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

**Remarks:** Known for the area from post-larvae specimens. See Porteiro *et al.* (in prep.) for details.

### **Evermannellidae**

Order 36- Aulopiformes. Family 182- Evermannellidae.

### *Coccorella atlantica* (Parr, 1928)

Atlantic sabretooth

**Clofnam number:** 60.2.1.

**Synonyms, misspellings, misidentifications:** *Coccorella atrata* by Roule & Angel 1930, Fowler 1936, Albuquerque 1954-1956.

**References for the Azores:** Roule & Angel 1930<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956.

### *Evermannella balbo* (Risso, 1820)

balbo sabretooth

**Clofnam number:** 60.1.1.

**Synonyms, misspellings, misidentifications:** *Odontostomus balbo* by Schmidt 1918.

**References for the Azores:** Schmidt 1918<sup>o</sup>; Roule & Angel 1930<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Rofen 1966b<sup>o</sup>.

### **Omosudidae**

Order 36- Aulopiformes. Family 183- Omosudidae.

### *Omosudis lowei* Günther, 1887

**Clofnam number:** 62.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Omosudis lowii* by Fowler 1936.

**References for the Azores:** Roule & Angel 1930<sup>o</sup>, 1933<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Ege 1958<sup>o</sup>; Rofen 1966b.

### **Alepisauridae**

Order 36- Aulopiformes. Family 184- Alepisauridae.

### *Alepisaurus ferox* Lowe, 1833

*Santos, Porteiro & Barreiros*

lancetfish, longnose lancetfish

**Clofnam number:** 61.1.1.

**References for the Azores:** Haedrich 1964<sup>o</sup>; Parin 1970; Pinho & Pereira 1995a<sup>o</sup>.

Order **MYCTOPHIFORMES**

**Myctophidae**

Order 37- Myctophiformes. Family 186- Myctophidae.

*Benthoosema glaciale* (Reinhardt, 1837)

divertido, escolarinho, lobisomem  
lanternfish, glacier lanternfish

**Clofnam number:** 58.2.1.

**References for the Azores:** Halliday 1970<sup>o</sup>; Bolin 1959<sup>o</sup>; Geistdoerfer *et al.* 1971<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>.

*Benthoosema suborbitale* (Gilbert, 1913)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.2.2.

**Synonyms, misspellings, misidentifications:** *Myctophum simile* by Tåning 1932b, Albuquerque 1954-1956.

**References for the Azores:** Tåning 1932b<sup>o</sup>; Albuquerque 1954-1956; Bolin 1959<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>.

*Bolinichthys indicus* (Nafpaktitis & Nafpaktitis, 1969)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.13.3.

**Synonyms, misspellings, misidentifications:** *Lepidophanes pyrsobolus* by Bolin 1959.

**References for the Azores:** Bolin 1959<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

*Ceratoscopelus maderensis* (Lowe, 1839)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.4.1.

**Synonyms, misspellings, misidentifications:** *Lampanyctus maderensis* by Fowler 1936, Belloc 1938; *Myctophum (Lampanyctus) maderense* by Zugmayer 1911b, Roule & Angel 1930; *M. (L.) maderensi* by Brauer 1906; *M. (L.) maderensis* by Nobre 1935, Ferreira 1942; Dias *et al.* 1976; *Scopelus maderensis* by Richard 1905a.

**References for the Azores:** Richard 1905a<sup>o</sup>; Brauer 1906; Zugmayer 1911b<sup>o</sup>; Roule 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Roule & Angel 1930<sup>o</sup>; Nobre 1935; Fowler 1936; Belloc 1938; Ferreira 1942; Collins 1954; Backus *et al.* 1970<sup>o</sup>; Geistdoerfer *et al.* 1971<sup>o</sup>; Dias *et al.* 1976<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983; Chicharo & Teodósio 1990<sup>o</sup>; Monteiro 1996<sup>o</sup>; Monteiro *et al.* 1996b<sup>o</sup>.

**Remarks:** According to Ferreira (1942) “lobisomem” and “negrinho” are the common names used by the fishermen of Capelas, and “divertido” by the fishermen from Vila Franca do Campo, São Miguel Island. These names are extended by us to all other myctophids.

*Ceratoscopelus warmingii* (Lütken, 1892)

divertido, escolarinho, lobisomem

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lanternfish

**Clofnam number:** 58.4.2.

**References for the Azores:** Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

**Remarks:** Nafpaktitis *et al.* (1977) records are based on specimens collected at around 37°N, 21°W. One specimen (47mm TL) caught by R/V “Arquipélago” on 21 August, 1994 at 36°56'N, 27°58'W (DOP 350).

***Diaphus brachycephalus*** Tåning, 1928

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.2.

**References for the Azores:** New record.

**Remarks:** Two specimens (20.7-26.5mm TL) found in a stomach of *Lepidopus caudatus* (127cm TL) caught at 38°27' 99''N, 27°33'18''W (DOP 351).

***Diaphus dumerilii*** (Bleeker, 1856)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.3. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** One specimen (61mm TL) was found washed up on the beach at Porto Pim Bay, Faial Island, on 8 January, 1997 (DOP 369).

***Diaphus effulgens*** (Good & Bean, 1896)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.4. Species not cited for the Azores in FNAM.

**References for the Azores:** Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

***Diaphus holti*** Tåning, 1918

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.5.

**References for the Azores:** Bolin 1959<sup>o</sup>; Nafpaktitis 1968; Backus *et al.* 1970<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

***Diaphus metopoclampus*** (Cocco, 1829)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.7.

**Synonyms, misspellings, misidentifications:** *Myctophum (Diaphus) metopoclampus* by Zugmayer 1933.

**References for the Azores:** Zugmayer 1933<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Nafpaktitis 1968<sup>o</sup>; Dias *et al.* 1976<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

***Diaphus mollis*** Tåning, 1928

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.6.8.

**References for the Azores:** Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

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- Diaphus rafinesquei* (Cocco, 1838) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.6.9.  
**Synonyms, misspellings, misidentifications:** *Diaphus rafinesquii* by Fowler 1936, *Nafpaktitis et al.* 1977, Bekker 1983; *Myctophum (Diaphus) rafinesquei* by Zugmayer 1933.  
**References for the Azores:** Zugmayer 1933°; Fowler 1936; Albuquerque 1954-1956; Bolin 1959°; *Nafpaktitis* 1968°; Geistdoerfer *et al.* 1971°; *Nafpaktitis et al.* 1977°; Bekker 1983.
- Diogenichthys atlanticus* (Tåning, 1928) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.7.1.  
**References for the Azores:** Bolin 1959°; *Nafpaktitis et al.* 1977°; Bekker 1983.
- Electrona rissoi* (Cocco, 1829) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.8.1.  
**Synonyms, misspellings, misidentifications:** *Electrona risso* by *Nafpaktitis et al.* 1977, Topal 1987; *Electrona (Electrona) risso* by Bekker 1983; *Myctophum (Myctophum) rissoi* by Murray & Hjort 1912, Zugmayer 1933, Ferreira 1942; *M. risso* by Fowler 1936; *M. rissoi* by Dias *et al.* 1976.  
**References for the Azores:** Murray & Hjort 1912°; Zugmayer 1933°; Fowler 1936; Ferreira 1942; Collins 1954; Bolin 1959°; Backus *et al.* 1970°; Dias *et al.* 1976°; *Nafpaktitis et al.* 1977°; Bekker 1983; Topal 1987°; Monteiro 1996°; Monteiro *et al.* 1996a°,b°.  
**Remarks:** The records of *Myctophum (Myctophum) Rissoi* and *M. rissoi* by Brauer (1906) and by Albuquerque (1954-1956), respectively, are not valid because they are based on Collett's (1896a) specimen (reported as *Scopelus rissoi*) caught in station 96 at 43°24'50''N, 21°40'45''W.
- Gonichthys coccoi* (Cocco, 1829) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.9.1.  
**Synonyms, misspellings, misidentifications:** *Gonichthys cocco* by Collins 1954, *Nafpaktitis et al.* 1977; *Myctophum (Myctophum) coccoi* by Brauer 1906, *M. cocco* by Fowler 1936, Albuquerque 1954-1956; *M. (Myctophum) coccoi* by Murray & Hjort 1912; *M. (Rhinoscopelus) Coccoi* by Roule & Angel 1933, Belloc 1938, Ferreira 1942; *Scopepus Coccoi* by Collett 1896a; *Scopelus (Rhinoscopelus) Coccoi* by Lütken 1892.  
**References for the Azores:** Lütken 1892°; Collett 1896a°; Brauer 1906; Murray & Hjort 1912°; Roule & Angel 1933°; Fowler 1936; Belloc 1938°; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Bolin 1959°; *Nafpaktitis et al.* 1977°; Arruda 1992.  
**Remarks:** Bekker (1983) records *Gonichthys barnesi* Whitey, 1943 from the Azores. According to *Nafpaktitis et al.* (1977) the four forms of *Gonichthys* described to date “are very similar to each other with many of the proposed adult morphological characters overlapping to a degree that identifications can not always be made with reasonable certainty. Future studies of larvae and otoliths are necessary before the taxonomic relationships of the described forma are better understood”.

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- Hygophum benoiti*** (Cocco, 1838) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.10.2.  
**Synonyms, misspellings, misidentifications:** *Myctophum benoiti* by Goode & Bean 1895, Fowler 1936, Belloc 1938, Albuquerque 1954-1956; *M. (Myctophum) Benoiti* by Brauer 1906; *Scopelus Benoiti* by Lütken 1892;  
**References for the Azores:** Lütken 1892°; Goode & Bean 1895°; Brauer 1906; Fowler 1936; Belloc 1938°; Albuquerque 1954-1956; Bolin 1959°; Geistdoerfer *et al.* 1971°; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Hygophum hygomii*** (Lütken, 1892) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.10.1.  
**Synonyms, misspellings, misidentifications:** *Myctophum (Myctophum) benoiti hygomi* by Brauer 1906; *M. hygomi* by Tåning 1932a, Goode & Bean 1895, Fowler 1936; Albuquerque 1954-1956, *Scopelus Hygomii* by Lütken 1892.  
**References for the Azores:** Lütken 1892°; Goode & Bean 1895; Brauer 1906; Tåning 1932a; Fowler 1936; Albuquerque 1954-1956; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Hygophum reinhardtii*** (Lütken, 1892) divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.10.3.  
**References for the Azores:** Porteiro *et al.* in prep.°.
- Hygophum taaningi*** Bekker, 1965 divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.10.4. Species not cited for the Azores in FNAM.  
**Synonyms, misspellings, misidentifications:** *Myctophum macrochir* by Bolin 1959.  
**References for the Azores:** Bolin 1959°.
- Lampadena anomala*** Parr, 1928 divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.11.-. Species not included in FNAM.  
**References for the Azores:** Porteiro *et al.* in prep.°.
- Lampadena chavesi*** Collett, 1905 divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.11.2.  
**Synonyms, misspellings, misidentifications:** *Myctophum (Lampadena) chavesi* by Brauer 1906.  
**References for the Azores:** Collett 1905°; Brauer 1906; Fowler 1936; Belloc 1938; Barnard 1948; Collins 1954; Albuquerque 1954-1956; Krefft 1970; Dias *et al.* 1976°; Nafpaktitis *et al.* 1977°; Bekker 1983.

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- Lampadena speculigera* Goode & Bean, 1896  
divertido, escolarinho, lobisomem  
lanternfish  
**Clofnam number:** 58.11.1.  
**References for the Azores:** Nafpaktitis *et al.* 1977°; Bekker 1983.
- Lampanyctus ater* Tåning, 1928  
divertido, escolarinho, lobisomem  
lanternfish  
**Clofnam number:** 58.12.3.  
**References for the Azores:** Geistdoerfer *et al.* 1971°; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Lampanyctus festivus* Tåning, 1928  
divertido, escolarinho, lobisomem  
lanternfish  
**Clofnam number:** 58.12.5.  
**References for the Azores:** Nafpaktitis *et al.* 1977°; Bekker 1983.  
**Remarks:** Several specimens (DOP 362) were found stranded in January 1996 in Porto Pim Bay and at Feteira, Faial Island.
- Lampanyctus gemmifer* (Goode & Bean, 1879)  
divertido, escolarinho, lobisomem  
lanternfish, jewel lanternfish  
**Clofnam number:** 58.12.-. Species not included in FNAME.  
**Synonyms, misspellings, misidentifications:** *Lampanyctus gemmifer* by Fowler 1936, Albuquerque 1954-1956; *Lampanyctus crocodilus* by Collins 1954, Bolin 1959, Geistdoerfer *et al.* 1971, Nafpaktitis *et al.* 1977; *L. (Lampanyctus) crocodilus* by Bekker 1983; *Macrostoma gemmifer* by Fowler 1936; *Myctophum (Lampanyctus) gemmifer* by Murray & Hjort 1912, Zugmayer 1933; *M. (L.) crocodilus* by Zugmayer 1933.  
**References for the Azores:** Murray & Hjort 1912°; Zugmayer 1933°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Bolin 1959°; Geistdoerfer *et al.* 1971°; Nafpaktitis *et al.* 1977°; Bekker 1983; Stefanescu *et al.* 1994°.  
**Remarks:** *Lampanyctus gemmifer* was revalidated recently by Stefanescu *et al.* (1994), who claim that *L. crocodilus* is the Mediterranean species, and *L. gemmifer* the Atlantic species. *Lampanyctus crocodilus* (Risso, 1810) (Clofnam: 58.12.1.) was cited for the Azores in ICN (1993).
- Lampanyctus intricarius* Tåning, 1928  
divertido, escolarinho, lobisomem  
lanternfish  
**Clofnam number:** 58.12.6.  
**References for the Azores:** Bolin 1959°; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Lampanyctus photonotus* Parr, 1928  
divertido, escolarinho, lobisomem  
lanternfish  
**Clofnam number:** 58.12.9.  
**References for the Azores:** Bolin 1959°; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Lampanyctus pusillus* (Johnson, 1890)  
divertido, escolarinho, lobisomem  
lanternfish

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**Clofnam number:** 58.12.10.

**Synonyms, misspellings, misidentifications:** *Myctophum (Lampanyctus) alatum* by Zugmayer 1911b, Collins 1954; *M. (L.) pusillus* by Ferreira 1942.

**References for the Azores:** Zugmayer 1911b<sup>o</sup>; Fowler 1936; Belloc 1938; Ferreira 1942; Collins 1954; Albuquerque 1954-1956; Bolin 1959<sup>o</sup>; Geistdoerfer *et al.* 1971<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

*Lepidophanes gausi* (Brauer, 1906) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.13.2.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

*Lepidophanes guentheri* (Good & Bean, 1896) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.13.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Nafpaktitis *et al.* 1977<sup>o</sup>.

*Lobianchia dofleini* (Zugmayer, 1911) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.14.2.

**References for the Azores:** Bolin 1959<sup>o</sup>; Nafpaktitis 1968<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

*Lobianchia gemellarii* (Cocco, 1838) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.14.1.

**Synonyms, misspellings, misidentifications:** *Diaphus gemellarii* by Fowler 1936, Albuquerque 1954-1956; *Myctophum (Diaphus) gemellari* by Murray & Hjort 1912, Zugmayer 1933.

**References for the Azores:** Murray & Hjort 1912<sup>o</sup>; Zugmayer 1933<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Nafpaktitis 1968<sup>o</sup>; Nafpaktitis *et al.* 1977<sup>o</sup>; Bekker 1983.

*Loweina interrupta* (Tåning, 1928) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.15.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Nafpaktitis *et al.* 1977<sup>o</sup>.

**Remarks:** This is a rare species known only from few specimens in the Atlantic (Nafpaktitis *et al.* 1977).

*Loweina rara* (Lütken, 1892) divertido, escolarinho, lobisomem lanternfish

**Clofnam number:** 58.15.1.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

*Myctophum nitidulum* Garman, 1899 divertido, escolarinho, lobisomem lanternfish, spotted lanternfish

**Clofnam number:** 58.1.2.

**References for the Azores:** Porteiro *et al.* in prep.<sup>o</sup>.

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- Myctophum punctatum* Rafinesque, 1810                      divertido, escolarinho, lobisomem  
lanternfish, spotted lanternfish
- Clofnam number:** 58.1.1.  
**References for the Azores:** Vaillant 1919°; Fowler 1936; Belloc 1938°; Collins 1954; Albuquerque 1954-1956; Bolin 1959°; Parin 1970; Saldanha 1977; Nafpaktitis *et al.* 1977°; Bekker 1983; Monteiro 1996°; Monteiro *et al.* 1996a,b°.
- Notolychnus valdiviae* (Brauer, 1904)                      divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.16.1.  
**References for the Azores:** Bolin 1959°; Nafpaktitis *et al.* 1977°; Bekker 1983.
- Notoscopelus (Pareiophus) bolini* Nafpaktitis, 1975                      divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.17.5.  
**References for the Azores:** Nafpaktitis 1975°; Nafpaktitis *et al.* 1977°.  
**Remarks:** Maul (1976: 15) remarks that “Kreffit (pers. com.) has specimens from the vicinity of the Azores”.
- Notoscopelus (Notoscopelus) caudispinosus* (Johnson, 1863)                      divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.17.2.  
**References for the Azores:** Porteiro *et al.* in prep.°.
- Notoscopelus (Notoscopelus) kroeyerii* (Malm, 1861)                      divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.17.4.  
**Synonyms, spellings, misidentifications:** *Lampanyctus elongatus* by Collins 1954; *Myctophum (Lampanyctus) elongatus* by Zugmayer 1933.  
**References for the Azores:** Zugmayer 1933°; Collins 1954.
- Notoscopelus (Notoscopelus) resplendens* (Richardson, 1845)                      divertido, escolarinho, lobisomem  
lanternfish, patchwork lampfish
- Clofnam number:** 58.17.1.  
**Synonyms, misspellings, misidentifications:** *Lampanyctus resplendes* by Dias *et al.* 1976.  
**References for the Azores:** Belloc 1938; Dias *et al.* 1976°; Nafpaktitis *et al.* 1977°; Bekker 1983; Clarke *et al.* 1995°.
- Protomyctophum (Hierops) arcticum* (Lütken, 1892)                      divertido, escolarinho, lobisomem  
lanternfish
- Clofnam number:** 58.18.1. Species not cited for the Azores in FNAM.  
**References for the Azores:** Nafpaktitis *et al.* 1977°; Bekker 1983.

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*Symbolophorus veranyi* (Moreau, 1888)

divertido, escolarinho, lobisomem  
lanternfish

**Clofnam number:** 58.19.1.

**Synonyms, misspellings, misidentifications:** *Myctophum humboldti* by Tåning 1932c, Nobre 1935, Fowler 1936; Belloc 1938, Collins 1954, Dias *et al.* 1976; *M. (Myctophum) Humboldti* by Brauer 1906; *Scopelus humboldti* by Lütken 1892.

**References for the Azores:** Lütken 1892°; Brauer 1906; Tåning 1932c; Nobre 1935; Fowler 1936; Belloc 1938; Collins 1954; Albuquerque 1954-1956; Bolin 1959°; Dias *et al.* 1976°; Nafpaktitis *et al.* 1977°; Bekker 1983.

**Remarks:** The species is erroneously cited for the Azores by Ferreira (1942) and Albuquerque (1954-1956), as *Myctophum (Myctophum) Humboldti* and as *M. humboldti*, respectively. Both authors base their information on the record of *Scopelus Humboldti* by Collett (1896a). Collett's specimen was caught outside the Azores region, at station 170 (44°02'15''N, 14°25'45''W).

### Order LAMPRIDIFORMES

#### Lamprididae

Order 38- Lampridiformes. Family 188- Lamprididae.

*Lampris guttatus* (Brünnich, 1788)

joaninha, peixe cravo  
opah, moonfish

**Clofnam number:** 105.1.1.

**Synonyms, misspellings, misidentifications:** *Lampris regius* by Parin 1970.

**References for the Azores:** Parin 1970; Wheeler 1978; DOP 1993°; Santos *et al.* 1994b°; Pinho & Pereira 1995a°.

#### Radiicephalidae

Order 38- Lampridiformes. Family 191- Radiicephalidae.

*Radiicephalus elongatus* Osório, 1917

**Clofnam number:** 108.1.1.

**References for the Azores:** Harrison & Palmer 1968°.

#### Trachipteridae

Order 38- Lampridiformes. Family 192- Trachipteridae.

*Trachipterus arcticus* (Brünnich, 1771)

deal fish

**Clofnam number:** 107.1.1.

**Synonyms, misspellings, misidentifications:** *Trachipterus tænia* by Regan 1903; *Trachipterus trachipterus* by Albuquerque 1954-1956.

**References for the Azores:** Regan 1903°; Albuquerque 1954-1956, Wheeler 1978.

**Remarks:** The occurrence of this species in the Azores is confirmed. Three specimens deposited at MCZ were studied by us, and confirmed to be *Trachipterus arcticus*. All the specimens (MCZ 8644 and 8645) have more than 96 vertebra, i. e. 99 to 101. Body proportions also fit *T. arcticus*. We did not studied the

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specimens cited by Regan (1903) as *Trachypterus taenia*, and by Albuquerque (1954-1956) as *Trachypterus trachypterus* (Gmenlin, 1789) (Clofnam: 107.1.1.) but tentatively assign these to *T. arcticus*, since there is no valid evidence of the occurrence of *T. trachypterus* in the North-eastern Atlantic.

***Zu cristatus*** (Bonelli, 1820)

scalloped ribbon fish

**Clofnam number:** 107.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Palmer 1961; Parin 1970.

**Remarks:** One specimen (110cm SL) was caught in the summer of 1992 off São Miguel Island (DOP 366).

Order **POLYMIXIIFORMES**

**Polymixiidae**

Order 39- Polymixiiformes. Family 194- Polymixiidae.

***Polymixia nobilis*** Lowe, 1836

salmonete do alto  
beardfish

**Clofnam number:** 111.1.1.

**References for the Azores:** Saldanha 1977°; Santos *et al.* 1995c; Silva & Menezes 1995b°; Silva *et al.* 1995°; Menezes 1996°.

Order **OPHIDIIFORMES**

**Carapidae**

Order 41- Ophidiiformes. Family 198- Carapidae.

***Echiodon drummondi*** Thompson, 1837

**Clofnam number:** 175.2.1.

**References for the Azores:** Markle & Olney 1990°.

**Remarks:** The specimens cited by Markle & Olney (1990) are all larvae. One adult specimen (273mm TL) was found stranded at Porto Pim Bay on 18 January, 1996 (DOP 352).

**Ophidiidae**

Order 41- Ophidiiformes. Family 199- Ophidiidae.

***Holcomycteronus squamosus*** (Roule, 1916)

**Clofnam number:** 172.2.1.

**Synonyms, misspellings, misidentifications:** *Grimaldichthys squamosus* by Roule 1915, 1916, 1919, Fowler 1936, Belloc 1949.

**References for the Azores:** Roule 1915°, 1916°, 1919°; Fowler 1936; Belloc 1949°; Albuquerque 1954-1956.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

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### *Monomitopus metriostoma* (Vaillant, 1888)

**Clofnam number:** 172.8.1.

**Synonyms, misspellings, misidentifications:** *Dicromita metriostoma* by Goode & Bean 1895, Roule & Angel 1921, Fowler 1936, Albuquerque 1954-1956; *Sirembo metriostoma* by Vaillant 1888.

**References for the Azores:** Vaillant 1888°; Goode & Bean 1895; Roule & Angel 1921; Fowler 1936; Albuquerque 1954-1956; Hureau & Nielsen 1981; Arruda 1992.

### *Parophidion vassali* (Risso, 1810)

**Clofnam number:** 173.3.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Azevedo & Heemstra 1995°.

### *Spectrunculus grandis* (Günther, 1877)

**Clofnam number:** 172.11.1.

**References for the Azores:** Nielsen & Hureau 1980°; Hureau & Nielsen 1981.

## **Bythitidae**

Order 41- Ophidiiformes. Family 200- Bythitidae.

### *Cataetyx laticeps* Koefoed, 1927

**Clofnam number:** 172.6.2.

**References for the Azores:** Hureau & Nielsen 1981°; Saldanha 1994°; Van Dover *et al.* 1996°; Saldanha & Biscoito in press b°.

## **Aphyonidae**

Order 41- Ophidiiformes. Family 201- Aphyonidae.

### *Aphyonus gelatinosus* Günther, 1878

**Clofnam number:** 174.5.1.

**References for the Azores:** Rannou *et al.* 1974°.

### *Barathronus parfaiti* (Vaillant, 1888)

**Clofnam number:** 174.1.1.

**References for the Azores:** Roule 1915°, 1916°, 1919°; Fowler 1936; Albuquerque 1954-1956; Grey 1956; Nielsen 1969°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

### *Meteorina erythroptis* Nielsen, 1969

**Clofnam number:** 174.3.1.

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**References for the Azores:** Nielsen 1969°.

**Remarks:** A juvenile specimen (25mm SL) caught at 40°32'N, 35°24'W - 40°34'N, 35°52'W, between 4540 and 4,600m by the Swedish R/V "Albatross". This specimen was first mentioned by Nybelin (1957) as gen. et spec. indet., probably a juvenile *parfaiti*?

*Sciadonus pedicellaris* Garman, 1899

**Clofnam number:** 174.2.-. Species not included in FNAM.

**Synonyms, misspellings, misidentifications:** *Leucochlamys* sp. by Nybelin 1951; *Sciadonus kullenbergi* by Nybelin 1957.

**References for the Azores:** Nybelin 1951°, 1957°; Nielsen 1969°.

**Remarks:** One female (102mm SL.) caught at 40°32'N, 35°24'W - 40°34'N, 35°52'W, between 4540 and 4,600m, on 7 September, 1948, by the Swedish R/V "Albatross". The specimen was considered the holotype of *Sciadonus kullenbergi* Nybelin, 1957. Nielsen (1969), who reexamined the specimen, considers that it is a *Sciadonus pedicellaris*.

### Parabrotulidae

Order 41- Ophidiiformes. Family 202- Parabrotulidae.

*Leucobrotula adipatus* Koefoed, 1952

**Clofnam number:** 171.2.1.

**Synonyms, misspellings, misidentifications:** In FNAM the species is spelled as *Leucobrotula adipata*.

**References for the Azores:** Nielsen *et al.* 1990°.

*Parabrotula plagiophthalmus* Zugmayer, 1911

**Clofnam number:** 171.1.1.

**References for the Azores:** Nielsen 1968°; Nielsen *et al.* 1990°.

## Order GADIFORMES

### Macrouridae

Order 42- Gadiformes. Family 205- Macrouridae.

*Bathygadus melanobranchus* Vaillant, 1888

peixe rato, rato

Vaillant's grenadier

**Clofnam number:** 99.2.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Bathygadus Vaillanti* by Roule & Angel 1933, Fowler 1936, Belloc 1949, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Collett 1896a°; Brauer 1906; Richard 1900, 1910; Roule 1919°; Roule & Angel 1933°; Fowler 1936; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Grey 1956; Cohen *et al.* 1990; Marshall & Iwamoto 1973°; Arruda 1992.

## Marine fishes of the Azores

**Remarks:** Albuquerque (1954-1956) cites both *Bathygadus melanobranchus* and *B. vaillanti* as valid species for the Azores; the first based on Collett (1896a) and Brauer (1906), and the second on Fowler (1936).

*Cetonurus globiceps* (Vaillant, 1888) peixe rato, rato  
globehead grenadier

**Clofnam number:** 99.6.1.

**Synonyms, misspellings, misidentifications:** *Hymenocephalus crassiceps* by Vaillant 1888; Bauchot *et al.* 1971, *H. globiceps* by Vaillant 1919.

**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895; Fowler 1936; Albuquerque 1954-1956; Bauchot *et al.* 1971°; Marshall & Iwamoto 1973; Arruda 1992.

*Chalinura leptolepis* (Günther, 1877) peixe rato, rato

**Clofnam number:** 99.16.2. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** 1 *Chalinura simula* by Roule, 1918, 1919, Nybelin 1951, 1957; Collins 1954, Albuquerque 1954-1956; *Coryphaenoides simulus* by Fowler 1936.

**References for the Azores:** Roule 1919°; Fowler 1936; Nybelin 1951°, 1957°; Collins 1954; Albuquerque 1954-1956; Marshall & Iwamoto 1973.

*Chalinura mediterranea* Giglioli, 1893 peixe rato, rato  
Mediterranean grenadier

**Clofnam number:** 99.16.3.

**References for the Azores:** Roule 1919°; Geistdoerfer & Rannou 1971, 1972; Marshall & Iwamoto 1973; Bauchot & Pras 1980.

**Remarks:** Marshall & Iwamoto (1973) mention the species for the Azores with the following observation "...if Roule's record is correct".

*Coelorhynchus coelorhynchus coelorhynchus* (Risso, 1810) rato bicudo  
hollow-snout rat-tail, blackspot  
grenadier

**Clofnam number:** 99.12.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Coelorrinchus caelorrinchus* by Wheeler 1978; *Coelorrinchus coelorhynchus* by Fowler 1936; *C. coelorrinchus* by Shcherbachev *et al.* 1985; *C. atlanticus* by Goode & Bean 1895; *Coelorhynchus coelorhynchus* by Menezes 1996; *Macrurus coelorhynchus* by Hilgendorf 1888b, Vaillant 1888, Collett 1890a, Regan 1903, Bauchot *et al.* 1971.

**References for the Azores:** Hilgendorf 1888b°; Vaillant 1888°, 1919°; Collett 1890a; Goode & Bean 1895; Regan 1903°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Bauchot *et al.* 1971°; Marshall & Iwamoto 1973; Dias *et al.* 1976°; Wheeler 1978; INIP 1985a°,b°; Shcherbachev *et al.* 1985; Cohen *et al.* 1990; Dias 1991°; Arruda 1992; Silva *et al.* 1995°; Menezes 1996°.

*Coelorhynchus labiatus* (Koehler, 1896) peixe rato, rato  
spear-snouted grenadier

**Clofnam number:** 99.12.-. Species not included in FNAME.

*Santos, Porteiro & Barreiros*

**Synonyms, misspellings, misidentifications:** *Coelorhynchus vaillanti* by Fowler 1936; *Coelorhynchus japonicus* by Vaillant 1919; Bauchot *et al.* 1971, *C. occa* by Marshall & Iwamoto 1973, Arruda 1992, *C. vaillanti* by Roule 1916, 1918, 1919, Belloc 1949, Collins 1954, Albuquerque 1954-1956; *Macrurus japonicus* by Vaillant 1887, 1888; *M. (Coelorhynchus) talismani* by Brauer 1906, Koefoed 1927.

**References for the Azores:** Vaillant 1887°, 1888°, 1919°; Brauer 1906; Roule 1916°, 1919°; Koefoed 1927; Fowler 1936; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Bauchot *et al.* 1971°; Marshall & Iwamoto 1973°; Cohen *et al.* 1990; Arruda 1992.

**Remarks:** Saldanha & Biscoito (in press b°) refer to *Coelorhynchus* cf. *labiatus*, based on video recordings.

*Coryphaenoides guentheri* (Vaillant, 1888) peixe rato, rato  
Günther's grenadier

**Clofnam number:** 99.13.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Chalinura guentheri* by Grey 1956; Geistdoerfer & Rannou 1971, *Macruropus guentheri* by Fowler 1936, Collins 1954; *Macrurus Güntheri* by Collett 1896a, Brauer 1906, Roule 1919, Koefoed 1927; *M. (Coelorhynchus) Güntheri* by Brauer 1906; *M. Guntheri* by Richard 1900, 1910.

**References for the Azores:** Collett 1896a°; Brauer 1906; Richard 1900, 1910; Roule 1919°; Koefoed 1927; Fowler 1936; Collins 1954; Grey 1956; Geistdoerfer & Rannou 1971; Marshall & Iwamoto 1973; Cohen *et al.* 1990; Arruda 1992.

*Gadomus longifilis* (Goode & Bean, 1886) peixe rato, rato  
treadfin grenadier

**Clofnam number:** 99.3.1.

**Synonyms, misspellings, misidentifications:** *Bathygadus longifilis* by Collett 1896a, Richard 1900, 1910, Brauer 1906, Roule 1919, Koefoed 1927.

**References for the Azores:** Collett 1896a°; Richard 1900, 1910; Brauer 1906; Roule 1919°; Koefoed 1927; Fowler 1936; Albuquerque 1954-1956; Marshall & Iwamoto 1973; Arruda 1992.

*Hymenocephalus italicus* Giglioli, 1884 peixe rato, rato  
Italian grenadier

**Clofnam number:** 99.5.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Macrurus italicus* by Collett 1896a; *M. (Hymenocephalus) italicus* by Brauer 1906.

**References for the Azores:** Vaillant 1888°; Collett 1896a°; Brauer 1906; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Bauchot *et al.* 1971°; Marshall & Iwamoto 1973; Maul 1976; Saldanha 1977; Cohen *et al.* 1990; Arruda 1992.

*Lionurus carapinus* (Goode & Bean, 1883) peixe rato, rato  
carapine grenadier

**Clofnam number:** 99.17.1.

**Synonyms, misspellings, misidentifications:** *Chalinura carapina* by Roule & Angel 1933, Collins 1954, Albuquerque 1954-1956, Grey 1956; *Coryphaenoides carapinus* by Roule & Angel 1933, Fowler 1936, Schroeder 1940.

## Marine fishes of the Azores

**References for the Azores:** Roule & Angel 1933<sup>o</sup>; Fowler 1936; Schroeder 1940; Collins 1954; Albuquerque 1954-1956; Geistdoerfer *et al.* 1971<sup>o</sup>; Grey 1956; Marshall & Iwamoto 1973.

*Malacocephalus laevis* (Lowe, 1843) rato redondo  
armed grenadier

**Clofnam number:** 99.10.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Collins 1954; Marshall & Iwamoto 1973; Ehrich 1977; INIP 1985a<sup>o</sup>,b<sup>o</sup>; Cohen *et al.* 1990; Dias *et al.* 1990<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992.

**Remarks:** Albuquerque (1954-1956) mentions the occurrence of the species in the Azores based on Fowler (1936) but Fowler does not mention this species for the region.

*Nematonurus armatus* (Hector, 1875) peixe rato, rato  
armed grenadier

**Clofnam number:** 99.15.1.

**Synonyms, misspellings, misidentifications:** *Coryphaenoides armatus* by Fowler 1936, Cohen *et al.* 1990; *C. gigas* by Brian 1912; *Nematonurus gigas* by Roule 1916, 1919, Vaillant 1919, Marshall & Iwamoto 1973.

**References for the Azores:** Brian 1912<sup>o</sup>; Roule 1916<sup>o</sup>, 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Fowler 1936; Nybelin 1951<sup>o</sup>, 1957<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Grey 1956; Geistdoerfer *et al.* 1971<sup>o</sup>; Marshall & Iwamoto 1973<sup>o</sup>; Cohen *et al.* 1990.

**Remarks:** Schroeder (1940) mentions the occurrence of the species in the “vicinity of the Azores”, without giving further details.

*Nezumia aequalis* (Günther, 1878) rato redondo  
smooth grenadier

**Clofnam number:** 99.9.1.

**Synonyms, misspellings, misidentifications:** *Macruroplus serratus* by Fowler 1936, Collins 1954; *Macrurus aequalis* by Collett 1896a, Koefoed 1927, Nobre 1935, Marshall & Iwamoto 1973; *M. (Coelorhynchus) aequalis* by Brauer 1906 *M. serratus* by Roule 1919, Vaillant 1919.

**References for the Azores:** Collett 1896a<sup>o</sup>; Brauer 1906; Roule 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Koefoed 1927; Nobre 1935; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Marshall & Iwamoto 1973; Cohen *et al.* 1990; Arruda 1992; Hamer *et al.* 1994<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Menezes 1996<sup>o</sup>.

*Nezumia sclerorhynchus* (Valenciennes, 1838) peixe rato, rato  
rougtip grenadier, bluntsnout  
grenadier

**Clofnam number:** 99.9.2.

**Synonyms, misspellings, misidentifications:** *Macruroplus sclerorhynchus* by Fowler 1936, Collins 1954; *Macrurus sclerorhynchus* by Vaillant 1888, Bauchot *et al.* 1971, Collett 1896a, Roule 1919, Koefoed 1927; *M. (Coelorhynchus) sclerorhynchus* by Brauer 1906.

**References for the Azores:** Vaillant 1888<sup>o</sup>; Collett 1896a<sup>o</sup>; Brauer 1906; Roule 1919<sup>o</sup>; Koefoed 1927; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Grey 1956; Bauchot *et al.* 1971<sup>o</sup>; Marshall & Iwamoto 1973; Cohen *et al.* 1990; Arruda 1992.

*Santos, Porteiro & Barreiros*

*Odontomacrus murrayi* Norman, 1939

peixe rato, rato  
roundhead grenadier

**Clofnam number:** 99.11.1.

**Synonyms, misspellings, misidentifications:** *Phalacromacrus pantherinus* by Collins 1954.

**References for the Azores:** Collins 1954°.

**Remarks:** Marshall & Iwamoto (1973) mention the occurrence of the species off the Azores without giving precise locations. Collins (1954) includes this species in his list referring to G. E. Maul, without stating the date, but this species is not mentioned by Maul (1951) as occurring in the Azores. A specimen collected at 38°32'42"N, 30°06'06"W by the R/V "Oceanus" at 1500m on 1 September, 1984 is deposited in MCZ 62187 (id. K. E. Hartel and J. E. Craddock).

*Sphagemacrus hirundo* (Collett, 1896)

peixe rato, rato  
swallow grenadier

**Clofnam number:** 99.8.1.

**Synonyms, misspellings, misidentifications:** *Grenurus hirundo* by Grey 1956; *Macruroplus hirundo* by Fowler 1936, Collins 1954; *Macrus hirundo* by Collett 1896a, Richard 1900, 1910 Roule 1919, Belloc 1949; *M. (Coelorhynchus) hirundo* by Brauer 1906; *Nezumia hirundo* by Albuquerque 1954-1956.

**References for the Azores:** Collett 1896a°; Richard 1900, 1910; Brauer 1906; Roule 1919°; Fowler 1936; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Grey 1956; Arruda 1992.

*Trachonurus villosus* (Günther, 1877)

peixe rato, rato  
bristly grenadier

**Clofnam number:** 99.7.1.

**Synonyms, misspellings, misidentifications:** *Coryphaenoides asperrimus* by Vaillant 1888; Bauchot *et al.* 1971; *Macrus (Coryphaenoides) asperrimus* by Brauer 1906; *Trachonurus asperrimus* by Roule 1916, 1919, Fowler 1936; *T. sulcatus* by Collins 1954, Albuquerque 1954-1956, *Trachonurus villosus* by Arruda 1992.

**References for the Azores:** Vaillant 1888°; Brauer 1906; Roule 1916°, 1919°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Bauchot *et al.* 1971°; Marshall & Iwamoto 1973; Arruda 1992.

## Moridae

Order 42- Gadiformes. Family 207- Moridae.

*Gadella maraldi* (Risso, 1810)

gadela  
morid cod

**Clofnam number:** 103.3.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Uraleptus Maraldi* by Regan 1903.

**References for the Azores:** Regan 1903°; Aguiar & Pereira 1982°; Cohen *et al.* 1990; Silva & Menezes 1995a°; Menezes 1996°.

*Lepidion eques* (Günther, 1887)

morid cod

**Clofnam number:** 103.6.2. Species not cited for the Azores in FNAM.

## Marine fishes of the Azores

**Synonyms, spellings, misidentifications:** *Lota lepidion* by Richard 1934; *Aloporphyrus lepidion* var. *eques* by Guiart 1935.

**References for the Azores:** Richard 1934°; Guiart 1935°; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** Guiart (1935) in his work on parasitology refers to a *Aloporphyrus lepidion* var. *eques* caught in 1913 at st. 3374 (38°03'N, 26°47'W at 1,650m). The same specimen is called *Lota lepidion* by Richard (1934). No further reference to this specimen was found in other reports of the scientific cruises of Albert I<sup>er</sup> of Monaco. The occurrence of this species was recently confirmed for the Azores based on one specimen (DOP 363) caught during a fisheries cruise by the R/V “Arquipélago”.

*Lepidion guentheri* (Giglioli, 1880)

juliana pequena  
morid cod

**Clofnam number:** 103.6.3.

**Synonyms, misspellings, misidentifications:** *Haloporphyrus Güntheri* by Vaillant 1919.

**References for the Azores:** Vaillant 1919°; Collins 1954; Templeman 1970a°,b°; Stefanescu *et al.* 1991.

*Mora moro* (Risso, 1810)

juliana, melga  
morid cod

**Clofnam number:** 103.7.1.

**References for the Azores:** Roule 1919°; Saldanha 1977°; INIP 1985a°,b°,c°; Cohen *et al.* 1990; Dias 1991°; Gonçalves & Santos 1994°; Krug 1995; Silva *et al.* 1994°, 1995°; Silva & Menezes 1995a,b°; Menezes 1996°; Saldanha & Biscoito in press b°.

*Physiculus dalwigki* Kaup, 1858

morid cod

**Clofnam number:** 103.8.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Aguiar & Pereira 1982°.

### Melanonidae

Order 42- Gadiformes. Family 208- Melanonidae.

*Melanonus zugmayeri* Norman, 1930

**Clofnam number:** 104.1.1.

**Synonyms, misspellings, misidentifications:** *Melanonus unipennis* by Koefoed 1953.

**References for the Azores:** Koefoed 1953°.

**Remarks:** A specimen (135mm TL) was caught, on 21 June, 1995, by Lisa Steiner, floating at the surface at 38°19'N, 28°12'W (DOP 363).

### Phycidae

Order 42- Gadiformes. Family 212- Phycidae.

*Gaidropsarus granti* (Regan, 1903)

viúva do alto  
Grant's rockling

**Clofnam number:** 101.20.2.

*Santos, Porteiro & Barreiros*

**Synonyms, misspellings, misidentifications:** *Gaidropsarus guttatus* by Collett 1905; *G. tricirratus* by Fowler 1936; *Motella tricirrata* by Vaillant 1919; *Onus Granti* by Regan 1903.

**References for the Azores:** Regan 1903°; Collett 1905°; Vaillant 1919°; Fowler 1936; Dooley *et al.* 1985; Svetovidov 1986°; Cohen *et al.* 1990.

**Remarks:** Vaillant's (1919) record of *Motella tricirrata* caught at 599m was considered by Arruda (1992) as a probable synonym of *Gaidropsarus vulgaris* (Cloquet, 1824) (Clofnam: 101.20.4), a valid species which does not occur in the Azores. From the depth at which the specimen was caught, it is probably a *Gaidropsarus granti*. The citation of *G. tricirratus* made by Fowler (1936, p. 483), which is based on Vaillant (1919) should be considered a "probable" synonym of *G. granti*. However, the citation by Fowler (1936, p. 1251), based on Zugmayer (1933) and personal observation of the author, should be considered a synonym of *G. guttatus*.

***Gaidropsarus guttatus*** (Collett, 1890)

viúva, aranha da pedra

**Clofnam number:** 101 20.3.

**Synonyms, misspellings, misidentifications:** *Gaidropsarus maculatus* by Collins 1954, Fowler 1936; *G. tricirratus* by Fowler 1936, Albuquerque 1954-1956; *G. mediterraneus* by Albuquerque 1954-1956, Arruda 1992; *Merluccius merluccius* by Fowler 1936; *Motella fusca* by Nobre 1924, 1930; *M. macullata* by Hilgendorf 1888b; *M. tricirrata* by Hilgendorf 1888b, Zugmayer 1933; *Onus guttatus* by Collett 1890a, 1892, 1896a, Belloc 1949.

**References for the Azores:** Hilgendorf 1888b°; Collett 1890a°, 1892°, 1896°, 1905°; Nobre 1924°, 1930; Zugmayer 1933°; Fowler 1936°; Belloc 1949°; Maul 1952; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Arruda 1979°, 1980b°, 1992; Dooley *et al.* 1985; Cohen *et al.* 1990; Patzner *et al.* 1990°, 1992°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°; Santos *et al.* 1994a°; Wirtz 1994°; Azevedo 1995; Gonçalves *et al.* 1995°.

**Remarks:** *Motella macullata*, cited for the Azores by Hilgendorf, should be considered an early synonym of *Gaidropsarus mediterraneus* (Linnaeus, 1758) (Clofnam: 101.20.1.). At the time of Hilgendorf's citation of *M. macullata*, *G. guttatus* was not yet described. If *M. macullata* by Hilgendorf (1888b) is to be considered an early as a synonym of *G. guttatus*, then *G. maculatus* by Fowler (1936) and Collins (1954) are also to be considered synonyms of *G. guttatus*. Arruda (1992) considers *M. macullata* by Hilgendorf (1888b) as a synonym (with a question mark) of *G. mediterraneus*. *Merluccius merluccius* by Fowler (1936) based on *Onus guttatus* by Collett (1890a) should also be considered a synonym of *G. guttatus*. The citation of *G. tricirratus* by Fowler (1936) is based on two specimens from Terceira and one from Faial. Albuquerque 1954-1956 cites *G. guttatus*, *G. mediterraneus* and *G. tricirratus* for the Azores, all three should be considered synonyms of *G. guttatus*, including *G. tricirratus* since it is based on Fowler's (1936: 1251) specimens.

***Gaidropsarus*** n. sp. Saldanha & Biscoito, in press a

**Clofnam number:** 101 20.-. New species (not included in FNAM).

**References for the Azores:** Saldanha & Biscoito in press a°,b°.

***Phycis blennoides*** (Brünnich, 1768)

abrótea do alto, melga, juliana  
greater fork-beard

## Marine fishes of the Azores

**Clofnam number:** 101.15.2. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Phycis blennioides* by Silva 1986a.

**References for the Azores:** Dias *et al.* 1976°; INIP 1985a°; Martins 1982b; Silva 1986a°; Dias 1991°; DOP 1993°; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°, 1995°; Krug 1995; Isidro 1996; Menezes 1996°.

**Remarks:** Drouët (1861b), and Ramos (1869) based upon him, cites *Gadus* sp. for the Azores. He says (p. 136) based on information from the fishermen that "Il existe probablement aux Açores plusieurs espèces de ce genre ou de genres voisins; l'une d'elles est connue sous le nom de "juliana". On fait une grande consommation de morue sèche ("bacalhao" des Açoréens)". "Juliana" is the common Azorean name for the Phycidae, *Phycis blennioides* and for the Moridae, *Mora moro*. The latter species was not commonly caught in the Azores due to its depth distribution. For this reason *M. moro* should be excluded as the species referred by Drouët (1861b). Both *P. blennioides* and *P. phycis* are consumed either fresh or dry-salted ("escaladas"). Since both *Phycis* are so similar it is hard to understand why Drouët identified one of them as a *Gadus* and the other as a *Motella*.

***Phycis phycis*** (Linnaeus, 1766)

abrótea

fork-beard

**Clofnam number:** 101.15.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Motella tricirrata* by Hilgendorf 1888b, Vaillant 1919; *M. vulgaris* by Drouët 1861b; Ramos 1869; *Phycis mediterranea* by Nobre 1924, 1930; *P. mediterraneus* Hilgendorf 1888b, Regan 1903, Sampaio 1904, Ribeiro 1936, Cadenat 1937; *Phycis phycis* by Dias *et al.* 1976, Barreiros 1990, Santos *et al.* 1990b.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Sampaio 1904°; Vaillant 1919°; Nobre 1924°, 1930; Ribeiro 1936; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Wood 1974°; Dias *et al.* 1976°, 1990°; Maul 1976; Ehrich 1977; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°; Muzavor & Westhaus 1981; Martins 1982a°; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Silva 1986a°,b, 1992, 1995°; Isidro 1987, 1989°, 1996; Cohen *et al.* 1990; Barreiros 1990°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Dias 1991°; Dias & Cascalho 1991; Monteiro 1991°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°; Silva & Krug 1992°; DOP 1993°; Santos *et al.* 1994b, 1995c; Azevedo 1995; Krug 1995; Silva *et al.* 1994°, 1995°; Silva & Menezes 1995a°,b°; Menezes 1996°.

**Remarks:** *Motella vulgaris* by Drouët (1861b): "L'une des meilleures espèces de ces parages est ce gade appelé "abrotea"; il est fort recherché sur les tables" (p. 136). "Abrótea" is the common name of *Phycis phycis*, which is highly appreciated as food fish in the region.

### Gadidae

Order 42- Gadiformes. Family 214- Gadidae.

***Gadiculus argenteus argenteus*** Guichenot, 1850

silvery pout

**Clofnam number:** 101.5.1.1. Species not cited for the Azores in F NAM.

**References for the Azores:** ICN 1993.

**Remarks:** Known from one specimen (172mm TL) caught on Princesa Alice Bank, on 21 August, 1991 at 360m (DOP 353; DOP CD 2/1;).

*Santos, Porteiro & Barreiros*

*Micromesistius poutassou* (Risso, 1826)

verdinho  
blue whiting

**Clofnam number:** 101.8.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** One specimen caught at Ponta dos Capelinhos, Faial Island at 450m by F/V “Sérgio Fábio” on 9 December, 1992 (DOP 16; DOP CD 2/2-3). This species is occasionally caught in the region on bottom long-line.

*Molva macrophthalma* (Rafinesque, 1810)

pescada dos Açores  
blue ling

**Clofnam number:** 101.14.-. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Molva dipterygia macrophthalma* by Dias *et al.* 1990; INIP 1985a,b; Silva *et al.* 1994, 1995; Clarke *et al.* 1995; Krug 1995; Silva & Menezes 1995a,b; Menezes 1996; *M. molva* by Dias 1991.

**References for the Azores:** Dias *et al.* 1976°, 1990°; INIP 1985a°,b°; Dias 1991°; Silva *et al.* 1994°, 1995°; Clarke *et al.* 1995°; Krug 1995; Silva & Menezes 1995a°,b°; Menezes 1996°.

**Remarks:** This species is included in FNAM as *Molva dipterygia macrophthalma* (Rafinesque, 1810) (Clofnam: 101.14.2.2.). *Merluccius merluccius* (Linnaeus, 1758) (Clofnam: 100.1.1) (Merlucciidae) is cited for the Azores by Collins (1954) based on the original citation of Sampaio (1904) of *Gadus merluccius*. We believe that this citation was based on a misidentification of *M. macrophthalma*.

## Order LOPHIIFORMES

### Lophiidae

Order 44- Lophiiformes. Family 216- Lophiidae.

*Lophius piscatorius* Linnaeus, 1758

peixe engana, peixe diabo, tamboril  
angler, anglerfish, monkfish

**Clofnam number:** 210.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Lophius vaillanti* by Regan 1903.

**References for the Azores:** Hilgendorf 1888b°; Vaillant 1888°; Silva 1893°; Carqueja 1894°; Goode & Bean 1895; Regan 1903°; Tåning 1923; Ferreira 1940°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Haedrich 1964°; Martins 1982b; Arruda 1992; Krug 1995; Silva *et al.* 1995°.

### Antennariidae

Order 44- Lophiiformes. Family 217- Antennariidae.

*Antennarius nummifer* (Cuvier, 1816)

coin-bearing frogfish

**Clofnam number:** 211.2.3.

**References for the Azores:** Pietsch & Grobecker 1987°.

**Remarks:** Pietsch & Grobecker (1987) examined a specimen of *Antennarius nummifer* originated from the Azores and deposited in the MMF (5254). They state that the specimen was identified by Maul (1959) as *Antennarius bermudensis*. Maul (1959) refers to four specimens of frogfishes, “collected within the last 30 years” “on different, widely separated dates” and adds “The identification of...” three

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of them "...presents some difficulty but they are likely to turn out to be *Antennarius bermudensis*". Maul (1959) does not refer to the specimen originating in the Azores. The occurrence of this species for the Azores was questioned in ICN (1993).

### *Antennarius senegalensis* Cadenat, 1959

Senegalese frogfish

**Clofnam number:** 211.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Azevedo & Heemstra 1995°.

### *Histrio histrio* (Linnaeus, 1758)

frogfish, sargassumfish

**Clofnam number:** 211.1.1.

**Synonyms, misspellings, misidentifications:** *Antennarius histrio* by Collett 1896a, Ferreira 1940.

**References for the Azores:** Collett 1896a°; Ferreira 1940; Pietsch & Grobecker 1987°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

## Chaunacidae

Order 44- Lophiiformes. Family 219- Chaunacidae.

### *Chaunax pictus* Lowe, 1846

**Clofnam number:** 212.1.1.

**References for the Azores:** Azevedo & Heemstra 1995°.

### *Chaunax suttkusi* Caruso, 1989

**Clofnam number:** 212.1.-. Species not included in FNAM.

**Synonyms, misspellings, misidentifications:** *Chaunax pictus* by Roule 1919; Fowler 1936; Ferreira 1940; Collins 1954; Albuquerque 1954-1956, Ehrich 1977.

**References for the Azores:** Roule 1919°; Fowler 1936; Ferreira 1940; Collins 1954; Albuquerque 1954-1956; Ehrich 1977; Caruso 1989°; Azevedo & Heemstra 1995.

**Remarks:** *Chaunax pictus* was the name historically applied to specimens from the Azores since Roule (1919). The recent revision of the family by Caruso (1989), where the new species *C. suttkusi* was created, aroused the suspicion that Roule's specimen (MOM 910541, year 1902, st. 1338) could belong to the new species. We have examined Roule's specimen and concluded that it probably belongs to *C. suttkusi*. However, as the distinctive characters of the species are mostly based on pigmentation, which may have changed since 1902 further review is necessary. Fowler (1936), Ferreira (1940), Collins (1954), Albuquerque (1954-1956) and Ehrich (1977) are all based in Roule (1919). Saldanha & Biscoito (in press b°) video-recorded a specimen of *Chaunax*, which could not be assigned to a species.

## Caulophryidae

Order 44- Lophiiformes. Family 221- Caulophryidae.

### *Caulophryne jordani* Goode & Bean, 1896

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**Clofnam number:** 213.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Ceratocaulophryne Regani* by Roule & Angel 1932, 1933, Fowler 1936, Ferreira 1940, Belloc 1949; Albuquerque 1954-1956.

**References for the Azores:** Roule & Angel 1932°, 1933°; Fowler 1936; Ferreira 1940; Belloc 1949°; Albuquerque 1954-1956; Pietsch 1979.

**Remarks:** Bertelsen (1951, 1986a) mentions the occurrence of *C. jordani* in Madeira. However, the meristics given for the specimen seems to correspond to *Ceratocaulophryne regani* (caught at 38°55'N, 34°07'30''W) cited by Roule & Angel (1933). If this is true, Bertelsen (1951, and then Bertelsen 1986a) mistook the locality referred to by Roule & Angel (1933). The specimen studied by Roule & Angel (1932, 1933) was caught at the Azores, and not "off Madeira" as stated by Bertelsen (1951, 1986a). Bertelsen (1986a) also mentions the occurrence of "A single female with parasitic male from north-east of the Azores." (p. 1375) of the species *Caulophryne polynema* Regan, 1930 (Clofnam: 213.1.2). Neither the source nor the coordinates are given. The occurrence of this species for the Azores was questioned in ICN (1993).

### **Melanocetidae**

Order 44- Lophiiformes. Family 223- Melanocetidae.

#### *Melanocetus johnsoni* Günther, 1864

**Clofnam number:** 214.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Regan 1926°; Bertelsen 1951°.

### **Himantolophidae**

Order 44- Lophiiformes. Family 224- Himantolophidae.

#### *Himantolophus groenlandicus* Reinhardt, 1837

**Clofnam number:** 215.1.1.

**References for the Azores:** Clarke 1956°; Bertelsen 1986b°.

**Remarks:** Clarke (1956) identified three specimens found in the stomach of two sperm whales caught, 10miles west of Capelinhos light house, Faial Island, in 1954. Two of the specimens were partially digested while the other was almost intact. Bertelsen (1986b) indicates on a map an individual of *Himantolophus groenlandicus* for the Azores. No further details are given. Bertelsen & Krefft (1988) refer a specimen (ISH 3247/79, 35mm, caught at 35°20'N, 30°16'W) of a metamorphosed male of the *Himantolophus brevisrostris* group. The occurrence of this species for the Azores was questioned in ICN (1993).

### **Oneirodidae**

Order 44- Lophiiformes. Family 226- Oneirodidae.

#### *Chaenophryne draco* Beebe 1932

**Clofnam number:** 217a.2.2.

**Synonyms, misspellings, misidentifications:** *Chaenophryne melanodactylus* by Regan & Trewavas 1932, Nielsen 1974.

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**References for the Azores:** Regan & Trewavas 1932°; Bertelsen 1951°; Nielsen 1974; Pietsch 1975.

### *Chaenophryne longiceps* Regan, 1925

**Clofnam number:** 217a.2.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Regan 1925°, 1926°; Fowler 1936; Collins 1954.

### *Dolopichthys jubatus* Regan & Trewavas, 1932

**Clofnam number:** 217a.4.3.

**Synonyms, misspellings, misidentifications:** *Dolopichthys megacerus* by Regan 1926, Fowler 1936, Collins 1954.

**References for the Azores:** Regan 1925°, 1926°; Regan & Trewavas 1932; Fowler 1936; Collins 1954; Pietsch 1972a°,b°.

## **Ceratiidae**

Order 44- Lophiiformes. Family 229- Ceratiidae.

### *Cryptopsaras couesi* Gill, 1883

triplewart seadevil

**Clofnam number:** 218.2.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Bertelsen 1951°; Grey 1956; Pietsch 1986; Du Buit *et al.* 1989.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

## **Linophrynidae**

Order 44- Lophiiformes. Family 231- Linophrynidae.

### *Lynophryne brevibarbata* Beebe, 1932

**Clofnam number:** 220.1.2. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Aceratias indicus* by Fowler 1936; *A. macrorhinus indicus* by Murray & Hjort 1912, Koefoed 1944; *Lynophryne arborifera* by Grey 1956.

**References for the Azores:** Murray & Hjort 1912°; Koefoed 1944°; Fowler 1936.

## **Order MUGILIFORMES**

## **Mugilidae**

Order 45- Mugiliformes. Family 232- Mugilidae.

### *Chelon labrosus* (Risso, 1826)

muja, mugem, tainha  
thick-lipped grey mullet

**Clofnam number:** 181.2.1.

**Synonyms, misspellings, misidentifications:** *Chelon (Crenimugil) labrosus* by Wood & Williams 1974; *Liza aurata* by Dooley *et al.* 1985, Barreiros 1990, Nash *et al.* 1990, Patzner 1990, Ré 1990; *Mugil auratus* by Fowler 1936, Collins 1954, Albuquerque 1954-1956; *M. capito* by Koefoed 1952; *M. cephalus* by Cadenat 1937; *M. chelo* by Drouët 1861b, Ramos 1869; Hilgendorf 1888a,b, Sampaio 1904,

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Lampe 1914, Nobre 1924, 1930, Ferreira 1934, Ribeiro 1936; *M. labeo* by Drouët 1861b, Hilgendorf 1888b, Fowler 1936, Collins 1954, Albuquerque 1954-1956; *M. provensalis* by Fowler 1936, Collins 1954, Albuquerque 1954-1956; *M. sp.* by Vaillant 1919, Harmelin & Harmelin-Vivien 1979, Ré 1979a, Martins 1982b.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Collett 1897; Hilgendorf 1888a,b; Sampaio 1904°; Lampe 1914; Vaillant 1919°; Roule & Angel 1920°, 1930; Nobre 1924°, 1930; Ferreira 1934°; Fowler 1936°; Ribeiro 1936; Cadenat 1937°; Koefoed 1952°; Collins 1954; Albuquerque 1954-1956; Trewavas & Ingham 1972°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Martins 1982b; Dooley *et al.* 1985; Barreiros 1990°, 1995°; Nash *et al.* 1990°, 1994a°; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Azevedo *et al.* 1991°, 1995°; Arruda *et al.* 1992°; Patzner & Santos 1993°; Santos 1992a; Wirtz 1994°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Santos *et al.* 1994a°; Azevedo 1995; Gonçalves *et al.* 1995°; Pinho *et al.* 1995; Santos & Nash 1995°.

**Remarks:** Trewavas (1979) examined specimens identified by Fowler (1936) as *Mugil labeo* (= *Oedalechilus labeo* (Cuvier, 1829); Clofnam: 181.4.1.) and confirmed that they were *Chelon labrosus*. Trewavas (1979) also confirmed that the citation of *M. auratus* (= *Liza aurata* (Risso, 1810), Clofnam: 131.3.2.) by Fowler (1936) was based on a misidentification. All Mugilidae that we have examined in the Azores are *C. labrosus* and it is highly probable that this is the only species occurring in the Archipelago. Arruda (1979, 1980b) cites *Lisa saliens* (Risso, 1810) (Clofnam: 181.3.4.) and for the above reasons it is also probably a misidentification of *C. labrosus*. Drouët (1861b) notes that “tainha” is reserved for the young stages and “mugem” for the adults but presently the fishermen call the adults “tainha” and “mugem” is applied for juveniles. The same information is given by Ferreira (1934), who also adds that, when young, they may be found in fresh water streams.

## Order **ATHERINIFORMES**

### **Atherinidae**

Order 46- Atheriniformes. Family 236- Atherinidae.

*Atherina (Hepsetia) presbyter* Cuvier, 1829

sand-smelt

**Clofnam number:** 183.1.3. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Atherina* sp. by Wood & Williams 1974; *A. presbyter* by Wirtz 1994.

**References for the Azores:** Wood & Williams 1974°; Wirtz 1994°; Gonçalves *et al.* 1995°.

## Order **BELONIFORMES**

### **Belonidae**

Order 47- Beloniformes. Family 242- Belonidae.

*Belone belone gracilis* (Lowe, 1839)

peixe agulha  
garfish

**Clofnam number:** 90.1.1.3.

**Synonyms, misspellings, misidentifications:** *B. belone* by Collett 1890b, Roule & Angel 1920 (larva), Fowler 1936, Collins 1954, Albuquerque 1954-1956, Ré 1979a, Martins 1982a,b, Chicharo & Teodósio

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1990, Wirtz 1990b, 1994, Santos & Nash 1995; *B. belone acus* Svetovidov 1955; *B. Cornidii* by Regan 1903; *B. vulgaris* by Hilgendorf 1888b, *Esox belone* by Sampaio, 1904, Ribeiro 1936; *Ramphistoma belone* (larva) by Roule & Angel 1930.

**References for the Azores:** Hilgendorf 1888b°; Collett 1890b°; Regan 1903°; Sampaio 1904°; Roule & Angel 1920°, 1930°; Fowler 1936; Ribeiro 1936; Collins 1954; Svetovidov 1955; Albuquerque 1954-1956; Collette & Parin 1970°; Wood & Williams 1974°; Ré 1979a°; Martins 1982a°,b; Chícharo & Teodósio 1990°; Wirtz 1990b°, 1994°; Arruda 1992; Nash *et al.* 1994a°; Santos *et al.* 1994a°; Pinho *et al.* 1995°; Santos & Nash 1995°.

**Remarks:** Hilgendorf (1888b: 211) cites a second species of Belonidae: *Belone caudimaculata* whose synonymy is not obvious. Fowler (1936: 1245, under *Strongylura acus* [= *Tylosurus acus*]) refers to this citation stating: "The reference to *Belone bimaculata* Hilgendorf I am unable to accept as a record for West Africa, as it is likely based on material with wrong locality or erroneously determined". Collett (1896a) cites *Belone* sp.. based on 5 specimens caught at st. 121 (Ponta Delgada, S. Miguel Island) and at st. 231 (channel Pico- São Jorge). The larger was an 84mm TL post-larva and all were impossible to identify to a species level.

***Platybelone argalus*** (Le Sueur, 1821)

peixe agulha  
keeltail needlefish

**Clofnam number:** 90.2.1.

**Synonyms, misspellings, misidentifications:** *Belone ardeola ardeola* by Norman 1935; *B. argalus* by Fowler 1919, 1936, Collins 1954; *B. trachura* by Fowler 1919.

**References for the Azores:** Fowler 1919°, 1936°; Norman 1935; Collins 1954; Collette & Parin 1970°.

**Remarks:** According to Collette & Parin (1970) "the magnitude of the differences among populations at groups of islands in the eastern Atlantic compared with the relative lack of variation found from Mauritius and Tanganyika to Hawaii requires the recognition of several subspecies in the Atlantic." These authors "provisionally apply the name *argalus* to the western Atlantic population, the name *lovii* Günther, 1866 to the Cape Verde population, and the name *trachura* Valenciennes, 1846 to the Ascension- St. Helena population. Recognizing three subspecies in the Atlantic makes necessary the description of a new sub-species for the Annobón- Fernando Pó population, which is the most different meristically and morphometrically". Collette & Parin (1970) "have examined only five specimens from the Azores and so refrain from applying a subspecific name to this population." (*op. cit.* p. 30). They observe that "the Azores population has high numbers of vertebrae, dorsal and anal fin rays, and predorsal scales thus most closely resembling *P. a. trachura*, especially from St. Helena. The Azores population is completely separated from *P. a. lovii* in the Cape Verdes in number of vertebrae and predorsal scales, at least based on the small sample available". The authors conclude that "more material is needed to assess correctly the systematic status of this population" (*op. cit.* p. 37).

### Scomberesocidae

Order 47- Beloniformes. Family 243- Scomberesocidae.

***Nanycthyus simulans*** Hubbs & Wisner, 1980

**Clofnam number:** 91.1.2.

**Synonyms, misspellings, misidentifications:** *Scombresox saurus* by Murray & Hjort 1912; *Scomberesox* sp. by Ueyanagi *et al.* 1972.

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**References for the Azores:** Murray & Hjort 1912°; Ueyanagi *et al.* 1972; Hubbs & Wisner 1980; John 1983.

*Scomberesox saurus saurus* (Walbaum, 1792) agulhão, ratinho do alto  
skipper, saury, saury-pike, Atlantic  
saury

**Clofnam number:** 91.1.1.

**Synonyms, misspellings, misidentifications:** *Scomberesox saurus* by Murray & Hjort 1912, Vaillant 1919, Belloc 1938, Parin 1970, Wheeler 1978, Monteiro 1996; *S. Rondeleti* by Zugmayer 1933.

**References for the Azores:** Murray & Hjort 1912°; Roule 1919°; Vaillant 1919°; Zugmayer 1933°; Fowler 1936; Belloc 1938°; Collins 1954; Albuquerque 1954-1956; Parin 1970; Wheeler 1978; Hubbs & Wisner 1980°; Monteiro 1996°;

### Exocoetidae

Order 47- Beloniformes. Family 244- Exocoetidae.

*Cheilopogon exsiliens* (Linnaeus, 1771) peixe voador  
flying fish

**Clofnam number:** 92.2.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Cypsilurus exsiliens* Koefoed 1953.

**References for the Azores:** Koefoed 1953°.

*Cheilopogon pinnatibarbus pinnatibarbus* (Bennett, 1831) peixe voador  
flying fish

**Clofnam number:** 92.2.1.

**Synonyms, misspellings, misidentifications:** *Cheilopogon pinnatibarbus* by Arruda 1992, *Cypselurus lineatus* by Bruun 1934, 1935, Nobre 1924, 1935, Koefoed 1953, Collins 1954; *C. pinnatibarbus* by Fowler 1936, *Cypsilurus lineatus* Albuquerque 1954-1956; *Exocetus lineatus* by Nobre 1930, *Exocoetus lineatus* by Hilgendorf 1888b; *E. pinnatibarbus* by Roule & Angel 1921, 1923.

**References for the Azores:** Hilgendorf 1888b°; Roule & Angel 1921°, 1923°; Nobre 1924°, 1930, 1935; Bruun 1934°, 1935°; Fowler 1936; Collins 1954; Koefoed 1953°; Albuquerque 1954-1956; Arruda 1992.

*Exocoetus obtusirostris* Günther, 1866 peixe voador  
flying fish

**Clofnam number:** 92.1.2.

**References for the Azores:** Koefoed 1953°.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Exocoetus volitans* Linnaeus, 1758 peixe voador  
flying fish, tropical two-wing  
flyingfish

**Clofnam number:** 92.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Exocetus volitans* by Sampaio 1904; *Exocoetus evolans* by Zugmayer 1911b; *Halocypselus evolans* by Vaillant 1919.

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**References for the Azores:** Sampaio 1904<sup>o</sup>; Zugmayer 1911b<sup>o</sup>; Vaillant 1919<sup>o</sup>; Fowler 1936; Collins 1954.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

### Order STEPHANOBERYCIFORMES

#### Melamphaidae

Order 49- Stephanoberyciformes. Family 254- Melamphaidae.

*Melamphaes simus* Ebeling, 1962

ridgehead

**Clofnam number:** 117.1.4.

**References for the Azores:** Ebeling 1962<sup>o</sup>; Ebeling & Weed 1973<sup>o</sup>.

*Melamphaes suborbitalis* (Gill, 1884)

ridgehead

**Clofnam number:** 117.1.5.

**References for the Azores:** Roule & Angel 1933<sup>o</sup>; Ebeling 1962<sup>o</sup>; Ebeling & Weed 1973<sup>o</sup>.

*Melamphaes typhlops* (Lowe, 1843)

ridgehead

**Clofnam number:** 117.1.1.

**References for the Azores:** Zugmayer 1911b<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Ebeling 1962<sup>o</sup>; Ebeling & Weed 1973<sup>o</sup>.

*Poromitra capito* Goode & Bean, 1883

ridgehead

**Clofnam number:** 117.3.1.

**Synonyms, misspellings, misidentifications:** *Melamphaes triceratops* by Roule & Angel 1933, Belloc 1949, Fowler 1936, Albuquerque 1954-1956.

**References for the Azores:** Roule & Angel 1933<sup>o</sup>; Belloc 1949<sup>o</sup>; Fowler 1936; Albuquerque 1954-1956; Geistdoerfer *et al.* 1971<sup>o</sup>; Ebeling & Weed 1973<sup>o</sup>.

*Poromitra crassiceps* (Günther, 1878)

ridgehead

**Clofnam number:** 117.3.2.

**Synonyms, misspellings, misidentifications:** *Melamphaes cristiceps* by Koefoed 1953; *M. nigriceps* by Fowler 1936; *M. nigrofulvus* by Koefoed 1953; *Poromitrella nigriceps* by Zugmayer 1911a,b, Belloc 1949.

**References for the Azores:** Zugmayer 1911a<sup>o</sup>,b<sup>o</sup>; Fowler 1936; Belloc 1949<sup>o</sup>; Koefoed 1953<sup>o</sup>; Ebeling & Weed 1973.

*Poromitra megalops* (Lütken, 1877)

ridgehead

**Clofnam number:** 117.3.3.

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**Synonyms, misspellings, misidentifications:** *Melamphaes megalops* by Lütken 1877, Brauer 1906, Roule & Angel 1930, Fowler 1936, Belloc 1938, Koefoed 1953, Nielsen 1974; *Plectromus megalops* by Goode & Bean 1895.

**References for the Azores:** Lütken 1877°; Goode & Bean 1895°; Brauer 1906; Roule & Angel 1930°; Fowler 1936; Belloc 1938; Koefoed 1953°; Ebeling & Weed 1973; Nielsen 1974.

### *Scopeloberyx opisthopterus* (Parr, 1933)

ridgehead

**Clofnam number:** 117.4.3.

**References for the Azores:** Geistdoerfer *et al.* 1971°.

### *Scopeloberyx robustus* (Günther, 1887)

ridgehead

**Clofnam number:** 117.4.1.

**Synonyms, misspellings, misidentifications:** *Melamphaes nigrescens* by Koefoed 1953, Grey 1956; *M. opercularis* by Roule 1919; *M. robustus* by Fowler 1936, Albuquerque 1954-1956.

**References for the Azores:** Roule 1919°; Fowler 1936; Koefoed 1953°; Albuquerque 1954-1956; Grey 1956.

### *Scopelogadus beanii* (Günther, 1887)

ridgehead

**Clofnam number:** 117.2.1.

**Synonyms, misspellings, misidentifications:** *Melamphaes mizolepis* by Borodin 1931.

**References for the Azores:** Borodin 1931°; Ebeling & Weed 1963°.

### *Scopelogadus mizolepis mizolepis* (Günther, 1878)

**Clofnam number:** 117.2.-. Species not included in FNAME.

**References for the Azores:** Porteiro *et al.* in prep.°.

## Stephanoberycidae

Order 49- Stephanoberyciformes. Family 256- Stephanoberycidae.

### *Acanthochaenus lutkeni* Gill, 1884

pricklefish

**Clofnam number:** 118.1.1.

**References for the Azores:** Geistdoerfer *et al.* 1971°.

## Rondeletiidae

Order 49- Stephanoberyciformes. Family 258- Rondeletiidae.

### *Rondeletia loricata* Abe & Hotta, 1963

redmouth whalefish

**Clofnam number:** 67b.1.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Paxton 1973°.

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**Remarks:** Paxton's record (1973) is based on a single specimen caught at 37°47'N, 31°41'W at 800m, by R/V "Atlantis" on the 4-5 August, 1931 (MCZ 41341).

### Order BERYCIFORMES

#### Anoplogastridae

Order 50- Beryciformes. Family 263- Anoplogastridae.

##### *Anoplogaster cornuta* (Valenciennes, 1833)

fangtooth

**Clofnam number:** 119.1.1.

**Synonyms, misspellings, misidentifications:** *Caulolepis longidens* by Borodin 1931, Zugmayer 1933.

**References for the Azores:** Borodin 1931°; Zugmayer 1933°; Woods & Sonoda 1973.

#### Diretmidae

Order 50- Beryciformes. Family 264- Diretmidae.

##### *Diretmus argenteus* Johnson, 1863

spinyfin

**Clofnam number:** 113.1.1.

**References for the Azores:** Roule 1919°; Zugmayer 1933°; Fowler 1936; Koefoed 1953°; Albuquerque 1954-1956; Woods & Sonoda 1973; Post & Quéro 1981; Hamer *et al.* 1994°; Clarke *et al.* 1995°.

#### Trachichthyidae

Order 50- Beryciformes. Family 267- Trachichthyidae.

##### *Hoplostethus atlanticus* Collett, 1889

olho-de-vidro, relógio  
orange roughy, slimehead

**Clofnam number:** 115.2.2.

**Synonyms, misspellings, misidentifications:** *Hoplostethus atlanticum* by Collett 1896a, Richard 1900, 1910, Brauer 1906, Belloc 1949; *Leiogaster atlanticus spinulosus* by Roule 1916, Roule 1919, Belloc 1949.

**References for the Azores:** Collett 1889c°, 1896a°; Goode & Bean 1895; Richard 1900, 1910; Brauer 1906; Roule 1916°, 1919°; Fowler 1936; Belloc 1949°; Collins 1954; Albuquerque 1954-1956; Woods & Sonoda 1973; Arruda 1992.

**Remarks:** The only know specimen from the Azores is the holotype, which is deposited in the *Musée Océanographique du Monaco*. This specimen was studied by the authors, for taxonomic determination and illustrative purposes. The species is probably abundant around deep seamounts, but is elusive to hooks and never caught. This species is questioned in ICN (1993).

##### *Hoplostethus mediterraneus* Cuvier, 1829

olho-de-vidro, relógio  
rough-fish, slimehead

**Clofnam number:** 115.2.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Hoplostethus mediterraneum* by Brauer 1906, Koefoed 1927.

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**References for the Azores:** Hilgendorf 1888b°; Vaillant 1888°; Regan 1903°; Cligny 1905; Brauer 1906; Koefoed 1927; Le Gall 1932; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Woods & Sonoda 1973; Wheeler 1978; INIP 1985a°; Dias & Monteiro 1986°; Dias 1991°; Arruda 1992; Santos *et al.* 1994b.

### Berycidae

Order 50- Beryciformes. Family 268- Berycidae.

*Beryx decadactylus* Cuvier, 1829

imperador, (alfonsim)  
alfonsino, beryx, red bream

**Clofnam number:** 112.1.1.

**Synonyms, misspellings, misidentifications:** *Berix decadactylus* by Sampaio 1904.

**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Sampaio 1904°; Vaillant 1919°; Mohr 1927; Ramalho 1929b; Fowler 1936°; Bougis 1945; Collins 1954; Albuquerque 1954-1956; Woods & Sonoda 1973; Wheeler 1978; Busakhin 1982; Martins 1982b; INIP 1985b°; Dias *et al.* 1990°; Dias 1991°; Monteiro 1991°; Arruda 1992; Silva & Krug 1992°; Krug 1995; Silva *et al.* 1994°, 1995°; Clarke *et al.* 1995°; Silva 1995°; Silva & Menezes 1995a°,b°; Isidro 1996°; Menezes 1996°.

**Remarks:** Steindachner (1868a) mentions that this species most probably occur in the Azores region: "...hauptsächlich zwischen den canarischen Inseln, Madeira und den Azoren...".

*Beryx splendens* Lowe, 1834

alfonsim  
alfonsino, Lowe's beryx

**Clofnam number:** 112.1.2.

**References for the Azores:** Hilgendorf 1888b°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Woods 1957; Woods & Sonoda 1973; Wheeler 1978; INIP 1985a°; Busakhin 1982°; Dias & Monteiro 1986°; Dias *et al.* 1990°; Dias 1991°; Monteiro 1991°; Arruda 1992; Silva 1992, 1995°; Silva *et al.* 1994°, 1995°; Clarke *et al.* 1995°; Krug 1995; Silva & Menezes 1995a°,b°; Isidro 1996°; Menezes 1996°; Saldanha & Biscoito in press b°.

## Order ZEIFORMES

### Zeidae

Order 51- Zeiformes. Family 272- Zeidae.

*Zenopsis conchifer* (Lowe, 1852)

peixe galo, galo branco  
sailfin dory, buckler dory

**Clofnam number:** 120.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°; Azevedo & Heemstra 1995°; Krug 1995; Silva & Menezes 1995a°.

**Remarks:** This species was not officially recorded for the Azores before 1993 despite its occasional occurrence in fish auctions (DOP CD 2/49-50).

*Zeus faber* Linnaeus, 1758

peixe galo  
dory, John dory

**Clofnam number:** 120.1.1.

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**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Regan 1903°; Sampaio 1904°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Maul 1976; Martins 1982b; INIP 1985c°; Dias & Monteiro 1986°; Dias 1991°; Arruda 1992; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°, 1995°; Wirtz 1994°; Azevedo 1995; Krug 1995; Silva & Menezes 1995b°; Menezes 1996°.

### Oreosomatidae

Order 51- Zeiformes. Family 273- Oreosomatidae.

*Neocyttus helgae* (Holt & Byrne, 1908)

false boarfish

**Clofnam number:** 122.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Saldanha & Biscoito in press b°.

### Caproidae

Order 51- Zeiformes. Family 275- Caproidae.

*Antigonia capros* Lowe, 1843

deep-bodied boarfish

**Clofnam number:** 123.2.1.

**References for the Azores:** Roule 1919°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Ehrich 1977; Quéro & Duron 1980; Dooley *et al.* 1985.

*Capros aper* (Linnaeus, 1758)

peixe pau, pimpim  
boarfish

**Clofnam number:** 123.1.1.

**References for the Azores:** Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Murray & Hjort 1912°; Richard 1900; Zugmayer 1911b°; Vaillant 1919°; Roule & Angel 1923; Fowler 1936; Koefoed 1952°; Collins 1954; Albuquerque 1954-1956; Maul 1976; Ehrich 1977; Martins 1982a°; INIP 1985a°,c°; Pereira 1987b°, 1992d, 1995°; Dias *et al.* 1990°; Dias 1991°; Monteiro 1991°, 1996°; Arruda 1992; Arruda *et al.* 1992°; Hamer *et al.* 1994°; Nash *et al.* 1994a°; Pierce *et al.* 1994°; Wirtz 1994°; Azevedo 1995; Clarke & Martins 1995°; Clarke *et al.* 1995°; Granadeiro *et al.* 1995°; Pinho *et al.* 1995°; Santos & Nash 1995°; Silva *et al.* 1995°; Menezes 1996°; Monteiro *et al.* 1996a°, b°.

## Order GASTEROSTEIFORMES

### Syngnathidae

Order 52- Gasterosteiformes. Family 281- Syngnathidae.

*Entelurus aequoreus* (Linnaeus, 1758)

snake pipefish

**Clofnam number:** 97.3.1.

**Synonyms, misspellings, misidentifications:** *Entulurus aequoreus* by Collins 1954, Albuquerque 1954-1956; *E. aequoraesus* by Santos *et al.* 1994b; *Nerophis aequoreus* by Günther 1870, Collett 1896a, Murray & Hjort 1912, Koefoed 1953.

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**References for the Azores:** Günther 1870°; Collett 1896a°; Murray & Hjort 1912°; Duncker 1915; Vaillant 1919°; Künne 1929; Fowler 1936; Poll 1947; Koefoed 1953°; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Bauchot & Pras 1980; Arruda 1992; Santos *et al.* 1994b, 1995c.

**Remarks:** The occurrence of this species for the Azores was questioned in ICN (1993).

*Hippocampus hippocampus* (Linnaeus, 1758)                      cavalo marinho  
short-snouted seahorse

**Clofnam number:** 97.4.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Hippocampus brevirostris*; by Drouët 1861, Hilgendorf 1888b.

**References for the Azores:** Drouët 1861b°; Hilgendorf 1888b; Collins 1954; Arruda 1992; Santos *et al.* 1994b, 1995c.

**Remarks:** *H. brevirostris* reported for the Azores by Hilgendorf (1888b) and Collins (1954) based on the original citation by Drouët (1861b) who, having lost the specimens, could not confirm their identification. He writes: "*Je pense bien que c'est cette espèce*" [*i.e. H. brevirostris*] "*que j'ai vue à San-Miguel, chez M. Ernesto do Canto, et qui provenait des côtes de cette île. J' en avais rapporté quelques spécimens qui ont été égarés. On la retrouve aux Canaries, à Madère et aux Bermudes*". A specimen (120mm TL) was caught in Faial Island (DOP 123).

*Hippocampus ramulosus* Leach, 1814                              cavalo marinho  
seahorse

**Clofnam number:** 97.4.2.

**Synonyms, misspellings, misidentifications:** *Hippocampus guttulatus guttulatus* by Regan 1903, Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888a°; Regan 1903°; Nobre 1924°, 1930°; Collins 1954; Albuquerque 1954-1956; Ré 1979a°; Patzner *et al.* 1990°, 1992°; Azevedo *et al.* 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos *et al.* 1994b, 1995c; Wirtz 1994°; Azevedo 1995.

*Nerophis maculatus* Rafinesque, 1810

**Clofnam number:** 97.2.1. Species cited in F NAM with a question mark.

**Synonyms, misspellings, misidentifications:** *Nerophis papacinus* by Hilgendorf 1888b.

**References for the Azores:** Hilgendorf 1888b°; Fowler 1936; Collins 1954.

**Remarks:** According to Fowler (1936) and Collins 1954 *Nerophis papacinus* of Hilgendorf (1888b) is a synonym of *Nerophis maculatus*. The occurrence of this species for the Azores was questioned in ICN (1993).

*Syngnathus acus* Linnaeus, 1758                                      chicote  
greater pipefish

**Clofnam number:** 97.1.1.

**Synonyms, misspellings, misidentifications:** *Syngnathus rubescens* by Hilgendorf 1888b, *S. pellegrini* by Collins 1954.

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**References for the Azores:** Hilgendorf 1888b°; Silva 1893°; Fowler 1936; Collins 1954°; Albuquerque 1954-1956; Wood & Williams 1974°; Dooley *et al.* 1985; Arruda 1992; Santos *et al.* 1994a°; Wirtz 1994°; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°.

**Remarks:** Hilgendorf (1888b) cites both *Syngnathus acus* and its synonym *S. rubescens*. The citation of *S. pellegrini* by Collins (1954) is original and is based on a personal communication from J. Agostinho. *S. pellegrini* was originally described by Fowler (1919) from the coast of Gabon based upon mislabelled specimens of *S. fuscus* from the western Atlantic coast. *S. pellegrini* was said to be related to *S. acus* by Fowler (1936).

### Macroramphosidae

Order 52- Gasterosteiformes. Family 285- Macroramphosidae.

*Macroramphosus scolopax* (Linnaeus, 1758) trombeteiro  
spine trumpet fish, longspine  
snipefish

**Clofnam number:** 96.1.1. (and 96.1.2.).

**Synonyms, misspellings, misidentifications:** *Centriscus scolopax* by Hilgendorf 1888b, Zugmayer 1911b, *C. gracilis* by Lütken 1880, Hilgendorf 1888b, Vaillant 1919; *Macroramphosus gracilis* by Fowler 1936; Mohr 1937, Albuquerque 1954-1956; Collins 1954, Dias *et al.* 1976, 1990, INIP 1985b,c.

**References for the Azores:** Lütken 1880°; Hilgendorf 1888b°; Zugmayer 1911b; Vaillant 1919°; Fowler 1936°; Mohr 1937°; Collins 1954; Albuquerque 1954-1956; Mapstone & Wood 1974°, 1975°; Dias *et al.* 1976°, 1990°; Maul 1976; Ehrich 1977; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°; INIP 1985a°,b°; Dias 1991°; Arruda 1992; Pierce *et al.* 1994°; Wirtz 1994°; Azevedo 1995; Gonçalves *et al.* 1995°; Granadeiro *et al.* 1995°; Pinho *et al.* 1995°; Steiner 1995°; Monteiro 1996°; Monteiro *et al.* 1996a°,b°.

**Remarks:** Fowler (1936), Albuquerque (1954-1956) and Dias *et al.* (1976) considered *Macroramphosus gracilis* and *M. scolopax* as valid species.

## Order SCORPAENIFORMES

### Dactylopteridae

Order 54- Scorpaeniformes. Family 290- Dactylopteridae.

*Dactylopterus volitans* (Linnaeus, 1758) flying gurnard

**Clofnam number:** 193.1.1.

**References for the Azores:** ICN 1993.

**Remarks:** One specimen (230mm SL) collected by speargun on the 21 August, 1995 at Velas, São Jorge Island (DOP 354). Previous to that, individuals were seen, but not collected, while scuba-diving.

### Scorpaenidae

Order 54- Scorpaeniformes. Family 291- Scorpaenidae.

*Helicolenus dactylopterus dactylopterus* (Delaroche, 1809) boca-negra  
blue-mouth, blackbelly rosefish

**Clofnam number:** 184.2.1. Species not cited for the Azores in FNAM.

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**Synonyms, misspellings, misidentifications:** *Helicolenus dactylopterus* by Vaillant 1919, Roule & Angel 1923; Fowler 1936, Albuquerque 1954-1956, Dias *et al.* 1976, Wheeler 1978, Martins 1982b, Silva 1986a,b, 1992, 1995 Isidro 1987, 1989, Dias & Cascalho 1991, Monteiro 1991, Monteiro *et al.* 1991, Silva & Krug 1992, Krug 1995, Santos *et al.* 1994b, Silva *et al.* 1994, 1995, Silva & Menezes 1995a,b, Menezes 1996; *H. madurensis* by Collins 1954, Pérès 1992; *Scorpaena dactyloptera* by Brauer 1906; *S. imperialis* by Sampaio 1904, Ribeiro 1936; *Sebastes dactylopterus* by Collett 1896a, Vaillant 1888, Regan 1903, Nobre 1924, 1930, 1935.

**References for the Azores:** Vaillant 1888°, 1919°; Sampaio 1904°; Collett 1896a°; Regan 1903°; Roule 1919°; Roule & Angel 1923°; Nobre 1924°, 1930, 1935; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Eschmeyer 1969; Dias *et al.* 1976°, 1990°; Ehrich 1977; Wheeler 1978; Martins 1982b; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Silva 1986a°,b, 1992, 1995°; Isidro 1987, 1989°, 1996°; Dias 1991°; Dias & Cascalho 1991; Monteiro 1991°; Monteiro *et al.* 1991°; Arruda 1992; Pérès 1992; Silva & Krug 1992°; DOP 1993°; Krug 1995; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°, 1995°; Silva & Menezes 1995a°,b°; Menezes 1996°.

**Remarks:** *Scorpaena imperialis* is cited by Sampaio (1904) with the common name “boca negra”. Collins (1954) also cites “boca negra” as *Helicolenus madurensis* and he synonymises *S. imperialis* of Sampaio (1904) and *S. madurensis* of Vaillant (1919) with *H. madurensis*, primarily based on Fowler (1936). “Boca negra” is, without any doubt, the common name strictly used in the Azores for *H. d. dactylopterus*. The records of Fowler (1936) and Vaillant (1919), included under *Helicolenus madurensis* by Collins (1954), refer to *Scorpaena maderensis*.

### *Pontinus kuhlii* (Bowdich, 1825)

bagre, cantarilho, cântaro

**Clofnam number:** 184.3.1.

**Synonyms, misspellings, misidentifications:** *Pontinus kuhli* by Ehrich 1977, Silva 1995; *Sebastes Kuhlii* by Regan 1903.

**References for the Azores:** Regan 1903°; Norman 1935; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Eschmeyer 1969°; Dias *et al.* 1976°, 1990°; Maul 1976; Ehrich 1977; Martins 1982b; Dooley *et al.* 1985; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Dias 1991°; Monteiro 1991°; Monteiro *et al.* 1991°; Silva & Krug 1992°; Krug 1995; Silva *et al.* 1994°, 1995°; Silva 1995°; Silva & Menezes 1995a°,b°; Isidro 1996°; Menezes 1996°.

### *Scorpaena azorica* Eschmeyer, 1969

**Clofnam number:** 184.1.2.

**References for the Azores:** Eschmeyer 1969°; Santos *et al.* 1994b, 1995c.

**Remarks:** The existence of *Scorpaena azorica* was based on one specimen caught in the Azores (see Eschmeyer 1969). Recently Golani (1996) recorded the species for the Mediterranean. We believe that the taxonomic status of this species needs reappraisal.

### *Scorpaena laevis* Troschel, 1866

**Clofnam number:** 184.1.4.

**Synonyms, misspellings, misidentifications:** *Scorpaena plumieri* by Fowler 1936, Collins 1954.

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**References for the Azores:** Fowler 1936<sup>o</sup>; Collins 1954; Eschmeyer 1969<sup>o</sup>.

*Scorpaena maderensis* Valenciennes, 1833                      coça, rascaço  
Madeira rockfish

**Clofnam number:** 184.1.6.

**Synonyms, misspellings, misidentifications:** *Helicolenus madurensis* by Norman 1935, Fowler 1936; *Scorpaena* sp.. by Saldanha 1980, 1995; *Sebastes maderensis* by Collett 1896a, 1897; *S. madurensis* by Vaillant 1919.

**References for the Azores:** Collett 1896a<sup>o</sup>, 1897<sup>o</sup>; Sampaio 1904; Brauer 1906; Vaillant 1919<sup>o</sup>; Norman 1935; Fowler 1936; Albuquerque 1954-1956; Eschmeyer 1969<sup>o</sup>; Wood & Williams 1974<sup>o</sup>; Mapstone & Wood 1974<sup>o</sup>, 1975<sup>o</sup>; Saldanha 1977, 1980<sup>o</sup>, 1995<sup>o</sup>; Dooley *et al.* 1985; Patzner 1990<sup>o</sup>; Patzner & Santos 1990d<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Ré 1990<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; Azevedo 1995<sup>o</sup>; Gonçalves *et al.* 1995<sup>o</sup>.

**Remarks:** See *Helicolenus dactylopterus dactylopterus*.

*Scorpaena notata* Rafinesque, 1810                      coça, rascaço  
rockfish

**Clofnam number:** 184.1.7.

**Synonyms, misspellings, misidentifications:** *Scorpaena ustulata* by Collett 1896a, Vaillant 1919; Norman 1935.

**References for the Azores:** Collett 1896a<sup>o</sup>; Vaillant 1919<sup>o</sup>; Norman 1935; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Eschmeyer 1969; Maul 1976; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Dooley *et al.* 1985; INIP 1985a<sup>o</sup>,b<sup>o</sup>; Patzner 1990<sup>o</sup>; Patzner & Santos 1990e<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; Azevedo 1995<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Menezes 1996<sup>o</sup>.

*Scorpaena porcus* Linnaeus, 1758                      coça, rascaço  
black scorpion-fish

**Clofnam number:** 184.1.1.

**References for the Azores:** Roule 1919<sup>o</sup>; Fowler 1936; Collins 1954; Dooley *et al.* 1985; Wirtz 1994<sup>o</sup>.

**Remarks:** Eschmeyer (1969) refers to Roule (1919) and Collins (1954) but does not mention the Azores in the paragraph concerning the distribution of this species. He simply states that the species "occurs in the Mediterranean and adjacent parts of the Atlantic in shallow water". Sampaio (1904) alleges that *Scorpaena porcus* can be found among boulders and tide pools. Based on known behaviour of local Scorpaenidae he can only be referring to *Scorpaena maderensis*. The vernacular name of "peixe porco" used by Sampaio, does not apply to any Azorean scorpionfish.

*Scorpaena scrofa* Linnaeus, 1758                      rocaz  
red scorpion-fish

**Clofnam number:** 184.1.8.

**Synonyms, misspellings, misidentifications:** *Scorpaena scrophia* by Sampaio 1904, Ribeiro 1936; *S. scrofa obesa* by Goode & Bean 1895.

**References for the Azores:** Günther 1860<sup>o</sup>; Drouët 1861b<sup>o</sup>; Goode & Bean 1895; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Roule & Angel 1921<sup>o</sup>; Sampaio 1904<sup>o</sup>; Nobre 1924<sup>o</sup>, 1930; Duncker 1934; Fowler

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1936°; Ribeiro 1936; Collins 1954; Eschmeyer 1969; Wood 1973°; Wood & Williams 1974°; Wood 1974°; Dias *et al.* 1976°; Maul 1976; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Martins 1982b; Dooley *et al.* 1985; INIP 1985b°,c°; Dias & Monteiro 1986°; Azevedo *et al.* 1991°, 1992°; Dias 1991°; Arruda 1992; Krug 1995; Silva *et al.* 1994°, 1995°; Wirtz 1994°; Gonçalves *et al.* 1995°; Silva & Menezes 1995a°,b°; Isidro 1996°; Menezes 1996°.

**Remarks:** Wood (1973) asserts that *Scorpaena scrofa* is “common in all areas” which are, at the most, 30m deep. The species in question is not commonly seen in waters less than 30m deep. We believe this might be a misidentification either for *S. maderensis* or *S. notata*. Drouët (1861b: 131, 222) says the common name of this species is “peixe-cão” but this name is currently used for the wrasse *Pseudolepidaplois scrofa*, a species which Drouët (1861b) does not mention. Ramos (1869) repeats this error. Eschmeyer (1969) refers to Collins (1954) but does not include the Azores in the paragraph concerning the distribution of this species.

### *Scorpaenodes arenai* Torchio, 1962

**Clofnam number:** 184.4.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Azevedo & Heemstra 1995°.

### *Setarches guentheri* Johnson, 1862

deepwater scorpionfish

**Clofnam number:** 184.6.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Setarches guentheri* by Shcherbachev *et al.* 1985.

**References for the Azores:** Saldanha 1977; Shcherbachev *et al.* 1985°.

### *Trachyscorpia cristulata echinata* (Koehler, 1896)

spiny scorpionfish, Atlantic  
thornyhead

**Clofnam number:** 184.7.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993; Saldanha & Biscoito in press b°.

**Remarks:** Several specimens and photographs (DOP CD 2/94) are deposited in the DOP collection and archives. The first records is of one specimen (450mm TL) caught by F/V “Três Rosas” SW of Condor Bank, at a depth of 720m on 27 February, 1992 (DOP 355).

## Triglidae

Order 54- Scorpaeniformes. Family 297- Triglidae.

### *Aspitrigla cuculus* (Linnaeus, 1758)

cabra, cabrinha, ruivo  
red gurnard

**Clofnam number:** 185.2.1.

**Synonyms, misspellings, misidentifications:** *Trigla cuculus* by Hilgendorf 1888b, Fowler 1936, Collins 1954, Dias *et al.* 1976; *Trigla (Aspitrigla) cuculus* by Albuquerque 1954-1956; *Trigla pini* by Regan 1903.

**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°, 1990°; Maul 1976; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Dias 1991°; Arruda 1992; Silva *et al.* 1995°; Menezes 1996°.

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**Remarks:** According to Hilgendorf (1888b) *Trigla cuculus* was registered as *Trigla pini* at the Museu Carlos Machado.

### *Trigloporus lastoviza* (Brünnich, 1768)

streaked gurnard

**Clofnam number:** 185.5.1.

**Synonyms, misspellings, misidentifications:** *Chelidonichthys (Trigloporus) lastoviza* by Richards 1968, Dooley *et al.* 1985; *Trigla lastoviza* by Fowler 1936, Collins 1954; *T. (Trigloporus) lastoviza* by Albuquerque 1954-1956; *T. lineata* by Hilgendorf 1888b.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Richards 1968; Dooley *et al.* 1985; Arruda 1992; Wirtz 1994<sup>o</sup>; Gonçalves *et al.* 1995.

**Remarks:** Gonçalves *et al.* (1995) were uncertain of the identification of their material (= cf. *Trigloporus lastoviza*).

## Order PERCIFORMES

### Acropomatidae

Order 55- Perciformes. Family 319- Acropomatidae.

### *Howella brodiei atlantica* Post & Quéro, 1991

**Clofnam number:** 127.3.1. Species not cited for the Azores in F NAM.

**References for the Azores:** New record.

**Remarks:** *Howella* is considered *incertae sedis* in F NAM and was provisionally included in the Moronidae. The Clofnam number given above is from the 1973 edition, and corresponds to the inclusion of the genus in the family Apogonidae. In the 1978's Clofnam's supplement *Howella brodiei* was considered a synonym of *Howella sherborni* (Norman, 1920) (Clofnam: 124.5a.1.) and was included in the family Serranidae. According to Nelson (1994) the *Howella* should probably be included in its own family Howellidae (based on Roberts 1993) but he still included it in Acropomatidae. Post & Quéro (1991) reviewed *H. brodiei* Ogilby, 1899, and showed the existence of two subspecies: *Howella brodiei atlantica* Post & Quéro, 1991 of the Atlantic Ocean, and *Howella b. brodiei* Ogilby, 1899 from the Indian and Pacific Oceans. The record of this species for the Azores is based on the occurrence of two specimens (DOP 356: 108.6mm TL and an incomplete specimen) collected at Santa Maria Island on 22 June, 1995, in a roseate tern (*Sterna dougalii*) colony (E. Solà and L. Monteiro, pers. com.).

### *Polyprion americanus* (Schneider, 1801)

cherne

wreck-fish, stone bass

**Clofnam number:** 124.7.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Polyprion americanum* by Fowler 1936, Cadenat 1937, Collins 1954, Albuquerque 1954-1956; Dias *et al.* 1976; Muzavor & Westhaus 1981; *P. cernium* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Sampaio 1904<sup>o</sup>; Murray & Hjort 1912<sup>o</sup>; Fowler 1936<sup>o</sup>; Ribeiro 1936; Cadenat 1937<sup>o</sup>; Koefoed 1952<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Wood 1974<sup>o</sup>; Dias *et al.* 1976<sup>o</sup>, 1990<sup>o</sup>; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; INIP 1985a<sup>o</sup>, b<sup>o</sup>, c<sup>o</sup>; Silva 1986a<sup>o</sup>, b, 1992; Dias 1991<sup>o</sup>; Arruda 1992; Silva & Krug 1992<sup>o</sup>; Santos *et*

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*al.* 1994b, 1995c; Silva *et al.* 1994<sup>a</sup>, 1995<sup>o</sup>; Krug 1995; Pinho & Pereira 1995b<sup>o</sup>; Sedberry 1995<sup>o</sup>; Silva & Menezes 1995a<sup>o</sup>,b<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>; Sedberry *et al.* 1996<sup>o</sup>.

**Remarks:** According to Nelson (1994), *Polyprion* should probably be included in the family Polyprionidae (based on Roberts 1993).

### Serranidae

Order 55- Perciformes. Family 320- Serranidae.

*Anthias anthias* (Linnaeus, 1758)

canário do mar, folião, periquito  
swallowtail sea perch

**Clofnam number:** 124.2.1.

**Synonyms, misspellings, misidentifications:** *Anthias sacer* by Hilgendorf 1888b, Nobre 1924, 1930; *Serranus anthias* by Drouët 1861b, Sampaio 1904.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Hilgendorf 1888b<sup>o</sup>; Sampaio 1904; Nobre 1924<sup>o</sup>, 1930; Fowler 1936<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976<sup>o</sup>; Ehrich 1977; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>; Saldanha 1980<sup>o</sup>, 1995<sup>o</sup>; Martins 1982a<sup>o</sup>; Dooley *et al.* 1985; Dias & Monteiro 1986<sup>o</sup>; Barreiros 1990<sup>o</sup>, 1995<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1992<sup>o</sup>, 1994<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; Azevedo 1995; Silva & Menezes 1995a<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Menezes 1996<sup>o</sup>.

*Epinephelus marginatus* (Lowe, 1834)

mero  
dusky perch, dusky grouper

**Clofnam number:** 124.5.4. Species designation not included in FNAM where it appears cited for the Azores as *Epinephelus guaza* (Linnaeus, 1758), which was found to be *nomen dubium* (Heemstra 1991).

**Synonyms, misspellings, misidentifications:** *Epinephelus guaza* by Dias 1991, *E. guaza* by Tortonese 1954, Wood 1973, Wood & Williams 1974, Wood 1974, Dias *et al.* 1976, Wheeler 1978, Harmelin & Harmelin-Vivien 1979, Ré 1979a, 1990, Saldanha 1980, 1992, Martins 1982b, Bruslé 1985, Dooley *et al.* 1985, INIP 1985c, Skaramuka *et al.* 1989, Patzner 1990, Patzner & Santos 1990c, Patzner *et al.* 1990, Santos *et al.* 1990a, Wirtz 1990b, Martins & Santos 1991, Arruda 1992, Santos 1992a,b, Silva *et al.* 1995, Isidro 1996, Menezes 1996; *Serranus gigas* by Hilgendorf 1888b, Sampaio 1904, Ribeiro 1936; *S. guaza* by Fowler 1936, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888b; Harmelin & Harmelin-Vivien Sampaio 1904<sup>o</sup>; Fowler 1936<sup>o</sup>; Ribeiro 1936; Collins 1954; Tortonese 1954; Albuquerque 1954-1956; Wood 1973<sup>o</sup>; Wood & Williams 1974<sup>o</sup>; Wood 1974<sup>o</sup>; Dias *et al.* 1976<sup>o</sup>; Wheeler 1978; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Saldanha 1980<sup>o</sup>, 1992<sup>o</sup>; Martins 1982b; Bruslé 1985; Dooley *et al.* 1985; INIP 1985c<sup>o</sup>; Skaramuka *et al.* 1989; Patzner 1990<sup>o</sup>; Patzner & Santos 1990c<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990a, 1994a<sup>o</sup>,b, 1995c; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>, 1995<sup>o</sup>; Dias 1991<sup>o</sup>; Heemstra 1991; Martins & Santos 1991; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Azevedo 1992<sup>o</sup>; Santos 1992a<sup>o</sup>,b; DOP 1993<sup>o</sup>; Heemstra & Randall 1993<sup>o</sup>; Gonçalves 1993; Azevedo 1995; Barreiros 1995<sup>o</sup>; Gonçalves *et al.* 1995<sup>o</sup>; Silva *et al.* 1995<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>.

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### *Mycteroperca fusca* (Lowe, 1836)

badejo  
comb grouper

**Clofnam number:** 124.6.-. This species was not included in FNAM being mistaken with either *Mycteroperca rubra* (Bloch, 1793) (Clofnam: 124.6.1) or with *Epinephelus alexandrinus* (Valenciennes, 1828) (Clofnam: 124.5.2.). Neither one of the two species was cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Epinephelus alexandrinus* by Wood 1973, Wood & Williams 1974, Wood 1974, Harmelin & Harmelin-Vivien 1979, Ré 1979a, 1990, Saldanha 1980, Wirtz 1990b, Martins & Santos 1991, Patzner *et al.* 1990, Santos 1992b; *Mycteroperca rubra* by Martins 1982b.

**References for the Azores:** Wood 1973°; Wood & Williams 1974°; Wood 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°, 1995°; Martins 1982b; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°; Heemstra 1991; Martins & Santos 1991; Arruda *et al.* 1992°; Santos 1992b; Heemstra & Randall 1993°; Santos *et al.* 1994b, 1995c; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°.

**Remarks:** Heemstra (1991) recognized *Mycteroperca fusca* (= *Serranus fuscus* Lowe, 1836) as an endemic species of the Macaronesian Islands. According to Heemstra (1991) the current valid name for “*Epinephelus alexandrinus*” is *Epinephelus costae* (Steindachner, 1878) which does not occur in the Azores.

### *Serranus atricauda* Günther, 1874

garoupa  
blacktail comber

**Clofnam number:** 124.1.2.

**Synonyms, misspellings, misidentifications:** *Paracentropristis atricauda* by Fowler 1936, Collins 1954; *P. scriba* by Collins 1954; *Serranellus atricauda* by Fowler 1919, Albuquerque 1954-1956; *Serranelus scriba* by Albuquerque 1954-1956; *Serranus (Pseudoserranus) atricauda* by Hilgendorf 1888b; *S. cabrilla* by Silva 1986a,b, *S. scriba* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b.

**References for the Azores:** Drouët 1861b°; Günther 1874°; Boulenger 1895°; Collett 1896a°; Ramos 1869; Hilgendorf 1888a,b; Regan 1903°; Vaillant 1919°; Fowler 1919°, 1936°; Collins 1954; Albuquerque 1954-1956; Bauchot & Blanc 1961; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Wood 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; INIP 1985c°; Dias & Monteiro 1986°; Silva 1986a°,b; Dias *et al.* 1990°; Barreiros 1990°, 1995°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1992°, 1994°; Azevedo *et al.* 1991°, 1992°; Dias 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; DOP 1993°; Gonçalves 1993; Silva *et al.* 1994°, 1995°; Azevedo 1995; Gonçalves *et al.* 1995°; Krug 1995; Silva & Menezes 1995a°,b°; Menezes 1996°.

**Remarks:** The report of *Serranus cabrilla* by Silva (1986a,b) is certainly a misidentification of *Serranus atricauda* (“garoupa”), the species of *Serranus* most commonly caught in the Azores. The quantities described by Silva (1986a,b) are very unlikely to be *S. cabrilla*, a species known by local fishermen as “garoupa-do-alto”. *Serranus scriba* (Linnaeus, 1758) (Clofnam: 124.1.4) originally reported for the Azores by Drouët (1861b) Based on this record, the species was subsequently referred by Ramos (1869), Hilgendorf (1888b), Collins (1954), Arruda (1992) and Wirtz (1994)e. We have never found *S. scriba* in the Azores. Drouët (1861b), whose mention of *S. scriba* was before to the description of *S. atricauda* by Günther (1874), says that the species “*Habite les côtes de San-Miguel, où il est connu des pêcheurs sous le nom de garoupa*”. Drouët’s specimens were, most probably, *S. atricauda*, the only “garoupa” traditionally exploited by Azorean fishermen. Günther (1874), in the paper where he describes *S.*

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*atricauda*, notes: "I find that the specimen from Mogador is identical with others in the British Museum from the Azores, Madeira and the Canary Islands (Tenerife) which I have hitherto confounded with *S. cabrilla*". *S. scribe* was questioned in ICN (1993).

***Serranus cabrilla*** (Linnaeus, 1785)

garoupa do alto  
comber

**Clofnam number:** 124.1.1.

**Synonyms, misspellings, misidentifications:** *Paracentropristis cabrilla* by Fowler 1936, Collins 1954; *Serranellus cabrilla* by Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Nobre 1924°, 1930; Fowler 1936°; Ribeiro 1936; Collins 1954; Tortonese 1954; Albuquerque 1954-1956; Wheeler 1978; INIP 1985b°; Chicharo & Teodósio 1990°; Dias 1991°; Arruda 1992; Wirtz 1992°; Silva & Menezes 1995a°,b°; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** Sampaio (1904) and Ribeiro (1936) incorrectly states that *S. cabrilla* is the most common species of this genus. *S. atricauda* is caught more often in coastal areas (see *S. atricauda*).

### **Callanthiidae**

Order 55- Perciformes. Family 322- Callanthiidae.

***Callanthias ruber*** (Rafinesque, 1810)

parrot sea perch

**Clofnam number:** 124.3.1.

**References for the Azores:** Maul 1976; Shcherbachev *et al.* 1985.

**Remarks:** Maul's record from the Azores (1976) is of a specimen of uncertain origin and the Shcherbachev *et al.* (1985) is based on Maul. One specimen (150mm FL) was caught on 15 September, 1994 by F/V "Três Rosas" (DOP 367). The occurrence of this species for the Azores was questioned in ICN (1993).

### **Priacanthidae**

Order 55- Perciformes. Family 332- Priacanthidae.

***Cookeolus japonicus*** (Cuvier, 1829)

bulleye

**Clofnam number:** 126.-.-. Genus not included in FNAM.

**References for the Azores:** Azevedo & Heemstra 1995°.

***Priacanthus arenatus*** Cuvier, 1829

Atlantic big-eye, bigeye

**Clofnam number:** 126.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993; Wirtz 1994°.

**Remarks:** Many specimens and photographs (DOP CD 3/38-40) are deposited in the DOP. The first documented specimen (227mm TL) was caught by J. Matos on hook and line at Horta harbour, Faial Island on 9 September, 1987 (DOP 89).

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### Apogonidae

Order 55- Perciformes. Family 333- Apogonidae.

*Apogon (Apogon) imberbis* (Linnaeus, 1758) folião  
cardinal fish

**Clofnam number:** 127.1.1.

**Synonyms, misspellings, misidentifications:** *Amia imberbe* by Fowler 1936, Collins 1954.

**References for the Azores:** Guimarães 1884°; Hilgendorf 1888b°; Vaillant 1919°; Nobre 1924°, 1930; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Wood & Williams 1974°; Wood 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Dooley *et al.* 1985; Barreiros 1990°, 1995°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Azevedo 1995; Gonçalves *et al.* 1995°.

### Epigonidae

Order 55- Perciformes. Family 334- Epigonidae.

*Epigonus telescopus* (Risso, 1810) escamuda, escuro, jordão, preto  
bull's-eye

**Clofnam number:** 127.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Koefoed 1952°; Collins 1954; Santos *et al.* 1995c; Silva *et al.* 1995°; Menezes 1996°; Saldanha & Biscoito in press b°.

### Pomatomidae

Order 55- Perciformes. Family 339- Pomatomidae.

*Pomatomus saltator* (Linnaeus, 1766) anchova, enchova  
bluefish

**Clofnam number:** 129.1.1.

**Synonyms, misspellings, misidentifications:** *Pomatomus saltatrix* by Le Gall 1934, Fowler 1936, Collins 1954, Albuquerque 1954-1956, Fowler 1936; *Temnodon saltator* by Hilgendorf 1888b, Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Le Gall 1934; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Martins 1982b; Nash *et al.* 1990°, 1994a°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Arruda 1992; Santos *et al.* 1994a°; Azevedo 1995; Santos & Nash 1995°; Isidro 1996.

### Echeneidae

Order 55- Perciformes. Family 341- Echeneidae.

*Echeneis naucrates* Linnaeus, 1758 agarrador, pegador, rémora  
sharksucker

**Clofnam number:** 200.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993.

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**Remarks:** One specimen (DOP 335: 650mm SL) was speared on 2 August, 1993, 8-10m depth, on a sandy bottom at Vila Nova on the North coast of Terceira Island by Helder Ferreira. Also several slides by Peter Wirtz (DOP CD 3/41-43).

*Phtheichthys lineatus* (Menzies, 1791)                      agarrador, pegador, rémora  
slender suckerfish

**Clofnam number:** 200.2.1.

**Synonyms, misspellings, misidentifications:** *Echeneis lineata* by Regan 1903.

**References for the Azores:** Regan 1903°; Albuquerque 1954-1956.

*Remora brachyptera* (Lowe, 1839)                      agarrador, pegador, rémora  
spearfish remora

**Clofnam number:** 200.3.3.

**Synonyms, misspellings, misidentifications:** *Remora (Remoropsis) brachyptera* by Albuquerque 1954-1956.

**References for the Azores:** Regan 1903°; Albuquerque 1954-1956; Arruda 1992.

**Remarks:** The specimen mentioned by Collett (1896a) as *Echeneis brachypterus* was caught slightly outside the Azorean EEZ, at 39°56'10''N, 36°20'15''W.

*Remora osteochir* (Cuvier, 1829)                      agarrador, pegador, rémora  
marlinsucker, sailfishsucker

**Clofnam number:** 200.3.4. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** One specimen (DOP 357: 340mm SL) was caught at Princesa Alice Bank by Les Gallagher on 12 August, 1995.

*Remora remora* (Linnaeus, 1758)                      agarrador, pegador, rémora  
remora, shark-sucker, common  
remora

**Clofnam number:** 200.3.1.

**Synonyms, misspellings, misidentifications:** *Echeneis remora* by Guimarães 1882, Hilgendorf 1888b, Collett 1897, Sampaio 1904; *Remora (Remora) remora* by Albuquerque 1954-1956.

**References for the Azores:** Guimarães 1882°; Hilgendorf 1888b°; Collett 1897; Sampaio 1904°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Wirtz 1990b°, 1994°; Arruda 1992.

*Remorina albescens* (Temminck & Schlegel, 1845)                      agarrador, pegador, rémora  
white suckerfish, mantasucker

**Clofnam number:** 200.4.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Echeneis albescens* by Collett 1987.

**References for the Azores:** Collett 1897°; Arruda 1992.

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### Coryphaenidae

Order 55- Perciformes. Family 343- Coryphaenidae.

*Coryphaena equiselis* Linnaeus, 1758

doirado, dourado  
pompano dolphin fish

**Clofnam number:** 132.1.2.

**Synonyms, misspellings, misidentifications:** *Coryphaena azorica* by Valenciennes 1833, Drouët 1861b, Ramos 1869, Hilgendorf 1888b, *C. equisetis* by Hilgendorf 1888b, Sampaio 1904, Ribeiro 1936; *Coryphaena pelagica* by Steindachner 1868b.

**References for the Azores:** Valenciennes 1833°; Drouët 1861b°; Steindachner 1868b; Ramos 1869; Hilgendorf 1888b°; Sampaio 1904°; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Arruda 1992.

**Remarks:** Valenciennes (1833) described *Coryphaena azorica* from an Azorean specimen but the species was later recognised as a synonym of *C. equiselis*. Drouët (1861b) and Hilgendorf (1888b) cite both as distinct species. Their reports of *C. azorica* are based on Valenciennes's (1833).

*Coryphaena hippurus* Linnaeus, 1758

doirado, dourado  
common dolphin fish, dolphin

**Clofnam number:** 132.1.1.

**References for the Azores:** Richard 1905b°; Bouvier 1907°; Guiart 1935; Fowler 1936; Collins 1954; Martins 1982b; Pinho & Pereira 1995b.

### Carangidae

Order 55- Perciformes. Family 344- Carangidae.

*Caranx crysos* (Mitchill, 1815)

írio de serra  
blue runner

**Clofnam number:** 131.1.3. Species not cited for the Azores in FNAME.

**References for the Azores:** Wirtz 1990a°,b°, 1991°, 1994°; DOP 1993°.

**Remarks:** Berry (1959) mentions records of *Caranx crysos* from the Azores, but does not give details concerning their status.

*Decapterus macarellus* Cuvier, 1833

mackerel scad

**Clofnam number:** 131.3.1.

**References for the Azores:** ICN 1993; DOP 1993°.

**Remarks:** Mackerel scad are occasionally a bycatch during the capture of *Trachurus picturactus* for live bait by tuna fishing boats.

*Elagatis bipinnulata* (Quoy & Gaimard, 1824)

salemão  
rainbow runner

**Clofnam number:** 131.4.1. Species not cited for the Azores in FNAME.

**References for the Azores:** ICN 1993; DOP 1993°; Azevedo & Heemstra 1995°.

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**Remarks:** The first DOP specimen recorded (photo by H. R. Martins) was caught at the surface on Açores Bank by the F/V “Lajes do Pico” in September 1978 (DOP CD 3/50-51).

*Naucrates ductor* (Linnaeus, 1758)

peixe-piloto, romeiro  
pilot-fish, pilotfish

**Clofnam number:** 131.6.1.

**Synonyms, misspellings, misidentifications:** *Naucleus compressus* by Hilgendorf 1988b.

**References for the Azores:** Hilgendorf 1888b°; Vaillant 1919°; Sampaio 1904°; Nobre 1924°, 1930; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Parin 1970; Wirtz 1990b°; Arruda 1992; DOP 1993°; Pinho & Pereira 1995b°; Saldanha 1995°.

**Remarks:** Hilgendorf (1888b) refers to both *Naucrates ductor* (species 30) and its synonym *Naucleus compressus* (species 30a), as two valid species.

*Pseudocaranx dentex* (Bloch & Schneider in Schneider, 1801)

encharéu, xaréu  
guelly jack

**Clofnam number:** 131.1a.1.

**Synonyms, misspellings, misidentifications:** *Caranx sp.* by Sampaio 1904, Ribeiro 1936; *C. ascensionensis* by Fowler 1936, Collins 1954, Albuquerque 1954-1956; *C. ascensionis* by Dias *et al.* 1976; *C. dentex* by Regan 1903, Vaillant 1919, Berry 1959, Wood & Williams 1974, Harmelin & Harmelin-Vivien 1979, Ré 1979a, Martins 1982b.

**References for the Azores:** Regan 1903°; Sampaio 1904°; Vaillant 1919°; Fowler 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Berry 1959; Wood & Williams 1974°; Dias *et al.* 1976°; Ré 1979a°, 1990°; Martins 1982b; Dooley *et al.* 1985; Barreiros 1990°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994b, 1995c; Wirtz 1990a°,b°, 1991°, 1994°; Arruda *et al.* 1992°; Azevedo *et al.* 1992°; Santos 1992a; DOP 1993°; Gonçalves 1993; Nash *et al.* 1994a°; Azevedo 1995; Gonçalves *et al.* 1995°; Saldanha 1995°; Santos & Nash 1995°; Silva & Menezes 1995a°; Silva *et al.* 1995°; Isidro 1996; Menezes 1996°.

*Seriola dumerili* (Risso, 1810)

írio, lírio  
amberjack, greater amberjack

**Clofnam number:** 131.9.1. Species not included in FNAME.

**Synonyms, misspellings, misidentifications:** *Seriola dumerili dumerili* by Albuquerque 1954-1956, *S. Dumerilii* by Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Fowler 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1991°, 1994°; Arruda 1992; Arruda *et al.* 1992°; DOP 1993°; Saldanha 1995°; Santos *et al.* 1995b.

**Remarks:** Wood & Williams (1974) and Barreiros (1990) mention *Seriola zonata* (Mitchill, 1815) (Clofnam: 131.9.3. but not included in FNAME), which they must have confused with one of the other *Seriola* that occur in the Azores. One cannot say which species from the photograph in Wood & Williams (1974). Wood (1974) and Williams and Wood (1974) also mention the occurrence of the Carangidae, *Lichia amia* (Linnaeus, 1758) (Clofnam: 131.5.1.), which also seems to be a *Seriola*.

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*Seriola rivoliana* Cuvier, 1833

írio, lírio  
almaco jack

**Clofnam number:** 131.9.2.

**Synonyms, misspellings, misidentifications:** *Seriola dumerili* by Saldanha 1980.

**References for the Azores:** Saldanha 1980<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>; DOP 1993<sup>o</sup>; Wirtz 1994<sup>o</sup>; Saldanha 1995<sup>o</sup>; Santos *et al.* 1995c.

**Remarks:** The specimens identified as *Seriola dumerili* in the underwater photograph 109 (and probably also on photo 108) of Saldanha (1980) are in fact *S. rivoliana*.

*Trachinotus ovatus* (Linnaeus, 1758)

cabra, prombeta, plombeta  
derbio, pompano

**Clofnam number:** 131.11.1.

**Synonyms, misspellings, misidentifications:** *Caesiomorus glaucus* by Fowler 1919, 1936, Albuquerque 1954-1956; *Lichia glauca* by Hilgendorf 1888b, Collett 1896a, Sampaio 1904, Zugmayer 1911b, Lampe 1914, Ninni 1934, Cadenat 1937; Collins 1954; *Trachinotus glaucus* by Albuquerque 1954-1956; *T. ovatus* by Wheeler 1978, Isidro 1988, Barreiros 1990, Nash *et al.* 1990, Patzner 1990, Patzner *et al.* 1990, Ré 1990, Wirtz 1990b, Arruda 1992, Azevedo *et al.* 1992; *Trachynotus glaucus* by Regan 1903, Fowler 1936, Ré 1979a.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Collett 1896a<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Zugmayer 1911b<sup>o</sup>; Lampe 1914; Fowler 1919<sup>o</sup>, 1936<sup>o</sup>; Ninni 1934; Cadenat 1937<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974<sup>o</sup>; Wood 1974<sup>o</sup>; Wheeler 1978; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Saldanha 1980<sup>o</sup>; Martins 1982b; Isidro 1988, 1990a<sup>o</sup>,b<sup>o</sup>; Barreiros 1990<sup>o</sup>; Nash *et al.* 1990<sup>o</sup>; Patzner 1990<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994a<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Azevedo *et al.* 1992<sup>o</sup>; Santos 1992a; DOP 1993<sup>o</sup>; Azevedo 1995; Gonçalves *et al.* 1995<sup>o</sup>; Pinho *et al.* 1995<sup>o</sup>; Saldanha 1995<sup>o</sup>; Santos & Nash 1995<sup>o</sup>.

*Trachurus picturatus* (T. E. Bowdich, 1825)

chicharro, chicharro do alto  
blue jack mackerel

**Clofnam number:** 131.10.4.

**Synonyms, misspellings, misidentifications:** *Caranx trachurus* by Ramos 1869, Regan 1903, Sampaio 1904, Murray & Hjort 1912, Ferreira 1932, 1937a; Ribeiro 1936; *Trachurus* by Frade 1960; *Trachurus Cuvieri* by Lütken 1880, Nobre 1924, 1930; *T. trachurus* by Drouët 1861b, Hilgendorf 1888b, Lampe 1914, Clark 1913, Fowler 1936; Collins 1954, Albuquerque 1954-1956, Dias *et al.* 1976, Dias 1991; *T. picturatus picturatus* by Shaboneyev 1973, 1980, Shaboneyev & Riazantseva 1977, Shaboneyev & Kotlyar 1979.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Lütken 1880<sup>o</sup>; Hilgendorf 1888b<sup>o</sup>; Collett 1896a<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Murray & Hjort 1912<sup>o</sup>; Lampe 1914; Clark 1913; Nobre 1924<sup>o</sup>, 1930; Fowler 1919<sup>o</sup>, 1936<sup>o</sup>; Ramalho 1929a; Ferreira 1932<sup>o</sup>, 1937a; Ribeiro 1936; Letaconnoux 1951; Koefoed 1952<sup>o</sup>; Collins 1954; Albuquerque 1954-1956; Frade 1960; Shaboneyev 1973<sup>o</sup>, 1980<sup>o</sup>; Wood & Williams 1974<sup>o</sup>; Wood 1974<sup>o</sup>; Dias *et al.* 1976<sup>o</sup>, 1990<sup>o</sup>; Maul 1976; Ehrich 1977; Shaboneyev & Riazantseva 1977<sup>o</sup>; Martins 1978, 1982a<sup>o</sup>,b<sup>o</sup>, 1992; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>; Shaboneyev & Kotlyar 1979<sup>o</sup>; Muzavor & Westhaus 1981; INIP 1985a<sup>o</sup>,b<sup>o</sup>,c<sup>o</sup>; Shcherbachev *et al.* 1985; Dias & Monteiro 1986<sup>o</sup>; Isidro 1988, 1990a<sup>o</sup>,b<sup>o</sup>; Barreiros 1990<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Pereira 1992d<sup>o</sup>; Silva 1992; DOP 1993<sup>o</sup>; Nash *et al.* 1994a<sup>o</sup>; Pierce *et*

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al. 1994°; Santos *et al.* 1994a°,b, 1995a,c; Wirtz 1994°; Azevedo 1995; Clarke & Martins 1995°; Clarke *et al.* 1995°; Gonçalves *et al.* 1995°; Granadeiro *et al.* 1995°; Pinho & Pereira 1995b°; Pinho *et al.* 1995°; Santos & Nash 1995°; Silva & Menezes 1995a°,b°; Pereira 1995°; Silva *et al.* 1995°; Isidro 1996°; Menezes 1996°; Monteiro 1996°.

**Remarks:** Drouët (1861b), Regan (1903), Sampaio (1904) and Ferreira (1932, 1937a) cite *Caranx trachurus* (= *Trachurus trachurus* [Linnaeus, 1758]). Collins (1954), Dias *et al.* (1976), Dias (1991) and Arruda (1992), with a question mark, also list *T. trachurus*. All are here treated as synonyms/misidentifications of *T. picturatus*. Fowler (1936) and Albuquerque (1954-1956), based on Fowler (1936), report both *T. picturatus* and *T. trachurus*. Fowler's (1936) record of *T. picturatus* is based on specimens collected in Faial while *T. trachurus* is based on two small specimens from Faial and one from Terceira.

### Bramidae

Order 55- Perciformes. Family 347- Bramidae.

*Brama brama* (Bonnaterre, 1788)

chaputa

Ray's bream, Atlantic pomfret

**Clofnam number:** 133.2.1.

**Synonyms, misspellings, misidentifications:** *Brama raii* by Hilgendorf 1888b, Regan 1903, Fowler 1936, Collins 1954, Albuquerque 1954-1956.

**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Mead & Haedrich 1965; Mead 1972; Wheeler 1978; Arruda 1992; Silva *et al.* 1995°; Menezes 1996°.

*Pterycombus brama* Fries, 1837

rough pomfret, silver pomfret,  
Atlantic fanfish

**Clofnam number:** 133.4.1.

**References for the Azores:** New record.

**Remarks:** Two specimens (330-330mm SL) were caught at 38°08'20''N, 29°23'45''W, in 540m, on 25 July, 1994 by F/V "Rei do Atlântico" (DOP 330). The occurrence of this species for the Azores was questioned in ICN (1993).

*Taractes asper* Lowe, 1843

rough pomfret

**Clofnam number:** 133.1.2.

**Remarks:** *T. asper* was reported for the Azores by Hilgendorf (1888b°) and, upon him, by Arruda (1992). Fowler (1936), Collins (1954) and Mead & Maul (1958) considered that record a synonym of *Taractichthys longipinnis* (see below). However, the drawing of *Taractes longipinnis* in Fowler (1936) seems to represent *T. asper*. Mead (1972: 25) also notes that the description of *T. longipinnis* by Fowler (1936) "appears to be of *T. asper*". Mead & Maul (1958) did not see the specimen listed by Hilgendorf (1888b), deposited at the Museum Carlos Machado, since they state that it is "said to be deposited in the Museum zu Ponta Delgada" (p. 409). There is some confusion around these records. This is probably due to the fact that Fowler (1936) did not consider *T. asper* a valid species, and considered Hilgendorf's (1888b) record as a synonym of *T. longipinnis*. Later authors followed Fowler interpretation. Even Mead

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(1972) considers Hilgendorf's (1888b) *T. asper* a synonym of *Taractichthys longipinnis*, but again without direct observation of the original specimen.

A photograph, by Robert Patzner, of a specimen (194mm SL) caught around Faial in 1989 is deposited in DOP archives (DOP CD 3/89). The specimen was not preserved. The occurrence of this species for the Azores was questioned in ICN (1993).

### *Taractes rubescens* (Jordan & Evermann, 1887)

**Clofnam number:** 133.1.1. Species not cited for the Azores in FNAME.

**References for the Azores:** ICN 1993.

**Remarks:** One specimen caught off Faial Island by F/V "Mar da Prata" on 12 September, 1992.

### *Taractichthys longipinnis* (Lowe, 1843)

long-finned bream, bigscale pomfret

**Clofnam number:** 133.3.1.

**References for the Azores:** ICN 1993.

**Remarks:** Several specimens and photographs (DOP CD 3/90-91) are deposited in DOP collections. See also other remarks under *Taractes asper*.

## **Caristiidae**

Order 55- Perciformes. Family 348- Caristiidae.

### *Platyberyx opalescens* Zugmayer, 1911

**Clofnam number:** 114.2.1.

**References for the Azores:** Koefoed 1953°.

**Remarks:** The Azores record is based on the identification of a 63mm specimen caught by the R/V "Michael Sars" at 36°53'N, 29°47'W (station 56).

## **Lobotidae**

Order 55- Perciformes. Family 351- Lobotidae.

### *Lobotes surinamensis* (Bloch, 1790)

lobotes  
tripletail

**Clofnam number:** 134.1.1.

**References for the Azores:** ICN 1993.

**Remarks:** Included in this checklist based on two specimens (DOP 342 and 364). One (380mm TL) was caught by F/V "Príncipe da Horta" on 25 July, 1992, 3miles SW of Varadouro, Faial Island, below a floating buoy by J. H. Neves. The other (445mm TL) was caught on 16 August, 1996 by F/V "Neuzamar", off Faial Island below a floating object by A. Páscoa.

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### Sparidae<sup>2</sup>

Order 55- Perciformes. Family 355- Sparidae.

***Boops boops*** (Linnaeus, 1758)

boga  
bogue

**Clofnam number:** 139.2.1.

**Synonyms, misspellings, misidentifications:** *Box boops* by Collett 1896a, Vaillant 1919, Nobre 1924, 1930; *B. vulgaris* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Regan 1903, Nobre 1930, Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Collett 1896a<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Roule 1919<sup>o</sup>; Vaillant 1919<sup>o</sup>; Nobre 1924<sup>o</sup>, 1930; Fowler 1919<sup>o</sup>, 1936<sup>o</sup>; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974<sup>o</sup>; Wheeler 1978; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Martins 1982a<sup>o</sup>,b; INIP 1985b<sup>o</sup>,c<sup>o</sup>; Dias & Monteiro 1986<sup>o</sup>; Isidro 1988, 1990a<sup>o</sup>,b<sup>o</sup>; Nash *et al.* 1990<sup>o</sup>, 1994a<sup>o</sup>; Patzner & Santos 1990d<sup>o</sup>, 1993<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994a<sup>o</sup>,b, 1995c; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>; Dias 1991<sup>o</sup>; Arruda 1992; Arruda *et al.* 1992<sup>o</sup>; Santos 1992a; DOP 1993<sup>o</sup>; Krug 1995; Silva *et al.* 1994<sup>o</sup>, 1995<sup>o</sup>; Azevedo 1995; Pereira 1995<sup>o</sup>; Barreiros 1995<sup>o</sup>; Gonçalves *et al.* 1995<sup>o</sup>; Pinho *et al.* 1995<sup>o</sup>; Santos & Nash 1995<sup>o</sup>; Silva & Menezes 1995a<sup>o</sup>,b<sup>o</sup>; Isidro 1996; Menezes 1996<sup>o</sup>.

***Diplodus sargus cadenati*** de la Paz, Bauchot & Daget, 1974 sargo

white sea bream

**Clofnam number:** 139.4.3.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Diplodus sargus* by Fowler 1919, 1936, Albuquerque 1954-1956, Wood 1973; Mapstone & Wood 1974, 1975, Wood & Williams 1974, Wood 1974, Dias *et al.* 1976, Harmelin & Harmelin-Vivien 1979, Ré 1979a, 1990, Muzavor & Westhaus 1981, Martins 1982b, Dias & Monteiro 1986, Barreiros 1990, Nash *et al.* 1990, Patzner & Santos 1990d, Patzner *et al.* 1990, Santos *et al.* 1990b, 1994a,b, Wirtz 1990b, Azevedo *et al.* 1991, 1992, Dias 1991, Arruda 1992, DOP 1993, Gonçalves 1993, 1993, Wirtz 1994, Azevedo 1995, Santos & Nash 1995, Silva & Menezes 1995a, Silva *et al.* 1995, Isidro 1996, Menezes 1996; *Diplodus vulgaris* by Fowler 1936, Cadenat 1937, Collins 1954, Albuquerque 1954-1956, Arruda 1992; *Sargus rondeletii* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Regan 1903, Lampe 1914; *S. sargus* by Vaillant 1919; *S. vulgaris* by Hilgendorf 1888b, Sampaio 1904; Nobre 1924, 1930, Ribeiro 1936.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Regan 1903<sup>o</sup>; Sampaio 1904<sup>o</sup>; Lampe 1914; Vaillant 1919<sup>o</sup>; Nobre 1924<sup>o</sup>, 1930; Fowler 1919<sup>o</sup>, 1936<sup>o</sup>; Ribeiro 1936; Cadenat

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<sup>2</sup> *Spondyliosoma cantharus* (Linnaeus, 1758) (Clofnam: 139.10.1.) is also recorded for the Azores by: Hilgendorf (1888b) and Sampaio (1904) as *Cantharus lineatus*, and by Fowler (1936), Collins (1954), Martins (1982b), Wheeler (1978), and Arruda (1992) as *Spondyliosoma cantharus*. All the citations, except that of Sampaio (1904), are based in Hilgendorf (1888b), who refers to the species without giving further information. We were unable to find *Spondyliosoma cantharus* in the Azores despite the effort made. As we could not find the specimen on which Hilgendorf (1888b) based his record, we decided not to include the species. *S. cantharus* is questioned in ICN 1993. Wheeler (1978) and Dooley *et al.* (1985) cite also for the Azores the species *Sparus aurata* Linnaeus, 1758 (Clofnam: 139.1.1.). This species does not occur in the Azores. The reason why these authors cite this species is not clear. It is neither introduced as an original record, nor is it referred for the Azores by the authors mentioned by Dooley *et al.* (1985). Arruda (1992) also cites this species based on Drouët (1861) and Hilgendorf (1888b).

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1937°; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Wood 1974°; de la Paz *et al.* 1974°; de la Paz 1975°; Dias *et al.* 1976°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Muzavor & Westhaus 1981; Martins 1982b; INIP 1985b°; Dias & Monteiro 1986°; Barreiros 1990°, 1995°; Nash *et al.* 1990°, 1994a°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°,b, 1995c; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Dias 1991°; Arruda *et al.* 1992°; Santos 1992a°, 1995b°; DOP 1993°; Gonçalves 1993; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°; Silva & Menezes 1995a°; Silva *et al.* 1995°; Isidro 1996; Menezes 1996°.

**Remarks:** Hilgendorf (1888b) cites both *Sargus rondeletii* and *S. vulgaris* for the Azores. The first record is based on Drouët (1861b). *S. vulgaris* is a common synonym for *Diplodus vulgaris* (E. Geoffrey Saint-Hilaire, 1817) (Clofnam: 139.4.4.) whose occurrence in the Azores is not confirmed in recent times. *Diplodus vulgaris* is also cited by Collins (1954) and Arruda (1992), and by Sampaio (1904) and Nobre (1919) as *Sargus vulgaris*. Fowler (1936) and Albuquerque (1954-1956) cite both *D. sargus* and *D. vulgaris*. Collins (1954) cites *Diplodus trifasciatus*, a common synonym for *D. cervinus* (Lowe, 1841) (Clofnam: 139.4.2.), based on a specimen that he observed at the Museum of Ponta Delgada (not found in the MCM collections). We consider that these citations are probable misidentifications of *D. s. cadenati*. The subject deserves further detailed attention.

### *Pagellus acarne* (Risso, 1826)

besugo  
axillary sea-bream

**Clofnam number:** 139.7.2. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Pagellus owenii* by Regan 1903.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Sampaio 1904°; Roule 1919°; Vaillant 1919°; Nobre 1924°, 1930; Fowler 1919°, 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Harmelin & Harmelin-Vivien 1979°; Muzavor & Westhaus 1981; Martins 1982b; Dooley *et al.* 1985; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Dias *et al.* 1990°; Patzner *et al.* 1990°, 1992°; Dias 1991°; Arruda 1992; Santos 1992a; DOP 1993°; Krug 1995; Nash *et al.* 1994a°; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°, 1995°; Wirtz 1994°; Azevedo 1995; Gonçalves *et al.* 1995°; Pinho *et al.* 1995; Santos & Nash 1995°; Silva & Menezes 1995a,b°; Isidro 1996; Menezes 1996°.

### *Pagellus bogaraveo* (Brünnich, 1768)

carapau, peixão, goraz  
red sea-bream

**Clofnam number:** 139.7.3. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Pagellus centrodontus* by Drouët 1861b, Hilgendorf 1888b, Collett 1896a, Regan 1903, Sampaio 1904, Fowler 1919, 1936, Ribeiro 1936, Cadenat 1937, Collins 1954, Albuquerque 1954-1956; Dias *et al.* 1976.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Sampaio 1904°; Fowler 1919°, 1936°; Ribeiro 1936; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°, 1990°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Saldanha 1980°; Muzavor & Westhaus 1981; Martins 1982b, 1992; Dooley *et al.* 1985; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Krug 1986°, 1989°, 1991°, 1995°; Silva 1986a°,b, 1992, 1995°; Isidro 1987, 1989°, 1996; Isidro 1988, 1990a°,b°; Barreiros 1990°; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Ré 1990°; Santos *et al.* 1990b°, 1994b, 1995c°; Wirtz 1990b°; Dias 1991°; Dias & Cascalho 1991; Monteiro 1991°, 1996°; Arruda 1992; Azevedo *et al.* 1992°; Pereira 1992d°, 1995°; Santos 1992a°; Silva & Krug 1992°.

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1995°; DOP 1993°; Nash *et al.* 1994a°; Silva *et al.* 1994°, 1995°; Azevedo 1995; Clarke *et al.* 1995°; Gonçalves *et al.* 1995°; Pinho *et al.* 1995°; Santos & Nash 1995°; Silva & Menezes 1995a°,b°; Menezes 1996°; Monteiro *et al.* 1996.

**Remarks:** Drouët (1861b), Hilgendorf (1888b), Sampaio (1904), Fowler (1936), Collins (1954) and Albuquerque (1954-1956) cite both *P. bogaraveo* and *P. centrodontus*. Collins (1954) calls the first “carapau” and the second “goraz”. Traditionally, the fishermen and the people of the Azores call *P. bogaraveo* three distinct vernacular names: “carapau” when they are small, “peixão” for fishes of intermediate size and finally “goraz” for the full grown demersal individuals. The three designations apply well to the three distinct ecotopes which the species occupies during its life. Drouët (1861b: 132, 221, 222) and Ramos (1869: 107, 108) swapped the common name of *Pagellus bogaraveo*, which they call “salema”, with that of *Sarpa salpa*, which they call “carapau”.

### *Pagrus pagrus* (Linnaeus, 1758)

pargo  
Couch’s sea-bream, common sea  
bream, red porgy

**Clofnam number:** 139.1.4. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Chrysophrys aurata* by Drouët 1861b, Hilgendorf 1888b; *C. auratus* by Ramos 1869; *Pagrus vulgaris* by Hilgendorf 1888b, Sampaio 1904, Nobre 1924, 1930, Ribeiro 1936; *Sparus pagrus* by Wheeler 1978, Martins 1982b, INIP 1985b,c; Dias & Monteiro 1986, Silva 1986a,b, 1992, Dias 1991, Silva *et al.* 1994, Krug 1995.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Sampaio 1904°; Nobre 1924°, 1930; Fowler 1919°, 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Dias *et al.* 1976°; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; INIP 1985b°,c°; Dias & Monteiro 1986°; Silva 1986a°,b, 1992; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Dias 1991°; Dias & Cascalho 1991; Arruda 1992; Azevedo *et al.* 1992°; Santos 1992a; Silva & Krug 1992°; DOP 1993°; Santos *et al.* 1994b, 1995c; Silva *et al.* 1994°, 1995°; Azevedo 1995; Clarke & Martins 1995°; Gonçalves *et al.* 1995°; Krug 1995; Serafim & Krug 1995°; Silva & Menezes 1995a°,b°; Isidro 1996; Menezes 1996°.

**Remarks:** *Sparus aurata* Linnaeus, 1758 (Clofnam: 139.1.1.) is reported for the Azores by Collins (1954) based on the citation of *Chrysophrys aurata* in Hilgendorf (1888b), which is in turn based in Drouët (1861b). It is almost certain that Drouët (1861b) originally used the name *C. aurata* to designate *P. pagrus*. He writes: "Cette daurade paraît connue sous le nom de “pargo”" (p. 132). “Pargo” is the local name of *P. pagrus*.

### *Sarpa salpa* (Linnaeus, 1758)

salema  
salema, saupe

**Clofnam number:** 139.9.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Boops salpa* by Roule 1919; *Box salpa* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Collett 1896a, Sampaio 1904, Lampe 1914, Nobre 1924, 1930, Ninni 1933, Ribeiro 1936.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Sampaio 1904°; Lampe 1914; Roule 1919°; Nobre 1924°, 1930; Ninni 1933; Fowler 1936°; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Wood & Williams 1974°; Wood 1974°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Martins 1982b; Harmelin-Vivien *et al.* 1985°; Barreiros 1990°, 1995°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°;



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Bermuda sea chub, Bermuda chub

**Clofnam number:** 142.1.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Cyphosus sectatrix* by Albuquerque 1954-1956; *Kyphosus sectatrix* by Fowler 1936, Collins 1954, Santos *et al.* 1990b, Wirtz 1990b.

**References for the Azores:** Collins 1954; Albuquerque 1954-1956; Harmelin & Harmelin-Vivien 1979°; Patzner *et al.* 1990°, 1992°; Ré 1990°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Arruda *et al.* 1992°; Santos 1992a; Azevedo 1995; Gonçalves *et al.* 1995°.

**Remarks:** At Dollabarat Bank, where the schools of *Kyphosus* are abundant, many colour variation were observed. We found individuals that were entirely yellow, others with yellow head, while others had only irregular yellow spots on the body.

### Pomacentridae

Order 55- Perciformes. Family 389- Pomacentridae.

*Abudefduf luridus* (Cuvier, 1830)

castanheta preta

**Clofnam number:** 144.2.1.

**Synonyms, misspellings, misidentifications:** *Glyphidodon luridus* by Hilgendorf 1888a,b.

**References for the Azores:** Hilgendorf 1888a°,b°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Willis & Wood 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°,b°, 1980°, 1990°; Saldanha 1980°; Edwards 1986°; Patzner 1990°; Patzner & Santos 1990b°,d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Allen 1991; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Santos & Barreiros 1993; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°.

**Remarks:** Edwards (1986) states that based on morphology and behaviour, *Abudefduf luridus* might not be an *Abudefduf*. He states that a new genus will be established for *A. luridus* by D.A. Henseley, J.K. Dooley & J. Van Tassel (in prep.). The species is temporarily placed in *Abudefduf* by Allen (1991), who also mentions that “it will eventually be assigned to a new genus”. The photograph of an adult *A. luridus* included in Allen (1991) was not taken in the Canary Islands, as mentioned there, but in the Azores.

*Chromis limbata* (Valenciennes, 1833)

castanheta amarela

damsel fish, Azores chromis

**Clofnam number:** 144.1.-. Species designation not considered in FNAM where it is referred for the Azores as *Chromis chromis* (Linnaeus, 1758) (Clofnam: 144.1.1.).

**Synonyms, misspellings, misidentifications:** *Chromis chromis* by Fowler 1919, 1936, Cadenat 1937, Collins 1954, Albuquerque 1954-1956, Bauchot & Blanc 1961, Saldanha 1966, Wood 1973, Mapstone & Wood 1974, 1975, Wood & Williams 1974, 1975, Williams & Wood 1974, Arruda 1977, Martins 1982b; *C. c. limbatus* Arruda 1980a; *C. limbatus* by Wood 1977, Harmelin & Harmelin-Vivien 1979, Ré 1979a, 1990, Saldanha 1980, Ré & Gomes 1982, Arruda 1992; *Heliases chromis* by Hilgendorf 1888a,b, Nobre 1924, 1930; *H. marginatus* by Sampaio 1904.

**References for the Azores:** Hilgendorf 1888a°,b°; Sampaio 1904°; Nobre 1924°, 1930; Fowler 1919°, 1936°; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Bauchot & Blanc 1961; Saldanha 1966, 1980°; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Willis & Wood 1974°; Mapstone & Wood 1975°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Wood 1977°; Arruda 1977°, 1980a°; Martins 1982b; Ré & Gomes 1982°; Edwards 1986°; Patzner & Santos 1990b°,d°, 1993°;

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Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Allen 1991; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°.

### Labridae<sup>3</sup>

Order 55- Perciformes. Family 390- Labridae.

*Acantholabrus palloni* (Risso, 1810)

bodião do alto  
scale-rayed wrasse

**Clofnam number:** 145.2.1.

**Synonyms, misspellings, misidentifications:** *Acantholabrax palloni* by Shcherbachev *et al.* 1985;

**References for the Azores:** Hilgendorf 1888b°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Maul 1976; Wheeler 1978; Dooley *et al.* 1985; Shcherbachev *et al.* 1985; Michel *et al.* 1987; Arruda 1992; Porteiro *et al.* 1996°.

*Centrolabrus trutta* (Lowe, 1833)

bodião verde, maracoto  
emerald wrasse

**Clofnam number:** 145.3.2.

**Synonyms, misspellings, misidentifications:** *Acantholabrus romerus* by Drouët 1861b.

**References for the Azores:** Drouët 1861b°; Hilgendorf 1888a,b°; Regan 1903°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Bauchot & Blanc 1961; Wood & Williams 1974°; Wood 1974°; Arruda 1979°, 1980b°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Dooley *et al.* 1985; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°; Porteiro *et al.* 1996°.

*Coris julis* (Linnaeus, 1758)

lambaz, peixe-rei  
rainbow wrasse

**Clofnam number:** 145.4.1.

**Synonyms, misspellings, misidentifications:** *Coris giofredi* by Günther 1862, Regan 1903; *C. julis melanura* by Roule 1919; *Julis azorensis* by Fowler 1919; *J. speciosa* by Drouët 1861b, Ramos 1869; *J. julis* by Collett 1896a, Zugmayer 1933.

**References for the Azores:** Drouët 1861b°; Günther 1862°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Sampaio 1904°; Vaillant 1919°; Roule 1919°; Nobre 1924°, 1930; Zugmayer 1933°; Fowler 1919°, 1936°; Ribeiro 1936; Le Gall 1937b; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°, 1995°; Martins 1982b; Laurent

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<sup>3</sup>*Labrus merula* Linnaeus, 1758 (Clofnam: 145.1.3.) was cited for the Azores by several authors (Hilgendorf 1888b, Sampaio 1904, Ribeiro 1936, Albuquerque 1954-1956, Michel *et al.* 1987, Patzner *et al.* 1990 and Arruda 1992, as *Labrus livens* by Fowler 1936, Collins 1954). The occurrence of this species in the Azores was not confirmed, in recent years.

*Symphodus* (*Crenilabrus*) *melops* (Linnaeus, 1758) (Clofnam: 145.9.8.) is cited by Hilgendorf (1888a,b), Vaillant (1919), Fowler (1936), Albuquerque (1954-1956), Bini (1968), Michel *et al.* (1987), Chicharo & Teodósio (1990), Ré (1990) and Arruda (1992). The occurrence of this species in the Azores was not confirmed in recent years.

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& Lejeune 1988; Barreiros 1990°, 1995°; Patzner 1990°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994b, 1995c; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°, 1995b°; Azevedo 1995; Gonçalves *et al.* 1995°; Isidro 1996; Porteiro *et al.* 1996°.

**Remarks:** Regan (1903) cites both *Coris julis* and *C. giofredi*.

***Labrus bergylta*** Ascanius, 1767

bodião vermelho

ballan wrasse

**Clofnam number:** 145.1.2.

**Synonyms, misspellings, misidentifications:** *Labrus bergylta* by Fowler 1936, Collins 1954; *L. maculatus* by Vaillant 1919.

**References for the Azores:** Vaillant 1919°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Wood & Williams 1974°; Wood 1974°; Harmelin & Harmelin-Vivien 1979°; Dooley *et al.* 1985; Barreiros 1990°, 1995°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda *et al.* 1992°; Santos 1992a; Gonçalves 1993; Azevedo 1995; Gonçalves *et al.* 1995°; Porteiro *et al.* 1996°.

***Labrus bimaculatus*** Linnaeus, 1758

peixe rei do alto

cuckoo wrasse

**Clofnam number:** 145.1.1.

**Synonyms, misspellings, misidentifications:** *Labrus mixtus* by Guimarães 1882, Hilgendorf 1888b, Regan 1903, Wood & Williams 1974, Wood 1974, Wheeler 1978.

**References for the Azores:** Guimarães 1882°; Hilgendorf 1888b°; Regan 1903°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Wood & Williams 1974°; Wood 1974°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Arruda 1992; Azevedo *et al.* 1992°; Wirtz 1994°; Porteiro *et al.* 1996°.

***Pseudolepidaplois scrofa*** (Valenciennes, 1839)

gaio, peixe cão, viola

**Clofnam number:** 145.8.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Bodianus scrofa* by Dooley *et al.* 1985, Arruda *et al.* 1992; *B. speciosus* by Martins 1982b; *Cossyphus scrofa* by Hilgendorf 1888b; *Crenilabrus caninus* by Collins 1954; *Diastodon speciosus* by Collins 1954, Albuquerque 1954-1956, Wood & Williams 1974, Harmelin & Harmelin-Vivien 1979, Ré 1979a, Saldanha 1980, INIP 1985b, Dias 1991; *Trochocopus scrofa* by Guimarães 1884.

**References for the Azores:** Guimarães 1884°; Hilgendorf 1888b°; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Dias *et al.* 1976°, 1990°; Ré 1979a°; Saldanha 1980°; Martins 1982b; Dooley *et al.* 1985; INIP 1985b°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Dias 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Gonçalves 1993; Azevedo 1995; Silva *et al.* 1995°; Porteiro *et al.* 1996°.

**Remarks:** The presence of *Bodianus speciosus* (S. Bowdich, 1825) (Clofnam: 145.6.1.) in the Azores has never been confirmed so all the citations to this species or its common synonyms (e.g. *Diastodon speciosus*) are considered misidentifications of *Pseudolepidaplois scrofa*. Collins (1954), INIP (1985b) and Dias (1991) cite both species.

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*Symphodus (Crenilabrus) mediterraneus* (Linnaeus, 1758) costureira, abadejo  
axillary wrasse

**Clofnam number:** 145.9.6. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Crenilabrus mediterraneus* by Vaillant 1919, Zugmayer 1933, Collins 1954, Albuquerque 1954-1956; *C. (Symphodus) mediterraneus* by Wood & Williams 1974.

**References for the Azores:** Vaillant 1919°; Zugmayer 1933°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Collignon & Aloncle 1973; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Michel *et al.* 1987; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Ré 1990°; Arruda *et al.* 1992°; Azevedo *et al.* 1992°; Santos 1992a; Wirtz 1994°; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°; Porteiro *et al.* 1996°.

*Thalassoma pavo* (Linnaeus, 1758) rainha, bodeão, bodião, verdugo,  
torcida  
ornate wrasse

**Clofnam number:** 145.10.1.

**Synonyms, misspellings, misidentifications:** *Julis pavo* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Regan 1903, Vaillant 1919, Nobre 1924, 1930, Zugmayer 1933.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Regan 1903°; Vaillant 1919°; Nobre 1924°, 1930; Zugmayer 1933°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°, 1995°; Martins 1982b; Dooley *et al.* 1985; Michel *et al.* 1987; Barreiros 1990°, 1995°; Patzner 1990°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1991°, 1994°; Azevedo *et al.* 1991°, 1992°, 1995°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°, 1995b°; Van Tassel *et al.* 1994; Azevedo 1995; Gonçalves *et al.* 1995°; Porteiro *et al.* 1996°.

*Xyrichtys novacula* (Linnaeus, 1758) bodião da areia, peixe padre  
cleaver wrasse

**Clofnam number:** 145.11.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Novacula cultrata* by Hilgendorf 1888b, Regan 1903; *Xyrichtys novacula* by Collins 1954.

**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Vaillant 1919°; Nobre 1924°, 1930; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Quignard 1966; Bauchot & Blanc 1961; Dooley *et al.* 1985; Michel *et al.* 1987; Wirtz 1990b°, 1994°; Arruda 1992; Porteiro *et al.* 1996°.

### Scaridae

Order 55- Perciformes. Family 392- Scaridae.

*Sparisoma (Euscarus) cretense* (Linnaeus, 1758) veja, véja  
parrotfish

**Clofnam number:** 146.1.1.

**Synonyms, misspellings, misidentifications:** *Euscarus cretensis* by Schultz 1958, Bauchot & Blanc 1961; *Scarus cretensis* by Hilgendorf 1888b, Regan 1903, Sampaio 1904, Lampe 1914; Roule 1919; Vaillant 1919, Ribeiro 1936; *Sparisoma cretense* by Fowler 1936, Collins 1954, Albuquerque 1954-

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1956, Wood 1973; Wood & Williams 1974, Harmelin & Harmelin-Vivien 1979, Barreiros 1990, Patzner & Santos 1990c, Ré 1990, Santos *et al.* 1990b, 1994b, Wirtz 1990b, 1994, Azevedo 1995, Gonçalves *et al.* 1995, Isidro 1996; *S. cretensis* by Ré 1979a.

**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Sampaio 1904°; Lampe 1914; Roule 1919°; Vaillant 1919°; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Schultz 1958°; Bauchot & Blanc 1961; Wood 1973°; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Martins 1982b; Dooley *et al.* 1985; Barreiros 1990°; Patzner 1990°; Patzner & Santos 1990c°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994b, 1995c; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Monteiro 1991°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Azevedo 1995; Gonçalves *et al.* 1995°; Isidro 1996°.

### Chiasmodontidae

Order 55- Perciformes. Family 407- Chiasmodontidae.

*Chiasmodon niger* Johnson, 1863

**Clofnam number:** 150.1.1.

**Synonyms, misspellings, misidentifications:** *Chiasmodon niger* by Murray & Hjort 1912.

**References for the Azores:** Murray & Hjort 1912°; Fowler 1936; Koefoed 1952°; Albuquerque 1954-1956.

### Trachinidae

Order 55- Perciformes. Family 418- Trachinidae.

*Echiichthys vipera* (Cuvier, 1829)

peixe aranha

weever, lesser weever

**Clofnam number:** 148.1.4. & 148.2.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Trachinus vipera* by Hilgendorf 1888b, Sampaio 1904, Fowler 1936, Collins 1954, Albuquerque 1954-1956, Dooley *et al.* 1985.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Dooley *et al.* 1985; Patzner *et al.* 1990°, 1992°; Arruda 1992; Nash & Santos 1993°; Nash *et al.* 1994a°; Santos *et al.* 1994a°; Azevedo 1995; Santos & Nash 1995°.

### Tripterygiidae

Order 55- Perciformes. Family 420- Tripterygiidae.

*Tripterygion delaisi delaisi* Cadenat & Blache, 1971

caboz de très dorsais

black-faced blenny

**Clofnam number:** 166b.1.3.2. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Tripterygion delaisi* by Azevedo 1995; *Tripterygion delaisi* by Azevedo *et al.* 1995; *Tripterygion melanurum* by Collett 1897; *T. nasus* by Roule & Angel 1920 (larvae and post-larvae); *T. tripteronotus* by Arruda 1992, *T. xanthosoma* by Wood & Williams 1974, Ré 1979a; *Tripterygium* sp.. (larvae and post-larvae) by Roule & Angel 1930.

**References for the Azores:** Collett 1897°; Roule & Angel 1920°, 1930; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a, 1990°; Barreiros 1990°, 1995°; Patzner 1990°; Patzner &

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Santos 1990c,d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Gonçalves *et al.* 1995°.

**Remarks:** The Tripterygidae were cited for the first time for the Azores by Collett in 1897 as *Tripterygium melanurum*. *T. melanurus* Guichenot, 1845 (Clofnam: 166b.1.2.) does not occur in the Azores. *T. melanurum* by Collett (1897) must be considered an early synonym of *T. delaisi*, not *Tripterygion tripteronotus* (Risso, 1810) (Clofnam: 166b.1.1.) as stated by Arruda (1992).

### Blenniidae

Order 55- Perciformes. Family 425- Blenniidae.

*Blennius ocellaris* Linnaeus, 1758

caboz ocelado  
butterfly blenny

**Clofnam number:** 164.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Regan 1903°; Albuquerque 1954-1956; Santos 1987°, 1992a°; Oliveira *et al.* 1992°; DOP 1993°; Santos *et al.* 1994b, 1995c; Wirtz 1994°.

**Remarks:** Roule (1921) reports a specimen of an 8mm planktonic larvae of *Blennius* at Povoação (S. Miguel Island) which he was unable to identify to species, stating that it could either be a *Blennius ocellaris* or a *Blennius pholis*.

*Coryphoblennius galerita* (Linnaeus, 1758)

caboz de crista  
Montagu's blenny

**Clofnam number:** 164.2.1.

**Synonyms, misspellings, misidentifications:** *Blennius galerita* by Collett 1897; *Salarias symplocos* by Hilgendorf 1888a,b.

**References for the Azores:** Hilgendorf 1888a°,b°; Collett 1897; Albuquerque 1954-1956; Wood & Williams 1974°; Bath 1977; Arruda 1979°, 1980b°; Ré 1979a°; Almada *et al.* 1983°; Almeida & Harmelin-Vivien 1983°; Santos 1987, 1992a°; Barreiros 1990°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°,b; Azevedo *et al.* 1991°; Arruda 1992; Arruda *et al.* 1992°; Oliveira *et al.* 1992°; DOP 1993°; Almada & Santos 1995°; Azevedo 1995.

*Lipophrys pholis* (Linnaeus, 1758)

caboz gigante  
shanny

**Clofnam number:** 164.1.4. & 164.1.13. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Blennius pholis* by Harmelin & Harmelin-Vivien 1979, Zander 1980, Barreiros 1990.

**References for the Azores:** Arruda 1979°; Harmelin & Harmelin-Vivien 1979°; Zander 1980; Santos 1987°, 1992a°; Almada *et al.* 1990; Barreiros 1990°; Patzner *et al.* 1990°, 1992°; Azevedo *et al.* 1991°; Arruda *et al.* 1992°; Santos *et al.* 1988, 1994b, 1995c; Oliveira *et al.* 1992°; DOP 1993°; Azevedo 1995.

**Remarks:** *Lipophrys pholis* may reach more than 300mm TL in the Azores. Large sized individuals are also found at Madeira. In fact, this species was considered an endemic Madeiran species (Lowe 1843; Fowler 1936; Bath 1973), named *Blennius bufo* (= *Pholis bufo* Lowe 1843) but recent revisions considered this population a local race of *L. pholis* (Bath 1977; Zander 1986; Zander 1980). Fowler (1936) recorded an individual at 305mm TL. The individual sizes found at Madeira and the Azores (Santos *et al.* 1988) are almost the double of the maximum individual sizes found in European populations of the species.

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See also remark included under *Blennius ocellaris*.

*Lipophrys trigloides* (Valenciennes, 1836) caboz

**Clofnam number:** 164.1.19. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Blennius trigloides* by Harmelin & Harmelin-Vivien 1979, Zander 1980, Almeida & Harmelin-Vivien 1983; *Paralipophrys trigloides* by Arruda 1979.

**References for the Azores:** Arruda 1979<sup>o</sup>, 1980b<sup>o</sup>; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Zander 1980; Almeida & Harmelin-Vivien 1983<sup>o</sup>; Santos 1987<sup>o</sup>, 1992a<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994a<sup>o</sup>, 1995c; Azevedo *et al.* 1991<sup>o</sup>; Arruda *et al.* 1992<sup>o</sup>; Oliveira *et al.* 1992<sup>o</sup>; DOP 1993<sup>o</sup>; Wirtz 1994<sup>o</sup>; Azevedo 1995.

*Ophioblennius atlanticus atlanticus* (Valenciennes, 1836) rói anzóis  
redlip blenny

**Clofnam number:** 164.-.-. Genus not included in FNAM.

**Synonyms, misspellings, misidentifications:** *Ophioblennius atlanticus* by Ré 1990, Santos *et al.* 1990b; *Rupiscastris* sp.. by Collins 1954.

**References for the Azores:** Collins 1954<sup>o</sup>; Wood & Williams 1974<sup>o</sup>; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>, 1990<sup>o</sup>; Ré & Almeida 1981<sup>o</sup>; Almeida & Harmelin-Vivien 1983<sup>o</sup>; Santos 1987<sup>o</sup>, 1992a<sup>o</sup>, 1995a<sup>o</sup>,b<sup>o</sup>; Barreiros 1990<sup>o</sup>, 1995<sup>o</sup>; Patzner 1990<sup>o</sup>; Patzner & Santos 1990d<sup>o</sup>, 1993<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994a<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Arruda *et al.* 1992<sup>o</sup>; Oliveira *et al.* 1992<sup>o</sup>, 1993<sup>o</sup>; Santos & Barreiros 1993<sup>o</sup>; DOP 1993<sup>o</sup>; Azevedo 1995; Gonçalves *et al.* 1995<sup>o</sup>.

*Parablennius incognitus* (Bath, 1968) caboz das cracas

**Clofnam number:** 164.1.9. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Blennius inaequalis* by Nobre 1924, 1930, Albuquerque 1954-1956; *B. incognitus* by Wood & Williams 1974, Almeida & Harmelin-Vivien 1983; *B. verryckeni* by Wood & Williams 1974.

**References for the Azores:** Nobre 1924<sup>o</sup>, 1930; Albuquerque 1954-1956; Wood & Williams 1974<sup>o</sup>; Almeida & Harmelin-Vivien 1983<sup>o</sup>; Santos 1987<sup>o</sup>, 1992a<sup>o</sup>, 1995a<sup>o</sup>; Patzner 1990<sup>o</sup>; Patzner & Santos 1990d<sup>o</sup>, 1993<sup>o</sup>; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Santos *et al.* 1990b<sup>o</sup>, 1994a<sup>o</sup>,b; Wirtz 1990b<sup>o</sup>, 1994<sup>o</sup>; Azevedo *et al.* 1991<sup>o</sup>, 1992<sup>o</sup>; Arruda *et al.* 1992<sup>o</sup>; Oliveira *et al.* 1992<sup>o</sup>; DOP 1993<sup>o</sup>; Almada & Santos 1995<sup>o</sup>; Azevedo 1995.

**Remarks:** Wood & Williams (1974) questionably recorded *Blennius verryckeni* and *B. incognitus* for the Azores. Our studies of the specimens collected by Wood & Williams (1974) in the NHM (London) showed that the authors misidentified the females of *P. incognitus* as *B. verryckeni* (see also Oliveira *et al.* 1992).

*Parablennius parvicornis* (Valenciennes, 1836) caboz das poças  
rock-pool blenny

**Clofnam number:** 164.1.11.

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**Synonyms, misspellings, misidentifications:** *Blennius palmicornis* by Drouët 1861b, Ramos 1869; *B. sanguinolentus* by Hilgendorf 1888b, Collett 1896a, Regan 1903, Collins 1954, Albuquerque 1954-1956, Zander 1980, Almeida & Harmelin-Vivien 1983, Santos 1984, 1985a, 1985b, 1986, 1989, Santos & Almada 1988, Barreiros 1990, Monteiro 1991, Gonçalves 1993; *Parablennius sanguinolentus* by Bath 1982, Santos 1987, 1989, Santos *et al.* 1989, Chícharo & Teodósio 1990, Wirtz 1990b, Azevedo *et al.* 1991, 1992, Arruda 1992, Taborsky 1994; Azevedo 1995; *P. s. parvicornis* by Santos 1992a, 1995, DOP 1993, Santos & Barreiros 1993, Santos *et al.* 1994a, 1995b, 1996; Almada & Santos 1995, Santos & Nash 1996; *Pictiblennius sanguinolentus* by Arruda 1979, 1980b.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Collins 1954; Albuquerque 1954-1956; Arruda 1979°, 1980b°; Zander 1979°, 1980; Bath 1982°, 1990; Almeida & Harmelin-Vivien 1983°; Santos 1984°, 1985a°,b°, 1986°, 1987°, 1989°, 1992a°, 1995a°; Santos & Almada 1988°; Santos *et al.* 1989°, 1994a°, 1995b°, 1996°; Barreiros 1990°; Chícharo & Teodósio 1990°; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°; Azevedo *et al.* 1991°, 1992°; Monteiro 1991°; Arruda 1992; Arruda *et al.* 1992°; Oliveira *et al.* 1992°; DOP 1993°; Gonçalves 1993; Gonçalves *et al.* 1993; Santos & Barreiros 1993°; Santos *et al.* 1994a°, 1995b°; Taborsky 1994; Almada & Santos 1995; Azevedo 1995; Santos & Nash 1996°.

**Remarks:** Drouët (1861b: 134, 222) and Ramos (1869: 108) call this species “viúva”. As far as we know this common name is used only for *Gaidropsarus guttatus*. Since both species may be found in rock pools and are of similar shape and colour, it is possible that the same name was used for both species or that the authors confused the vernacular names. Azevedo *et al.* (1992) cite both *Parablennius parvicornis* and *P. sanguinolentus* as if the two species occurred in the Azores.

***Parablennius ruber*** (Valenciennes, 1836)

caboz Português  
[Portuguese blenny]

**Clofnam number:** 164.6.1.

**Synonyms, misspellings, misidentifications:** *Blennius gattorugine* by Regan 1903, Collins 1954, Albuquerque 1954-1956; *B. ruber* Almeida 1982, Almeida & Harmelin-Vivien 1983; *B. sp.* nov. 1 by Wood & Williams 1974, Arruda 1979, 1980b; *Parablennius gattorugine* by Chícharo & Teodósio 1990.

**References for the Azores:** Regan 1903°; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Arruda 1979°, 1980b°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°; Almeida 1982°; Almeida & Harmelin-Vivien 1983°; Santos 1987°, 1992a°; Chícharo & Teodósio 1990°; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°, 1995c; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda *et al.* 1992°; Oliveira *et al.* 1992°; DOP 1993°; Azevedo 1995; Gonçalves *et al.* 1995°.

### Gobiesocidae

Order 55- Perciformes. Family 427- Gobiesocidae.

***Apletodon*** n. sp. Hofrichter & Patzner, in press

peixe ventosa dos ouriços  
[sea-urchin clingfish]

**Clofnam number:** 208.1.-. Species not included in FNAM.

**Synonyms, misspellings, misidentifications:** *Diplecogaster bimaculata* by Wirtz 1994; *D. b. pectoralis* by Patzner *et al.* 1990, 1992, 1993; Azevedo *et al.* 1991, 1992, Arruda 1992, Arruda *et al.* 1992, Patzner & Santos 1992, Santos 1992a, ICN 1993, Santos *et al.* 1994b, 1995c.



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**Synonyms, misspellings, misidentifications:** *Callyonimus phaeton* by Vaillant 1888, Goode & Bean 1895, Brauer 1906, Roule & Angel 1921; *Synchiropus phaeton* by Ehrich 1977; Fricke 1981; Arruda 1992.

**References for the Azores:** Vaillant 1888°; Goode & Bean 1895; Brauer 1906; Roule & Angel 1921; Ehrich 1977; Fricke 1981; Arruda 1992.

**Remarks:** The genus is considered to occur in the Azores by Nakabo (1982). We follow his nomenclature. This species has been collected and photographed recently on several occasions (e.g. DOP CD 5: 46).

### Gobiidae

Order 55- Perciformes. Family 433- Gobiidae.

#### *Gobius paganellus* Linnaeus, 1758

bochecha, caboz, joana  
rock goby

**Clofnam number:** 162.1.9.

**Synonyms, misspellings, misidentifications:** *Bathygobius paganellus* by Fowler 1936, Collins 1954; *Gobius niger* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Sampaio 1904, Nobre 1924, 1930, Arruda 1992; *G. (Gobius) niger* by Albuquerque 1954-1956; *G. maderensis* by Regan 1903; *G. (Macrogobius) paganellus* by Albuquerque 1954-1956.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888a,b°; Regan 1903°; Sampaio 1904°; Nobre 1924°, 1930; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Arruda 1979°, 1980b°; Miller 1984°; Azevedo *et al.* 1990, 1991°, 1992°, 1995°; Patzner 1990°; Patzner & Santos 1990a°,c°,e°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°,b; Wirtz 1990b°, 1994°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a°; DOP 1993°; Azevedo 1995; Gonçalves *et al.* 1995°.

**Remarks:** Hilgendorf (1888b) reports both *Gobius niger* Linnaeus, 1758 (Clofnam: 162.1.1.) and *G. paganellus*. The record of *G. paganellus* is based on his own observations, while *G. niger* is based on Drouët (1861b). Albuquerque (1954-1956) also includes both species. Since *P. niger* is not known to occur in the Azores we believe that the records of *G. niger* were misidentifications of *G. paganellus*. Sampaio (1904) also cites *Gobius lota*, which is a synonym of *Zosterisessor ophiocephalus* (Pallas, 1811) (Clofnam: 126.26.1), a species which does not occur in the Azores.

#### *Pomatoschistus pictus* (Malm, 1865)

góbio da areia  
painted goby

**Clofnam number:** 162.21.7. Species not cited for the Azores in FNAME.

**References for the Azores:** Patzner & Santos 1990a°,c°,e°; Patzner *et al.* 1990°, 1992°; Ré 1990°; Santos *et al.* 1990b°; Azevedo *et al.* 1991°, 1992°; Nash *et al.* 1991°; Arruda *et al.* 1992°; Santos 1992a; DOP 1993°; Azevedo 1995.

#### *Thorogobius ephippiatus* (Lowe, 1839)

bochecha pintada  
leopard-spotted goby

**Clofnam number:** 162.24.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Azevedo *et al.* 1990°; Patzner & Santos 1990a°,c°,e°; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1994°; Santos 1992a; DOP 1993°; Azevedo 1995; Barreiros 1995°; Gonçalves *et al.* 1995°.

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**Luvaridae**

Order 55- Perciformes. Family 442- Luvaridae.

*Luvarus imperialis* Rafinesque, 1810

boquinho, peixe sol  
louvar

**Clofnam number:** 159.1.1.

**Synonyms, misspellings, misidentifications:** *Luvaris imperialis* by Collins 1954.

**References for the Azores:** Roule & Angel 1924°, 1930°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Wheeler 1978.

**Scombrrolabracidae**

Order 55- Perciformes. Family 445- Scombrrolabracidae.

*Scombrrolabrax heterolepis* Roule, 1922

**Clofnam number:** 154.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** One specimen (242mm SL) was caught on 10 April, 1994, south of São Mateus, Terceira Island, by the F/V “Casmár” on long line at 600m (DOP 358).

**Sphyraenidae**

Order 55- Perciformes. Family 446- Sphyraenidae.

*Sphyraena viridensis* Cuvier, 1829

bicuda  
yellowmouth barracuda

**Clofnam number:** 180.1.3. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Sphyraena* sp. by Azevedo *et al.* 1992; *S. vulgaris* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Sampaio 1904; Zugmayer 1933, Ribeiro 1936; *S. sphyraena* by Collett 1896a, Fowler 1936, Cadenat 1937, Collins 1954, Wood 1973, Wood & Williams 1974, Ré 1979a, 1990, Saldanha 1980, Martins 1982b, Dooley *et al.* 1985, Arruda 1992, Arruda *et al.* 1992; Isidro 1996, Menezes 1996.

**References for the Azores:** Drouët 1861b°; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Sampaio 1904°; Zugmayer 1933°; Fowler 1936°; Ribeiro 1936; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Wood & Williams 1974°; Ré 1979a°, 1990°; Saldanha 1980°, 1995°; Martins 1982b; Dooley *et al.* 1985; Patzner *et al.* 1990°, 1992°; Wirtz 1990b°, 1991°, 1994°; Arruda 1992; Arruda *et al.* 1992°; Azevedo *et al.* 1992°; Santos *et al.* 1994b, 1995c; Gonçalves *et al.* 1995°; Isidro 1996°; Menezes 1996°.

**Remarks:** Sphyraenidae in the Azores have been traditionally identified as *Sphyraena sphyraena* (Linnaeus, 1758) (Clofnam: 180.1.1) but all the specimens that we have ever observed belongs to *S. viridensis* and we believe that it is the only species in the Azores. The records of *S. sphyraena* for the Azores are here considered as misidentifications of *S. viridensis*.

Clarke (1956) refers to the occurrence of *Sphyraena* sp. in the stomach of a sperm whale caught in the Azores on the 21 July, 1949.

## Marine fishes of the Azores

### Gempylidae

Order 55- Perciformes. Family 447- Gempylidae.

#### *Gempylus serpens* Cuvier, 1829

escolar  
snake mackerel

**Clofnam number:** 153.1.1.

**References for the Azores:** Lütken 1880<sup>o</sup>; Nakamura & Parin 1993.

**Remarks:** One specimen (DOP 18) caught by R/V “Arquipélago” on the 7 September, 1991 (CodFra 91) about 50 to 60 miles south of Pico Island. Nakamura & Parin (1993) show the species occurring in the Azores on a general map.

#### *Lepidocybium flavobrunneum* (Smith, 1849)

escolar  
escolar

**Clofnam number:** 153.3.1. Species not cited for the Azores in FNAME.

**References for the Azores:** ICN 1993; Nakamura & Parin 1993; Azevedo & Heemstra 1995<sup>o</sup>.

**Remarks:** The first confirmed specimen (124cm SL; 38kg TW) was caught by F/V “Avis” on 22 September, 1992 on a swordfish long line. The specimen was photographed (DOP CD 5/56-65). Nakamura & Parin (1993) show the species occurring in the Azores on a general map.

#### *Nesiarchus nasutus* Johnson, 1862

escolar  
Johnson’s scabbardfish, black  
gemfish

**Clofnam number:** 153.5.1.

**References for the Azores:** ICN 1993.

**Remarks:** One specimen (102cm SL) was caught at 38°35’63’’N, 28°17’52’’W by F/V “Pérola do Faial” (coll. M. Serpa) at around 1200m. Another specimen was caught off Faial, July 1992 (no further data). The specimen was photographed (DOP CD 5/67-71). The species is caught occasionally on bottom long lines.

#### *Promethichthys prometheus* (Cuvier, 1832)

coelho do alto, peixe coelho  
rabbit-fish

**Clofnam number:** 153.6.1.

**References for the Azores:** Collins 1954<sup>o</sup>; Albuquerque 1954-1956; Santos *et al.* 1994b.

**Remarks:** Collins record (1954) is based on the study of a specimen at Horta museum. We have observed *Promethichthys prometeus* on several occasions in landings at Horta Harbour, Faial Island.

#### *Ruvettus pretiosus* Cocco, 1829

escolar  
oilfish

**Clofnam number:** 153.7.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Thyrstites pretiosus* by Sampaio 1904.

**References for the Azores:** Sampaio 1904<sup>o</sup>; Collins 1954; Wheeler 1978; Martins 1982b; Santos *et al.* 1994b, 1995c.

**Remarks:** We have observed *Ruvettus pretiosus* on a few occasions in landings at Horta Harbour, Faial Island. The species has commercial value.

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**Trichiuridae**

Order 55- Perciformes. Family 448- Trichiuridae.

*Aphanopus carbo* Lowe, 1839

peixe espada preto  
black scabbard fish

**Clofnam number:** 155.2.1.

**References for the Azores:** Wheeler 1978; INIP 1985b°; Martins & Cascalho 1990; Dias 1991°; Monteiro 1991°; Nakamura & Parin 1993; Silva *et al.* 1995°; Menezes 1996°.

*Benthodesmus simonyi* (Steindachner, 1891)

peixe espada  
frostfish

**Clofnam number:** 155.3.-. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Benthodesmus elongatus simonyi* by Silva *et al.* 1995; Menezes 1996.

**References for the Azores:** Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** In FNAM this species is considered a sub-species of *Benthodesmus elongatus* (Clofnam: 155.3.1.2.) but Nakamura & Parin (1993) consider that both *B. elongatus* and *B. simonyi* are valid species.

*Lepidopus caudatus* (Euphrasen, 1788)

peixe espada branco, talabarte  
scabbardfish, silver scabbard fish

**Clofnam number:** 155.4.1.

**Synonyms, misspellings, misidentifications:** *Lepidopus argenteus* by Roule 1919; *L. lusitanicus* by Sampaio 1904, Ribeiro 1936.

**References for the Azores:** Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Sampaio 1904°; Roule 1919°; Vaillant 1919°; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Wood 1974°; Dias *et al.* 1976°, 1990°; Ehrich 1977; Martins 1982a°,b; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Dias 1991°; Arruda 1992; Nakamura & Parin 1993; Krug 1995; Silva *et al.* 1994°, 1995°; Clarke & Martins 1995°; Clarke *et al.* 1995°; Pinho & Pereira 1995a°; Silva 1995°; Silva & Menezes 1995a°,b°; Isidro 1996; Menezes 1996°.

**Scombridae**

Order 55- Perciformes. Family 449- Scombridae.

*Acanthocybium solandri* (Cuvier, 1832)

cavala da índia  
wahoo

**Clofnam number:** 158.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Ferreira 1937a°; Azevedo & Heemstra 1995°.

**Remarks:** Ferreira (1937a) described and photographed of a 133cm specimen caught between Pico and Faial in October, 1931 which is noted by him as *Acanthocybium solandri* n. sp.

*Auxis rochei rochei* (Risso, 1810)

judeu  
frigate mackerel, bullet tuna, bullet  
mackerel

## Marine fishes of the Azores

**Clofnam number:** 157.2.1.

**Synonyms, misspellings, misidentifications:** *Ausis bisus* by Nobre 1924, 1930, Ferreira 1937a; *A. thazard* by Collins 1954, Albuquerque 1954-1956, Dias & Barraca 1971.

**References for the Azores:** Nobre 1924<sup>o</sup>, 1930; Ferreira 1937a; Collins 1954; Albuquerque 1954-1956; Dias & Barraca 1971; Wheeler 1978; Collette & Aadland 1996<sup>o</sup>.

**Remarks:** Sampaio (1904) and, following him, Ribeiro (1936) included this species in their lists. According to Sampaio (1904), who calls this species "serra", it occurs in great abundance in the summer, close to Vila da Praia. This is, almost certainly, a misidentification of *Sarda sarda*. Collette & Aadland (1996) have recently differentiated two *Auxis rochei* subspecies: *Auxis rochei rochei* (Risso, 1810) of the Atlantic and *Auxis rochei eudorax* of the eastern Pacific.

According to Collette & Aadland (1996) the distribution of *Auxis rochei rochei* and *Auxis thazard thazard* (Lacepède, 1800) partially overlap in the eastern (south of Ghana) and western Atlantic, in the Indian, and in the western and central Pacific Oceans.

***Katsuwonus pelamis*** (Linnaeus, 1758)

bonito, gaiado  
oceanic bonito, skipjack tuna

**Clofnam number:** 157.3.2.

**Synonyms, misspellings, misidentifications:** *Euthynnus pelamis* by Fowler 1936, Wheeler 1978; *E. (Katsuwonus) pelamis* by Albuquerque 1954-1956, Dias & Barraca 1971, Martins 1982b; *Thynnus pelamis* by Sampaio 1904, Ribeiro 1936; *Thunnus pelamys* by Ferreira 1932, 1937a; *Thynnus pelamys* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b.

**References for the Azores:** Drouët 1861b<sup>o</sup>; Ramos 1869; Hilgendorf 1888b<sup>o</sup>; Sampaio 1904<sup>o</sup>; Ferreira 1932<sup>o</sup>, 1937a; Fowler 1936; Ribeiro 1936; Collins 1954; Albuquerque 1954-1956; Dias & Barraca 1971; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; Pereira 1982a,b, 1983b<sup>o</sup>, 1992a<sup>o</sup>,d, 1994a<sup>o</sup>, 1995<sup>o</sup>; Collette & Nauen 1983; Bard 1986; Monteiro 1991<sup>o</sup>; Arruda 1992; Silva 1992; Santos *et al.* 1994b<sup>o</sup>; Pinho & Pereira 1995a,b; Pinho *et al.* 1995; Isidro 1996.

***Sarda sarda*** (Bloch, 1793)

serra  
bonito, Atlantic bonito

**Clofnam number:** 158.4.1.

**Synonyms, misspellings, misidentifications:** *Pelamys sarda* by Hilgendorf 1888b, Richard 1905b.

**References for the Azores:** Hilgendorf 1888b<sup>o</sup>; Richard 1905b; Fowler 1936; Ferreira 1937a; Collins 1954; Collett & Chao 1975; Wheeler 1978; Harmelin & Harmelin-Vivien 1979<sup>o</sup>; Ré 1979a<sup>o</sup>; Martins 1982b; Rey *et al.* 1984; Patzner *et al.* 1990<sup>o</sup>, 1992<sup>o</sup>; Wirtz 1990b<sup>o</sup>, 1991<sup>o</sup>, 1994<sup>o</sup>; Arruda 1992; Saldanha 1995<sup>o</sup>; Silva & Menezes 1995a<sup>o</sup>; Isidro 1996.

***Scomber japonicus*** Houttuyn, 1782

cavala  
Spanish mackerel, chub mackerel

**Clofnam number:** 156.1.2.

**Synonyms, misspellings, misidentifications:** *Scomber pneumatophorus* by Hilgendorf 1888b; *S. colias* by Drouët 1861b, Ramos 1869, Hilgendorf 1888b, Collett 1896a, Regan 1903, Ferreira 1937a; Fowler 1919, Roule 1919, Cadenat 1937, Collins 1954; *S. (Pneumatophorus) japonicus* by Martins 1982b, INIP 1985a,b,c, Dias & Monteiro 1986.

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**References for the Azores:** Drouët 1861b; Ramos 1869; Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Ferreira 1937a°; Fowler 1919°; Roule 1919°; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; INIP 1985a°,b°,c°; Dias & Monteiro 1986°; Isidro 1988, 1990a°,b°; Dias 1991°; Arruda 1992; Pereira 1992d°, 1995°; Silva 1992; Santos *et al.* 1994b; Pinho *et al.* 1995°; Silva & Menezes 1995a°,b°; Silva *et al.* 1995°; Isidro 1996°; Menezes 1996°; Monteiro 1996°; Monteiro *et al.* 1996b°.

**Remarks:** Azorean mackerels are cited as *S. (Scomber) scombrus* by INIP (1985b) and Dias & Monteiro (1986), as *S. scombrus* by Drouët (1861b), Ramos (1869), Sampaio (1904), Ribeiro (1936) and Arruda (1992) and as *S. scomber* by Hilgendorf (1888b), Nobre (1924, 1930) and Ferreira (1937a). However, we have serious reservations regarding the occurrence of *S. scombrus* in the Azores. Fowler (1936), Albuquerque (1954-1956) and Dias (1991) cite both species. Ferreira (1937a) apparently correctly distinguishes both species by the number of the spines in the first dorsal fin. Ramos (1869) and Ferreira (1937a) give two different common names to the *Scomber* species: “cavalla” for *S. scombrus* and “cavalla meirinha” for *S. colias* (= *S. japonicus*). We never seen *S. scomber* in the Azores.

*Thunnus alalunga* (Bonnaterre, 1788)

voador  
long-fin tunny, albacore

**Clofnam number:** 157.1.2.

**Synonyms, misspellings, misidentifications:** *Germo alalonga* by Ferreira 1932, 1940; *G. alalunga* by Fowler 1936, Cadenat 1937, Dias & Barraca 1971; *Thunnus (Germo) alalunga* by Martins 1982b; *T. (Thunnus) alalunga* by Albuquerque 1954; *Thynnus alaloaga* by Richard 1900, Gain 1913; *T. alalunga* by Clarke 1956.

**References for the Azores:** Richard 1900°; Gain 1913°; Ferreira 1932°, 1940; Fowler 1936; Cadenat 1937°; Collins 1954; Albuquerque 1954-1956; Clarke 1956°; Dias & Barraca 1971; Wheeler 1978; Bauchot & Pras 1980; Muzavor & Westhaus 1981; Garcez 1982; Martins 1982b; Pereira 1982a°,b, 1983b°, 1992a°,d, 1994a°, 1995°; Collette & Nauen 1983; Bard 1986; Monteiro 1991°; Morin 1992; Silva 1992; Pinho & Pereira 1995a,b; Pinho *et al.* 1995; Isidro 1996.

**Remarks:** The record of the species by Clarke (1956) was based on a “mostly digested head and fragments of the backbone” found in the stomach of a sperm whale caught in the Azores on 10 August, 1949.

*Thunnus albacares* (Bonnaterre, 1788)

albacora, alvacor, galha à ré, peixe  
de galha à ré  
yellow-fin tunny, yellowfin tuna

**Clofnam number:** 157.1.3.

**Synonyms, misspellings, misidentifications:** *Neothunnus albacora* by Frade 1931b,c, 1960, Ferreira 1932, 1937a, 1940; Dias & Barraca 1971; *Orcynus albacora* by Nobre 1935; *Thunnus (Neothunnus) albacares* by Martins 1982b; *T. (Neothunnus) albacora* by Albuquerque 1954-1956; *T. argentivittatus* by Collins 1954.

**References for the Azores:** Frade 1931b,c°, 1960°; Ferreira 1932°, 1937a, 1940; Nobre 1935; Collins 1954; Albuquerque 1954-1956; Parin 1970; Dias & Barraca 1971; Wheeler 1978; Muzavor & Westhaus 1981; Martins 1982b; Pereira 1982a,b, 1983b°, 1986b°, 1992d, 1995°; Collette & Nauen 1983; Bard 1986; Pinho & Pereira 1995a; Pinho *et al.* 1995; Isidro 1996.

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*Thunnus obesus* (Lowe, 1839)

albacora, alvacora, alvacor, patudo,  
big-eye tunny, bigeye tuna

**Clofnam number:** 157.1.4.

**Synonyms, misspellings, misidentifications:** *Parathunnus obesus* by Frade 1929, 1931a,c, 1960 Ferreira 1932, 1937a, 1940 Dias & Barraca 1971; *Thunnus (Parathunnus) obesus* by Collins 1954, Albuquerque 1954-1956, Martins 1982b.

**References for the Azores:** Frade 1929°, 1931a,c°, 1960°; Ferreira 1932°, 1937a, 1940; Collins 1954; Albuquerque 1954-1956; Dias & Barraca 1971; Collignon & Aloncle 1973; Muzavor & Westhaus 1981; Garcez 1982; Martins 1982b; Pereira 1982a,b, 1983b°, 1985a,b°, 1987a, 1989a°, 1992a°,d, 1994a°, 1995°; Collette & Nauen 1983; Bard 1986; Silva 1992; Clarke & Martins 1995°; Pinho & Pereira 1995a,b; Pinho *et al.* 1995; Isidro 1996.

*Thunnus thynnus thynnus* (Linnaeus, 1758)

albacora, alvacor, rabão, rabilo  
blue-fin tunny, Atlantic bluefin tuna,  
blue fin tuna

**Clofnam number:** 157.1.1.

**Synonym:** *Thinnus brachypterus* by Sampaio 1904; *Thynnus thynnus* by Drouët 1861b, Hilgendorf 1888b; *Thunnus thynnus* Heldt 1931; Frade 1929, 1931c, 1960; Ferreira 1932, 1937a, 1940, Fowler 1936, Poll 1947, Collins 1954, Dias & Barraca 1971, Wheeler 1978, Garcez 1982, Pereira 1982a,b, 1983b, 1987a, 1995; Collette & Nauen 1983, Cort & Rey 1984, Bard 1986, Arruda 1992, Isidro 1996; *T. (Thunnus) thynnus* by Albuquerque 1954-1956, Martins 1982b.

**References for the Azores:** Drouët 1861b°; Hilgendorf 1888b; Sampaio 1904°; Heldt 1931; Frade 1929°, 1931c, 1960; Ferreira 1932°, 1937a, 1940; Fowler 1936; Poll 1947; Collins 1954; Albuquerque 1954-1956; Dias & Barraca 1971; Wheeler 1978; Garcez 1982; Martins 1982b; Pereira 1982a,b, 1983b°, 1987a°, 1992d, 1995°; Collette & Nauen 1983; Cort & Rey 1984; Bard 1986; Arruda 1992; Pinho & Pereira 1995a; Pinho *et al.* 1995; Isidro 1996.

### Xiphiidae

Order 55- Perciformes. Family 450- Xiphiidae.

*Makaira nigricans* Lacepède, 1801

espadim azul  
blue marlin

**Clofnam number:** 160.2.1.

**References for the Azores:** Ueyanagi *et al.* 1970°; Nakamura 1985.

*Tetrapturus albidus* Poey, 1860

espadim branco  
white marlin

**Clofnam number:** 160.3.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Ueyanagi *et al.* 1970°; Nakamura 1985.

*Tetrapturus pfluegeri* Robins & de Sylva, 1963

longbill spearfish

**Clofnam number:** 160.3.4. Species not cited for the Azores in FNAM.

**References for the Azores:** Ueyanagi *et al.* 1970°; Nakamura 1985.

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*Xiphias gladius* Linnaeus, 1758

agulhão, espadarte  
swordfish

**Clofnam number:** 161.1.1.

**References for the Azores:** Sampaio 1904°; Ribeiro 1936°; Ferreira 1937a; Collins 1954; Parin 1970; Ueyanagi *et al.* 1970°; Wheeler 1978; Palko *et al.* 1981; Martins 1982b; Rey 1984; Nakamura 1985; Bard 1987; Rey 1987; Monteiro & Lopes 1990°; Monteiro 1991°; Silva 1992; Clarke & Martins 1995°; Clarke *et al.* 1995°; Esteves *et al.* 1995°; Pinho & Pereira 1995a°; Simões & Silva 1995°; Isidro 1996; Menezes 1996; Smale 1996.

### Centrolophidae

Order 55- Perciformes. Family 452- Centrolophidae.

*Centrolophus niger* (Gmelin, 1788)

blackfish, black ruff

**Clofnam number:** 176.1.1.

**Synonyms, misspellings, misidentifications:** *Centrolophus pompilus* by Hilgendorf 1888b, Cligny 1905, Guiart 1935, Le Gall 1937a.

**References for the Azores:** Hilgendorf 1888b°; Collett 1896a°; Regan 1903°; Cligny 1905; Guiart 1935; Fowler 1936; Le Gall 1937a; Poll 1947; Collins 1954; Albuquerque 1954-1956; Parin 1970; Bauchot & Pras 1980; Arruda 1992.

**Remarks:** The specimen recorded by Collett (1896a), as *Centrolophus pompilus*, was caught slightly outside the Azorean EEZ at 39°56'10"N, 36°20'15"W.

*Hyperglyphe perciformis* (Mitchill, 1818)

barrelfish

**Clofnam number:** 176.2.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Lirus perciformes* by Murray & Hjort 1912; *Mupos perciformis* by Fowler 1936.

**References for the Azores:** Murray & Hjort 1912°; Fowler 1936.

*Schedophilus medusophagus* Cocco, 1839

cornish blackfish

**Clofnam number:** 176.3.1.

**References for the Azores:** Haedrich 1964°; ICN 1993.

**Remarks:** The record of this species from the Azores, as *Lirus medusophagus*, by Albuquerque (1954-1956) is based in Fowler (1936) and Collett (1896a) whose reported specimens clearly caught outside the Azores region. The specimens referred by Haedrich (1964) were post-larvae found in the stomachs of *Alepisaurus ferox*. An adult specimen (380mm TL) was caught off Faial Island in 1993 and drawn by Les Gallagher. The specimen was not preserved.

*Schedophilus ovalis* (Cuvier, 1833)

choupa  
imperial blackfish

**Clofnam number:** 176.3.2.

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**Synonyms, misspellings, misidentifications:** *Lirus Bennetti* by Collett 1896a; *L. ovalis* by Murray & Hjort 1912, Albuquerque 1954-1956; *Mopus ovalis* by Fowler 1936.

**References for the Azores:** Collett 1896a°; Murray & Hjort 1912°; Fowler 1936; Barnard 1948; Albuquerque 1954-1956; Dooley *et al.* 1985; Arruda 1992; Pinho & Pereira 1995b°; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** Valenciennes (1833) refers to a specimen as *Centrolophus crassus* caught 125miles west of the Azores.

### Nomeidae

Order 55- Perciformes. Family 453- Nomeidae.

#### *Cubiceps gracilis* Lowe, 1843

longfin cigarfish

**Clofnam number:** 177.2.1.

**Synonyms, misspellings, misidentifications:** *Aphareus obtusirostris* by Borodin 1931.

**References for the Azores:** Günther 1889°; Borodin 1931°; Fowler 1936°; Koefoed 1952°; Collins 1954; Haedrich 1964°, 1967; Bauchot & Pras 1980; Agafonova & Kukuyev 1990°.

**Remarks:** Albuquerque's Azorian record (1954-1956) is not valid, since it is based on two specimens found in the stomach of a *Thunnus alalunga* and described by Collett (1896a) far from the Azores (44°01'26"N, 15°31'W).

#### *Psenes maculatus* Lütken, 1880

silver driftfish

**Clofnam number:** 177.3.1.

**References for the Azores:** Lütken 1880°; Haedrich 1967°.

### Tetragonuridae

Order 55- Perciformes. Family 455- Tetragonuridae.

#### *Tetragonurus cuvieri* Risso, 1810

smalleye squaretail

**Clofnam number:** 178.1.1.

**References for the Azores:** Borodin 1931°; Grey 1955°; Janssen & Harbison 1981°.

Order **PLEURONECTIFORMES**<sup>4</sup>

**Bothidae**<sup>5</sup>

Order 56- Pleuronectiformes. Family 465- Bothidae.

*Arnoglossus rueppelli* (Cocco, 1844)

**Clofnam number:** 196.2.4. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Arnoglossus Rüppeli* by Kyle 1913, Bertin 1932, 1936; *Dollfusina rueppelli* by Chabanaud 1932.

**References for the Azores:** Kyle 1913°; Bertin 1932°, 1936°; Chabanaud 1932; Albuquerque 1954-1956.

*Bothus podas maderensis* (Lowe, 1834)

solha  
wide-eyed flounder

**Clofnam number:** 196.1.1.2. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Bothus mancus* by Vaillant 1919; *B. podas* by Vaillant 1919, Norman 1934, Cadenat 1937, Chabanaud 1939, Collins 1954, Albuquerque 1954-1956, Ré 1979a, 1990, Barreiros 1990, Nash *et al.* 1990, 1991, Santos *et al.* 1990b, Wirtz 1990b, 1994, Santos 1992a, DOP 1993, Santos & Nash 1995; *Platophrys mancus* by Lampe 1914; *P. podas* by Collett 1896a, Fowler 1936; *Rhomboidichthys mancus* by Hilgendorf 1888b; *R. podas* by Nobre 1924, 1930, Zugmayer 1933.

**References for the Azores:** Hilgendorf 1888b°; Collett 1896a°; Kyle 1913; Lampe 1914; Vaillant 1919°; Nobre 1924°, 1930; Zugmayer 1933°; Norman 1934; Fowler 1936°; Cadenat 1937°; Chabanaud 1939; Collins 1954; Albuquerque 1954-1956; Wood & Williams 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Barreiros 1990°; Nash *et al.* 1990°, 1991°, 1994a°,b°; Patzner & Santos 1990a°,e°; Patzner 1990°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; DOP 1993°; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°.

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<sup>4</sup> Sampaio (1904), Ribeiro (1936) and Collins (1954) cite for the Azores *Pleuronectes platessa* Linnaeus, 1758 (Family 469- Pleuronectidae) (Clofnam: 197.1.1.) and *Solea vulgaris* Quensel, 1806 (Family 472- Soleidae) (Clofnam: 198.1.1.) -as *Pleuronectes solea* in Sampaio (1904) and as *Solea solea* in Collins (1954). This two species do not occur in the Azores.

Collett (1896a) describes a Pleuronectiform post-larvae ("*Charybdia Rüppelii*") with 25 mm total length, caught at st. 212 (south of Flores), which could be, according to the author, an *Arnoglossus* or a *Lepidorhombus*.

<sup>5</sup> Based on a original record by Lampe (1914), both Fowler (1936) and Collins (1954) cite for the Azores the species *Syacium micrurum* Ranzani, 1840 -in Lampe, 1914 as *Hemirhombus aramaca*- (Family 468- Paralichthyidae). The citation for the Azores must have been based on a partial mislabelling of the original material. The locality Porto Grande, São Vicente is not in the Azores, but in the Cape Verde archipelago.

## Marine fishes of the Azores

### Scophthalmidae

Order 56- Pleuronectiformes. Family 467- Scophthalmidae.

*Lepidorhombus whiffiagonis* (Walbaum, 1792) areeiro, solha da fundura  
megrim

**Clofnam number:** 195.2.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Lepidorhombus megastoma* by Goode & Bean 1895; *L. whiff-iagonis* by Fowler 1936; *Pleuronectes megastoma* by Vaillant 1888, 1919.

**References for the Azores:** Vaillant 1888°, 1919°; Goode & Bean 1895°; Cligny 1905; Norman 1934; Fowler 1936; Chabanaud 1939; Collins 1954; Albuquerque 1954-1956; Nash *et al.* 1991; Arruda 1992; DOP 1993°; Silva *et al.* 1995°; Menezes 1996°.

### Cynoglossidae

Order 56- Pleuronectiformes. Family 473- Cynoglossidae.

*Symphurus nigrescens* Rafinesque, 1810  
spotted tonguesole

**Clofnam number:** 199.2.1.

**Synonyms, misspellings, misidentifications:** *Symphurus lactea* by Kyle 1913; *S. lacteus* by Chabanaud 1933.

**References for the Azores:** Collett 1896a°; Brauer 1906; Kyle 1913; Norman 1930; Chabanaud 1933, 1950°; Albuquerque 1954-1956; Munroe 1990; Patzner *et al.* 1990°, 1992°; Nash *et al.* 1991; Arruda 1992; DOP 1993°; Azevedo 1995.

## Order TETRAODONTIFORMES

### Balistidae

Order 57- Tetraodontiformes. Family 476- Balistidae.

*Balistes carolinensis* Gmelin, 1789  
peixe porco  
triggerfish, grey triggerfish, gray  
triggerfish

**Clofnam number:** 201.1.2.

**Synonyms, misspellings, misidentifications:** *Balistes capriscus* by Hilgendorf 1888b, Bauchot 1967, Dooley *et al.* 1985; *B. (Capriscus) carolinensis* by Albuquerque 1954-1956, Dias *et al.* 1976.

**References for the Azores:** Hilgendorf 1888b°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Bauchot 1967; Wood 1973°; Wood & Williams 1974°; Dias *et al.* 1976°; Wheeler 1978; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Saldanha 1995°; Martins 1982b; Dooley *et al.* 1985; Sazonov & Galaktionova 1987°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°; Wirtz 1990b°, 1994°; Arruda 1992; Arruda *et al.* 1992°; Santos 1992a; Gonçalves 1993; Azevedo 1995; Gonçalves *et al.* 1995°; Pinho & Pereira 1995b°; Silva & Menezes 1995b°; Menezes 1996°.

*Canthidermis maculatus* (Bloch, 1786)  
peixe porco  
triggerfish, rough triggerfish

**Clofnam number:** 201.-.-. Genus not included in FNAM.

*Santos, Porteiro & Barreiros*

**References for the Azores:** New record.

**Remarks:** One specimen (237mm TL) was speared by Vitor Rosa on 27 December, 1993 close to Faial Island (DOP 360), amongst a school of *Balistes carolinensis*. Two others specimens (250-277mm TL) were caught on 15 October, 1993 in Horta Harbour, Faial Island by Vitor Rosa (DOP 359) and Vitor Cavalinha (DOP 339).

### **Monacanthidae**

Order 57- Tetraodontiformes. Family 477- Monacanthidae.

*Aluterus monocerus* (Linnaeus, 1758)

peixe porco  
triggerfish, unicorn filefish

**Clofnam number:** 202.-.-. Genus not included in FNAM.

**References for the Azores:** ICN 1993.

**Remarks:** One specimen (423mm SL) was speared by Vitor Rosa on 8 May, 1992 close to Faial Island, amongst a school of *Balistes carolinensis*. (DOP 361; DOP CD 6/1-4). The occurrence of this species in Faial is also mentioned in the correspondence between B. Collins and G. E. Maul (Maul in litt. to Collins 14 February, 1955/ 28 December, 1955; Collins in litt. to Maul 5 March, 1955/ 28 May, 1955/ 10 November, 1955).

*Stephanolepis hispidus* (Linnaeus, 1766)

peixe porco  
triggerfish, planehead filefish

**Clofnam number:** 202.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993; Wirtz 1994°.

**Remarks:** Two specimens (130-161mm SL) caught by rod and reel and SCUBA diving by Humberto Rodrigues and Vitor Rosa between 4 and 8 October, 1990 in Horta Harbour, Faial Island (DOP 340, 343; DOP CD 6/11-14).

### **Ostraciidae**

Order 57- Tetraodontiformes. Family 478- Ostraciidae.

*Acanthostracion notacanthus* (Bleeker, 1863)

**Clofnam number:** 203.1.1.

**Synonyms, misspellings, misidentifications:** *Lactophrys notacanthus* by Fowler 1919; *L. tricornis* by Albuquerque 1954-1956; *Ostracion tricornis* by Fowler 1936.

**References for the Azores:** Fowler 1919°, 1936°; Albuquerque 1954-1956; Klassen 1995.

### **Tetraodontidae**

Order 57- Tetraodontiformes. Family 480- Tetraodontidae.

*Canthigaster rostrata* (Bloch, 1786)

sharpnose puffer

**Clofnam number:** 205.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Azevedo & Heemstra 1995°.

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- Lagocephalus lagocephalus*** (Linnaeus, 1758) peixe balão  
pufferfish, oceanic puffer
- Clofnam number:** 204.2.1.  
**Synonyms, misspellings, misidentifications:** *Tetrodon lagocephalus* by Vaillant 1919.  
**References for the Azores:** Vaillant 1919°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Shipp 1974°; Wheeler 1978.
- Sphoeroides marmoratus*** (Lowe, 1839) peixe-balão, sopapo, sapo  
Guinean pufferfish
- Clofnam number:** 204.3.1. Species designation not included in FNAME where it appears cited for the Azores as *Sphoeroides spengleri* (Bloch, 1792).  
**Synonyms, misspellings, misidentifications:** *Sphoeroides spengleri* by Fowler 1936, Collins 1954, Albuquerque 1954-1956, Wood 1973; Mapstone & Wood 1974, 1975, Wood & Williams 1974, Harmelin & Harmelin-Vivien 1979, Ré 1979a, 1990, Saldanha 1980, Dooley *et al.* 1985, Barreiros 1990, Patzner 1990, Patzner & Santos 1990d, 1993, Patzner *et al.* 1990, 1992, Santos *et al.* 1990b, Wirtz 1990b, Azevedo *et al.* 1991, 1992, Arruda 1992, Arruda *et al.* 1992, Santos 1992a, DOP 1993; *Tetraodon marmoratus* by Sampaio 1904; *Tetrodon spengleri* by Regan 1903, Hilgendorf 1888b; Zugmayer 1933.  
**References for the Azores:** Hilgendorf 1888b°; Regan 1903°; Sampaio 1904°; Zugmayer 1933°; Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Wood 1973°; Mapstone & Wood 1974°, 1975°; Wood & Williams 1974°; Shipp 1974°; Harmelin & Harmelin-Vivien 1979°; Ré 1979a°, 1990°; Saldanha 1980°; Dooley *et al.* 1985°; Barreiros 1990°; Patzner 1990°; Patzner & Santos 1990d°, 1993°; Patzner *et al.* 1990°, 1992°; Santos *et al.* 1990b°, 1994a°; Wirtz 1990b°, 1994°; Azevedo *et al.* 1991°, 1992°; Arruda 1992°; Arruda *et al.* 1992°; Santos 1992a; DOP 1993°; Nash *et al.* 1994a°; Azevedo 1995; Gonçalves *et al.* 1995°; Santos & Nash 1995°.  
**Remarks:** The species is confused with *Sphoeroides spengleri* in FNAME. *S. spengleri* is a valid western Atlantic species.
- Sphoeroides pachygaster*** (Müller & Troschel, 1848) peixe balão, sapo do alto  
smooth pufferfish, blunthead puffer
- Clofnam number:** 204.3.2. Species designation not included in FNAME where it appears cited for the Azores as *Sphoeroides cutaneus* (Günther, 1870).  
**Synonyms, misspellings, misidentifications:** *Liosaccus cutaneus* by Fowler 1919, 1936, Albuquerque 1954-1956; *Sphoeroides cutaneus* by Collins 1954, Calvário *et al.* 1980, Brito 1983, Dooley *et al.* 1985, Vacchi 1986; *Tetrodon cutaneus* by Barnard 1927.  
**References for the Azores:** Fowler 1919°, 1936°; Collins 1954; Barnard 1927; Albuquerque 1954-1956; Shipp 1974; Calvário *et al.* 1980; Brito 1983; Dooley *et al.* 1985; Vacchi 1986; Menezes 1996°.  
**Remarks:** In FNAME this species is called *Sphoeroides cutaneus*. According to Shipp (1974) there is not enough information to separate the eastern and western Atlantic populations of this species; he states that “should specific status of the populations ever be discovered *S. pachygaster* (Müller & Troschel) would stand for the eastern Atlantic form, and *S. cutaneus* Günther for the western Atlantic species”.

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**Diodontidae**

Order 57- Tetraodontiformes. Family 481- Diodontidae.

*Diodon hystrix* Linnaeus, 1758

peixe balão espinhoso  
porcupine fish

**Clofnam number:** 206.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Collins 1954; Wirtz 1994°.

**Remarks:** Collins's (1954) uncertain record is based on a personal communication of J. Agostinho. The first documented specimen (400mm TL) was caught by Vitor Rosa at Pasteleiro, Faial Island on 1 September 1977 at 7m depth, and deposited at DOP.

**Molidae**

Order 57- Tetraodontiformes. Family 482- Molidae.

*Masturus lanceolatus* (Liénard, 1840)

peixe lua  
sharptail mola

**Clofnam number:** 207.2.1.

**Synonyms, misspellings, misidentifications:** *Mola lanceolata* by Collins 1954.

**References for the Azores:** Collins 1954°.

**Remarks:** Collins (1954) based his record, the first in Azorean waters, on photographs and descriptions supplied to him of a specimen caught at Horta in 1952. The specimens described by Albert I<sup>er</sup> of Monaco (1889), as *Ostthagoriscus mola*, and by Steenstrup & Lütken (1898), as *Ranzania truncata* were based on a young specimen taken from a stomach of *Coryphaena* sp., from outside the Azores region. These records were reviewed by Collett (1896), Schmidt (1921a,b, 1926) and Gudger (1937). Since then several individuals have been brought ashore (Martins 1977 and pers. obs.) or observed around the islands in recent years.

*Mola mola* (Linnaeus, 1758)

peixe lua  
sunfish, ocean sunfish

**Clofnam number:** 207.1.1.

**Synonyms, misspellings, misidentifications:** *Orthagoriscus mola* by Hilgendorf 1888b, Brian 1912; *Tetraodon mola* by Sampaio 1904.

**References for the Azores:** Hilgendorf 1888b°; Sampaio 1904°; Brian 1912°; Guiart 1935; Collins 1954; Albuquerque 1954-1956; Wheeler 1978; Arruda 1992.

**Remarks:** *Mola rotunda* is also referred by Sampaio (1904).

*Ranzania laevis* (Pennant, 1776)

peixe lua  
truncated sunfish, slender sunfish,  
slender mola

**Clofnam number:** 207.3.1.

**References for the Azores:** MCM collection.

**Remarks:** One specimen registered in Museum Carlos Machado (Ponta Delgada, São Miguel Island) was originally identified as *Orthagoriscus oblongus* or *Ranzania truncata*. One specimen (470mm TL) was stranded at Porto Pim, Faial Island on 18 July, 1996 (DOP 368).

## Marine fishes of the Azores

### Appendix to the checklist

This appendix includes: i) species whose occurrence in the Azores needs further confirmation besides the references already found in the literature, ii) species whose identification criteria are doubtful, iii) littoral species whose occurrences are presumably exceptional, and/or iv) species recorded at the outer limits of the Azorean EEZ.

#### Class CHONDRICHTHYES

#### Order CARCHARHINIFORMES

##### Scyliorhinidae

Order 6- Carcharhiniformes. Family 14- Scyliorhinidae.

##### *Apristurus maderensis* Cadenat & Maul, 1966

Madeira catshark

**Clofnam number:** 11.2.1. Species not cited for the Azores in F NAM.

**References for the Azores:** Saldanha & Biscoito in press b°.

**Remarks:** Saldanha & Biscoito (in press b) made video recordings of *Apristurus* at Lucky Strike (37°18'N, 32°16'W at ca. 1,700m depth) in 1994 which seem to be *Apristurus maderensis*. However, the authors state that identification is only possible with a specimen. The record should be considered provisionally.

##### *Galeus melastomus* Rafinesque, 1810

black-mouthed dogfish

**Clofnam number:** 11.3.1. Species not cited for the Azores in F NAM.

**References for the Azores:** Dias 1991°.

**Remarks:** Dias (1991) report is the only record of *G. melastomus* for the Azores. The occurrence of this species in the region needs further evaluation.

##### *Scyliorhinus canicula* (Linnaeus, 1758)

lesser spotted dogfish, dogfish,  
sandy dogfish

**Clofnam number:** 11.1.1. Species not cited for the Azores in F NAM.

**References for the Azores:** ICN 1993.

**Remarks:** This record is based on a single specimen (DOP 365: 152mm TL) caught off Faial Island but without additional data.

##### Triakidae

Order 6- Carcharhiniformes. Family 18- Triakidae.

##### *Mustelus mustelus* (Linnaeus, 1758)

smooth hound

**Clofnam number:** 13.5.1. Species noted for the Azores in F NAM with a question mark.

**Synonyms, misspellings, misidentifications:** *Mustelus laevis* by Belloc 1934.

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**References for the Azores:** Belloc 1934.

**Remarks:** The first and only known record of this species for the Azores is based on Belloc (1934). The occurrence of this species in the region needs further documentation.

**Carcharhinidae**

Order 6- Carcharhiniformes. Family 20- Carcharhinidae.

*Carcharhinus leucas* (Valenciennes, 1841)

bull shark

**Clofnam number:** 13.1.9. Species not cited for the Azores in FNAM.

**References for the Azores:** ICN 1993.

**Remarks:** The only record is based on a adult female specimen (420cm TL as measured by fishermen) caught at São Mateus, Terceira Island, in March, 1993. Photos of the head deposited at DOP. Jaws in JPB collection.

Order LAMNIFORMES

**Alopiidae**

Order 7- Lamniformes. Family 25- Alopiidae.

*Alopias superciliosus* (Lowe, 1839)

tubarão raposo  
bigeye thresher

**Clofnam number:** 9.1.2. Species not cited for the Azores in FNAM.

**References for the Azores:** New record.

**Remarks:** Record based on a specimen (342cm TL) caught on 22 August, 1994, slightly south of Azorean EEZ, at 33°56'N, 27°57'W. Photographs deposited in DOP archives.

Order SQUALIFORMES

**Echinorhinidae**

Order 9- Squaliformes. Family 30- Echinorhinidae.

*Echinorhinus brucus* (Bonnaterre, 1788)

bramble shark

**Clofnam number:** 16.9.1.

**References for the Azores:** Wheeler 1978; ICN 1993.

**Remarks:** The only citations of this species for the Azores are Wheeler (1978) and ICN (1993). The map in Wheeler (1978) is very general but includes the Azores. The occurrence of this species in the region needs further documentation.

**Squalidae**

Order 9- Squaliformes. Family 33- Squalidae.

*Squalus acanthias* Linnaeus, 1758

spurdog, spiny dogfish

**Clofnam number:** 16.1.1.

## Marine fishes of the Azores

**References for the Azores:** Sanches 1986b; ICN 1993.

**Remarks:** Sanches (1986) states that this species occurs in Madeira and the Azores. The occurrence of this species in the region needs further confirmation.

### Order RAJIFORMES

#### Torpedinidae

Order 12- Rajiformes. Family 37- Torpedinidae.

##### *Torpedo (Torpedo) torpedo* (Linnaeus, 1758)

common torpedo

**Clofnam number:** 20.1.1. Species not cited for the Azores in FNAME.

**References for the Azores:** New record.

**Remarks:** This species was observed (P. A. Monteiro, pers. com.) off Vila Maria Bay, south coast of Terceira Island, 2.5 miles west of Angra de Heroísmo, on 14 May, 1993. The fish was resting on a sandy bottom at 4m depth and a detailed description of the characteristic five blue ocelli was given. The occurrence of this species in the region needs further documentation.

#### Rajidae

Order 12- Rajiformes. Family 41- Rajidae.

##### *Raja (Dipturus) batis* Linnaeus, 1758

arraia, raia

skate

**Clofnam number:** 21.1.10. Species not cited for the Azores in FNAME.

**References for the Azores:** Dias *et al.* 1976°; ICN 1993; Silva *et al.* 1995°; Menezes 1996°.

**Remarks:** The occurrence of this species in the region needs further documentation.

##### *Raja (Raja) microcellata* Montagu, 1818

arraia, raia

small-eyed ray, painted ray

**Clofnam number:** 21.1.6. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Raja microcellata* by Dias *et al.* 1976.

**References for the Azores:** Dias *et al.* 1976°.

**Remarks:** Dias *et al.* (1976) state that this species was common at five stations in the area (L2: n= 23, 52.5kg; L3: n= 23, 36.5kg; L4: n= 2, 3.5kg; L5: n= 94, 204kg and L6: n= 29, 102.5kg) but the most common ray in the Azores, *Raja clavata*, was not reported by Dias *et al.* (1976). Despite the fact that *R. microcellata* is easily distinguishable from *R. clavata* due to the long bands arranged almost parallel to the disc margins, it is possible that the authors misidentified the species. The occurrence of this species in the region needs further documentation.

##### *Raja (Dipturus) oxyrinchus* Linnaeus, 1758

arraia, raia

long-nosed skate

**Clofnam number:** 21.1.12. Species not cited for the Azores in FNAME.

**References for the Azores:** Sanches 1986b; Dias 1991.

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**Remarks:** There is a dried specimen in the fish exhibition of the Museum Carlos Machado, Ponta Delgada (without catalogue number). The occurrence of this species in the region needs further documentation.

**Dasyatidae**

Order 12- Rajiformes. Family 44- Dasyatidae.

*Dasyatis centroura* (Mitchill, 1815)

ratão  
rougtail stingray

**Clofnam number:** 22.1.2. Species not cited for the Azores in FNAM.

**References for the Azores:** MCM collection.

**Remarks:** Two dried specimens are deposited in the fish collection of the Museum Carlos Machado, Ponta Delgada (without catalogue number). The occurrence of this species in the region needs further documentation.

**Myliobatidae**

Order 12- Rajiformes. Family 47- Myliobatidae.

*Rhinoptera marginata* (E. Geoffroy Saint-Hilaire, 1817)

lusitanian cownose ray

**Clofnam number:** 24.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Collins 1954°.

**Remarks:** Collins (1954) cites this species for the Azores based on two specimens, one at Horta museum and the other at Ponta Delgada. It could well be a misidentification of *Myliobatis aquila*. We have not seen these specimens and the occurrence needs further confirmation.

**Class ACTINOPTERYGII**

**Order ELOPIFORMES**

**Megalopidae**

Order 21- Elopiformes. Family 64- Megalopidae.

*Tarpon atlanticus* (Cuvier & Valenciennes, 1847)

peixe-prata, tarpão  
tarpon

**Clofnam number:** 28a.1.1.

**References for the Azores:** Pereira & Saldanha 1977°; Quéro & Delmas 1982.

**Remarks:** There is only one registered occurrence of *Tarpon atlanticus* for the Azores (Pereira & Saldanha 1977). The specimen is deposited at the MCM, in Ponta Delgada. Since the occurrence of the species seems to be highly exceptional, it was not included in the main list.

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Order ANGUILLIFORMES

**Muraenidae**

Order 23- Anguilliformes. Family 73- Muraenidae.

*Gymnothorax afer* Bloch 1795

**Clofnam number:** 73.2.-.

**Synonyms, misspellings, misidentifications:** *Lycodontis afer* by Fowler 1936

**References for the Azores:** Fowler 1936°.

**Remarks:** This species is cited for the Azores by Fowler (1936) based on two specimens collected in Faial and in Terceira Islands, respectively by F. M. McGuire in 1879 and by William Trelease in 1894. Both specimens were deposited at the USNM. We didn't verify the correct identity of the specimens. This *G. afer* is known to occur in the west coast of Africa, south of Mauritania. It is most probable the specimens were misidentified. The identification of the species is in need of verification.

*Gymnothorax miliaris* (Kaup, 1856)

**Clofnam number:** 73.2.-. Species not included in FNAME.

**Remarks:** There is a specimen of *Gymnothorax miliaris* deposited under MCZ 34270. The specimen was probably collected in Faial in the mid-1800s but not catalogued until 1937 (K. E. Hartel, pers. com.). No collector is given. David G. Smith (USNM) kindly re-examined the specimen for us and confirmed its identification as *G. miliaris* (D. G. Smith, pers. com.).

Order SACCOPHARYNGIFORMES

**Cyematidae**

Order 24- Saccopharyngiformes. Family 83- Cyematidae.

*Cyema atrum* Günther, 1878

bobtail snipe eel

**Clofnam number:** 78.1.1.

**Synonyms, misspellings, misidentifications:** “*Leptocephalus Cyematis atri*” by Lea 1913.

**References for the Azores:** Lea 1913°; Roule & Bertin 1929°; Bertin 1937; Grey 1956.

**Remarks:** The citation of this species for the Azores is based on a single larvae caught by R/V “Michael Sars” expeditions at 36°53'N, 29°47'W (station 56).

Order CLUPEIFORMES

**Engraulidae**

Order 25- Clupeiformes. Family 88- Engraulidae.

*Engraulis encrasicolus* (Linnaeus, 1758)

anchovy, European anchovy

**Clofnam number:** 35.1.1. Species not cited for the Azores in FNAME.

**References for the Azores:** Ramos 1869°; Martins 1982b; ICN 1993.

*Santos, Porteiro & Barreiros*

**Remarks:** The occurrence of this species in the area needs documentation.

**Clupeidae**

Order 25- Clupeiformes. Family 91- Clupeidae.

*Sardinella maderensis* (Lowe, 1838)

pilchard, sardine

**Clofnam number:** 33.4.2. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Clupea maderensis* by Günther 1868, Regan 1903, Albuquerque 1954-1956.

**References for the Azores:** Günther 1868; Regan 1903; Albuquerque 1954-1956; Arruda 1992.

**Remarks:** Günther (1868; vol. 7/B, p. 440-1) includes the Azores in the geographic distribution of this species. However, this is not based on the study of specimens existing in museum collections. No clear demonstration of the occurrence of the species in the area is given. The occurrence of this species in the region needs further documentation.

**Order SILURIFORMES**

**Ariidae**

Order 29- Siluriformes. Family 128- Ariidae.

*Galeichthys feliceps* Valenciennes, 1840

**Clofnam number:** ---.---.---. Family not included in F NAM.

**Synonyms, misspellings, misidentifications:** *Tachysurus feliceps* by Fowler 1936.

**References for the Azores:** Lampe 1914; Fowler 1936; Collins 1954.

**Remarks:** The record of this species for the Azores may have been due to a mislabelling of the specimens or jars.

**Order OSMERIFORMES**

**Argentinidae**

Order 32- Osmeriformes; Family 153- Argentinidae.

*Argentina sphyraena* Linnaeus, 1758

argentine

**Clofnam number:** 46.1.1. Species not cited for the Azores in F NAM.

**Citations for the Azores:** Nobre 1924, 1930; Albuquerque 1954-1956.

**Remarks:** This is probably a misidentification by Nobre (1924) and the occurrence of this species in the Azores needs further documentation. The occurrence of this species for the Azores was questioned in ICN (1993).

**Alepocephalidae**

Order 32- Osmeriformes. Family 158- Alepocephalidae.

*Leptoderma* sp.

splitfin smooth-head

## Marine fishes of the Azores

**Clofnam number:** 30.10.3.

**References for the Azores:** Markle 1976; Markle & Quéro 1986°.

**Remarks:** Only one specimen (210mm TL) is known from the Azores region. According to Markle and Quéro (1986) the specimen belongs to the *Leptoderma lubricum*-complex of Markle 1976.

*Rinoctes nasutus* (Koefoed, 1927)

abyssal smooth-head

**Clofnam number:** 30.11b.1.

**Remarks:** One specimen, the type, was caught at 34°59'N, 33°01'W at 2,865m (Koefoed 1927) (Southwest of Azores). Also see Markle & Merrett (1980).

### Order STOMIIFORMES

#### Gonostomatidae

Order 34- Stomiiformes. Family 167- Gonostomatidae.

*Cyclothone acclinidens* Garman, 1899

**Clofnam number:** 37.4.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Cyclothone pseudoacclinidens* by Quéro 1975.

**References for the Azores:** Quéro 1975.

**Remarks:** Reported from off the Azores (31° 20'N, 35° 07'W) by Murray & Hjort (1912) and, based on this, by Fowler (1936) Albuquerque (1954-1956), Grey (1956), and Witzell (1973). Quéro (1975) states that the eastern Atlantic "population" *C. acclinidens* is a new species, *C. pseudoacclinidens*, abundant around the Azores. We did not find any direct evidence of specimens caught in the Azorean EEZ. The occurrence of this species for the Azores was questioned in ICN (1993).

### Order AULOPIIFORMES

#### Alepisauridae

Order 36- Aulopiformes. Family 184- Alepisauridae.

*Alepisaurus brevirostris* Gibbs, 1960

lancetfish

**Clofnam number:** 61.1.-. Species not included in FNAME.

**References for the Azores:** Haedrich 1964°.

**Remarks:** Haedrich (1964) reports finding four specimens (69-178mm SL) in the stomachs of two *Alepisaurus ferox* caught at 36°21'N, 23°30'W and 36°55'N, 32°32'W on 8 and 17 May, 1963.

### Order LAMPRIDIFORMES

#### Regalecidae

Order 38- Lampridiformes. Family 193- Regalecidae.

*Regalecus glesne* Ascanius, 1772

## *Santos, Porteiro & Barreiros*

oar-fish, ribbon-fish, king of herrings

**Clofnam number:** 106.1.1.

**References for the Azores:** Wheeler 1978; ICN 1993.

**Remarks:** Wheeler (1978) show a generalized distribution in all the tropical and temperate zones of the Atlantic, Indian and Pacific oceans but primary references were not found to documented occurrence in the Azores.

### Order OPHIDIIFORMES

#### Carapidae

Order 41- Ophidiiformes. Family 198- Carapidae.

*Carapus acus* (Brünnich, 1768)

pearlfish

**Clofnam number:** 175.1.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Carapus imberbis* by Collins 1954.

**References for the Azores:** Collins 1954°.

**Remarks:** Collins (1954) record is based on a specimen, presently lost, caught off Angra do Heroísmo, Terceira Island, on 11 April, 1923 from information supplied by Col. José Agostinho. The occurrence of this species in the region needs further documentation. The occurrence of this species for the Azores was questioned in ICN (1993).

### Order GADIFORMES

#### Macrouridae

Order 42- Gadiformes. Family 205- Macrouridae.

*Chalinura brevibarbis* Goode & Bean, 1896

shortbeard grenadier

**Clofnam number:** 99.16.1.

**References for the Azores:** Bauchot & Pras 1980.

**Remarks:** This is the only citation of this species so far known for the Azores. No primary references were found concerning the occurrence of this species in the Azores. The occurrence of this species needs further documentation. The occurrence of this species for the Azores was questioned in ICN (1993).

*Nezumia bairdii* (Goode & Bean, 1877)

marlin-spike

**Clofnam number:** 99.9.-. Species not included in F NAM

**Synonyms, misspellings, misidentifications:** *Coryphaenoides bairdii* by Fowler 1936; *Macrurus bairdii* by Roule & Angel 1933.

**References for the Azores:** Roule & Angel 1933°; Fowler 1936; Collins 1954; Albuquerque 1954-1956; Geistdoerfer *et al.* 1970°, 1971°; Marshall & Iwamoto 1973; Merrett 1986°; Cohen *et al.* 1990.

**Remarks:** Cohen *et al.* (1990) recorded this species with a question mark. Marshall & Iwamoto (1973) take precautions concerning the species identification by stating that “Roule & Angel (1933) reported one specimen from the vicinity of the Azores, but they gave a pelvic fin-ray count for this specimen as 8,

## Marine fishes of the Azores

which suggests that they had another species.” They also state that the specimen identified by Geistdoerfer *et al.* (1970) may well belong to another species and “should be re-examined”. The citation made by Merrett (1986) has not sufficient details in order to allow a resolution.

### Moridae

Order 42- Gadiformes. Family 207- Moridae.

#### *Laemonema latifrons* Holt & Byrne, 1908

**Clofnam number:** 103.5.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Saldanha & Biscoito in press b°.

**Remarks:** Saldanha & Biscoito (in press b) made two video recordings at Lucky Strike (37°18'N, 32°16'W) of a species that they believe could be *Laemonema latifrons* but positive identification can only be made from specimens.

#### *Lepidion schmidti* Svetovidov, 1936

**Clofnam number:** 103.6.4. Species not cited for the Azores in FNAM.

**References for the Azores:** Saldanha & Biscoito in press b°.

**Remarks:** Saldanha & Biscoito (in press b) made several video recordings and colour slides both at Lucky Strike (37°18'N, 32°16'W) and Menez Gwen (37°50'N, 31°31'W) hydrothermal sites of fishes that they identified as *Lepidion schmidti*. They state that “although the available videos and colour slides leave little doubt, a definite identification can only be obtained from captured specimens”.

## Order LOPHIIFORMES

### Antennariidae

Order 44- Lophiiformes. Family 217- Antennariidae.

#### *Antennarius radiosus* Garman, 1896

big-eyed frogfish, singlespot  
frogfish

**Clofnam number:** 211.2.2. Species not cited for the Azores in FNAM.

**References for the Azores:** Ferreira 1940°.

**Remarks:** The mention of this species for the Azores is based on a specimen collected off Velas (São Jorge) at 10m. This specimen was deposited at Museum Carlos Machado but must have been lost, since we could not find it in the collections. This species, and the recently recorded for the Azores *Antennarius senegalensis* by Azevedo & Heemstra 1995, belong to the *Antennarius ocellatus* group (Pietsch & Grobecker, 1987). Ferreira (1940) could have misidentified his specimen. The occurrence of this species in the region needs further documentation.

### Ceratiidae

Order 44- Lophiiformes. Family 229- Ceratiidae.

#### *Ceratias holboelli* Kröyer, 1845

## *Santos, Porteiro & Barreiros*

**Clofnam number:** 218.1.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Ceratias holbölli* by Clarke 1950, 1956.

**References for the Azores:** Clarke 1950°, 1956°.

**Remarks:** Clarke (1956) reported three specimens in the stomachs of three sperm whales caught 20 miles southwest of Capelinhos, Faial Island, on 12 August, 1949 (see also Clarke 1950), 4 and 19 August, 1954. The first specimen was identified from a skin fragment, and the other two were partially digested. The occurrence of this species for the Azores was questioned in ICN (1993). The occurrence of this species in the region needs further documentation.

### Order BELONIFORMES

#### Belonidae

Order 47- Beloniformes. Family 242- Belonidae.

*Tylosurus acus* (Lacepède, 1803)

peixe agulha  
agujon needlefish

**Clofnam number:** 90.3.1. Species not cited for the Azores in F NAM.

**Synonyms, misspellings, misidentifications:** *Belone acus* by Nobre 1924, 1930; *Strongylura acus* by Fowler 1936.

**References for the Azores:** Nobre 1924°, 1930°; Fowler 1936°; Collins 1954.

**Remarks:** The identity of the species and their synonyms in this family occurring in the Azores are in need of further confirmation, where possible. For instance, it is most likely that the *Belone acus* cited by Nobre (1924, 1930) will prove to be *Belone belone gracilis*. Also see the remark under *Belone belone gracilis*.

### Order STEPHANOBERYCIFORMES

#### Melamphaidae

Order 49- Stephanoberyciformes. Family 254- Melamphaidae.

*Melamphaes longivelis* Parr, 1933

ridgehead

**Clofnam number:** 117.1.2.

**References for the Azores:** Ebeling & Weed 1973; ICN 1993.

**Remarks:** Ebeling & Weed (1973) examined specimens from the North-Atlantic. They do not give precise locations concerning the specimens they studied. They consider that the species “ranges widely throughout the Atlantic”.

*Melamphaes microps* (Günther, 1878)

ridgehead

**Clofnam number:** 117.1.3.

**References for the Azores:** Ebeling & Weed 1973; ICN 1993.

**Remarks:** Ebeling & Weed (1973) consider the species as antitropical, with one population in the North-Atlantic. They report specimens from the North-Atlantic between 32° and 58°N without giving the exact locations.

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*Scopeloberyx rubriventer* (Koefoed, 1953)

ridgehead

**Clofnam number:** 117.4.2.

**Synonyms, misspellings, misidentifications:** *Melamphaës rubriventer* by Koefoed 1953.

**References for the Azores:** Koefoed 1953<sup>o</sup>; Ebeling & Weed 1973.

**Remarks:** The species is “Only known from five juvenile specimens whose identification is considered in doubt.” (vd. FNAM p. 764). The occurrence of this species for the Azores was questioned in ICN (1993).

### Order GASTEROSTEIFORMES

#### Fistulariidae

Order 52- Gasterosteiformes. Family 284- Fistulariidae.

*Fistularia* sp..

cornetfish

**Clofnam number:** -.-.-. Family not included in FNAM.

**References for the Azores:** Collins in litt. to Maul 1955.

**Remarks:** The occurrence of a single specimen of *Fistularia* is documented in the correspondence between B. Collins and G. E. Maul (Collins in litt. to Maul 28 August, 1955; Maul in litt. to Collins 28 November, 1955). The specimen was caught off Faial and brought to Collins. Morphometrics, meristics, and a photograph was taken by Robert Clarke but the specimen was not preserved.

### Order SCORPAENIFORMES

#### Triglidae

Order 54- Scorpaeniformes. Family 297- Triglidae.

*Trigla lyra* Linnaeus, 1758

piper

**Clofnam number:** 185.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Sampaio 1904; Collins 1954.

**Remarks:** This species is included based on a probable misidentification of *Aspitrigla cuculus* by Sampaio (1904). The occurrence of *Trigla lyra* in the Azores needs further documentation.

*Peristedion cataphractum* (Linnaeus, 1758)

armed gurnard

**Clofnam number:** 186.1.1. Species not cited for the Azores in FNAM.

**Remarks:** In the summer of 1992 a specimen of the subfamily Peristediinae was stranded at the harbour of Horta, Faial Island. The specimen, despite being damaged with the rostral extensions broken, seems to correspond to *Peristedion cataphractum*.

#### Cyclopteridae

Order 54- Scorpaeniformes. Family 313- Cyclopteridae.

*Eumicrotremus spinosus* (Fabricius, 1776)

## *Santos, Porteiro & Barreiros*

### Atlantic spiny lumpsucker

**Clofnam number:** 191.3.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Collett 1897°, 1905°; Arruda 1992.

**Remarks:** There is no reason to doubt Collett's identification, at least at the generic levels. The occurrence of the species in the latitudes of the Azores is really exceptional. Its inclusion in the present list should be considered of historical interest. Collett (1905: p. 724) makes the following observation: "*E. spinosus*" (...) "has its principal distribution in somewhat deep water, and has hitherto been found only in arctic waters. Its discovery in the sea surrounding the Azores, in a latitude (38° N. Lat.) similar to that of Portugal, is interesting as a proof of the great conformity in the distribution of organic life in different latitudes at greater depths. In the Arctic Ocean, *E. spinosus* has only been found where the bottom temperature is about freezing, sometimes even in ice-cold water".

## Order PERCIFORMES

### Chaetodontidae

Order 55- Perciformes. Family 370- Chaetodontidae.

#### *Chaetodon sedentarius* Poey, 1860

reef butterflyfish

**Clofnam number:** 143.1.-. Species not included in FNAM.

**References for the Azores:** New record.

**Remarks:** A single specimen was seen, photographed and video recorded during several days at the outer edge of Horta Harbour, Faial Island, in September, 1996 (J. Fontes, pers. com.).

### Chiasmodontidae

Order 55- Perciformes. Family 407- Chiasmodontidae.

#### *Pseudoscopelus altipinnis* Parr, 1933

**Clofnam number:** 150.3.1. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Pseudoscopelus scriptus* by Collins 1954.

**References for the Azores:** Collins 1954.

**Remarks:** Collins (1954) mentions this species for the Azores based on information about a specimen caught at Pico Island given from Col. J. Agostinho. The occurrence of *P. altipinnis* in the Azores needs further documentation. The occurrence of this species for the Azores was questioned in ICN (1993).

### Callionymidae

Order 55- Perciformes. Family 428- Callionymidae.

#### *Callionymus reticulatus* Valenciennes, 1837

**Clofnam number:** 163a.1.6. Species not cited for the Azores in FNAM.

**Synonyms, misspellings, misidentifications:** *Callionymus lyra* by Fowler 1936; Collins 1954; Albuquerque 1954-1956; Maul 1972; Wheeler 1978.

**References for the Azores:** Fowler 1936°; Collins 1954; Albuquerque 1954-1956; Maul 1972; Wheeler 1978.

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**Remarks:** Fowler (1936) refers to a specimen (115mm TL) of *Callionymus lyra* (USNM 94473) (Clofnam: 163a.1.1. Cited for the Azores in FNAME) secured by William Trelease on 3 July, 1894, but since then no additional specimens have been reported. “Cantro” and “soma” are, according to Fowler (1936), the vernacular names used at Terceira Island to designate the species. The genus is considered to occur in the Azores by Nakabo (1982) based on Fowler’s reference. The specimen was re-examined by J. Williams (USNM- Smithsonian Institution) in November, 1996 (J. Williams, pers. com.) and by us in January, 1997 and identified as belonging to *C. reticulatus*. *Callionymus lyra* was questioned in ICN (1993).

### Gobiidae

Order 55- Perciformes. Family 433- Gobiidae.

#### *Lesueurigobius suerii* (Risso, 1810)

Lesueur’s goby

**Clofnam number:** 162.16.1. Species not cited for the Azores in FNAME.

**Synonyms, misspellings, misidentifications:** *Gobius Lesueuri* by Vaillant 1919; *G. lesuerii* by Fowler 1936.

**References for the Azores:** Vaillant 1919°; Fowler 1936.

**Remarks:** Vaillant (1919) mentions the occurrence of *Gobius lesueuri* (= *Lesueurigobius suerii*) in the Azores based on a specimen caught at 599m by a trawl over coarse sand at st. 866 (38°52’50’’N, 27°23’W). The identification of this specimen is in need of further verification (P. Miller, pers. com.).

#### *Mauligobius maderensis* (Valenciennes, 1837)

**Clofnam number:** 162.26.2. Species noted with a question mark in the Azores.

**Synonyms, misspellings, misidentifications:** *Gobius maderensis* by Regan 1903.

**References for the Azores:** Regan 1903°.

**Remarks:** Regan (1903) reported *Gobius maderensis*, but he does not give a description. We did not examine the specimens in question and we can not be sure if they were *Mauligobius maderensis* or *Gobius paganellus*, since the two species are very similar. Our recent study of the Olivia Dabney’s collection of Azorean fishes deposited at the Museum of Comparative Zoology (Harvard University) revealed that among the nineteen gobies (MCZ 13141, 13223, 13288, 149279), three were *Mauligobius maderensis* (MCZ 13141). Besides these, two others presented intermediate characteristics. In recent years there has been no reference to *M. maderensis* occurring in the Azores. For that reason we decided to include this species in the appendix, until further studies are made. Identification of the species was confirmed (P. Miller pers. commn).

### Xiphiidae

Order 55- Perciformes. Family 450- Xiphiidae.

#### *Istiophorus albicans* (Latreille, 1804)

Atlantic sailfish, sailfish

**Clofnam number:** 160.1.1.

**Synonyms, misspellings, misidentifications:** *Istiophorus platypterus* by Martin 1986.

**References for the Azores:** Martin 1986°; Nakamura 1985.

**Remarks:** Martin (1986) reported this species as being observed at 38°34'N, 28°30'W. Nakamura's (1985) very general range map includes the Azores. This species needs further confirmation since it was never recorded in the log books of the big game fishing boats operating in the Azores (L. Gallagher, pers. comm). The occurrence of this species for the Azores was questioned in ICN (1993).

### Blenniidae

Order 55- Perciformes. Family 425- Blenniidae.

#### *Hyleurochilus fissicornis* (Quoy & Gaimard, 1824)

**Clofnam number:** 164.3.-. Species not included in FNAM.

**Synonyms, misspellings, misidentifications:** *Blennius fucorum* by Cuvier & Valenciennes 1836, Bath 1977; *Hyleurochilus* sp. by Oliveira *et al.* 1992 based on personal communication by Hans Bath.

**References for the Azores:** Cuvier & Valenciennes 1836; Bath 1977, 1994; Oliveira *et al.* 1992.

**Remarks:** Cuvier & Valenciennes (1836: p. 263-265) described a new species, *Blennius fucorum*, based on a specimen captured 80 miles south of the Azores in rafting algae (see also Bath 1977, Oliveira *et al.* 1992). Bath (1994) studied the specimen and found that it is *Hyleurochilus fissicornis* (Quoy & Gaimard, 1824), which inhabits the south Atlantic coasts of Brasil and Uruguay. The specimen must have reached the region of the Azores associated with rafting algae (*Fucus natan*).

### Tetragonuridae

Order 55- Perciformes. Family 455- Tetragonuridae.

#### *Tetragonurus atlanticus* Lowe, 1839

bigeye squaretail

**Clofnam number:** 178.1.2.

**References for the Azores:** ICN 1993.

**Remarks:** Since individuals were caught all around, but not inside, the Azorean EEZ during the *Dana* expeditions (Grey, 1955) it is probable that this species also occurs in the Azores. Janssen & Harbison (1981), note that it occurs in association with salps north of the Azorean EEZ. These authors also mention four observations of unidentified *Tetragonurus*, stating however that they should probably be *T. cuvieri*, at the far western edge of the Azorean EEZ (see also Swanberg & Harbison 1980, concerning information about R/V "Atlantis II" cruise stations).

### Stromateidae

Order 55- Perciformes. Family 456- Stromateidae.

#### *Stromateus fiatola* Linnaeus, 1758

butterfish

**Clofnam number:** 179.1.1. Species not cited for the Azores in FNAM.

**References for the Azores:** Nobre 1924, 1930; Albuquerque 1954-1956.

**Remarks:** The occurrence of this species needs further documentation. The occurrence of this species for the Azores was questioned in ICN (1993).

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### Order PLEURONECTIFORMES

#### Bothidae<sup>6</sup>

Order 56- Pleuronectiformes. Family 465- Bothidae.

*Arnoglossus imperialis* (Rafinesque, 1810)

scaldfish

**Clofnam number:** 196.2.2.

**Synonyms:** *Arnoglossus lophotes* by Collett 1896a.

**References for the Azores:** Collett 1896a<sup>9</sup>; Kyle 1913; Albuquerque 1954-1956; Arruda 1992.

**Remarks:** The occurrence of this species is based on a single specimen reported by Collett (1896a).

### Order TETRAODONTIFORMES

#### Balistidae

Order 57- Tetraodontiformes. Family 476- Balistidae.

*Balistes vetula* Linnaeus, 1758

peixe porco  
triggerfish, queen triggerfish

**Clofnam number:** 201.1.1.

**References for the Azores:** Fowler 1919<sup>9</sup>, 1936<sup>9</sup>; Collins 1954; Albuquerque 1954-1956; Dooley *et al.* 1985; ICN 1993.

**Remarks:** The occurrence of this species for the Azores is based on a single specimen observed by Fowler (1919). There are no new records since then. The inclusion of this species in the checklist of Azorean marine fishes requires further documentation.

#### Diodontidae

Order 57- Tetraodontiformes. Family 481- Diodontidae.

*Chilomycterus atringa* (Linnaeus, 1758)

porcupine fish, spotted burrfish

**Clofnam number:** 206.2.1. Species not cited for the Azores in FNAM.

**References for the Azores:** MCM collection.

**Remarks:** Specimens deposited in Museum Carlos Machado (Ponta Delgada, São Miguel Island) are here considered exceptional occurrences but valid records. The inclusion of this species in the checklist of Azorean marine fishes requires further documentation.

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<sup>6</sup> Based on a original record by Lampe (1914), both Fowler (1936) and Collins (1954) cite for the Azores the species *Syacium micrurum* Ranzani, 1840 -in Lampe, 1914 as *Hemirhombus aramaca-* (Family 468-Paralichthyidae). The citation for the Azores must have been based on a partial mislabelling of the original material. The locality Porto Grande, São Vicente is not in the Azores, but in Cape Verde archipelago.

## Appendix to ICN (1993)

In addition to the notations and corrections concerning the checklist of marine fishes included in ICN (1993) which are in the previous sections, the following still need to be corrected.

Eight species whose occurrence in the Azores was questioned in ICN (1993) and which are not confirmed are:

*Radhinesthes decimus* (Zugmayer, 1911) (Astronesthidae); *Serranus scriba* (Linnaeus, 1758) (Serranidae); *Priacanthus cruentatus* (Lacepède, 1801) (Priacanthidae); *Spondylisoma cantharus* (Linnaeus, 1758) (Sparidae); *Benthocometes robustus* (Goode & Bean, 1886) (Ophidiidae); *Caulophryne polynema* Regan, 1930 (Caulophrynidae); *Oneirodes eschrichtii* Lütken, 1871 and *O. macronema* (Regan & Trewavas, 1932) (Oneirodidae).

Eleven species whose occurrence in the Azores was mentioned in ICN (1993) are not considered valid records and are not included in the present checklist:

*Sphyrna lewini* (Griffith & Smith, 1834) (Carcharhinidae); *Ilyophis brunneus* Gilbert, 1891 (Synphobranchidae); *Nessorhamphus ingolfianus* (Schmidt, 1912) (Derichthyidae); *Rouleina maderensis* Maul, 1948 (Alepocephalidae); *Holtbyrnia macrops* Maul, 1957 and *Sagamichthys schnakenbecki* (Krefft, 1953) (Platyroctidae); *Echiostoma barbatum* Lowe, 1843 and *Photonectes dinema* Regan & Trewavas, 1930 (Stomiidae); *Taaningichthys minimus* (Tåning, 1928) (Myctophidae); *Trachipterus trachipterus* (Gmelin, 1789) (Trachipteridae); *Aspitrigla obscura* (Linnaeus, 1764) (Triglidae).

## CONCLUSIONS

Four hundred and sixty species of marine fishes occurring in the Azores are included in the present checklist. Forty four of these are Chondrichthyes, and 416 are Actinopterygii. Perciformes is the best represented order with 108 species. Myctophidae with 43 species is the best represented family. In addition to these species, 54 other species -14 Chondrichthyes and 40 Actinopterygii - are included in an appendix. We consider the species listed in the appendix not fully validate members of the Azorean fish fauna. In some cases their taxonomic determination is dubious. In other cases the occurrences, despite being relevant and well determined, are, presumably, highly occasional.

The first ichthyological comments regarding Azores was found in Duhamel du Monceau (1777) who mentions the “Raie cornue des Açores”, or “Mobular des Caraïbes”. The first authoritative taxonomic reference came only in 1833, when A. Valenciennes described a new species, *C. azorica*, based on a specimen from the Azores. This was later found to belong to the previously described species *C. equiselis*.

Until 1860 only 6 species were mentioned in scientific literature for the Azores. In 1861, the French zoologist, Henri Drouët, working for the King of Portugal, added 24 species. In 1888 new records were included, 51 of these were cited by the German ichthyologist, F. Hilgendorf, based on the fishes collected during an expedition lead by H. Simroth, and on several specimens deposited in the *Museu Carlos Machado* (Hilgendorf 1888b). Twenty one additional species were reported by the eminent French ichthyologist, Louis Vaillant, who studied the fishes collected during the scientific expeditions of the R/V “Travailleur” and R/V “Talisman” from 1880 to 1883 (Vaillant 1888).

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During the 19th century Olivia Dabney, daughter of the American Consul in Faial, J. B. Dabney sent a collection of fishes composed of around 130 specimens, belonging to 27 families and 46 species to Louis Agassiz, at the Museum of Comparative Zoology, Cambridge (see Dabney 1977 and Porteiro & Santos in prep.). If this collection had been studied then, it would have constituted the first extensive list of marine fishes of the Azores.

The number of marine fishes known for the Azores increased over the years (Fig. 2). A major contribution was made by the scientific cruises organised by Albert I<sup>er</sup>, Prince of Monaco. These also contributed to the knowledge of the life history and physiology of Azorean species. The number of fish species recorded for the Azores is expected to increase in the next few years, in part due to the growing research in the deep-sea, including hydrothermal vent ecosystems (Desbruyères & Alayse 1995, Saldanha & Bischoito in press a,b).

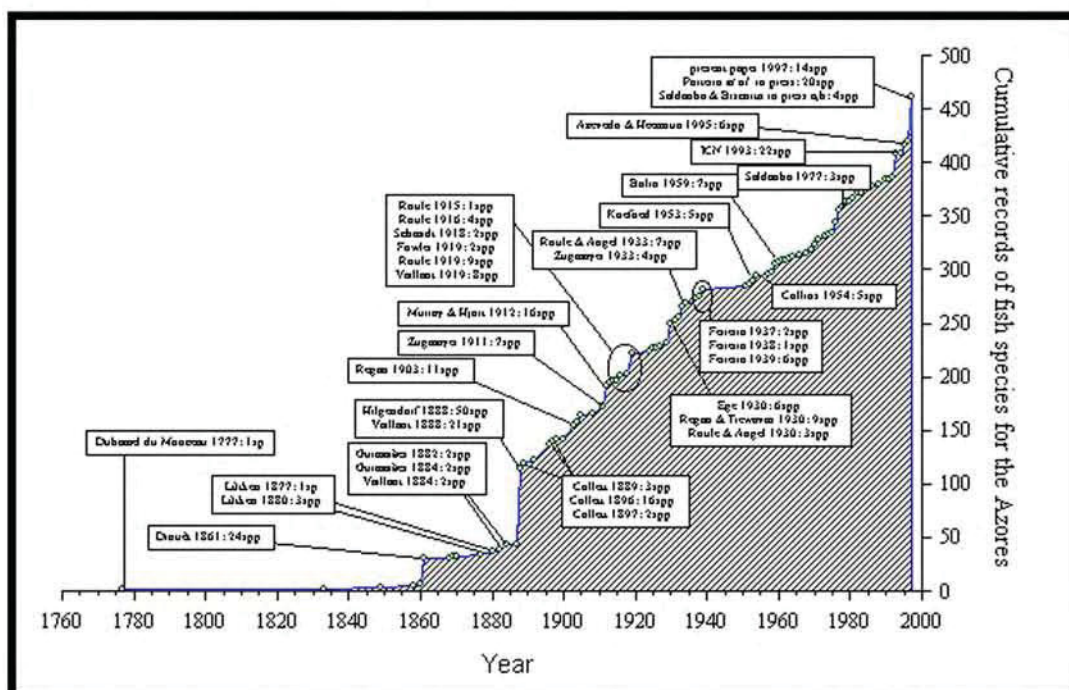


Figure 2. Cumulative records of fish species new for the Azores since the 18th century, with reference to some bibliographic contributions.

The Azores constitute the most isolated North-eastern Atlantic Archipelago. The fish fauna evolved as a result of historical events and present oceanographic conditions. Atlantic mesopelagic zoogeography has been studied using the Myctophidae as a model under which the Azores were included in Azores-Britain province (Backus *et al.* 1977). Coastal fish are of Macaronesian affinity (see Santos *et al.* 1995c and Porteiro *et al.* 1996) but more studies are needed to evaluate ichthyogeographic affinities of the Azores in a larger context.

A picture emerges showing the Azores at a “cross-roads”, where shallow marine fauna and flora of different origins meet. The waters of the Mediterranean penetrate into the region of the Azores at

depths below 800 to 1,000m (see Pickard & Emery 1982, Santos *et al.* 1995c). The eddies circulating from western Africa and the Macaronesian Islands, on one hand, and from the Atlantic coasts of Europe, on the other, must have been the main source of transport of eggs and fish larvae, and even young and adult fish. Small islets and shallow seamounts, which are a common topographic feature of the ocean between the Azores and the African continent, could have served as “stepping-stones” for the dispersal of organisms. It would be highly interesting to evaluate the role of the chain of seamounts with regard to dispersal of benthic fishes. Large scale circulation from the west by the Gulf Stream, also plays a role in the circulation and transport of fish. However, the differences in the structure of coastal waters of the Azores and of the eastern American coast and adjacent archipelagos suggest that colonisation from the west is an unlikely event.

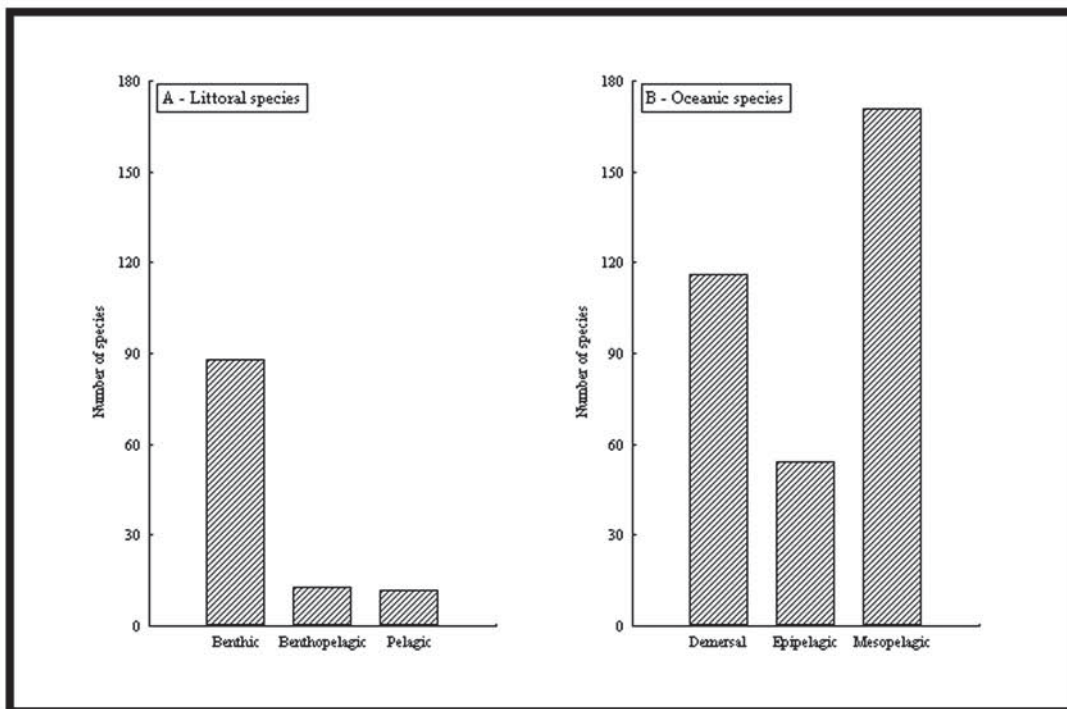


Figure 3. Histograms of littoral (A) and oceanic (B) fishes of the Azores separated in three guilds each.

The most outstanding element of the global picture of the Azorean marine fish fauna is the lack of many endemic species. Reasons for the few endemisms in the Azores were first hypothesised by Briggs (1966, 1970, 1974). Crowley (1981) concluded that the drop of sea temperatures during the Pleistocene probably resulted in mass extinctions which suggests that most of the organisms now present would have reached the Azores in the last 17,000 years - too short a time for species differentiation.

Oceanic species represent 75% of the number of known species. The remaining 25% are littoral species, i. e., species living shallower than the 200m bathymetric contour (Fig. 3). Of the total

## *Marine fishes of the Azores*

number of species occurring in the Azores, approximately 75 (16%), have some commercial interest. Thirty one of these are littoral species, the rest oceanic.

With exception of a few rafting species, most coastal fish must have colonised the Azores Archipelago by larval dispersion from other areas. The great part of the coastal species have limited capacity to transverse the long distances of deep ocean that separates the islands from the nearest shores. The fish larvae are susceptible to environmental condition especially change in temperature, which causes high mortality. Thus, only the larvae of the more resistant, eurytherm species would reach the Azores.

Climate changes and change in currents over time must have affected fish diversity in the Azores especially more shallow water species. There is a need of more detailed research on paleoceanology to clarify aspects of changes in currents, climate and geology in the sea that could have influenced colonisation. More comparative and empirical research to characterise variations in both coastal and pelagic fish assemblages are also needed. Programs of monitoring of environmental conditions and fish assemblages should be established.

Documentation of occasional occurrences is also important. These occurrences can make us understand the pathways and patterns of fish seasonally, distribution and dispersal in our region. It is important to make as systematic and quantitative inventory of historical documents and collections. We are sure that unpublished correspondence between naturalists of interest to ichthyologists, still exist. An example of this are the interesting letters exchanged by G. E. Maul and Bernhard Collins.

The study of natural history and the keeping of taxonomic collections in Portugal and in the Azores have always been done with the good will of a few scientists and interested laymen but these collections were usually lost. Two of the three Portuguese museums of natural history are examples of this. The collections of fishes of the *Museu Bocage* (Lisbon) were almost completely lost during a tragic fire that occurred in the 70's. The collection of fishes of the *Museu Carlos Machado* (Ponta Delgada, Açores), which flourished during the early century, suffered from a lack of proper curation between 1950 and 1980. The natural history collections of the museum are now being rebuilt and restructured under the museum's new direction and by a permanent curator for the collections of natural history.

Museums of natural history in Portugal suffered (and continue to suffer) because at the lack of funding, which has lead to the deterioration of buildings and collections. Also, there has been an inherent lack of tradition to pass down information required by curators and assistant curators. Now that museums of natural history are modernising throughout the world, this seems opportune time to create a Museum of Natural History, based on modern multimedia technology together with classical preserved collections, to reveal the hidden natural history of the North-eastern Atlantic Archipelago of the Azores.

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Checklist; Systematics; Anatomy/ meristics/ morphometry; Geographical distribution; Scientific expeditions/ cruises.
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Systematics; Checklist; Scientific expeditions/ cruises/ stations; Museum collection; History/ marine research.

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Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Scientific expeditions/ cruises.
- Bekker, V. E. 1983. *Myctophids of the World*. Moskva: Akademyia nauk SSSR. 248pp. (In Russian).  
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- Belloc, G. 1934. Catalogue illustré des Poissons comestibles de la côte Occidentale d'Afrique (du Cap Spartel au Cap Vert). *Revue des Travaux de l'Office des Pêches Maritimes*, Tome VII, fasc. 2, No. 26: 117-193.  
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Systematics/ diagnosis; Checklist; Anatomy/ meristics/ morphometry; Scientific expeditions/ cruises.
- Belloc, G. 1949. Catalogue des types de poissons du Musée Océanographique de Monaco. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 958: 1-23 + 3 plates.  
Checklist; Museum collection/ catalogs.  
Observations: The indication given by the author that the stations 2103 and 2108 are 100 miles north of Corvo is wrong. They are located southwest of the Azores, respectively at 31°38'N, 42°42'W and 31°44'30''N, 42°49'W.
- Berry, F. H. 1959. Young jack crevalles (*Caranx* species) off the southeastern Atlantic coast of the United States. *Fishery Bulletin*, 152 (59): 417-535.  
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- Bertelsen, E. 1986a. Caulophrynidae. Pp. 1373-1375 in: P. J. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (Eds.) *Fishes of the North-east Atlantic and the Mediterranean*. Vol. III. UNESCO, Paris.  
Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.
- Bertelsen, E. 1986b. Himantolophidae. Pp. 1378-1380 in: P. J. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (Eds.) *Fishes of the North-east Atlantic and the Mediterranean*. Vol. III. UNESCO, Paris.  
Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.

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Development/ larvae and juveniles; Geographical distribution; Ecology/ vertical distribution;  
Evolution/ phylogeny.
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Development/ larvae and juveniles; Geographical distribution; Ecology/ vertical distribution;  
Evolution/ phylogeny; Scientific expeditions/ cruises.
- Bertin, L. 1932. Une espèce rarissime de poisson hétérosome *Arnoglossus Rüppeli* (Cocco). *Bulletin de la Société Zoologique de France*, Tome LVII: 495-505.  
Systematics/ diagnosis; Development/ larvae and juveniles; Anatomy/ meristics/ morphometry;  
Ecology/ vertical distribution; Geographical distribution/ occurrences.
- Bertin, L. 1934. Les poissons Apodes appartenant au sous-ordre des Lyomères. *Dana-Report*, No. 3: 1-56 + 2 plates.  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy/ morphometry/ meristics; Geographical distribution; Evolution/ phylogeny; Ecology; Scientific expeditions/ cruises; .
- Bertin, L. 1936. *Titres et Travaux Scientifiques*. Impressions Blondel La Rougery, Paris: 87pp.  
Bibliography; History/ marine research; Scientific divulgation .
- Bertin, L. 1937. Les poissons abyssaux du genre *Cyema* Günther (Anatomie, Embryologie, Bionomie). *Dana-Report*, No. 10: 1-30.  
Systematics/ diagnosis; Anatomy/ morphometry/ meristics; Development/ larvae and juveniles;  
Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny; Scientific expeditions/ cruises/ stations.
- Bertin, L. 1938. Formes nouvelles et formes larvaires de poissons Apodes appartenant au sous-ordre des Lyomères. *Dana-Report*, No. 15: 1-26 + 2 plates.  
Development/ larvae and juveniles; Systematics/ identification keys/ diagnosis; Anatomy/ morphometry/ meristics; Checklist; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises.
- Bertin, L. 1940. Catalogue des types de poissons du Muséum National d'Histoire Naturelle. *Bulletin du Muséum*, 2<sup>e</sup> série, XII, 6: 244-322.  
Systematics; Checklist.
- Bigelow, H. B & W. C. Schroeder 1948. Sharks. Pp. 59-546 in: J. Tee-Van, C. M. Breder, S. F. Hildebrand, A. E. Parr & W. C. Schroeder (eds.). Fishes of the western north Atlantic. Number One. Part One. Lancelets, Cyclostomes, Sharks. *Memoir Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Bigelow, H. B & W. C. Schroeder 1953. Sawfishes, Guitarfishes, Skates and Rays. Pp. 1-514 in: J. Tee-Van (ed.) Fishes of the western north Atlantic. Number One. Part Two: Sawfishes, Guitarfishes, Skates, Rays and Chimaeroids. *Memoir Sears Foundation for Marine Research*, Yale University, New Haven.

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Systematics; Checklist; Geographical distribution.
- Böhlke, E. B. 1966. Order Lyomeri. Pp. 603-625 in: E. B. Böhlke (ed.). Fishes of the Western North Atlantic. Number One, Part Five: Order Iniomi. Order Lyomeri. *Memoir - Sears Foundation for Marine Research*, Allen Press, Inc., Lawrence, Texas.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist.
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Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Ecology; Ethology.
- Bolin, R. 1959. Iniomi, Myctophidae. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 7, Bergen: 1-45 (with 7 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics; Checklist; Geographical distribution; Scientific expeditions/ cruises.
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Systematics/ diagnosis; Checklist; Anatomy/ meristics/ morphometry; Scientific expeditions/ cruises.  
Observations: Other species cited by the author but not included in the list: Myctophinae sp. and *Cyclothone* sp.
- Bougis, P. 1945. Notes sur les *Beryx* poissons de profondeur. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 891: 1-10.  
Systematics; Ecology/ vertical distribution.
- Boulenger, G. A. 1895. Catalogue of the Perciform fishes in the British Museum, I: 391pp. (+ 15 plates).  
Systematics; Checklist; Museum collections/ catalogs.
- Bouvier, E.- L. 1907. Quelques impressions d'un naturaliste au cours d'une campagne scientifique de S. A. S. le Prince de Monaco (1905). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 93: 1-103.  
History.  
Observations: An interesting paper concerning the research conducted by the Prince of Monaco in the Azores and the scientific role played by Coronel Afonso Chaves in the Azores.
- Brauer, A. 1906. Die Tiefseefische. 1. Systematischer Teil. (Deutsche Tiefsee-Expedition 1898-1899. Bd. XV) "*Valdivia*", Iena, 15 (1): 420 pp (+ 16 plates, 2 maps).  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Scientific expeditions/ cruises.  
Observations: There are no stations in the Azores. All records are of secondary degree.
- Brian, A. 1908. Note préliminaire sur les Copépodes parasites des poissons provenant des campagnes scientifiques de S. A. S le Prince Albert Ier de Monaco ou déposés dans les

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Parasitology.  
Observations: Other species The author also cite for the Azores *Macrurus* sp. and *Spinax* (?) sp.
- Brian, A. 1912. Copépodes parasites des poissons et des Échinides provenant des Campagnes Scientifiques de S. A. S. le Prince Albert Ier du Monaco. *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule XXXVIII, Imprimerie du Monaco. 58pp. (+ 12 plates).  
Parasitology; Scientific expeditions/ cruises.
- Briggs, J. C. 1955. A monograph of the clingfishes (Order Xenopterygii). *Stanford Ichthyological Bulletin*, 6: 1-224.  
Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Geographical distribution; Evolution/ phylogeny.
- Briggs, J. C. 1966. Oceanic islands, endemism and marine paleotemperatures. *Systematic Zoology*, 15 (2), 153-163.  
Biogeography/ zoogeography; Marine geology; Evolution/ phylogeny.
- Briggs, J. C. 1970. A faunal history of the north Atlantic Ocean. *Systematic Zoology*, 19 (1), 19-34.  
Biogeography/ zoogeography; Marine geology; Evolution/ phylogeny.
- Briggs, J. C. 1974. *Marine Zoogeography*. McGraw-Hill Book Company, xi + 475 pp.  
Biogeography/ zoogeography.
- Brito, A. 1983. Tres especies nuevas para la fauna ictiológica de las Islas Canarias: *Hoplostethus mediterraneus* Cuvier, 1829, *Sphoeroides cutaneus* (Günther, 1870) y *Blennius pilicornis* Cuvier, 1829 (Pisces: Teleostei). *Vieraea*, 12 (1/2): 17-26.  
Geographical distribution/ new records; Anatomy/ meristics/ morphometry.
- Brum, J. M. M. 1992. Note on the presence of the great-white shark *Charcharodon charcharias* (Linnaeus, 1758) in the waters of São Miguel, Azores. *Açoreana*, 7 (3): 517-521.  
Geographical distribution/ new record; Anatomy/ morphometry .
- Brum, J. M. M. & J. M. N. Azevedo 1995. First record of the Galapagos Shark *Carcharinus galapagensis* (Snodgrass & Heller, 1905) (Carcharinidae) on the Azores. *Boletim do Museu Municipal do Funchal*, Supl. No. 4: 139-143.  
Systematics/ diagnosis; Anatomy/ morphometry; Geographical distribution/ new record.
- Bruslé, J. 1985. Exposé synoptique des données biologiques sur les mérours *Epinephelus aeneus* (Geoffroy Saint Hilaire, 1809) et *Epinephelus guaza* (Linnaeus, 1758) de l'océan Atlantique et de la Méditerranée. FAO, Synopse sur les Pêches, No. 129: vi + 1-64.  
Systematics; Anatomy/ meristics/ morphometry; Evolution/ phylogeny; Geographical distribution; Ecology/ vertical distribution/ migration/ populations dynamics/ feeding; Biology/ reproduction/ age/ growth; Development/ larvae and juveniles; Parasitology; Ethology; Fisheries/ statistics.
- Bruun, A. F. 1934. *Cypsilurus lineatus* in L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.

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- Bruun, A. F. 1935. Flying-fishes (*Exocoetidae*) of the Atlantic - Systematic and biological studies. *Dana-Report*, 6: 1-108.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Biology/ reproduction; Geographical distribution; Ecology; Evolution.
- Bruun, A. F. 1936. Sur la distribution de quelques poissons océaniques d'après les Expéditions Danoises. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 700: 1-16.  
Geographical distribution; Scientific expeditions/ cruises.
- Bruun, A. F. 1937. Contributions to the life histories of the deep sea eels: Synphobranchidae. *Dana-Report*, No. 9: 1-31 + 1 plate.  
Development/ larvae and juveniles; Biology/ growth; Systematics/ diagnosis; Anatomy/ morphometry; Checklist; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises/ stations. .
- Busakhin, S. V. 1982. Systematics and distribution of the family Berycidae (Osteichthyes) in the world ocean. *Journal of Ichthyology*, 22 (6): 1-21.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.
- Cadenat, J. 1937. Recherches systématiques sur les Poissons littoraux de la Côte Occidentale d'Afrique, récoltés par le navire *Président Théodore-Tissier*, au cours de sa 5<sup>e</sup> croisière (1936). *Revue des Travaux de l'Office Scientifique et Technique des Pêches Maritimes*, Tome X, Fascicule 4, No. 40: 421-562.  
Systematics; Geographical distribution; Scientific expeditions/ cruises.  
Observations: This author also mentions the species *Dentex dentex* (Linnaeus, 1758) (Clofnam: 139.3.1) for the Azores (Horta). It seems very unlikely that Cadenat has mistaken the species, which he knew rather well from African examples. However, as we can assure that it does not occur in recent times at the Azores, we decided not to include it in the catalogue. It may happen that the fish listed by Cadenat (1937) was wrongly labeled, having been caught in another station of the cruise.
- Calvário, J. R., J. C. Marques & M. A. Pousada 1980. Occurrence of *Sphoeroides cutaneus* (Günther, 1870) (Pisces, Tetraodontidae) off the Portuguese coast. *Arquivos do Museu Bocage*, 2<sup>a</sup> série, vol. VII, No. 10: 131-138.  
Geographical distribution; Anatomy/ morphometry/ meristics; Ecology/ feeding.
- Capello, F. de B. 1871a. Primeira lista dos peixes da Ilha da Madeira, Açores e das possessões d'Africa que existem no museu de Lisboa. *Jornal de Sciencias Mathematicas Physicas e Naturaes*, Tomo III, Num. XI - Março de 1871 -: 194-202.  
Checklist; Museum collections/ catalogs.  
Observations: This paper does not cite any species for the Azores.
- Capello, F. de B. 1871b. Primeira lista dos peixes da Ilha da Madeira, Açores e das possessões d'Africa que existem no museu de Lisboa (continuação). *Jornal de Sciencias Mathematicas Physicas e Naturaes*, Tomo III, Num. XII - Dezembro de 1871 -: 280-282.  
Checklist; Museum collections/ catalogs.  
Observations: This paper does not cite any species for the Azores.

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- Capello, F. de B. 1871c. Primeira lista dos peixes da Ilha da Madeira, Açores e das possessões d' Africa que existem no museu de Lisboa (continuação). *Jornal de Scientias Mathematicas Physicas e Naturaes*, Tomo III, Num. XIII: 83-88.  
Checklist; Museum collections/ catalogs.  
Observations: Refers two specimens of *Hippocampus* sp.?, caught in S. Miguel Island by Mr. Canto and Mr. Valdez.
- Carpine-Lancre, J. & L. V. C. Saldanha 1992. *Souverains Océanographes*. Fondation Calouste Gulbenkian, Lisboa: 178pp.  
History/ marine research; Oceanography.
- Carqueja, B. 1894. Os Açores. Notas instantaneas. *Bibliotheca da Autonomia dos Açores*, Volume II: 1-43.  
History.  
Observations: Paper with generic notes concerning the Azores.
- Caruso, J. H. 1989. Systematics and Distribution of the Atlantic Chaunacid Anglerfishes (Pisces: Lophiiformes). *Copeia*, 1989 (1): 153-165.  
Systematics/ identification key/ diagnosis/ new species; Anatomy/ meristics/ morphology; Geographical distribution.
- Carvalho, F. P. 1982. *Chlorophthalmus agassizi* Bonaparte, 1840 (Pisces, Chlorophthalmidae): famille, genre et espèce nouveaux pour la faune marine du Portugal. *Arquivos do Museu Bocage*, Série B (Notas), vol. II, No. 2: 9-14.  
Geographical distribution; Anatomy/ morphometry/ meristics.
- Chabanaud, P. 1932. *Dollfusina rueppelli* in L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Chabanaud, P. 1933. Poissons hétérosomes recueillis par M. le Professeur A. Gruvel et par MM R.-Ph. Dollfus et J. Lioouville sur la côte atlantique du Maroc. *Mémoires de la Société des Sciences Naturelles du Maroc*, No. XXXV: 1-111 + 2 planches.  
Checklist; Geographical distribution.
- Chabanaud, P. 1939. Catalogue systématique et chorologique des Téléostéens dyssymétriques du Globe. *Bulletin de l'Institute Océanographique (Fondation Albert Ier de Monaco)*, No. 763: 1-31.  
Checklist.
- Chabanaud, P. 1950. Sur deux espèces de poissons du genre *Symphurus* de l'Atlantique oriental. *Annals & Magazine of Natural History, Twelfth Series, Vol. 3, No. 31*: 508-511.  
Systematics/ diagnosis; Geographical distribution.
- Chaves, F. A. 1905. *Bibliographia Zoologica dos Açores*. Imprensa Nacional, Lisboa. 8pp. (Facsimiled edition: Arquivo dos Açores, Vol. XIII, Universidade dos Açores, 1983. Pp. 200-208).  
History/ history of science.  
Observations: This paper, with historical interest, gives an account of zoological research made in the Azores. This paper is not referred in the text. ms/ paper of reduced circulation.

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- Chaves, F. A. 1911. Introdução de algumas espécies zoológicas na Ilha de S. Miguel depois da sua descoberta (Conferencia realizada no Atheneu Commercial no dia 14 de Janeiro de 1909) Typ. do "Diario dos Açores", Ponta Delgada, S. Miguel, Açores: 1- 22. .  
History.  
Observations: This paper concerns the introduction of species in the Azores, but without reference to marine fishes. ms/ paper of reduced circulation.
- Chícharo, L. M. Z. & M. A. Teodósio 1990. Ictioplâncton in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1: 92-104. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Development/ larvae and juveniles; Plankton; Scientific expeditions.  
Observations: The author also cites for the Azores: *Trachurus* spp., *Gaidropsarus* spp., *Diplodus* spp., *Ctenolabrus rupestris*, *Sphoeroides* spp., Gobiidae and Bothidae. ms/ paper of reduced circulation.
- Christiansson, E. Th. 1957. How the "Albatross" became a research vessel. *Reports of the Swedish Deep-Sea Expedition 1947-1948*, Volume I, No. 2: 125-142.  
Scientific expeditions/ cruises; History/ marine research.
- Clark, R. S. 1913. Scottish National Antarctic Expedition: "Scotia" collection of Atlantic fishes (In: *Report of Scientific Research Voyage of the "Scotia"*, *Scottish National Antarctic Expedition*, Vol. IV, Part XVI. Pp. 375-402, 5figs), Edimburg, 1915.  
Checklist; Scientific expeditions/ cruises.
- Clarke, M. & H. Martins 1995. Marine Azorean foodsweeps: the known, the unknown and the unlikely. *Relatório da XIII Semana das Pescas dos Açores*, 13 (1994): 73-80.  
Ecology/ feeding.  
Observations: This paper is based, partially, on the examination of the stomach contents of *Xiphias gladius*, mainly, and *Dalatias licha*. Besides the species included in the checklist the authors refer to the following genus *Pagellus*, *Coelorhynchus*, *Aphanopus*, *Alepisaurus* and *Sciaena*. Most of the identifications are based on fish parts (e.g. otoliths). ms/ paper of reduced circulation.
- Clarke, M. R., D. C. Clarke, H. Martins & H. M. Silva 1995. The diet of swordfish (*Xiphias gladius*) in Azorian waters. *Arquipélago*. Life and Earth Sciences, 13A: 53-69.  
Ecology/ feeding.  
Observations: The article is a study of the diet of *Xiphias gladius*. Besides the species included in the checklist the authors refer to the following genus, *Coelorhynchus* sp., *Epigonus* spec. A and spec. B, *Macrorhamphosus* sp., *Hoplostethus* sp., *Diaphus* spp., *Lampadena* sp. and *Lampanyctus* sp.
- Clarke, R. 1950. The bathypelagic angler fish *Ceratias holbölli* Kröyer. *Discovery Reports*, Vol. XXVI: 1-32.  
Ecology/ feeding.
- Clarke, R. 1956. Sperm whale of the Azores. *Discovery Reports*, Vol. XXVIII: 237-298. [also published as a summary in 1956: A biologia dos cachalotes capturados nos Açores (bi-lingual). *Notas e Estudos do Instituto de Biologia Marítima*, 10: 11pp.].  
Ecology/ feeding.  
Observations: This paper deals with feeding ecology and general biology of the sperm whale (*Physeter macrocephalus*) of the Azores.

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- Cligny, A. 1905. Poissons des côtes d'Espagne et du Portugal (Océan Atlantique): Deuxième partie. *Annales de la Station Aquicole de Boulogne-sur-Mer (Pêches et Biologie Marine)*, Nouvelle Série, Volume I: 70-92.  
Checklist; Geographical distribution.
- Cohen, D. M. 1960. Isospondyli. 3. Argentinoidea (Argentinidae and Opisthoproctidae). *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 9, Bergen: 1-5 (with 1 figure in text).  
Systematics/ diagnosis; Checklist; Scientific expeditions/ cruises.
- Cohen, D. M. 1964. Order Isospondyli. Suborder Argentinoidea. pp. 1-70 in: H. B. Bigelow (ed.). *Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Development; Ecology .
- Cohen, D. M., T. Inata, T. Iwamoto & N. Scialabba 1990. FAO species catalogue. Vol. 10. *Gadiformes fishes of the world (Order Gadiformes). An annotated and illustrated catalogue of cods, hakes, grenadiers and other gadiform fishes known to date*. FAO Fisheries Synopsis, No. 125, Vol. 10: x + 442pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology; Fisheries.
- Collett, R. 1889a. Diagnoses de poissons nouveaux provenant des campagnes de l'Hirondelle. I Sur un genre nouveau de la famille des Muraenidae. *Bulletin de la Société Zoologique de France*, XIV: 123-125.  
Systematics/ diagnosis/ new species; Anatomy; Scientific expeditions/ cruises.
- Collett, R. 1889b. Diagnoses de poissons nouveaux provenant des campagnes de l'Hirondelle. II Sur un genre nouveau de la famille des Stomiidae. *Bulletin de la Société Zoologique de France*, XIV: 292-293.  
Systematics/ diagnosis/ new species; Anatomy; Scientific expeditions/ cruises.
- Collett, R. 1889c. Diagnoses de poissons nouveaux provenant des campagnes de l'Hirondelle. II Description d'une espèce nouvelle du genre *Hoplostethus*. *Bulletin de la Société Zoologique de France*, XIV: 306-308.  
Systematics/ diagnosis/ new species; Anatomy; Scientific expeditions/ cruises.
- Collett, R. 1890a. Diagnoses de poissons nouveaux provenant des campagnes de l'Hirondelle. V Description de deux espèces nouvelles du genre *Onus* Risso. *Bulletin de la Société Zoologique de France*, 15: 105-109.  
Systematics/ diagnosis/ new species; Anatomy; Scientific expeditions/ cruises.
- Collett, R. 1890b. Sur quelques poissons rapportés de Madère par le Prince de Monaco. *Bulletin de la Société Zoologique de France*, 15: 218-224.  
Systematics/ diagnosis; Anatomy/ morphometry; Geographical distribution/ occurrences; Checklist.
- Collett, R. 1892. Oversigt over de tri-cirrate arter of slagten *Onus*. *Forhandlinger i Videnskabselskabet i Kristiania*, 1891, 11: 1-17 .  
Systematics/ identification keys/ diagnosis.

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- Collett, R. 1896a. Poissons provenant des campagnes du yacht L'Hirondelle (1885-1888). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule X, Imprimerie du Monaco. 1-198 (+ 6 plates).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Ecology/ vertical distribution; Geographical distribution; Scientific expeditions/ cruises.
- Collett, R. 1896b. Le genre *Cyclothone* Goode & Bean. II Description d'une espèce nouvelle recueillie par S. A. Le Prince de Monaco. *Bulletin de la Société Zoologique de France*, XXI: 99-102.  
Systematics/ diagnosis/ new species; Anatomy; Development/ eggs; Scientific expeditions/ cruises.
- Collett, R. 1897. Om en Samling Fiske fra Azoreme, tilhørende Museet i Ponta Delgada. *Archiv for Mathematik og Naturvidenskab*, 19 (7): 1-17.  
Systematics; Checklist; Geographical distribution; Museum collection.
- Collett, R. 1905. On some fishes from the sea off the Azores. *Zoologischen Anzeiger*, 28 (21/22): 723-730.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Museum collection.
- Collette, B. B. & L. N. Chao 1975. Systematics and morphology of the bonitos (*Sarda*) and their relatives (Scombridae, sardini). *Fishery Bulletin*, 73 (3): 516-625.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographic distribution; Evolution.
- Collette, B. B. & C. E. Nauen 1983. Scombrids of the World. An annotated and illustrated catalogue of tunas, mackerels, bonitos and related species known to date. *FAO Fisheries Synopsis*, No 125, Vol. 2: vii + 1-137.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology.
- Collette, B. B. & C. R. Aadland 1996. Revision of the frigate tunas (Scombridae, *Auxis*) with descriptions of two new subspecies from the eastern Pacific. *Fishery Bulletin*, 94: 423-441.  
Systematics/ diagnosis; Anatomy/ meristics/ comparative morphology; Checklist; Geographical distribution.
- Collette, B. B. & N. V. Parin 1970. Needlefishes (Belonidae) of the eastern Atlantic ocean. *Atlantide Report*, no. 11: 7-60.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ comparative morphology; Checklist; Geographical distribution; Parasitology.
- Collignon, J. & H. Aloncle 1972. Catalogue raisonné des poissons des mers marocaines. *Bulletin de l'Institut des Pêches Maritimes*, 1ère partie, 19: 163pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Ecology. .
- Collignon, J. & H. Aloncle 1973. Catalogue raisonné des poissons des mers marocaines. *Bulletin de l'Institut des Pêches Maritimes*, 2ème partie, 21: 267pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Ecology. .
- Collins, B. L. 1954. Lista de peixes dos mares dos Açores. *Açoreana*, II (5): 1-40.  
Checklist; Systematics/ vernacular names.
- Compagno, J. J. V. 1984. Sharks of the World. An annotated and illustrated catalogue of shark species known to date. Part 1- Hexanchiformes to Lamniformes. Part 2- Carchariniiformes. *FAO Fisheries Synopsis*, No 125, Vol. 4, Part 1 and 2, Rome: viii + 1-249; x + 250-655.

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- Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology; Fisheries.
- Cort, J. L. & J. C. Rey 1984. Distribucion geografica de Atun Rojo (*Thunnus thynnus*, L.) juvenil del Atlantico Este, Mediterraneo Occidental y Adriatico. *ICCAT, Recueil de Documents Scientifiques*, 20 (2): 298-318.  
Geographical distribution; Fisheries biology; Ecology/ migration; Development/ larvae and juveniles.
- Crowley, T. J. 1981. Temperature and circulation changes in the eastern North Atlantic during the last 150,000 years: evidence from the planktonic foraminiferal record. *Marine Micropaleontology*; 6 (2), 97-129.  
Oceanography/ climate; Plankton.
- Cuvier, G & A. Valenciennes 1836. *Histoire Naturelle des Poissons*. Paris, Strasbourg, Vol. 11: xx + 506 pp.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Museum collections; Natural history.
- D'Ancona, U. 1929. *Anguilla anguilla*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- D'Ancona, U. 1931. *Chimaera monstrosa*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Dabney, R. L. 1977. *Annals of the Dabney family in Fayal*. Press of Alfred Mudge & Son. Boston U. S. A. (3 Volumes).  
History.
- Desbruyères, D. & A. M. Alayse 1995. Compte- rendu de la campagne DIVA 2 -31 mai au 4 juillet 1994- IFREMER DRO/EP No. 95-56-AMA: pages not numbered.  
Scientific expeditions/ cruises/ technology; Deep-sea research/ hydrothermal vents.  
Observations: ms/ paper of reduced circulation.
- Dias, M. L. 1991. Pesca exploratória com palangre em águas dos grupos central e oriental do Arquipélago dos Açores (1979-1983). *Relatórios Técnicos e Científicos do INIP*, Lisboa (46) Novembro 1991. 26p., il.  
Fisheries biology; Fisheries/ cruises/ technology; Checklist.  
Observations: ms/ paper of reduced circulation.
- Dias, M. L. & I. F. Barraca 1971. Sobre a pesca de tunídeos nas costas de Portugal continental e ilhas da Madeira e Açores (1961-1970). *Boletim Informativo do Instituto de Biologia Marítima*, No.2: 14pp.  
Fisheries/ technology/ commercial species.  
Observations: The authors also refer for the Azores *Euthynnus alletteratus* (Clofnam: 157.3.1.), species which is not included in the present checklist. ms/ paper of reduced circulation.
- Dias, M. L. & A. Cascalho 1991. Experiências de pesca com palangre em águas dos Açores. *Relatório da XI Semana das Pescas dos Açores*, 11 (1990): 139-156.

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- Fisheries biology; Fisheries/ cruises/ technology; Checklist.  
Observations: ms/ paper of reduced circulation.
- Dias, M. L. & M. C. Monteiro 1986. Pesca exploratória e observações hidrológicas em águas dos Açores. 22pp. + 47 tabelas + 4pp. + 25 figuras.  
Fisheries/ cruises/ technology; Oceanography.  
Observations: ms/ paper of reduced circulation.
- Dias, M. L., M. H. Krug & H. M. Silva 1990. Estudos de apoio às pescas açoreanas. Campanha “Açores 1/83”. *Relatórios Técnicos e Científicos do INIP*, Lisboa (22) Março 1990, 94p., il.  
Fisheries/ cruises/ technology/ checklist; Fisheries biology; Oceanography; Ecology/ vertical distribution; Biology/ reproduction.  
Observations: Also refers *Raja* sp. ms/ paper of reduced circulation.
- Dias, M. L., K. Olsen, & O. J. Østvedt 1976. Report on a cruise by the R. V. “G. O. Sars” to the Açores and the coast of Portugal. *International Council for the Exploration of the Sea*, C.M. 1976/J: 12, Pelagic Fish (Southern) Committee: 44pp.  
Fisheries/ cruises/ technology; Oceanography; Plankton; Development/ larvae and juveniles; Ecology/ demography.  
Observations: Also refers *Diaphus* sp. ms/ paper of reduced circulation.
- Dooley, J. K., J. V. Tassell & A. Brito 1985. An Annotated Checklist of the Shorefishes of the Canary Islands. *American Museum Novitates*, 2824: 1-49.  
Checklist; Geographical distribution.
- DOP 1993. *Peixes Marinhos dos Açores. Uma coleção de ilustrações/ Marine Fishes of the Azores. A selected collection of illustrations*. Departamento de Oceanografia e Pescas. Universidade dos Açores. Nova Gráfica, Lda., Ponta Delgada. i + 14 pp. + 13 plates (bilingual: Portuguese and English).  
Scientific divulgation/ illustrations.  
Observations: Original illustrations (by J. P. Barreiros) and text concerning common fishes of the Azores. All drawings are based on specimens collected in the Azores.
- Drouët, H. 1858. Rapport a Sa Majesté Le Roi de Portugal sur un Voyage d’Exploration Scientifique aux îles Açores. *Mémoires de la Société Académique de l’Aube*, Tome XXII (extrait): 1-3.  
Scientific expeditions; Natural history.
- Drouët, H. 1861a. Voyage d’Exploration Scientifique aux Iles Açores, effectué par MM. Morelet et Drouët pendant le printemps et l’été de 1857. *Annales de la Société Linneenne de Maine et Loire*, Tome IV, 4e Année: 81-98.  
Scientific expeditions.  
Observations: Reproduces, with a few alterations, the report dated 1958.
- Drouët, H. 1861b. *Éléments de la Faune Açoréenne*. J. B. Bailliére & Fils, Paris: 245pp.  
Natural history; History/ ethnology; Checklist.
- Du Buit, M. H., C. Ozouf-Costaz & J. C. Quéro 1989. Observation à Concarneau de *Cryptosaras couesi* et *Ceratias* sp. (Pisces, Lophiiformes, Ceratiidae), espèces nouvelles pour la faune ichthyologique française. Leur distribution en Atlantique nord-est. *Cybiurn*, 13 (2): 192.  
Geographical distribution.

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- Duhamel du Monceau, M. 1777. *Traité Général des Pêches et Histoire des Poissons qu'elles fournissent, tant pour la subsistance des Hommes, que pour plusieurs autres usages qui on rapport aux arts et au commerce*. Suite de la Seconde Partie. Tome Troisième, Paris: 320pp.  
Fisheries; Checklist.  
Observations: The work of Duhamel du Monceau (1777) as been placed on the official index of rejected and invalid works in zoology, because the author did not apply the principles of binomial nomenclature. Op. 859 (Eschmeyer 1990).
- Duncker, G. 1915. Revision der Syngnathidae. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg*, Erster teil, 32: 9-120.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Duncker, G. 1934. *Scorpaena scrofa*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ebeling, A. W. 1962. Melamphaidae I: Systematics and zoogeography of the species in the bathypelagic fish genus *Melamphaes* Günther. *Dana-Report*, 58: 1-164.  
Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Development/ larvae and juveniles; Ecology/ vertical distribution; Evolution/ phylogeny; Biogeography/ zoogeography; Scientific expeditions/ cruises.
- Ebeling, A. W. & Weed III, W. H. 1963. Melamphaidae III: Systematics and distribution of the species in the bathypelagic fish genus *Scopelogadus* Vaillant. *Dana-Report*, 60: 1-58.  
Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Development/ larvae and juveniles; Scientific expeditions/ cruises/ stations.
- Ebeling, A. W. & Weed III, W. H. 1973. Order Xenoberyces (Stephanoberyciformes). Pp. 397- 478. In D. M. Cohen, J. W. Atz, F. H. Berry, J. E. Böлке, R. H. Gibbs, E. A. Lachner, G. W. Mead & D. Mehner (eds.). Fishes of the Western North Atlantic. Number One. Part Six. *Order Heteronomi (Notacanthiformes) Halosauridae, Notacanthidae, Lipogenyidae*. Suborder Cyprinodontoidei. *Order Berycomorphi (Beryciformis) Polymixiidae, Berycidae, Diretmidae, Trachichthyidae, Anomalopidae, Holocentridae, Anoplogasteridae*. *Order Xenoberyces (Stephanoberyciformes) Gibberichthyidae, Stephanoberycidae, Melamphidae*. *Order Anacanthini (Gadiformes) in part Macrouridae*. *Memoir- Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Ecology/ vertical distribution; Geographical distribution.
- Edwards, A. 1986. A new damselfish, *Chromis lubbocki* (Teleostei: Pomacentridae) from the Cape Verde Archipelago, with notes on other eastern Atlantic pomacentrids. *Zoologische Mededelingen*, 60 (12): 181-207.  
Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Geographical distribution.
- Ege, V. 1930. Contributions to the knowledge of the North Atlantic and Mediterranean species of the genus *Paralepis* Cuv., A Systematic and Biological Investigation. *Report on the Danish Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas*, Vol. II, Biology, A. 13: 1- 193 (with 37 figures and charts in the text).

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- Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Checklist; Biology; Ecology/ vertical distribution; Geographical distribution; Scientific expeditions/ cruises.
- Ege, V. 1932. *Paralepis coregonoides borealis*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ege, V. 1934. The genus *Stomias* Cuv., Taxonomy and Bio-Geography (based on adolescent and adult specimens). *Dana-Report*, No. 5: 1-58 (with 12 figures and charts in the text and 1 plate).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Biogeography/ zoogeography; Checklist; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises/ stations.
- Ege, V. 1939. A Revision of the Genus *Anguilla* Shaw. A Systematic, Phylogenetic and Geographical study. *Dana-Report*, 16: 1-256 (with 53 figures and charts in the text and 6 plates).  
Systematics; Checklist; Evolution/ phylogeny; Biogeography; Scientific expeditions/ cruises.
- Ege, V. 1948. *Chauliodus* Schn., Bathypelagic Genus of Fishes. A Systematic, Phylogenetic and Geographical Study. *Dana-Report*, No. 31: 1-56 (with 9 figures and 2 plates).  
Systematics/ diagnosis/ identification keys/ new subspecies; Biogeography/ zoogeography; Anatomy/ meristics/ morphology; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises/ stations.
- Ege, V. 1953. Paralepididae I (*Paralepis* and *Lestidium*). Taxonomy, Ontogeny, Phylogeny and Distribution. *Dana-Report*, No. 40: 1-184 (with 33 figures in the text).  
Systematics/ identification keys/ diagnosis/ new species; Checklist; Anatomy/ meristics/ morphology; Development/ larvae and juveniles; Evolution/ phylogeny; Geographical distribution; Scientific expeditions/ cruises/ stations.
- Ege, V. 1957. Paralepididae II (Macroparalepis). Taxonomy, Ontogeny, Phylogeny and Distribution. *Dana-Report*, No. 43: 1-101 (with 24 figures in the text).  
Systematics/ identification keys/ diagnosis/ new species; Checklist; Anatomy/ meristics/ morphology; Development/ larvae and juveniles; Evolution/ phylogeny; Geographical distribution; Scientific expeditions/ cruises/ stations.
- Ege, V. 1958. *Omosudis* Günther, Bathypelagic Genus of Fish. *Dana-Report*, No. 47: 1-19 (with 3 figures in the text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Development/ larvae and juveniles; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises/ stations.
- Ehrich, S. 1977. Die Fischfauna der Großen Meteorbank. "Meteor" *Forschungsergebnisse*, Reihe D - No. 25, Biologie: 1-23.  
Anatomy/ morphometry/ comparative morphology/ meristics; Checklist; Ecology/ population dynamics/ feeding; Geographical distribution; Evolution/ phylogeny; Biogeography; Scientific expeditions/ cruises.
- Ellis, R. & J. E. McCosker 1991. *Great White Shark*. Harper Collins Publ. N.Y., xvi + 270pp.  
Scientific divulgation/ species monography.
- Eschmeyer, W. N. 1969. A systematic review of the scorpionfishes of the Atlantic Ocean (Pisces: Scorpaenidae). *Occasional Papers of the California Academy of Sciences*, No. 79: 1-142.

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- Systematics/ identification key/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Biogeography.
- Eschmeyer, W. N. 1990. *Catalogue of the Genera of Recent Fishes*. California Academy of Sciences, San Francisco. 697pp.  
Systematics; Bibliography.
- Esteves, E., P. Simões, H. M. Silva & J. P. Andrade 1995. Ageing of swordfish *Xiphias gladius* Linnaeus, 1788, from the Azores, using sagittae, anal-fin spines and vertebrae. *Arquipélago - Life and Earth Sciences*, 13A: 39-51.  
Biology/ age/ growth; Fisheries biology.
- Fage, L. 1920. Engraulidæ, Clupeidæ. *Report on the Dana Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas* Vol. II. Biology, A. 9.: 1-140.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Fage, L. 1935. Gobiesocidae. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ferreira, E. 1932. La pesca dell' "Albacora" nelle Azzorre. *Note dell'Istituto Italo-Germanico di Biologia Marina di Rovigno d'Istria*, 1932: 1-10 (+ 5 figures).  
Fisheries.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1934. A viagem nupcial das "Eirós" dos Açores. *Açoreana*, I (1): 4-9.  
Scientific divulgation.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1937a. Escombridas dos Açores. *Açoreana*, I (4): 211-221.  
Systematics/ diagnosis; Anatomy; Checklist; Fisheries; Scientific divulgation.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1937b. *O Arquipélago dos Açores na História das Ciências*. Reprint of Vol. I of "Petrus Nónius" (Publication of the Portuguese group of the "Académie International d'Histoire des Sciences"). Bertrand (Irmãos), Lda., Lisboa: 23pp.  
History.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1938. Ápodos dos Açores. *Açoreana*, II (1): 1-14.  
Systematics/ diagnosis; Anatomy; Checklist; Scientific divulgation.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1939. Seláceos dos Açores. *Açoreana*, II (2): 79-97.  
Systematics/ diagnosis; Anatomy; Checklist; Fisheries; Scientific divulgation.  
Observations: ms/ paper of reduced circulation.
- Ferreira, E. 1940. A pesca da "Albacora" em 1938 e 1939 e "Pediculados" nos Açores. *Açoreana*, II (3): 129-134.  
Scientific divulgation; Fisheries.  
Observations: ms/ paper of reduced circulation.

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- Ferreira, E. 1942. Peixes luminosos dos mares dos Açores. *Açoreana*, III (1) [1942-1945]: 6-16.  
Checklist; Scientific divulgation.  
Observations: ms/ paper of reduced circulation.
- Fowler, H. W. 1919. The fishes of the United States *Eclipse* expedition to west Africa. *Proceedings of the United States National Museum*, Vol. 56: 195-292.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Museum collection; Scientific expeditions/ cruises.
- Fowler, H. W. 1936. The marine fishes of west Africa, based on the collection of the American Museum Congo Expedition 1909-15. *Bulletin of the American Museum of Natural History*, LXX, Part I & II: 1-1493.  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy/ meristics/ morphometry; Geographical distribution; Museum collection; Scientific expeditions.
- Frade, F. 1929. Sur quelques thons peu connus de l'Atlantique. *Bulletin de la Société Portugaise des Sciences Naturelles*, Tome X, No. 20: 228-243.  
Geographical distribution.
- Frade, F. 1931a. *Parathunnus obesus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Frade, F. 1931b. *Neothunnus albacora*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Frade, F. 1931c. Données biométriques sur trois espèces de thon de l'Atlantique Oriental. (*Thunnus thynnus* (L.), *Parathunnus obesus* (Lowe) et *Neothunnus albacora* (Lowe)). *Rapports et Procès-Verbaux des Réunions du Conseil Permanent International pour l'Exploration de la Mer*, Copenhague, Volume LXX: 117-126.  
Anatomy/ morphometry; Fisheries.
- Frade, F. 1960. Le thon patudo *Parathunnus obesus* (Lowe) et sa pêche. *Estudos, Ensaios e Documentos, Junta de Investigações do Ultramar*, Lisboa, 69:1-74 (7 plates).  
Ecology/ vertical distribution/ migration; Biology; Fisheries; Geographical distribution.  
Observations: ms/ paper of reduced circulation.
- Fricke, R. 1981. Revision of the Genus *Synchiropus*. Verlag von J. Cramer, Braunschweig. 194pp.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.
- Frutuoso, G. 1983. *Livro Terceiro das Saudades da Terra*. Instituto Cultural de Ponta Delgada, 300 pp.  
History.  
Observations: Printed edition of a manuscript written by one of the most eminent Azorean historians born in 1522 and died in 1591. The species are mention only by their vernacular names.
- Gain, L. 1913. Campagne du *Sylvana* (Février-Juin 1913). *Bulletin de l'Institut Océanographique (Fondation Albert I<sup>er</sup> de Monaco)*, No. 278: 1-17 (+ 1 chart).  
Scientific expeditions/ cruises/ stations.

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- Garcez, A. G. 1982. Situação Actual dos Stocks de Tunídeos no Atlântico. *Relatório da II Semana das Pescas dos Açores*, 2 (1981): 113-119.  
Fisheries biology/ parameters.
- Geistdoerfer, P. & M. Rannou 1971. A propos des *Chalinura* méditerranéens (Téléostéens, Macrouridae). *Bulletin du Muséum National d'Histoire Naturelle*, Paris, 2 (42) 5: 1009-1018.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.
- Geistdoerfer, P. & M. Rannou 1972. Poissons benthiques récoltés en Méditerranée occidentale par le N. O. «Jean Charcot» (Campagne Plymède). *Bulletin du Muséum National d'Histoire Naturelle*, Paris, 3<sup>e</sup> série, No. 25, Zoologie 19: 101-110.  
Systematics/ diagnosis; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Geistdoerfer, P.; J.-C- Hureau & M. Rannou 1970. Deux poissons abyssaux nouveaux capturés dans l'Atlantique Nord et Est: *Bathytyphlops azorensis* n. sp. (Ipnopidae) et *Lycenchelys labradorensis* n. sp. (Zoarcidae). *Bulletin du Musée National d'Histoire Naturelle*, Paris 2<sup>e</sup> Série, Tome 42, No. 3: 452-459.  
Systematics/ new species; Anatomy/ meristics/ morphometry; Geographical distribution; Biogeography; Scientific expeditions/ cruises.
- Geistdoerfer, P.; J.-C- Hureau & M. Rannou 1971. Liste préliminaire des espèces de poissons de profondeur récoltées au cours de la campagne "Noratlante" du N.O. Jean Charcot en Atlantique Nord (août- octobre 1969). *Bulletin du Musée National d'Histoire Naturelle*, Paris, 42 (6): 1177-1185.  
Checklist; Scientific expeditions/ cruises.
- Gibbs, R. H.(Jr.) 1964. Family Idiacanthidae. pp. 512-522 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ diagnosis; Development/ larvae and juveniles; Biology/ reproduction; Ecology/ vertical distribution; Geographical distribution.
- Gibbs, R. H.(Jr.) 1969. Taxonomy, sexual dimorphism, vertical distribution, and evolutionary zoogeography of the bathypelagic fish genus *Stomias* (Stomiidae). *Smithsonian Contributions to Zoology*, 31: 1-25.  
Systematics/ diagnosis/ identification keys; Biology/ reproduction; Ecology/ vertical distribution; Geographical distribution/ zoogeography.
- Godman, Frederick du Cane 1870. *Natural History of the Azores or Western Islands*. John Van Voorst, Paternoster Row, London: v +258.  
Natural history; History; Scientific expeditions.  
Observations: In the chapter dedicated to the fishes (p. 44) the author only considers freshwater habitats. On which concerns the eel he writes: "There is also a species of Eel, two specimens of which were sent me after my return to England, -one from Flores and the other from St. Michael's; both were in bad condition. Dr. Günther tells me that he can identify them with *Anguilla fluviatilis* of Europe. M. Drouët says that *Anguilla canariensis* is an inhabitant of the Azores; but he doubtless refers to the former species."
- Golani, D. 1996. The marine ichthyofauna of the eastern Levant. *Israel Journal of Zoology*, 42: 15-55.  
Checklist; Geographical distribution/ occurrence.

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- Golovan, G. A. 1976. Rare and firstly recorded Chondrosteian and Teleostean fishes of the continental slope of west Africa. *Transactions of the P. P. Sirskov Institut of Oceanology*, 104: 278-317. (in Russian, English summary).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution/ occurrence.
- Gonçalves, E. J., V. C. Almada, A. J. Almeida & R. F. de Oliveira 1993. On the occurrence of *Parablennius sanguinolentus* (Pisces: Blenniidae) on the Portuguese coast. *Journal of the Marine Biological Association of the United Kingdom*, 73 (2): 465-467.  
Geographical distribution/ occurrence; Anatomy/ meristics.
- Gonçalves, J. M. 1993. *Octopus vulgaris* Cuvier, 1797 (polvo-comum): sinopse da biologia e exploração. Provas de Aptidão Pedagógica e Capacidade Científica. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta, 447pp. + 3 anexos.  
Ecology/ feeding.  
Observations: *Octopus vulgaris* biology and fisheries. Fishes are cited as food item of *Octopus vulgaris*. The author also cites for the Azores: *Seriola* spp. MSc Thesis; ms/ paper of reduced circulation.
- Gonçalves, J. M. 1994. "Lucky Strike", outras fontes hidrotermais, escorrências frias e relatório de participação na 2ª parte da campanha "DIVA-2". *Arquivos do DOP*, Série: Estudos, 3/94: 1-42.  
Deep-sea research/ hydrothermal vents; History/ marine research; Scientific expeditions/ cruises  
Observations: ms/ paper of reduced circulation.
- Gonçalves, J. M. & R. S. Santos 1994. Relatório da Campanha nº 14/94 do N/I "Arquipélago" (Ensaio preliminar de pesca de profundidade com armadilhas dirigidas a crustáceos e peixes). *Arquivos do DOP*, Série: Cruzeiros, 1/94: 1-4 + 3 anexos.  
Fisheries/ technology.  
Observations: ms/ paper of reduced circulation.
- Gonçalves, J. M., R. S. Santos, J. P. Barreiros & N. C. Serpa 1995. Caracterização da situação de referência das comunidades marinhas na zona de implantação do futuro porto de recreio de Angra do Heroísmo. *Arquivos do DOP*, Série: Estudos, 5/95:1-15.  
Ecology/ demography; Checklist.  
Observations: ms/ paper of reduced circulation.
- Goode, G. B. & T. H. Bean 1895. *Oceanic Ichthyology* (A treatise on the deep-sea and pelagic fishes of the World, based chiefly upon the collections made by the steamers Blake, Albatross and Fish Hawk in the northwestern Atlantic, with an atlas containing 417 figures). *Smithsonian Institute, United States Natural Museum, Special Bulletin*, no.2. [*Smithsonian Contributions to Knowledge* no. 981/982 and *Memoirs of the Museum of Comparative Zoology*, Harvard Colledge, 22], Washington: xxxv + 553 and xxiii + 26 + cxxiii plates.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Granadeiro, J. P., L. R. Monteiro, R. W. Furness & M. C. Silva 1995. The food of common terns *Sterna hirundo* in the Azores. Abstracts of papers presented at the 5th International Seabird Group conference. Glasgow, 24-26 March 1995. Pp. 20-21.  
Ecology/ feeding.
- Grey, M. 1955. The fishes of the genus *Tetragonurus* Risso. *Dana-Report*, 41: 1-75 (+ 16 figs.).

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Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Evolution/ phylogeny; Development/ larvae and juveniles; Ecology/ vertical distribution/ feeding; Biology/ reproduction; Geographical distribution; Scientific expeditions/ cruises/ stations.

Grey, M. 1956. The distribution of fishes found below a depth of 2000 meters. *Fieldiana: Zoology*, 36 (2): 75-337.

Systematics; Ecology/ vertical distribution; Checklist; Geographical distribution.

Grey, M. 1964. Family Gonostomatidae. pp. 77-240 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatoidei, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.

Systematics/ identification keys/ diagnosis; Checklist; Ecology/ vertical distribution; Evolution/ phylogeny; Geographical distribution.

Gudger, E. W. 1937. The natural history and Geographical distribution of the pointed-tailed ocean sunfish (*Masturus lanceolatus*). *Proceedings of the Zoological Society of London*, Ser. A: 353-397.

Geographical distribution/ occurrences; Development/ larvae and juveniles. .

Guerne, J. de 1888. *Excursions zoologiques dans les Îles de Fayal et de San Miguel (Açores)*. Campagnes Scientifiques du yacht Monégasque L'*Hirondelle*. Gauthiers-Villars et Fils, Paris: 111 pp. + 1 plate.

Natural history; Scientific expeditions; History.

Observations: A work with special interest for the history of zoological research in the Azores. *Anguilla vulgaris* (= *Anguilla anguilla*) is referred in freshwater streams of the islands (pp.39, note 2 and p. 66, Table VIII).

Guiart, J. 1935. Cestodes parasites provenant des campagnes scientifiques de S. A. S. le Prince Albert I<sup>er</sup> de Monaco. *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule XCI.: 115pp.

Parasitology; Scientific expeditions/ cruises.

Observations: The author also cite for the Azores: *Syngnathus pelagicus*? and *Coryphaena* sp.

Guimarães, A. R. P. 1882. Lista dos peixes da Ilha da Madeira, Açores e das possessões portuguesas d' Africa, que existem no museu de Lisboa (Supplemento). *Jornal de Sciencias Mathematicas, Physicas e Naturaes*, Tomo IX, Num. XXXIII - Julho de 1882 -: 30- 39.

Checklist; Museum collections/ museum catalogs.

Guimarães, A. R. P. 1884. Lista dos peixes da Ilha da Madeira, Açores e das possessões portuguesas d' Africa, que existem no museu de Lisboa (Segundo suplemento). *Jornal de Sciencias Mathematicas, Physicas e Naturaes*, Num. XXXVII - Março de 1884 -: 11-28.

Checklist; Museum collections/ museum catalogs.

Guitel, F. 1904. Descriptions comparatives des *Lepadogaster bimaculatus* Pennant et *microcephalus* Brook. *Archives de Zoologie Expérimentale et Générale*, Vol II, 4: 357-495.

Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution; Ecology/ vertical distribution.

Guitel, F. 1919. *Lepadogaster*. Report on the Danish Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas. Copenhagen, Vol. II, Biology, No. 6, A. 8: 1-9.

Systematics; Geographical distribution; Scientific expeditions/ cruises.

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- Günther, A. 1860. *Catalogue of the Fishes in the British Museum*. Volume Second, xxi + 548pp. Checklist; Museum collections/ catalogs.
- Günther, A. 1862. *Catalogue of the Fishes in the British Museum*. Volume Fourth: xxi + 534pp. Checklist; Museum collections/ catalogs.
- Günther, A. 1864. *Catalogue of the Fishes in the British Museum*. Volume Fifth: xxii + 455pp. Checklist; Museum collections/ catalogs.
- Günther, A. 1870. *Catalogue of the Fishes in the British Museum*. Volume Eighth, A: xxv + 549pp. Checklist; Museum collections/ catalogs.
- Günther, A. 1874. Notice of some new species from Morocco. *Annals and Magazine of Natural History*, 4 (13): 230-232.  
Systematics/ diagnosis/ new species; Geographical distribution/ occurrences.
- Günther, A. 1887. Report on the Deep-Sea Fishes collected by H. M. S. Challenger during the years 1873-1876. *Report of the Scientific Results of the Voyage of the H. M. S. Challenger During the Years 1873-1876*, Zoology Vol. XXII,: viii + lxx + 335pp. (+ 73 plates).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Scientific expeditions/ cruises.  
Observations: No fish species are referred for the Azores.
- Günther, A. 1889. Report on the Pelagic Fishes collected by H. M. S. Challenger during the years 1873-1876. *Report of the Scientific Results of the Voyage of the H. M. S. Challenger During the Years 1873-1876*, Zoology Vol. XXXI, Part XXXVIII: 47pp. + 6 plates.  
Checklist; Museum collections; Scientific expeditions/ cruises.
- Haedrich, R. L. 1964. Food habits and young stages of North Atlantic *Alepisaurus* (Pisces, Iniomi). *Breviora*, 201: 1-15 (2 figs.).  
Ecology/ feeding; Development/ larvae and juveniles; Geographical distribution; Scientific expeditions/ cruises.  
Observations: The author also refer the occurrence of an unidentified *Urophycis* (9mm SL) on the stomach of an *Alepisaurus ferox* caught in the Azores.
- Haedrich, R. L. 1967. The stromateoid fishes; systematics and a classification. *Bulletin of the Museum of Comparative Zoology*, Harvard, 135 (2): 31-139.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Geographical distribution; Evolution/ phylogeny.
- Halliday, R. G. 1970. Growth and vertical distribution of the glacier lanternfish, *Bentosema glaciale* in the northwestern Atlantic. *Journal Fisheries Research Board of Canada*, 27 (1): 105-116.  
Biology/ age/ growth/ reproduction; Ecology/ vertical distribution; Geographical distribution; Scientific expeditions/ cruises.
- Hamer, K. C., D. R. Thompson, A. J. Rundle, S. A. Lewis & F. M. Stewart 1994. Mesopelagic fish eaten by Yellow-legged Herring Gulls *Larus argentatus atlantis* in the Azores. *Seabird* 16: 30-33.  
Ecology/ feeding.  
Observations: The author also cite for the Azores: *Myctophum* sp., *Notoscopelus* sp., *Protomyctophum* sp., *Symbolophorus* sp., *Coelorhynchus* sp., Batrachoididae, *Trachichthodes* sp., *Beryx* sp., Gobiidae (2 spp.).

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- Harmelin, J.-G. & M. Harmelin-Vivien 1979. Mission Bio-Océanographique 1979 aux Açores: Rapport Préliminaire. 4pp + 4 tables in: L. Saldanha (Coord.). Missão Bio-Oceanográfica Açores 79. Julho/Agosto 1979. Faculdade de Ciências de Lisboa.  
Checklist; Ecology/ demography; Scientific expeditions.  
Observations: The authors also cite for the Azores the following species that were not considered valid for inclusion in the checklist: *Gymnothorax maderensis*, *Dicentrachus labrax*, *Caranx lugubris*, *Labrus viridis*, *Blennius basilicus*. The authors also cite, at the genus level *Caranx* sp., *Symphodus* sp., Gobiidae spp., *Scorpaena* sp., Blenniidae sp. and *Belone* sp. ms/ paper of reduced circulation.
- Harmelin-Vivien, M. L., J. G. Harmelin, C. Chauvet, C. Duval, R. Galzin, P. Lejeune, G. Barnabé, F. Blanc, R. Chevalier, J. Duclerc & G. Lasserre 1985. Évaluation visuelle des peuplements et populations de poissons: méthodes et problèmes. *Revue d'Écologie (Terre Vie)*, vol. 40: 467-539.  
Ecology/ demography; Scientific expeditions.
- Harrison, C. M. H. 1966. On the first *Halosaur* leptocephalus from Madeira. *Bulletin of British Museum (Natural History), Zoology*, 14 (8), 1966: 441-486.  
Systematics; Development/ larvae and juveniles; Anatomy/ meristics/ morphometry/ comparative morphology; Ecology/ feeding; Biology/ reproduction; Geographical distribution.
- Harrison, C. M. H. & G. P. Palmer 1968. On the neotype of *Radicephalus elongatus* Osório with remarks on its biology. *Bulletin of the British Museum (Natural History), Zoology*, 16 (5): 187-211.  
Systematics; Anatomy/ meristics/ morphometry; Geographical distribution; Evolution/ phylogeny; Ecology.
- Heemstra, P. C. 1991. A taxonomic revision of the eastern Atlantic groupers (Pisces: Serranidae). *Boletim do Museu Municipal do Funchal*, 43 (226): 5-71.  
Systematics/ identification keys/ diagnosis; Geographical distribution; Ecology.
- Heemstra, P. C. & J. E. Randall 1993. FAO species catalogue. Vol. 16. *Groupers of the World (Family Serranidae, subfamily Epinephelinae) -An annotated and illustrated catalogue of the grouper, rockcod, hind, coral grouper and lyretail species known to date-* FAO Fisheries Synopsis, No. 125, Vol. 16: viii + 382pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology .
- Heldt, H. 1931. *Thunnus thynnus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Hilgendorf, F. 1888a. Eine neue *Salarias*-Art vor, welche von Herrn Dr. H. Simroth bei den Açoren entdeckt wurde. *Sitzungs- Berichten der Gesellschaft naturforschender Freunde zu Berlin*, vom 15 Mai 1888, Nr. 5: 79.  
Systematics/ new species.
- Hilgendorf, F. 1888b. Die Fische der Azoren. pp. 205-213. In H. Simroth (Ed.) *Zur Kenntniss der Azorenfauna. Archiv für Naturgeschichte*, 1 (3): 179-234.  
Checklist; Museum collections.  
Observations: Besides the references included in this paper, Hilgendorf still mentions another four *Caranx* species: i) *C. hippos* (Clofnam: 131.1.1.) (also cited by Fowler, 1936 and Arruda, 1992,

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based on Hilgendorf 1888b). This species was not included in the present checklist. Its occurrence would need further confirmation. In recent times it was not seen around the Azores, but its occurrence could be possible since its geographical distribution includes Portugal, Madeira and the east and west coasts of the Atlantic; ii) *Caranx georgianus*; iii) *Caranx* sp. at the Museu Carlos Machado (species 26 op. cit.) and iv) *Caranx* sp., from von Simroth collections (species 28, op. cit.). *C. hippos* is cited upon an identification of a specimen present at the MCM and registered as *Trachurus fallax*. This name is a well known synonym of *Trachurus picturatus*. None of the four *Caranx* mentioned by Hilgendorf (1888b) can be assigned with certainty to any species.

Hofrichter, R. & R. A. Patzner in press. A new species of *Apletodon* from the Mediterranean Sea and the eastern Atlantic with notes on the differentiation between *Apletodon*- and *Diplecogaster*-species (Teleostei: Gobiesociformes: Gobiesocidae). *Senckenbergiana Biologica*.

Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphometry.

Observations: The species name given by the authors is *Apletodon incognitus* (Hofrichter & Patzner pers. com.).

Hubbs, C. L. & R. L. Wisner 1980. Revision of the sauries (Pisces, Scomberesocidae) with descriptions of two genera and one new species. *Fishery Bulletin*, 77, 3: 521-566.

Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution; Development/ larvae and juveniles; Biology/ reproduction; Evolution/ phylogeny; Paleontology.

Hureau (Ed.), J.-C. 1996. *Fishes of the North-east Atlantic and the Mediterranean*. ETI Expert Center for Taxonomic Identification. UNESCO, Paris: 1 CD- ROM.

Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.

Hureau, J. C. & J. G. Nielsen 1981. Les poissons Ophidiiformes des campagnes du N. O. "Jean Charcot" dans l'Atlantique et la Méditerranée. *Cybium*, 5 (3): 3-27.

Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Scientific expeditions/ cruises.

ICN 1993. *Livro Vermelho dos Vertebrados de Portugal*. Vol. III - Peixes Marinhos e Estuarinos. Secretaria de Estado do Ambiente e do Consumidor. ICN, Lisboa: 146pp.

Checklist; Marine conservation.

Observations: Red book of the Portuguese marine and estuarine fishes.

INIP 1985a. Programa de apoio às pescas nos Açores. Cruzeiros 020150479. *Relatórios INIP*, Lisboa (40) 1985: 26 pp.

Fisheries/ cruises/ technology/ checklist; Fisheries biology; Oceanography.

Observations: ms/ paper of reduced circulation.

INIP 1985b. Programa de apoio às pescas nos Açores. Cruzeiros 020150480, 02180780, 020290581 e 020310781. *Relatórios INIP*, Lisboa (42) 1985: 201pp.

Fisheries/ cruises/ technology/ checklist; Fisheries biology; Oceanography; Ecology/ vertical distribution.

Observations: ms/ paper of reduced circulation.

INIP 1985c. Programa de apoio às pescas nos Açores. Cruzeiros 020400782. *Relatórios INIP*, Lisboa (43) 1985: 52pp.

Fisheries/ cruises/ technology/ checklist; Fisheries biology; Oceanography.

Observations: ms/ paper of reduced circulation.

- Isidro, E. 1987. Contribuição para o estudo da biologia e pesca de boca-negra, *Helicolenus dactylopterus* (De la Roche, 1809) dos Açores. *Relatório da VII Semana das Pescas dos Açores*, 7 (1986): 183-189.  
Biology/ age/ reproduction/ growth; Geographical distribution; Fisheries/ statistics.  
Observations: ms/ paper of reduced circulation.
- Isidro, E. 1989. Crescimento e reprodução de *Helicolenus dactylopterus* (De la Roche, 1809). Provas de Acesso à Categoria de Assistente de Investigação. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 40pp. + 2 anexos.  
Biology/ age/ growth/ reproduction.  
Observations: MSc thesis; ms/ paper of reduced circulation.
- Isidro, E. J. 1996. Biology and population dynamics of selected demersal fish species of the Azores Archipelago. PhD Thesis. Department of Environmental and Evolutionary Biology, University of Liverpool: vi + 249pp (+ 3 appendices).  
Fisheries biology; Biology/ age/ growth/ reproduction.  
Observations: PhD thesis; ms/ paper of reduced circulation.
- Isidro, H. A. 1988. A pesca dos pequenos pelágicos nos Açores. *Relatório da VIII Semana das Pescas dos Açores*, 8 (1987): 183-186.  
Fisheries/ statistics.  
Observations: ms/ paper of reduced circulation.
- Isidro, H. A. 1990a. Age and growth of *Trachurus picturatus* (Bowdich, 1825) from the Azores. *Arquipélago - Life and Earth Sciences*, 8, 45-54.  
Biology/ age/ growth; Fisheries/ statistics; Fisheries biology/ parameters.
- Isidro, H. A. 1990b. Estudo do Chicharro (*Trachurus picturatus* Bowdich, 1825) (Teleostei, Carangidae) dos Açores Provas de Acesso à Categoria de Assistente de Investigação. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta, 64 pp + anexos.  
Fisheries/ statistics; Biology/ age/ growth/ reproduction.  
Observations: Msc thesis; ms/ paper of reduced circulation.
- Janssen, J. & G. R. Harbison 1981. Fish in salps: The association of squartails (*Tetragonurus* spp.) with pelagic tunicates. *Journal of the Marine Biological Association of the United Kingdom*, 61: 917-927.  
Ecology/ feeding/ vertical distribution; Ethology/ behavioural ecology; Geographical distribution; Scientific expeditions/ cruises.
- Jaquet, M 1905. Descriptions de quelques parties du squelette du *Pseudotriacis microdon* Capello. *Bulletin du Musée Océanographique de Monaco*, No. 36: 1-28 + 8 plates. [reprinted in 1940: Recueils de Travaux relatifs aux Campagnes du Prince Albert I<sup>er</sup> de Monaco (Protistologie, Zoologie, Physiologie, Bactériologie, Algologie, Pathologie). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule CIII: Pp. 157-173].  
Anatomy; Scientific expeditions/ cruises.
- Jaquet, M. 1920. Contribution à l'anatomie comparée du *Symenchelys parasiticus* Gill. *Résultats des Campagnes Scientifiques accomplies sur son Yacht par Albert I<sup>er</sup> Prince Souverain de Monaco*, Fascicule LVI: 78 pp. + 5 plates.  
Anatomy.

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- Jespersen, P. 1915. Sternoptychidae (*Argyropelecus* and *Sternoptyx*). *Report on the Dana Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas* Vol. II. Biology, A. 2.: 1-41 (with 6 charts in text).  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Ecology/ vertical distribution.
- Jespersen, P. 1934. *Argyropelecus aculeatus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- John, H.-Ch. 1983. Quantitative distribution of fry of beloniform fishes in the Atlantic Ocean. "Meteor" *Forschungsergebnisse*, Reihe D - No. 36, Biologie: 21-33.  
Geographical distribution; Ecology/ demography; Development/ larvae and juveniles; Scientific expeditions/ cruises.
- Johnson, R. K. 1974. A revision of the alepisauroid family Scopelarchidae, (Pisces Myctophiformes). *Fieldiana Zoologica*, 66: ix + 249.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Development/ larvae and juveniles; Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny; Biogeography.
- Joubin, L. 1905. Cours d'Océanographie. *Bulletin du Musée Océanographique de Monaco*, No. 45: 1-185.  
Scientific divulgation/ education/ lectures.
- Klassen, G. J. 1995. Phylogeny and biogeography of the Ostraciinae (Tetraodontiformes: Ostraciidae). *Bulletin of Marine Science*, 57 (2): 393-441.  
Anatomy; Evolution/ phylogeny; Biogeography; Geographical distribution. .
- Koefoed, E. 1927. Fishes from the sea-bottom from the "Michael Sars" north Atlantic deep-sea Expedition 1910. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep - Sea Expedition 1910*, Volume IV, Part I, 1927, Bergen: 1-148 (with 6 plates and 55 figures in text).  
Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Ecology/ vertical distribution; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Koefoed, E. 1944. Pediculati. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 1, Bergen: 1-18 (with 3 plates and 2 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1952. Zeomorphi, Percomorphi, Plectognathi. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 2, Bergen: 1-26 (with 3 plates and 3 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1953. Synentognathi, Solenichthyes, Ancanthini, Berycomorphi, Xenoberyces. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 3, Bergen: 1-38 (with 4 plates and 6 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.  
Observations: The author also cite for the Azores *Melamphaës mizolepis*.

- Koefoed, E. 1955. Iniomi (Myctophidae exclusive), Lyomeri, Apodes. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 4, Bergen: 1-15 (with 2 plates and 3 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1956. Isospondyli. 1. Gymnophotodermi and Lepiphotodermi *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 5, Bergen: 1-21 (with 3 plates and 2 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1958. Isospondyli. 2. Heterophotodermi. 1. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 6, Bergen: 1-17 (with 1 plate and 2 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1960. Isospondyli. 2. Heterophotodermi. 2. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 8, Bergen: 1-15 (with 1 plate and 9 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Koefoed, E. 1962. Isospondyli. 2. Heterophotodermi. 3. *Report on the Scientific Results of the "Michael Sars" North Atlantic Deep -Sea Expedition 1910*, Volume IV, Part II, 10, Bergen: 1-14 (with 2 plate and 2 figures in text).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.  
Observations: The author also cite for the Azores *Argyropelecus* sp.
- Kreffft, G. 1970. Zur systematik und Verbreitung der Gattung *Lampadena* Good & Bean, 1896 (Osteichthyes, Myctophoidi, Myctophidae) im Atlantischen Ozean, mit Beschreibung einer neuen Art. *Berichte der Deutschen Wissenschaftlichen Kommission für Meeresforschung*, 21 (1970), H. 1-4: 271-284.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Kreffft, G. 1976. Distribution patterns of oceanic fishes in the Atlantic Ocean. Selected problems. In J. C. Hureau & K. Banister. Actes du 2<sup>ème</sup> Congrès européen des ichthyologistes. *Revue des Travaux de l' Institut Scientifique et Technique des Pêches Maritimes*, 40 (3-4): 439-460 (13 fig.).  
Biogeography; Geographical distribution; Ecology/ demography/ vertical distribution/ migration; Scientific expeditions/ cruises.
- Kreffft, G. 1983. Taxonomy and distribution of the fish-genus *Ichthyococcus* (Bonaparte, 1841) (Photichthyidae Weitzman, 1974) in the Atlantic Ocean. *Investigación Pesquera*, 47 (2): 295-309.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Kreffft, G. 1985. Alepocephalidae (Osteichthyes, Argentinoidei) dreier Reisen der Fischereiforschungsschiffe "Anton Dohrn" und "Walther Herwig" in den Nordatlantik. *Archiv für Fischereiwissenschaft*, 36 (1/2): 213-233.  
Systematics; Anatomy/ meristics/ morphometry; Checklist; Biology/ reproduction; Ecology/ vertical distribution; Ethology/ behavioural ecology; Geographical distribution; Scientific expeditions/ cruises.

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- Krefft, G. 1987. Typespecimens of fishes in the collections of the Institut für Seefischerei, Hamburg, part II. *Mitteilungen aus dem Institut für Seefischerei*, 42: 69-89.  
Systematics; Checklist.
- Krug, H. M. 1986. O goraz *Pagellus bogaraveo* (Brünnich, 1768) do mar dos Açores - crescimento e reprodução. Provas de Acesso à Categoria de Assistente de Investigação. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 93pp.  
Biology/ age/ growth/ reproduction; Fisheries biology.  
Observations: MSc thesis; ms/ paper of reduced circulation.
- Krug, H. M. 1989. The Azorean blackspot seabream, *Pagellus bogaraveo* (Brünich, 1768) (Teleostei: Sparidae): age and growth. *Cybium*, 13 (4): 347-355.  
Biology/ age/ growth; Fisheries biology/ parameters.
- Krug, H. M. 1991. The Azorean blackspot seabream, *Pagellus bogaraveo* (Brünich, 1768) (Teleostei, Sparidae). Reproductive cycle, hermafroditism, maturity and fecundity. *Cybium*, 14 (2): 151-159.  
Biology/ reproduction; Fisheries biology/ parameters.
- Krug, H. M. 1995. Biologia e Avaliação do stock Açoreano de Goraz, *Pagellus bogaraveo*. Tese de Doutoramento. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 193pp.  
Biology/ age/ growth/ reproduction; Fisheries biology/ parameters; Fisheries/ statistics.  
Observations: PhD thesis; ms/ paper of reduced circulation.
- Krug, H. M. & H. M. Silva 1989. Avaliação do stock açoriano de goraz. *Relatório da IX Semana das Pescas dos Açores*, 9 (1988): 231-235.  
Fisheries biology/ parameters; Fisheries/ statistics.  
Observations: This paper does not include scientific names of the species. ms/ paper of reduced circulation.
- Kukuyev, E. I. & I. I. Konovalenko 1988. Two new species of sharks of the genus *Scymnodalatis* (Dalatiidae) from the North Atlantic and Southeastern Pacific Oceans. *Journal of Ichthyology*, 28 (1): 122-126.  
Systematics/ diagnosis/ identification keys/ new species; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.
- Künne 1929. *Entelurus aequoreus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Kyle, H. M. 1913. Flat-fishes (Heterosomata) *Report on the Dana Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas* Vol. II. Biology, A. 1.: 1-150 (with 4 plates, 7 charts and 30 figures in text).  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Lacepède, B. G. E. 1798. *Histoire Naturelle des Poissons*. Vol. 1: 1-8 + i-cxlvii+ 1-532. Plates 1-25, 1 table.  
Natural history; Checklist; Biology.

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Systematics; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Laurent, L. & P. Lejeune 1988. Coexistence en Méditerranée de deux livrées terminales différentes chez la girelle *Coris julis* (Pisces, Labridae). *Cybium*, 12 (1): 91-95.  
Anatomy/ comparative morphology; Ethology.
- Lea, E. 1913. Muraenoid Larvae from the “Michael Sars” North Atlantic Deep-Sea Expedition 1910. *Report of the Scientific Results of the “Michael Sars” North Atlantic Deep-Sea Expedition 1910*, Volume III, Part I, Zoology, Bergen: 1-59 (with 6 plates and 38 figures in text).  
Systematics/ diagnosis; Development/ larvae and juveniles; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Ecology/ vertical distribution; Biology; Scientific expeditions/ cruises/ stations.
- Le Gall, J. 1932. *Hoplostethus mediterraneus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l’Atlantique Nord*. Conseil Permanent pour l’Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Le Gall, J. 1934. Le Tassergal ou Blue Fish (*Pomatomus saltatrix* Lacepède = *Temnodon saltator* Linné). Résumé des connaissances acquise sur la biologie et l’utilisation de ce poisson. *Revue des Travaux de l’Office des Pêches Maritimes*, Tome VII, Fasc. 1, No. 25: 27-85.  
Biology; Fisheries.
- Le Gall, J. 1937a. *Centrolophus pompilus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l’Atlantique Nord*. Conseil Permanent pour l’Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Le Gall, J. 1937b. *Coris julis*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l’Atlantique Nord*. Conseil Permanent pour l’Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Letaconnoux, R. 1951. Contribution à l’étude des espèces du genre *Trachurus* et spécialement du *Trachurus trachurus* (Linné 1758). *Revue des Travaux de l’ Office Scientifique et Technique des Pêches Maritimes*, Paris: 1-67.  
Biology; Anatomy; Fisheries.
- Leviton, A. E., R. H. Gibbs, E. Heal & D. E. Dawson 1985. Standards in herpetology and ichthyology: Part I. Standard symbolic codes for institutional resource collections in herpetology and ichthyology. *Copeia* (3): 802-832
- Lloris, D., Rucabado, J. and Figueroa, H. 1991. Biogeography of the Macaronesian ichthyofauna (The Azores, Madeira, the Canary Islands, Cape Verde and the African enclave). *Boletim do Museu Municipal do Funchal*, 43 (234), 191-241.  
Biogeography; Geographical distribution; Checklist.

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Systematics/ nomenclature; Checklist; Geographical distribution.
- Lütken, Chr. 1877. To sjældnere pelagiske Berycider. *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger*, 1877: 175-194.  
Systematics/ nomenclature; Geographical distribution.
- Lütken, Chr. 1880. Spolia Atlantica. Bidrag til Kundskab om Formforandringer hos Fiske under deres Væxt og Udvikling særligt hos nogle af Atlanterhavets Højsøfiske. *Kongelige Danske Videnskabernes Selskabs Skrifter*, Kjøbenhavn, Afd XII. 6: 410-613 + 5 plates.  
Systematics/ nomenclature; Geographical distribution; Development/ larvae and juveniles.
- Lütken, Chr. 1892. Spolia Atlantica. Scopelini Musei Zoologici Universitatis Hauniensis. Bidrag til Kundskab om det aabne Havs Laxesild eller Scopeliner. Med et tillæg om en anden pelagisk fiskeslaegt. *Oversigt Kongelige Danske Videnskabernes Selskabs Skrifter*, Kjøbenhavn (6) 7: 221-297.  
Systematics/ nomenclature; Geographical distribution.
- Mapstone, G. M. & E. Wood 1974. Behaviour of the Pomacentrids *Abudefduf luridus* and *Chromis chromis*. pp. 7-39 in: Açores Expedition 1973. Report of Exul Sub Aqua Club Scientific Diving Expedition to Sao Miguel, Azores, August 1973. London.  
Ethology/ behavioural ecology; Ecology/ demography/ feeding; Biology/ reproduction.  
Observations: ms/ paper of reduced circulation. Ghost paper of Mapstone & Wood (1975).
- Mapstone, G. M. & E. M. Wood 1975. The ethology of *Abudefduf luridus* and *Chromis chromis* (Pisces: Pomacentridae) from the Azores. *Journal of Zoology of London*, 175: 179-199.  
Ethology/ behavioural ecology; Ecology/ demography/ feeding; Biology/ reproduction.
- Markle, D. F. 1976. Preliminary studies on the systematics of the deep-sea Alepocephalidae (Pisces: Salmoniformes). A dissertation presented to the Faculty of the School of Marine Science. The College of William and Mary in Virginia. 225pp., 41 fig. (not published).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.  
Observations: PhD thesis; ms/ paper of reduced circulation.
- Markle, D. F. 1978. Taxonomy and distribution of *Rouleina attrita* and *Rouleina maderensis* (Pisces: Alepocephalidae). *Fishery Bulletin*, 76 (1): 78-87, 4 fig.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology.
- Markle D. F. & N. R. Merrett 1980. The abyssal alepocephalid, *Rinoctes nasutus* (Pisces, Salmoniformes), a redescription and an evaluation of its systematic position. *Journal of Zoology of London*, 190: 225-239.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Biology/ reproduction; Geographical distribution.
- Markle D. F. & J. E. Olney 1990. Systematics of the pearlfishes (Pisces: Carapidae). *Bulletin of Marine Science*, 47 (2): 269-410.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.

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- Markle, D. F. & J.-C. Quéro 1986. Alepocephalidae. Pp. 228-253 in: P. J. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (Eds.) *Fishes of the North-east Atlantic and the Mediterranean*. Vol. I. UNESCO, Paris.  
Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.
- Marshall, N. B. & T. Iwamoto 1973. Family Macrouridae. pp. 496-665 In D. M. Cohen, J. W. Atz, F. H. Berry, J. E. Böлке, R. H. Gibbs, E. A. Lachner, G. W. Mead & D. Mehner (eds.). *Fishes of the Western North Atlantic*. Number One. Part Six. *Order Heteronomi* (Notacanthiformes) Halosauridae, Notacanthidae, Lipogenyidae. Suborder Cyprinodontoidei. *Order Berycomorphi* (Beryciformis) Polymixiidae, Berycidae, Diretmidae, Trachichthyidae, Anomalopidae, Holocentridae, Anoplogasteridae. *Order Xenoberyces* (Stephanoberyciformes) Gibberichthyidae, Stephanoberycidae, Melamphidae. *Order Anacanthini* (Gadiformes) in part Macrouridae. *Memoir- Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Ecology/ vertical distribution; Geographical distribution.
- Martin, A. R. 1986. Feeding association between dolphins and shearwaters around the Azores Islands. *Canadian Journal of Zoology*, 64: 1372-1374.  
Ecology/ feeding.  
Observations: Feeding ecology of dolphins and shearwaters.
- Martins, H. R. 1977. Peixe-lua, uma visita fatal no porto da Horta. *O Telégrafo*, No. 23210 (13 Julho): 1 e 4.  
Geographical distribution/ occurrences; Scientific divulgation (newspaper).  
Observations: ms/ paper of reduced circulation.
- Martins, H. R. 1978. Preliminary study of the Azorean population of “chicharro”, *Trachurus picturatus* (Bowdich). Ms. DOP.: 5 pp. + 1 fig.  
Fisheries.  
Observations: ms/ paper of reduced circulation.
- Martins, H. R. 1982a. Biological studies of the exploited stock of *Loligo forbesi* (Mollusca: Cephalopoda) in the Azores. *Journal of the Marine Biological Association of the United Kingdom*, 62: 799-808.  
Ecology/ feeding.  
Observations: Biology of squid. Fish are referred as squid prey. The author also cites for the Azores: *Etmopterus* sp.
- Martins, H. R. 1982b. Nomenclatura de peixes de valor comercial dos Açores. *Açoreana*, Vol. VI (2): 127-129.  
Checklist; Fisheries/ vernacular names.  
Observations: The author also cites for the Azores: *Phycis* spp., *Trigla* spp., *Argyrosomus regius*, *Sprattus sprattus*, *Serranus* spp., *Seriola* spp., *Pollachius pollachius*, *Merluccius merluccius* and Rajidae.
- Martins, H. R. 1992. Cephalopods in the Azores. Pp. 193-198 in: L. Saldanha, P. Ré & A. F. Martins (Eds.). *Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L' Hirondelle*. *Açoreana* (Suplemento 1992).  
Fisheries/ statistics; Scientific divulgation/ lecture.  
Observations: Fishes are referred as prey or predators of cephalopods.

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- Martins, J. A. & R. S. Santos 1991. Breves considerações sobre a implementação de reservas marinhas nos Açores. Pp. 318-333 in: E. Dias, J. P. Carretas & P. Cordeiro (Eds.). *Primeiras Jornadas de Protecção do Meio Ambiente (Açores, Madeira, Canárias e Cabo Verde)*, 1988. SRTA/DRA & CMAH, Angra do Heroísmo.  
Marine conservation.  
Observations: ms/ paper of reduced circulation.
- Martins, R. & A. Cascalho 1990. Pescarias de profundidade. *Relatório da X Semana das Pescas dos Açores*, 10 (1989): 199-206.  
Fisheries/ technology; Geographical distribution.  
Observations: ms/ paper of reduced circulation.
- Matsui, T. & R. H. Rosenblatt 1984. Review of the deep-sea fish family Plactyroctidae (Pisces: Salmoniformes). *Bulletin of the Scripps Institution of Oceanography*, University of California, San Diego, No. 26: vii + 159pp.  
Systematics/ identification keys/ diagnosis; Anatomy/ comparative morphology/ meristics; Checklist; Evolution/ phylogeny; Ecology/ vertical distribution; Geographical distribution;
- Maul, G. E. 1951. Monografia dos Peixes do Museu Municipal do Funchal: Famílias Macrouridae e Merlucciidae. *Boletim do Museu Municipal do Funchal*, V, Art. 12: 5-55.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry.
- Maul, G. E. 1952. Monografia dos Peixes do Museu Municipal do Funchal: Famílias Gadidae e Bregmacerotidae. *Boletim do Museu Municipal do Funchal*, VI, Art. 15: 5-51.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry.
- Maul, G. E. 1959. *Aulostomus*, a recent spontaneous settler in Madeiran waters. *Bocagiana*, Museu Municipal do Funchal, 1: 1- 18.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.
- Maul, G. E. 1972. On a new species of the genus *Callionymus* from the Great Meteor seamount (Percomorphi, Callionymoidea, Callionymidae). *Bocagiana*, Museu Municipal do Funchal, 30: 1-8.  
Systematics/ new species; Anatomy/ meristics/ morphometry; Geographical distribution; Scientific expeditions/ cruises.
- Maul, G. E. 1976. The fishes taken in bottom trawls by R. V. "Meteor" during the 1967 Seamount Cruises in the Northeast Atlantic. "*Meteor*" *Forschungsergebnisse*, Reihe D - No. 22, Biologie: 1-69.  
Systematics; Checklist; Anatomy/ meristics/ morphometry; Geographical distribution; Scientific expeditions/ cruises/ stations.
- McDowell, S. 1973a. *Suborder Halosauridei. Family Halosauridae*. Pp. 32-123. In D. M. Cohen, J. W. Atz, F. H. Berry, J. E. Böлке, R. H. Gibbs, E. A. Lachner, G. W. Mead & D. Mehner (eds.). *Fishes of the Western North Atlantic. Number One. Part Six. Order Heteronomi (Notacanthiformes) Halosauridae, Notacanthidae, Lipogenyidae. Suborder Cyprinodontoidei. Order Berycomorphi (Beryciformis) Polymixiidae, Berycidae, Diretmidae, Trachichthyidae, Anomalopidae, Holocentridae, Anoplogasteridae. Order Xenoberyces (Stephanoberyciformes) Gibberichthyidae, Stephanoberycidae, Melamphidae. Order Anacanthini (Gadiformes) in part Macrouridae. Memoir- Sears Foundation for Marine Research, Yale University, New Haven.*

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- Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Ecology/ vertical distribution; Geographical distribution.
- McDowell, S. 1973b. *Suborder* Notacanthoidei. *Family* Notacanthidae. Pp 124-207. In D. M. Cohen, J. W. Atz, F. H. Berry, J. E. Böлке, R. H. Gibbs, E. A. Lachner, G. W. Mead & D. Mehner (eds.). Fishes of the Western North Atlantic. Number One. Part Six. *Order* Heteronomi (Notacanthiformes) Halosauridae, Notacanthidae, Lipogenyidae. *Suborder* Cyprinodontoidei. *Order* Berycomorphi (Beryciformis) Polymixiidae, Berycidae, Diretmidae, Trachichthyidae, Anomalopidae, Holocentridae, Anoplogasteridae. *Order* Xenoberyces (Stephanoberyciformes) Gibberichthyidae, Stephanoberycidae, Melamphidae. *Order* Anacanthini (Gadiformes) in part Macrouridae. *Memoir- Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Ecology/ vertical distribution; Geographical distribution.
- Mead, G. W. 1972. Bramidae. *Dana-Report*, No. 81: 1-166.  
Systematics/ identification keys/ diagnosis/ vernacular names/ new species; Anatomy/ meristics/ morphometry; Development/ larvae and juveniles; Geographical distribution; Biology/ reproduction; Parasitology; Ecology/ feeding; Fisheries; Scientific expeditions/ cruises/ stations.
- Mead, G. W. & R. Haedrich 1965. The distribution of the Oceanic fish *Brama brama*. *Bulletin of the Museum of Comparative Zoology*, Harvard University, 134 (2): 29-68.  
Geographical distribution.
- Mead, G. W. & G. E. Maul 1958. *Taractes asper* and the systematic relationships of the Steinegeriidae and Trachyberyidae. *Bulletin of the Museum of Comparative Zoology*, Harvard College, 119 (6): 393-417 (7 figures + 1 plate).  
Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.
- Menezes, G. M. M. 1996. Interações Tecnológicas na Pesca Demersal dos Açores. Provas de Acesso à Categoria de Assistente de Investigação. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 180pp. + anexos.  
Fisheries biology/ parameters; Fisheries/ cruises/ technology/ fleet/ statistics; Ecology/ population dynamics/ vertical distribution.  
Observations: MSc thesis ms/ paper of reduced circulation.
- Merrett, N. R. 1980. *Bathytyphlops sewelli* (Pisces: Chlorophthamidae): a senior synonym of *B. azorensis*, from the eastern North Atlantic with notes on its biology. *Journal of the Linnean Society of London*, 68 (2): 99-109.  
Systematics; Anatomy/ meristics/ morphometry/ comparative morphology; Biology/ reproduction; Ecology/ feeding; Geographical distribution.
- Merrett, N. R. 1986. Macrouridae of the eastern-north Atlantic. *Fiches d'Identification du Plancton (ICES)*, 173/174/175: 14pp.  
Systematics/ identification keys; Development/ larvae and juveniles; Geographical distribution.
- Merrett, N. R., J. Badcock & P. J. Herring 1973. The status of *Benthalbella infans* (Pisces: Myctophoidei), its development, bioluminescence, general biology, and distribution in the eastern North Atlantic. *Journal of Zoology of London*, 170: 1-48.  
Systematics; Anatomy/ meristics/ morphometry; Development/ larvae and juveniles; Biology/ reproduction; Ecology/ feeding/ vertical distribution; Geographical distribution; Scientific expeditions/ cruises/ stations .

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- Michel, Ch., P. Lejeune & J. Voss 1987. Biologie et comportement des labridés européens (labres, crenilabres, rouquiers, vielles, girelles). *Revue Française d'Aquariologie et Herpétologie*, 14 (1/2): 1-80.  
Ethology/ behavioural ecology; Biology.
- Miller, P. J. 1984. The gobiid fishes of temperate Macaronesia (eastern Atlantic), *Journal of Zoology*, London, 204: 363-412.  
Systematics/ diagnosis; Anatomy/ meristics/ morphology; Geographical distribution; Biogeography.
- Mohr, E. W. 1927. Teleostei physoclisti, 13a. Beryciformes, In G. Grimpe & E. Wagler. *Die Tierwelt der Nord- und Ostsee*, 10 (12): 101-102.  
Systematics/ identification; Geographical distribution.
- Mohr, E. 1937. Revision der Centriscidae (Acanthopterygii Centrisciformes). *Dana-Report*, No. 13: 1-69 (+ 2 plates).  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy/ meristics/ morphology; Development/ larvae and juveniles; Geographical distribution; Scientific expeditions/ cruises/ stations.
- Monteiro, L. R. 1991. Relatório de actividades. Provas de Acesso à Categoria de Assistente de Investigação. Universidade dos Açores. Departamento de Oceanografia e Pescas. Horta, 42pp + 1 anexo.  
Marine conservation/ marine pollution.  
Observations: MSc thesis; ms/ paper of reduced circulation.
- Monteiro, L. R. 1996. Seabirds as monitors of mercury contamination in the Portuguese Atlantic. PhD Thesis, University of Glasgow.  
Marine conservation/ marine pollution; Ecology.  
Observations: PhD thesis; ms/ paper of reduced circulation.
- Monteiro, L. R. & H. D. Lopes 1990. Mercury content of swordfish *Xiphias gladius* in relation to length, weight, age and sex. *Marine Pollution Bulletin*, 21: 293-296.  
Marine conservation/ marine pollution.
- Monteiro, L. R., E. Isidro & H. D. Lopes 1991. Mercury content in relation to sex, size, age and growth in two scorpionfish (*Helicolenus dactylopterus* and *Pontinus kuhlii*) from Azorean waters. *Water, Air and Soil Pollution*, 56: 259-367.  
Marine conservation/ marine pollution.
- Monteiro, L. R., J. A. Ramos, R. W. Furness & A. J. Del Nevo 1996a. Movements, morphology, breeding, molt, and feeding of seabirds in the Azores. *Colonial Waterbirds*, 19 (1): 82-97.  
Ecology/ feeding.  
Observations: Fishes are referred as preys of seabirds.
- Monteiro, L. R., V. Costa, R. W. Furness & R. S. Santos 1996b. Mercury concentrations in prey fish indicate enhanced bioaccumulation in mesopelagic environments. *Marine Ecology Progress Series*, in press.  
Marine conservation/ marine pollution.
- Moreno, J. A. & J. Morón 1992. Comparative study of the Genus *Isurus* (Rafinesque, 1810) and description of a form ('Marrajo Criollo') apparently endemic to the Azores. *Australian Journal of Marine and Freshwater Research*, 43: 109-122.  
Anatomy/ morphometry/ comparative morphology; Fisheries/ statistics.

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- Morin, C. 1992. Les Açores, clé de la biologie du germon en Atlantique Nord?. Pp. 155-192 in: L. Saldanha, P. Ré & A. F. Martins (Eds.). *Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L' Hironnelle. Açoreana* (Suplemento 1992).  
History/ marine research; Fisheries; Fisheries biology; Ecology/ feeding/ vertical distribution/ migration; Biology/ reproduction/ growth; Parasitology; Scientific divulgation/ lecture.
- Morrow, J. E. (Jr.) 1964a. Family Chauliodontidae. pp. 274-289 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Anatomy; Checklist; Development/ larvae and juveniles; Ecology/ vertical distribution; Geographical distribution; Ethology.
- Morrow, J. E. (Jr.) 1964b. Family Malacosteidae. pp. 523-549 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution.
- Morrow, J. E. (Jr.) & R. H. Gibbs (Jr.) 1964. Family Melanostommatidae. pp. 351-511 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Checklist; Development/ larvae and juveniles; Geographical distribution.
- Mukhacheva, V. A. 1976. Systematics and distribution of *Bonapartia* Goode & Bean and *Margrethia* Jespersen et Tåning (Gonostomatidae, Osteichthyes). *Transactions of the P. P. Shirshov Institut of Oceanology*, 104: 73-91. (in Russian, English summary).  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Ecology/ vertical distribution/ migration; Geographical distribution.
- Mukhacheva, V. A. 1981. Geographical distribution and variability of *Maurolicus muelleri* (Gmelin) (Sternoptychidae, Osteichthyes). Pp. 41-46 in: Parin, N. V. (Ed.) 1981. Fishes of the Open Ocean. *Academy of Sciences of the USSR, P. P. Shirshov Institut of Oceanology*, Moscow: 119pp (in Russian, English summary).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution.
- Munroe, T. A. 1990. Eastern Atlantic tonguefishes (*Symphurus*: Cynoglossidae, Pleuronectiformes), with descriptions of two new species. *Bulletin of Marine Science*, 47 (2): 464-515.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Ecology/ vertical distribution/ feeding; Biology/ reproduction; Development/ larvae and juveniles; Evolution/ phylogeny.
- Murray, John & Johan Hjort 1912. *The Depths of the Ocean - A general account of the modern science of oceanography based largely on the scientific researches of the norwegian steamer "Michael Sars" in the north Atlantic-* Macmillan and Co., Limited, London (1965 reprint): xx + 821pp. + 4 maps + 9 plates. .  
Oceanography; Biology; Ecology/ vertical distribution; Checklist; Scientific expeditions/ cruises; History/ historical interest.

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- Muzavor, S. & P. Westhaus 1981. O Mar e a Universidade dos Açores. *Relatório da I Semana das Pescas dos Açores*, 1 (1980): 115-123.  
Fisheries/ statistics; Fisheries biology; Scientific divulgation/ education .  
Observations: ms/ paper of reduced circulation.
- Nafpaktitis, B. G. 1968. Taxonomy and distribution of the lanternfishes, genera *Lobianchia* and *Diaphus*, in the north Atlantic. *Dana-Report*, No. 73: 1-131.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution; Ecology/ vertical distribution; Biology/ reproduction; Scientific expeditions/ cruises.
- Nafpaktitis, B. G. 1975. Review of the lanternfish genus *Notoscopelus* (Family Myctophidae) in the North Atlantic and the Mediterranean. *Bulletin of Marine Science*, 25 (1): 75-87.  
Systematics/ identification keys/ diagnosis/ new species; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.
- Nafpakitis, B. G., R. H. Backus, J. E. Craddock, R. L. Haedrich, B. H. Robison & C. Karnella 1977. Family Myctophidae. pp. 13-265 in: R. H. Gibbs Jr. Fishes of the Western North Atlantic. Number One. Part Seven: Family Neoscopelidae. Family Mictophidae. Atlantic Mesopelagic Zoogeography. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Anatomy/ morphology; Checklist; Ecology/ vertical distribution; Geographical distribution; .
- Nakabo, T. 1982. Revision of genera of the dragonets (Pisces: Callionymidae). *Publications of the Seto Marine Biological Laboratory*, XXVII (1/3): 77-131.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Geographical distribution; Ecology/ vertical distribution.
- Nakamura, I. 1985. FAO species catalogue. Vol. 5. *Billfishes of the World: An annotated and illustrated catalogue of marlins, sailfishes, spearfishes and sword. fishes known to date*. FAO Fisheries Synopsis, No. 125, Vol. 5: iv + 65pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology; Fisheries.
- Nakamura, I. and N. V. Parin 1993. FAO species catalogue. Vol. 15. *Snake mackerels and cutlassfishes of the World: An annotated and illustrated catalogue of the snake mackerels, snoeks, escolars, gemfishes, sackfishes, domine, oilfishes, cutlassfishes, scabbardfishes, hairtails and frostfishes known to date*. FAO Fisheries Synopsis, No. 125, Vol. 15: vii + 136pp.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution; Biology; Ecology; Fisheries.  
Observations: The distribution map for *Neolotus tripes* Johnson, 1865 (Clofnam: 153.4.1.) presented by Nakamura & Parin (1993), consisting of a shadow covering a vast area of several oceans, apparently includes the Azores. The distribution map for *Aphanopus intermedius* (species not included in FNAM) presented by Nakamura & Parin (1993) apparently includes the Azores, and is represented by an isolated shadow.
- Nash, R. D. M. & R. S. Santos 1993. The occurrence of the lesser weever (*Echiichthys vipera*) (Cuvier 1829) in the Azores. *Journal of Fish Biology*, 43 (2): 317-319.  
Ecology/ population dynamics; Geographical distribution/ occurrences.
- Nash, R. D. M., S. J. Hawkins, E. Fisher & A. Hill 1990. Diel fluctuations and population structure of a sandy beach shallow-water fish assemblage at Porto Pim, Azores. Pp. 234-250. In *Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório*

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- Preliminar. Parte I, Vol. 2. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Ecology/ demography/ population dynamics; Checklist; Ethology/ behavioural ecology.  
Observations: ms/ paper of reduced circulation. Ghost paper of Nash *et al.* (1994a).
- Nash, R. D. M., A. J. Geffen & R. S. Santos 1991. The wide-eyed flounder, *Bothus podas* Delaroché, a singular flatfish in varied shallow-water habitats of the Azores. *Netherlands Journal of Sea Research*, 27 (3/4): 367-373.  
Biology/ growth/ reproduction; Ecology/ feeding; Development/ larvae and juveniles.
- Nash, R. D. M., R. S. Santos & S. J. Hawkins 1994a. Diel fluctuations of a sandy beach fish assemblage at Porto Pim, Azores. *Arquipélago - Life and Marine Sciences* 12A: 75-86.  
Ecology/ demography/ population dynamics; Checklist; Ethology/ behavioural ecology.
- Nash, R. D. M., R. S. Santos, A. J. Geffen, G. Hughes & T. R. Ellis 1994b. Diel variability in catch rate of juvenile flatfish on two small nursery grounds (Port Erin Bay, Isle of Man and Porto Pim Bay, Faial, Azores). *Journal of Fish Biology*, 44: 35-45.  
Ecology/ demography/ population dynamics; Ethology.
- Nelson, J. S. 1994. *Fishes of the World* (3rd. edition). John Wiley & Sons, Inc., New York. xvii + 600pp.  
Systematics; Evolution/ phylogeny; Biogeography.  
Observations: The Classes, Orders and Families of the present checklist were organized according to Nelson's book.
- Neuvillette, H., 1897. Remarques anatomiques sur les Squales observés pendant la dernière campagne du yacht *Princesse Alice*. *Bulletin du Muséum d'Histoire Naturelle*, Paris, 3, p. 5. [reprinted in 1940: Recueils de Travaux relatifs aux Campagnes du Prince Albert I<sup>er</sup> de Monaco (Protistologie, Zoologie, Physiologie, Bactériologie, Algologie, Pathologie). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule CIII: Pp. 148-150].  
Anatomy; Biology/ physiology; Scientific expeditions/ cruises.
- Neuvillette, H., 1900. L'intestin valvulaire de la Chimère monstrueuse (*Chimaera monstrosa* Linné). *Bulletin de la Société Philom.*, Paris, 9<sup>e</sup> sér., t.III, p.59. [reprinted in 1940 in: Recueils de Travaux relatifs aux Campagnes du Prince Albert I<sup>er</sup> de Monaco (Protistologie, Zoologie, Physiologie, Bactériologie, Algologie, Pathologie). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule CIII: Pp. 150-155].  
Anatomy/ comparative morphology; Biology/ physiology; Evolution; Scientific expeditions/ cruises.
- Nielsen, J. G. 1968. Redescription and reassignment of *Parabrotula* and *Leucobrotula* (Pisces: Zoarcidae). *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening i Kjøbenhavn*, 131: 225-249 (+ 12 figs.).  
Systematics/ taxonomy/ diagnosis; Anatomy/ meristics/ morphology; Biology/ reproduction; Development/ larvae and juveniles; Geographical distribution.
- Nielsen, J. G. 1969. Systematics and biology of the Aphyonidae (Pisces, Ophidioidea). *Galathea Report*, 10: 1-89 (+ 6 plates).  
Systematics/ taxonomy/ diagnosis; Anatomy/ meristics/ morphology; Biology/ reproduction; Development/ larvae and juveniles; Geographical distribution.

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- Nielsen, J. G. 1974. *Fish Types in the Zoological Museum of Copenhagen*. University of Copenhagen, Denmark. 115 pp.  
Checklist; Systematics/ identification; Geographical distribution; Museum collections.
- Nielsen, J. G. & E. Bertelsen 1985. The gulper-eel family Saccopharyngidae (Pisces: Anguilliformes). *Steenstrupia*, 11 (6): 157-206.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Biology/ reproduction; Ecology/ feeding; Geographical distribution.
- Nielsen, J. G. & J.-C. Hureau 1980. Revision of the ophidiid genus *Spectrunculus* Jordan & Thompson 1914, a senior synonym of *Parabassogigas* Nybelin, 1957 (Pisces: Ophidiiformes). *Steenstrupia*, 6: 149-169.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution; Biology/ growth.
- Nielsen, J. G., J. Baddock & N. R. Merrett 1990. New data elucidating the taxonomy and ecology of the Parabrotulidae (Pisces: Zoarcoidei). *Journal of Fish Biology*, 37: 437-448.  
Systematics; Anatomy/ meristics/ morphometry; Biology/ reproduction; Ecology/ vertical distribution.
- Nielsen, J. G. & Smith, D. 1978. The eel family Nemichthyidae (Pisces: Anguilliformes). *Dana-Report*, No. 88: 1-71 + 2 plates.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphology; Evolution/ phylogeny; Geographical distribution; Development/ larvae and juveniles; Scientific expeditions/ cruises/ stations.
- Ninni, E. 1933. *Box salpa*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ninni, E. 1934. *Lichia glauca*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Nobre, A. 1924. Contribuições para a fauna dos Açores. *Anais do Instituto de Zoologia da Universidade do Porto*, Vol. I: 41-90.  
Checklist; Scientific expeditions.  
Observations: We assume that specimens of all species included were observed by the author.
- Nobre, A. 1930. *Materiais para o Estudo da Fauna dos Açores*. Companhia Editora do Minho. 108pp.  
Checklist; Scientific expeditions.
- Nobre, A. 1935. *Fauna Marinha de Portugal: I. Vertebrados (Mamíferos, Répteis e Peixes)*. Pôrto. LXXXIV + 579pp (+ 77 drawings and photos).  
Checklist; Systematics/ vernacular names.
- Norman, J. R. 1930. Oceanic fishes and flatfishes collected in 1925-1927. *Discovery Reports*, Vol. II: 271-370 (+ 2 plates).  
Systematics; Geographical distribution; Scientific expeditions/ cruises.
- Norman, J. R. 1934. *A systematic monograph of the flatfishes (Heterosomata)*. Vol. I - Psettodidae, Bothidae, Pleuronectidae. British Museum (Natural History), London: viii + 459pp.

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- Systematics/ identification keys/ diagnosis; Geographical distribution.
- Norman, J. R. 1935. Coast fishes. Part I. The South Atlantic. *Discovery Reports*, Vol. XII: 1-58.  
Systematics; Geographical distribution; Scientific expeditions/ cruises.
- Nunn, P. D. 1994. *Oceanic islands*. Blackwell Publishers, Oxford, UK, xv + 413pp.  
Marine geology; Natural history; Biogeography; Evolution; Oceanography; Paleontology;  
Geographical distribution.
- Nybelin, O. 1951. Introduction and station list. *Reports of the Swedish Deep-Sea Expedition 1947-1948*, Volume II. Zoology, No. 1: 1-28.  
Checklist; Scientific expeditions/ cruises/ stations.  
Observations: The author also refer the occurrence of 6 non identified specimens of *Bathypterois*, and 1 specimen of *Leucochlamys*. All species referred for the Azores were collected in Station 387, at 40°33'N- 35°24'W. This paper contains preliminary observations, which were latter treated with more detail by Nybelin (1957).
- Nybelin, O. 1957. Deep-sea bottom fishes. *Reports of the Swedish Deep-Sea Expedition 1947-1948*, Volume II. Zoology, No. 20: 250-345 (+ 7 plates).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution;  
Ecology/ vertical distribution; Scientific expeditions/ cruises.
- Oliveira, R.; V. C. Almada; A. Almeida; R. S. Santos & E. Gonçalves 1992. A checklist of the blennioid fishes (Teleostei, Blennioidei) occurring in Portuguese waters. *Arquipélago - Life and Earth Sciences*, 10: 23-38.  
Checklist; Geographical distribution; Bibliography.
- Pafort- van Iersel, T. 1981. The Sternoptychidae (Pisces: Stomiatoidei) of the Amsterdam mid-north Atlantic expedition, with a note on specimens intermediate between *Argyropelecus aculeatus* Valenciennes, 1849 and *A. olfersi* (Cuvier, 1829). *Beaufortia*, 31 (4): 97-106.  
Systematics; Anatomy; Geographical distribution; Ecology/ vertical distribution/ demography;  
Scientific expeditions/ cruises.
- Palko, B. J., G. L. Beardsley & W. J. Richards 1981. Synopsis of the biology of the swordfish, *Xiphias gladius* Linnaeus. NOAA Technical Report NMFS Circular 441, FAO Fisheries Synopsis No. 127: iv + 21pp.  
Systematics/ diagnosis/ vernacular names; Geographical distribution; Development/ larvae and juveniles; Biology/ reproduction/ age/ growth; Ecology/ feeding/ migration/ population dynamic/ demography/ vertical distribution; Parasitology; Ethology; Fisheries biology/ parameters; Fisheries/ technology/ fleet/ statistics.
- Palmer, G. 1961. The deal fishes (Trachipteridae) of the Mediterranean and north-east Atlantic. *Bulletin of the British Museum of Natural History*, 7: 336-351.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics; Development/ larvae and juveniles;  
Geographical distribution; Ecology/ feeding.
- Parin, N. V. 1970. *Ichthyofauna of the Epipelagic Zone*. Israel Program for Scientific Translations, Jerusalem: iii + 205.  
Ecology; Oceanography; Anatomy; Geographical distribution; Checklist; Biology.  
Observations: The author also cites for the Azores an *Alepisaurus* sp.

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- Parin, N. V. & S. G. Kobylansky 1996. Diagnoses and distribution of fifteen species recognized in genus *Maurolicus* Cocco (Sternoptychidae, Stomiiformes) with a key to their identification. *Cybium*, 20 (2): 185-195.  
Systematics/ identification keys/ diagnoses; Geographical distribution.
- Parr, A. E. 1960. The fishes of the family Searsidae. *Dana-Report*, No. 51: 1-109.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Scientific expeditions/ cruises.
- Patzner, R. A. 1990. Fishes in the lagoon of Lajes, Pico in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1: 123-126. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Checklist; Scientific expeditions.  
Observations: ms/ paper of reduced circulation.
- Patzner, R. A. & R. S. Santos 1990a. Biologie der Fleckengrundel, *Pomatoschistus pictus*, im Atlantik. *Aquarien und Terrarien*, 11 (90): 396-399. *Datz*, 11 (90): 672-673.  
Biology; Ecology/ demography/ feeding; Scientific expeditions; Scientific divulgation. .
- Patzner, R. A. & R. S. Santos 1990b. Riffbarsche des Mittelmeeres und Nordlinchen Atlantik. *Datz*, 2 (90): 81-83.  
Ecology; Scientific divulgation.
- Patzner, R. A. & R. S. Santos 1990c. Fishes of the Azores. Pp. 152-159 in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Scientific expeditions .  
Observations: ms/ paper of reduced circulation. Ghost paper of Patzner *et al.* (1992).
- Patzner, R. A. & R. S. Santos 1990d. Ecology of rocky littoral fishes of the Azores in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1: 160-177. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Ecology/ vertical distribution/ feeding; Checklist; Geographical distribution; Scientific expeditions .  
Observations: ms/ paper of reduced circulation. Ghost paper of Patzner & Santos (1993).
- Patzner, R. A. & R. S. Santos 1990e. Biologie der Fleckengrundel *Pomatoschistus pictus* im Atlantik. Pp. 193-201 in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 2. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Biology; Ecology/ demography/ feeding; Scientific expeditions.  
Observations: ms/ paper of reduced circulation. Ghost paper of Patzner & Santos (1990a).
- Patzner, R. A. & R. S. Santos 1992. Field observations on the association between the clingfish *Diplecogaster bimaculata pectoralis* Briggs 1955 and different species of sea urchins at the Azores. *Zeitschrift für Fischkunde*, 1 (2):157-161.  
Ecology.
- Patzner, R. A. & R. S. Santos 1993. Ecology of rocky littoral fishes of the Azores. *Courrier Forschungsinstitut Senckenberg*, 159: 423-427.  
Ecology/ vertical distribution/ feeding; Checklist; Scientific expeditions .

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- Observations: Referred version of Patzner & Santos (1990c), Patzner *et al.* (1990), Santos *et al.* (1990) and Ré (1990).
- Patzner, R. A., R. S. Santos & B. Loidl 1993. Eine neu entdeckte Partnerschaft von den Azoren: Schildfische und Seeigel. *Datz*, 6: 374-375.  
Ecology; Scientific divulgation.
- Patzner, R. A., R. S. Santos & P. Ré 1990. Littoral fishes of the Azores - An annotated checklist of the "Expedition Azores 89" in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 2: 179-192. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Checklist; Scientific expeditions.  
Observations: This paper also refers the occurrence of an unidentified species of Gobiesocidae (see remarks under *Diplecogaster bimaculata*). ms/ paper of reduced circulation. Ghost paper of Patzner *et al.* (1992).
- Patzner, R. A., R. S. Santos, P. Ré & R. D. M. Nash 1992. Littoral fishes of the Azores: An annotated checklist of fishes observed during the " Expedition Azores 1989". *Arquipélago - Life and Earth Sciences*, 10: 101-111.  
Checklist; Geographic distribution/ new records; Ecology/ demography; Scientific expeditions.  
Observations: Referred version of Patzner & Santos (1990d).
- Paxton, J. R. 1973. Morphology and distribution patterns of the whalefishes of the family Rondeletiidae. *Journal of the Marine Biological Association of India*, 15 (1): 175-188.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.
- Paz, R. M. de la 1975. Systématique et phylogénèse des Sparidae du genre *Diplodus* Raf. (Pisces, Teleostei). *Travaux et Documents de l' O.R.S.T.O.M.*, No. 45: 1-96.  
Systematics; Evolution/ Phylogeny; Geographical distribution.
- Paz, R. M. de la, M. L. Bauchot & J. Daget 1974. Les *Diplodus* (Perciformes, Sparidae) du groupe *Sargus*:Systématique et phylogénie. *Ichthyologia*, 5:268-271.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution; Development/ larvae and juveniles; Evolution/ phylogeny.
- Pereira, J. 1982a. Alguns dados sobre a Pesca do Atum nos Açores. *Relatório da II Semana das Pescas dos Açores*, 2 (1981): 125-133.  
Fisheries/ history/ statistics/ technology; Checklist.  
Observations: ms/ paper of reduced circulation.
- Pereira, J. 1982b. Açores - Pesca do Atum. *Pesca e Navegação*, 21: 38-43.  
Fisheries; Scientific divulgation.
- Pereira, J. 1983a. A Universidade dos Açores e a investigação dos recursos marinhos. *Relatório da III Semana das Pescas dos Açores*, 3 (1982): 75-89.  
Fisheries biology.  
Observations: This paper is not referred because it does not includes scientific names of the species.  
ms/ paper of reduced circulation.
- Pereira, J. 1983b. Pêches et recherches thonières aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 18 (3): 747-753.  
Fisheries/ technology/ fleet/ checklist/ statistics; Fisheries biology.

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- Pereira, J. 1984. A Safra do Atum nos Açores em 1983. *Relatório da IV Semana das Pescas dos Açores*, 4 (1983): 119-142.  
Fisheries/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.  
ms/ paper of reduced circulation.
- Pereira, J. 1985a. Situação Actual dos Stocks de Tunídeos Tropicais no Atlântico. *Relatório da V Semana das Pescas dos Açores*, 5 (1984): 91-97.  
Fisheries biology/ parameters.
- Pereira, J. 1985b. Observations sur le sex ratio de patudo (*Thunnus obesus*) aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 23 (2): 237-241.  
Biology/ reproduction; Fisheries.
- Pereira, J. 1985c. Procédure suivis aux Açores pour la collecte des statistiques thonnières. *ICCAT, Recueil de Documents Scientifiques*, 23 (2): 437-438.  
Fisheries/ statistics; Fisheries biology.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1985d. Analyse de la PUE dans la pêche de Patudo en surface aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 23 (2): 221-223.  
Fisheries biology/ parameters; Fisheries/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1986a. A Pesca do Patudo nos Açores. *Relatório da VI Semana das Pescas dos Açores*, 6 (1985): 83-95.  
Fisheries/ statistics; Fisheries biology. .  
Observations: This paper is not referred because it does not includes scientific names of the species.  
ms/ paper of reduced circulation.
- Pereira, J. 1986b. Captures de jeunes albacores (*Thunnus albacares*) aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 25: 104-105.  
Fisheries/ statistics.
- Pereira, J. 1986c. Composition spécifique des bancs de thonidès pêches à la seinne, aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 25: 395-400.  
Ecology/ demography; Fisheries biology.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1987a. Situação actual do stock de atum-patudo do Atlântico. *Relatório da VII Semana das Pescas dos Açores*, 7 (1986): 221-230.  
Fisheries biology/ parameters; Fisheries/ technology.  
Observations: ms/ paper of reduced circulation.
- Pereira, J. 1987b. Situation actuelle de la pêche du patudo aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 26 (1): 174-183.  
Fisheries/ fleet/ statistics; Fisheries biology.
- Pereira, J. 1987c. Analyse de l'état du stock de patudo atlantique. *ICCAT, Recueil de Documents Scientifiques*, 26 (1): 141-167.  
Fisheries biology/ parameters; Fisheries/ technology/ statistics; Biology/ age/ growth.  
Observations: This paper is not referred because it does not includes scientific names of the species.

- Pereira, J. 1987d. Maturité sexuelle et sex ratio des patudos capturées aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 26 (1): 168-173.  
Biology/ reproduction.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1988a. La pêcherie de l'espadon aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 27: 318-320. .  
Fisheries/ tehnology/ fleet/ statistics; Fisheries biology.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1988b. Notes sur la pêche sportive du makaire bleu aux Açores. *ICCAT, Recueil de Documents Scientifiques*, 28: 300-301.  
Fisheries/ technology/ fleet/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1989a. État du stock de patudo (*Thunnus obesus*) de l'Atlantique. *ICCAT, Recueil de Documents Scientifiques*, 30 (1): 173-202.  
Fisheries biology/ parameters; Fisheries/ technology/ statistics; Biology/ age/ growth.
- Pereira, J. 1989b. Rapport national du Portugal in: *ICCAT, Rapport de la Période Biennale 1988-89 I<sup>ère</sup> Partie*, 1989: 340-342.  
Fisheries/ fleet/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1990a. Analyse de l'abondance de patudo atlantique en 1973-75. *ICCAT, Recueil de Documents Scientifiques*, 32 (1): 73-82.  
Fisheries biology/ parameters; Fisheies/ statistics; Ecology; Geographical distribution.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1990b. Etat du stock du patudo atlantique au 1989. *ICCAT, Recueil de Documents Scientifiques*, 32 (1): 83-110.  
Fisheries biology/ parameters; Fisheries; Biology/ age/ growth.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1992a. Statistiques de la pêche thonière açorienne, années 1979-90. *ICCAT, Recueil de Documents Scientifiques*, 39 (1): 88-95.  
Fisheries biology; Fisheries/ statistics.
- Pereira, J. 1992b. Etat du stock de patudo de l'atlantique. *ICCAT, Recueil de Documents Scientifiques*, 39 (1): 96-112.  
Fisheries biology/ parameters; Fisheries; Biology/ age/ growth.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1992c. Rapport national du Portugal in: *ICCAT, Rapport de la Période Biennale 1990-91 II<sup>re</sup> Partie*, 1992: 299-301.  
Fisheries/ fleet/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1992d. A pesca do atum com isco vivo nos Açores. *Arquivos do DOP*, Série: Estudos, 1/92: 35pp.  
Fisheries/ technology/ statistics/ fleet; History/ marine research.  
Observations: The author also cites for the Azores: *Sardina* sp. and the whale shark but, in this case he does not mentioned the scientific name of the species.

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- Pereira, J. 1993a. Etat du stock de patudo de l'Atlantique au 30 Septembre 1992. *ICCAT, Recueil de Documents Scientifiques*, 40 (2): 174-184.  
Fisheries biology/ parameters; Fisheries; Biology/ age/ growth.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1993b. Statistiques de la pêche thonière açorienne, années 1979-1991. *ICCAT, Recueil de Documents Scientifiques*, 40 (2): 185-190.  
Fisheries biology; Fisheries/ fleet/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1994a. Statistiques de la pêche thonière açorienne, années 1979-1992. *ICCAT, Recueil de Documents Scientifiques*, 42 (2): 428-435.  
Fisheries biology; Fisheries/ fleet/ statistics.
- Pereira, J. 1994b. Analyse de l'état du stock de patudo de l'Atlantique. *ICCAT, Recueil de Documents Scientifiques*, 42 (2): 279-289.  
Fisheries biology/ parameters; Fisheries; Biology/ age/ growth.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1994c. Rapport national du Portugal in: *ICCAT, Rapport de la Periode Biennale 1992-93 Ire Partie*, 1993: 430-432.  
Fisheries/ fleet/ statistics.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. 1995. A Pesca do Atum nos Açores e o Atum Patudo (*Thunnus obesus*, Lowe 1839) do Atlântico. Tese de Doutoramento. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 330pp.  
Fisheries biology/ parameters; Fisheries/ technology/ statistics/ fleet; Biology/ age/ growth/ reproduction; Checklist; Geographical distribution; Ecology/ migration.  
Observations: PhD thesis; ms/ paper of reduced circulation.
- Pereira, J. & A. Aguiar 1979. Un poisson Ophichthidae nouveau pour la faune des Açores: *Apterichthys caecus* (Linnaeus, 1758). *Arquivos do Museu Bocage*, Vol. VII, 2<sup>a</sup> Série, notas e suplementos No. 43: 7pp.  
Anatomy/ meristics/ morphometry; Geographical distribution/ new record.
- Pereira, J. & N. Miyabe 1990. Production model analysis on Atlantic bigeye tuna as of 1987. *ICCAT, Recueil de Documents Scientifiques*, 32 (1): 67-72.  
Fisheries biology/ parameters.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, J. & N. Miyabe 1993. Production model analysis on Atlantic bigeye tuna as of 1990. *ICCAT, Recueil de Documents Scientifiques*, 40 (2): 169-173.  
Fisheries biology/ parameters.  
Observations: This paper is not referred because it does not includes scientific names of the species.
- Pereira, L. C. & L. Saldanha 1977. Sur la distribution de *Tarpon atlanticus* (Val., 1847) (Pisces: Megalopidae) dans l'Atlantique oriental. *Memórias do Museu do Mar- Série Zoológica*, I, 1: 1-14 + 2 figs.  
Geographical distribution/ New record.
- Pérès, J. M. 1992. Le bathyscaphe français *Archimède* aux Açores: Études bionomiques et ecologiques du benthos profond. Pp. 237-264 in: L. Saldanha, P. Ré & A. F. Martins (Eds.).

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- Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L' Hirondelle. Açoreana* (Suplemento 1992).  
Deep-sea research/ communities; Ecology/ demography; History/ marine research; Scientific expeditions; Scientific divulgation/ lecture.  
Observations: The author also cites for the Azores: *Benthosaurus* sp., *Bathypterois* sp., Halossauridae and Macrouridae.
- Perrier, E. 1903. *Traité de Zoologie*. Fascicule VI- Poissons. Masson et C<sup>ie</sup>, Éditeurs, Paris: pp. 2357- 2727 (avec 206 figures).  
Natural history; Systematics; Biology; Anatomy.
- Pettersson, H. 1957. The ship, its equipment, and the voyage. *Reports of the Swedish Deep-Sea Expedition 1947-1948*, Volume I, No. 1: 1-123.  
Scientific expeditions/ cruises/ list of stations; History/ marine research.
- Pickard, G. L. & W. J. Emery 1982. *Descriptive Physical Oceanography*. Pergamon Press. 249pp.  
Oceanography.
- Pierce, G. J., P. R. Boyle, L. C. Hastie & M. B. Santos 1994. Diets of squid *Loligo forbesi* and *Loligo vulgaris* in the northeast Atlantic. *Fisheries Research*, 21 (1-2): 149-163.  
Ecology/ feeding.  
Observations: Feeding ecology of squid.
- Pietsch, T. W. 1972a. XIX Systematics and distribution of Ceratioid Anglerfishes of the Genus *Chaenophryne* (Family Oneirodidae). *Bulletin of the Museum of Comparative Zoology*, 147, 2: 75-99.  
Systematics/ identification keys; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny.
- Pietsch, T. W. 1972b. XIX Systematics and distribution of Ceratioid fishes of the Genus *Dolopichthys* (Family Oneirodidae), with the description of a new species. *Archiv für Fischereiwissenschaft*, XXIII, 1: 1-28.  
Systematics/ identification keys; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny.
- Pietsch, T. W. 1975. Systematics and distribution of Ceratioidei anglerfishes of a new genus and species from the banda Sea. *Contributions in Science, Natural History Museum of Los Angeles County*, 310, March 16: 1-25.  
Systematics/ identification keys; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny.
- Pietsch, T. W. 1979. Systematics and distribution of Ceratioidei anglerfishes of a new genus and species from the banda Sea. *Contributions in Science, Natural History Museum of Los Angeles County*, 310, March 16: 1-25.  
Systematics/ identification keys; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution; Evolution/ phylogeny.
- Pietsch, T. W. 1986. Systematics and distribution of bathypelagic anglerfishes of the family Ceratiidae (Order: Lophiformes). *Copeia*, 1986 (2): 479-493.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Evolution/ phylogeny.

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- Pietsch, T. W. & D. B. Grobecker, 1987. *Frogfishes of the World: Systematics, Zoogeography and Behavioral Ecology*. Stanford University Press, Stanford, California: xii + 420pp.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Geographical distribution; Evolution/ phylogeny; Biogeography; Ethology/ behavioural ecology; Ecology/ feeding/ vertical distribution; Biology/ reproduction .
- Pinho, M. R., J. G. Pereira & I. S. Rosa 1995. Caracterização da pesca do isco vivo da frota atuneira açoreana. *Arquivos do DOP*, Série: Estudos, 2/95: 29pp.  
Fisheries/ technology.  
Observations: ms/ paper of reduced circulation.
- Pinho, M. R. & J. G. Pereira 1995a. Pesca experimental com palangre de profundidade dirigida a grandes pelágicos. *Arquivos do DOP*, Série: Estudos, 1/95: 18pp.  
Fisheries/ technology.  
Observations: ms/ paper of reduced circulation.
- Pinho, M. R. & J. G. Pereira 1995b. Dispositivos de concentração de peixes nos Açores. *Arquivos do DOP*, Série: Estudos, 3/95: 17pp.  
Fisheries/ technology; Ethology; Ecology.  
Observations: The author also cite for the Azores: *Seriola* sp. ms/ paper of reduced circulation.
- Poll, M. 1947. *Faune de Belgique. Poissons Marins*. Musée Royal d'Histoire Naturelle de Belgique, Bruxelles: 452pp.  
Systematics/ identification keys; Anatomy/ meristics/ morphometry; Geographical distribution.
- Porteiro, F. M. & R. S. Santos in prep. De Olivia Dabney para Louis Agassiz- uma colecção de peixes do litoral dos Açores do século XIX no Museu de Zoologia Comparada (Universidade de Harvard).  
History; Checklist.
- Porteiro, F. M., J. P. Barreiros & R. S. Santos 1996. Wrasses (Teleostei, Labridae) of the Azores. *Arquipélago - Life and Marine Sciences*, 14A: 22-39.  
Systematics/ identification keys; Checklist; Anatomy/ meristics/ morphometry; Geographical distribution.
- Porteiro, F. M., K. Hartel, J. E. Craddock & R. S. Santos in prep. Mesopelagic fish of the Azores deposited in the Museum of Comparative Zoology of the University of Harvard.  
Checklist; Museum collections; Scientific expeditions/ cruises.  
Observations: The species referred in the Appendix III of this paper were not included in the present checklist.
- Post, A. 1985. Zur taxonomie und verbreitung einiger Gonostomatidae und Photichthyidae (Osteichtheys, Stomiiformes) des Nordatlantik. *Archiv für Fischereiwissenschaft*, 36 (1/2): 235-256.  
Systematics; Checklist; Anatomy/ meristics/ morphometry/ comparative morphology; Ecology/ vertical distribution; Geographical distribution; Scientific expeditions/ cruises/ stations.
- Post, A. 1987. Results of the research cruises of FRV "Walther Herwig" to South America. LXVII. Revision of the subfamily Paralepidinae (Pisces, Aulopiformes, Alepisauroidae, Paralepididae). I. Taxonomy, morphology and Geographical distribution. *Archiv für Fischereiwissenschaft*, 38 (1/2): 75-131.

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- Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Evolution/ phylogeny; Scientific expeditions/ cruises.
- Post, A. & J.-C. Quéro 1981. Révision des Diretmidae (Pisces, Trachichthyoidei) de l'Atlantique avec description d'un nouveau genre et d'une nouvelle espèce. *Cybium*, 3<sup>ème</sup> série, 5 (1): 33-60.  
Systematics/ diagnosis/ new species; Development/ larvae and juveniles; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution.
- Post, A. & J.-C. Quéro 1991. Distribution et taxonomie des *Howella* (Perciformes, Percichthyidae) de l'Atlantique. *Cybium*, 15 (2): 111-128.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution/ migration.
- Post, A. & F.-Tesch 1982. Midwater trawl catches of adolescent and adult anguilliform fishes during Sargasso Sea Eel Expedition 1979. *Helgoländer Meeresuntersuchungen*, 35: 341-356.  
Geographical distribution; Checklist; Ecology/ vertical distribution/ demography; Development/ larvae and juveniles; Scientific expeditions/ cruises.
- Quéro, J. C. 1975. *Cyclothone pseudoacclinidens* sp. nov. (Pisces, Clupeiformes, Gonostomatidae) poisson nouveau de l'Atlantique est. *Revue Travaux de l'Institut de Pêches Maritimes*., 38 (4): 449-457, 5 fig.  
Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Evolution/ phylogeny; Geographical distribution.
- Quéro, J. C. & M. Duron 1980. Sur la limite nord de l'aire de repartition d'*Antigonia capros* (Pisces, Zeiformes, Caproidae). *Annales de la Société Science Naturelles de Charente-Maritime*., 6 (7): 693-696.  
Geographical distribution/ occurrence.
- Quéro, J.-C., T. Matsui, R. H. Rosenblatt & Y. I. Sazonov 1984. Searsiidae. Pp. 254-267 in: P. J. Whitehead, M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (Eds.) *Fishes of the North-east Atlantic and the Mediterranean*. Vol. I. UNESCO, Paris.  
Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.
- Ramalho, A. 1929a. *Trachurus picturatus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ramalho, A. 1929b. *Beryx decadactylus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Ramalho, A. 1929c. VI Contribution à l'étude des races de la Sardine (*Sardina pilchardus* Walb.) au Portugal, à Madeira et aux Açores. Pp. 46-55. In ICES: Racial Investigations of Fishes. *Rapports et Procès-Verbaux des Réunions*, Volume LIV, Copenhague.  
Anatomy/ morphology/ meristics; Fisheries.
- Ramos, A. G. 1869. *Noticia do Archipelago dos Açores e do que ha de mais importante na sua Historia Natural*. Angra do Heroismo. Typ. Terceirense (1<sup>o</sup> Edição): 150pp. [2nd edition: 1871, same title. Lisboa, Typographia Universal: 229 pp.].

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History/ historical interest/ ethnology; Natural history; Checklist/ vernacular names.

Observations: This book was written by an army physician interested by natural history. The fish species cited for the Azores are those included in Drouët (1861). The 2nd edition was reviewed and modified by the author. The chapter concerning the fishes was not modified except for the inclusion of a new list of vernacular names with " *o intuito de chamar sobre elles a atenção dos zoologistas*" (= the intention to call the attention of the zoologists). These names are: *Agulha. Agulhão. Albafar. Alfonsim. Alvacor. Arraia. Badejo. Bagre. Boto. Cabra. Cação. Cachorra. Castanheta. Clerigo. Escolar. Enxareo. Enxova. Espada. Espadarte. Gata. Goraz. Irio. Mamona. Marracho. Mero. Official. Orelão. Paxão. Pescada. Porco. Prombeta. Quelma. Rocaz. Serra. Solho. Tainha. Tintureira. Tutia.*

Rannou, M. & M. Gaborit-Rezzouk 1976. Contribution à l'étude des Batypteroidea (Pisces: Iniomi) de l' Atlantique e de la Méditerrané. *Bulletin Museum National d' Histoire Naturelle*, Paris, Série 3 (Zoologie), No. 375) 263: 453-466.

Systematics/ taxonomy/ diagnosis; Anatomy/ meristics/ morphometry; Biology/ reproduction; Geographical distribution; Scientific expeditions/ cruises.

Rannou, M., J. G. Nielsen & J. C. Hureau 1974. A note on several Aphyonidae of the north Atlantic (Teleostei: Ophidioidei). *Bulletin Museum National d' Histoire Naturelle*, Paris (Zoologie) 171: 1249-1257.

Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution.

Ré, P. 1979a. Lista das espécies de peixes observadas e capturadas. 2pp in: L. Saldanha (Coord.). Missão Bio-Oceanográfica Açores 79. Julho/Agosto 1979. Faculdade de Ciências de Lisboa.

Checklist; Scientific expeditions .

Observations: The author also cites for the Azores: *Sphyrna* sp., *Dasyatis* sp., *Diplodus vulgaris*, *Pagellus* sp., *Labrus viridis*. ms/ paper of reduced circulation.

Ré, P. 1979b. The eggs and newly hatched larvae of *Abudefduf luridus* (Cuvier, 1830) (Pisces: Pomacentridae) from the Azores. 4pp. + 2 figures + 2 photographs. In L. Saldanha (Coord.). Missão Bio-Oceanográfica Açores 79. Julho/Agosto 1979. Faculdade de Ciências de Lisboa.

Development/ eggs/ larvae and juveniles; Scientific expeditions .

Observations: ms/ paper of reduced circulation. Ghost paper of Ré (1980).

Ré, P. 1980. The eggs and newly hatched larvae of *Abudefduf luridus* (Cuvier, 1830) (Pisces: Pomacentridae) from the Azores. *Arquivos do Museu Bocage*, 2ª Série, vol VII (8): 109-116.

Development/ eggs/ larvae and juveniles; Scientific expeditions .

Ré, P. 1990. Ecologia dos peixes litorais. Pp. 127-151. In Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.

Checklist; Ecology/ demography; Scientific expeditions. .

Observations: ms/ paper of reduced circulation. Ghost paper of Patzner *et al.* (1992).

Ré, P. & A. J. Almeida 1981. Observations on the biology of *Ophioblennius atlanticus atlanticus* (Valenciennes in Cuvier & Valenciennes, 1836) (Pisces: Blenniidae) from the Azores. *Arquivos do Museu Bocage*, Série B, vol I (5): 41-52.

Development/ eggs/ larvae and juveniles; Anatomy/ meristics/ morphology.

Ré, P. & J. Gomes 1982. The eggs, newly hatched larvae and juveniles of the Azorian *Chromis* (Pisces: Pomacentridae). *Boletim da Sociedade Portuguesa de Ciências Naturais*, 21: 9-18.

Development/ eggs/ larvae and juveniles .

*Santos, Porteiro & Barreiros*

- Regan, C. T. 1903. On a collection of fishes from the Azores. *Annals and Magazine of Natural History*, Ser. 7, Vol. XII, September 1903: 344-348.  
Systematics/ new species; Checklist.
- Regan, C. T. 1908. A synopsis of sharks of the family Squalidae. *Annals and Magazine of Natural History*, London, (8) II, 39-57.  
Systematics/ diagnosis/ identification; Anatomy.
- Regan, C. T. 1911. On the systematic position of *Macristium chavesi*. *Annals and Magazine of Natural History*, Série. 8, Vol. VII, February 1911: 344-348.  
Systematics; Anatomy.
- Regan, C. T. 1925. New ceratioid fishes from the north- Atlantic, the Caribbean Sea and the Gulf of Canada, collected by the "Dana". *Annals and Magazine of Natural History*, Ser. 9, Vol. XV: 561-567.  
Systematics/ diagnosis/ new species; Checklist; Scientific expeditions/ cruises.
- Regan, C. T. 1926. The pediculate fishes of the suborder Ceratioidea. *The Danish "Dana" - Expedition 1920-22 in the North Atlantic and the Gulf of Panama*, No. 2: 1-54 (+ 13 plates).  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy; Parasitology; Biology/ reproduction; Scientific expeditions/ cruises/ stations.
- Regan, C. T. & Trewavas, E. 1929. The fishes of the families Astronesthidae and Chauliodontidae. *The Danish "Dana" - Expedition 1920-22 in the North Atlantic and the Gulf of Panama*, No. 5: 1-39 (+ 7 plates).  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy; Scientific expeditions/ cruises/ stations.
- Regan, C. T. & Trewavas, E. 1930. The fishes of the families Stomiidae and Malacosteidae. *The Danish "Dana" - Expedition 1920-22 in the North Atlantic and the Gulf of Panama*, No. 6: 1-143 + 14 plates.  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy; Geographical distribution; Ecology/ vertical distribution; development/ larvae and juveniles; Scientific expeditions/ cruises/ stations.
- Regan, C. T. & Trewavas, E. 1932. Deep-sea angler-fishes (Ceratioidea). *Dana-Report*, No. 2: 1-131 (+ 10 plates).  
Systematics/ identification keys/ diagnosis; Checklist; Anatomy; Scientific expeditions/ cruises/ stations.
- Rey, J. C. 1984. La pesca del pez Espada en el Atlántico Noreste. *Relatório da IV Semana das Pescas dos Açores*, 4 (1983): 113-117.  
Fisheries/ statistics/ technology.  
Observations: ms/ paper of reduced circulation.
- Rey, J. C. 1987. Areas tradicionales de pesca de pez espada de la flota española en aguas de Azores, antes de la instauracion de las 200 millas. *Relatório da VII Semana das Pescas dos Açores*, 7 (1986): 111-115.  
Fisheries/ history.  
Observations: ms/ paper of reduced circulation.
- Rey, J. C., E. Alot & A. Ramos 1984. Synopsis biologica del Bonito *Sarda sarda* (Bloch), del Mediterraneo y Atlantico Oeste. *ICCAT, Recueil de Documents Scientifiques*, 20 (2): 469-502.

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Fisheries biology/ parameters; Fisheries/ technology/ statistics; Biology/ age/ growth/ reproduction;  
Ecology/ feeding/ migration/ population dynamics; Ethology.

- Ribeiro, L. S., 1936. Notas sobre a pesca e os pescadores na Ilha Terceira. *Açoreana*, I (3): 147-169.  
History/ ethnology.  
Observations: The list of species included in this paper, is exclusively based on Sampaio (1904).  
Almost all the generic names are written in lower cases. *Sciaena aquila*, a synonym of  
*Argyrosomus regius* (Clofnam: 137.2.1.) is cited for the Azores in this paper. The occurrence of  
this species, or any other member of the family Sciaenidae, is not confirmed for the region.
- Richard, J. 1900. *Les campagnes scientifiques de S. A. S. le Prince Albert Ier de Monaco*.  
Exposition Universelle de 1900, Principauté de Monaco. Imprimerie de Monaco: 140pp.  
Natural history; History/ marine research; Oceanography; Scientific expeditions/ cruises.
- Richard, J. 1905a. Campagne scientifique du yacht "Princesse-Alice" en 1904.- Observations sur la  
faune bathypélagique. *Bulletin de l'Institut Musée Océanographique de Monaco*, No. 41: 1-30.  
Checklist; Scientific expeditions/ cruises.
- Richard, J. 1905b. Campagne scientifique de la "Princesse-Alice" (1905). Liste des Stations (avec  
une carte). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 46: 1-  
31.  
Scientific expeditions/ cruises/ stations.
- Richard, J. 1910. Les campagnes scientifiques de S. A. S. le Prince Albert Ier de Monaco. *Bulletin  
de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 162: 159pp. xxvii.  
History/ marine research/ historical interest; Scientific divulgation; Checklist; Scientific expeditions/  
cruises/ technology; Oceanography/ cruises; Marine Geology; Natural history/ zoology.
- Richard, J. 1911. Campagne scientifique de la L'Hirondelle II (1911) (avec une carte). Liste des  
Stations. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 218: 1-  
9.  
Scientific expeditions/ cruises/ stations.
- Richard, J. 1912. Campagne scientifique de la L'Hirondelle II (1912) (avec une carte). Liste des  
Stations. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 251: 1-  
15.  
Scientific expeditions/ cruises/ stations.
- Richard, J. 1913. Campagne scientifique de la L'Hirondelle II (1913). Liste des Stations (avec une  
carte). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 274: 1-15.  
Scientific expeditions/ cruises/ stations.
- Richard, J. 1934. Liste générale des stations des campagnes scientifiques du Prince Albert de  
Monaco avec notes et observations. *Résultats des Campagnes Scientifiques Accomplies sur son  
Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule, LXXXIX: 1-348.  
Scientific expeditions/ cruises/ stations; Checklist.
- Richards, W. J. 1968. Eastern Atlantic Triglidae (Pisces, Scorpaeniformes) *Atlantide Report*, 10: 77-  
114.  
Systematics/ identification species/ diagnosis; Anatomy/ meristics/ morphometry/ comparative  
morphology; Geographical distribution. .

- Roberts, C. D. 1993. Comparative morphology of spined scales and their phylogenetic significance in the Teleostei. *Bulletin of Marine Science*, 52 (1): 60-113.  
Evolution/ phylogeny; Anatomy/ comparative morphology.
- Robins, C. H. & C. R. Robins 1989. Family Synbranchidae. pp. 207-253 in: E. B. Böhlke (ed.). Fishes of the Western North Atlantic. Number One, Part Nine, Volume One: Orders Anguilliformes and Saccopharyngiformes. *Memoir - Sears Foundation for Marine Research*, Allen Press, Inc., Lawrence, Texas.  
Systematics/ diagnosis/ identification keys/ nomenclature; Anatomy/ morphology; Checklist; Evolution/ phylogeny; Geographical distribution; Biogeography; Ecology; Biology .
- Robins, C. R., R. M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachner, R. N. Lea and W. B. Scott 1991. *Common and Scientific Names of Fishes from the United States and Canada*. (Fifth edition). American Fisheries Society, Special Publication 20: 183pp.  
Systematics/ nomenclature/ vernacular names; Checklist.
- Rofen, R. R. 1966a. Family Paralepididae. pp. 205-461 in: G. W. Mead (ed.). Fishes of the Western North Atlantic. Number One. Part Five: Order Iniomi. Order Lyomeri. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Anatomy/ morphology; Checklist; Evolution/ phylogeny; Development/ eggs/ larvae and juveniles; Ecology/ vertical distribution/ feeding; Geographical distribution; Ethology.
- Rofen, R. R. 1966b. Family Omosudidae. pp. 462-481 in: G. W. Mead (ed.). Fishes of the Western North Atlantic. Number One. Part Five: Order Iniomi. Order Lyomeri. *Memoir - Sears Foundation for Marine Research*. Yale University, New Haven.  
Systematics/ diagnosis; Anatomy/ morphology; Checklist; Evolution/ phylogeny; Development/ larvae and juveniles; Ecology/ vertical distribution/ feeding; Geographical distribution; Ethology.
- Roule, L. 1912. Notice sur les Sélaciens conservés dans les collections du Musée Océanographique. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 243: 1-36. [reprinted in 1940 in: Recueils de Travaux relatifs aux Campagnes du Prince Albert I<sup>er</sup> de Monaco (Protistologie, Zoologie, Physiologie, Bactériologie, Algologie, Pathologie). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule CIII: Pp. 174-200].  
Checklist; Museum collections/ catalogue; Ecology/ vertical distribution; Geographical distribution.
- Roule, L. 1915. Sur les poissons abyssaux de la famille des Brotulidés dans l'Océan Atlantique nord. *Comptes Rendus des Scéances hebdomadaires de l'Académie des Sciences*, Paris, CLXI: 56-58.  
Systematics; Geographical distribution.
- Roule, L. 1916. Notice préliminaire sur quelques espèces nouvelles ou rares des poissons provenant des croisières de S. A. S. le Prince du Monaco. *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 320: 1-32.  
Systematics; Checklist; Geographical distribution; Scientific expeditions/ cruises.
- Roule, L. 1919. Poissons provenant des campagnes du yacht *PRINCESSE-ALICE* (1891-1913) et du yacht *HIRONDELLE II* (1914). *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule LII, Imprimerie du Monaco. 190pp. + erratum + 7 plates.

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Systematics/ diagnosis; Anatomy/ morphometry/ comparative morphology/ meristics; Checklist; Scientific expeditions/ cruises.

Roule, L. & F. Angel 1920. Notice préliminaire sur les larves de Poissons recueillis par S. A. S. le Prince de Monaco dans ses croisières de 1885 à 1895 (inclus). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 378: 1-8.

Systematics; Checklist; Development/ larvae and juveniles; Geographical distribution; Scientific expeditions/ cruises.

Observations: The author also cites for the Azores: Brotulidae sp., Ceratidae sp., Macrouridae sp.

Roule, L. & F. Angel 1921. Notice préliminaire (II<sup>e</sup>) sur les larves et les alevins de poissons recueillis par S. A. S. le Prince de Monaco dans ses croisières de 1896 à 1901 (inclus). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, 397: 1-8.

Systematics/ diagnosis; Anatomy; Development/ larvae and juveniles; Checklist; Scientific expeditions/ cruises.

Observations: The author also cites for the Azores: *Lampanyctus* sp., *Seriola* sp., *Gobius* sp., *Blennius* sp. (probably *Bl. pholis* or *Bl. ocellaris*).

Roule, L. & F. Angel 1923. Notice préliminaire (III<sup>e</sup>) sur les larves et les alevins de poissons recueillis par S. A. S. le Prince Albert Ier de Monaco dans ses croisières (années 1902-03-04). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, 429: 1-7.

Development/ larvae and juveniles; Checklist; Scientific expeditions/ cruises.

Observations: The author also cites for the Azores: an unidentified larvae of Stomiidae, *Stylophthalmus* sp., *Cyclothone* sp., *Argyropelecus* sp., *Myctophum* sp., *Diaphus* sp., *Myctophidae* sp., *Paralepis* sp., *Thyrsites* ?, *Scorpaena* sp., *Paraneirodes* sp. and Pleuronectiformes.

Roule, L. & F. Angel 1924. Notice préliminaire (IV<sup>e</sup> et dernière) sur les larves et les alevins de Poissons recueillis par S. A. S. le Prince Albert I de Monaco dans ses croisières (années 1905 à 1915). *Bulletin de l'Institut Océanographique (Fondation Albert Ier de Monaco)*, No. 451: 1-7.

Checklist; Development/ larvae and juveniles; Scientific expeditions/ cruises.

Observations: The author also cites for the Azores: *Stylophthalmoides* sp., *Myctophum* sp., *Paralepis* sp., *Bonapartia* sp., *Melamphaes* sp. and gen. ind. Trichiuridae.

Roule, L. & F. Angel 1930. Larves et alevins de poissons provenant des croisières du Prince Albert Ier du Monaco. *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule LXXIX, Imprimerie du Monaco. 148pp. (+ 6 plates).

Systematics/ diagnosis; Development/ larvae and juveniles; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.

Observations: The author also cites for the Azores: larva of *Pteridium atrum* (= *Oligopus ater*; Clofnam 172.10.1., but according to Cohen 1964 the larval specimen does not belong to *O. ater*), *Ceratiella* A.; Larva sp. (*Krohnus* ?); *Exocoetus furcatus*; *Blennius* sp.; *Cyclothone* sp.; *Myctophum* (*Diaphus*) *Gemmellari*; *Scorpaena* sp.; *Argyropelecus* sp.; *Coryphaena* sp.; *Rhombus* sp.; *Lipactis tumidus*; *Stylophthalmella* B.; *Melanocetus* sp.;

Roule, L. & F. Angel 1931. Observations et rectifications concernant divers Poissons recueillis par S. A. S. le Prince Albert Ier de Monaco au Cours des campagnes 1911 à 1914. *Bulletin de l'Institut Océanographique (Fondation Albert Ier, Prince de Monaco)*, No. 581: 1-8.

Systematics/ nomenclature; Anatomy; Scientific expeditions/ cruises.

Observations: The author also cite for the Azores: *Echiostoma Richardi*.

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- Roule, L. & F. Angel 1932. Notice préliminaire sur un nouveau genre de poisson abyssal provenant des collections du Musée Océanographique de Monaco. *Bulletin du Musée Océanographique du Monaco*, 2<sup>e</sup>, s., t. IV: 500.  
Systematics/ diagnosis/ new species; Scientific expeditions/ cruises.
- Roule, L. & F. Angel 1933. Poissons provenant des campagnes du Prince Albert Ier de Monaco. *Résultats des Campagnes Scientifiques Accomplies sur son Yacht par Albert Ier Prince Souverain du Monaco*, Fascicule LXXXVI, (Imprimerie du Monaco): 155 pp. + 4 plates.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Scientific expeditions/ cruises.
- Roule, L. & L. Bertin 1929. Les poissons apodes appartenant au sous-ordre des Nemichthyiformes. *The Danish "Dana" - Expedition 1920-22 in the North Atlantic and the Gulf of Panama*, No *Dana-Report*, No. 4: 1-113 + 9 plates.  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution; Development/ larvae and juveniles; Scientific expeditions/ cruises.
- Roule, L. & L. Bertin 1931. *Nemichthys scolopaceus*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhague. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Saldanha, L 1966. Sobre a ocorrência na costa de Sesimbra de jovens de *Chromis chromis* (Pisces: Pomacentridae). *Arquivos do Museu Bocage*, 2 (1) -Notas e suplementos-: XI-XVIII.  
Geographical distribution/ new record; Anatomy/ morphometry.
- Saldanha, L. 1977. Poissons capturés et photographiés lors des plongés du bathyscaphe Archimède aux Açores - 1969. *Arquivos do Museu Bocage*, 2<sup>a</sup> Série, VII, 3: 35-50.  
Deep-sea research; Systematics/ diagnosis; Anatomy/ morphometry/ meristics; Checklist; Ecology/ vertical distribution; Geographical distribution; Scientific expeditions.  
Observations: The author also cite for the Azores: *Cyclothone* sp.
- Saldanha, L. 1980. *Fauna submarina Atlântica - Portugal continental, Açores, Madeira*. Europa-América, 203pp.  
Scientific divulgation/ field guide; Checklist.
- Saldanha, L. 1981. Sur la présence de *Paraconger macrops* (Gunther, 1870) aux Açores. *Cybium*, 5 (2): 95-97.  
Anatomy/ meristics/ morphometry; Geographical distribution/ new record; Ecology.
- Saldanha, L. 1982a. Remarques sur *Taenioconger longissimus* et *Paraconger macrops* à Madère (Pisces, Congridae). *Cybium*, 6 (4): 3-14.  
Anatomy/ morphometry; Ecology/ demography/ feeding; Biology/ reproduction; Geographical distribution.
- Saldanha, L. 1982b. Anguilliformes. Pp.: 7-20. In Maurin, C. & J. C. Quérou (Eds.), Poissons des côtes nord-ouest africaines (Campagne de la "Thalassa" 1962, 1968, 1971, 1973). *Revue des Travaux de l'Institut des Pêches Maritimes*, 65 (1): 95pp.  
Checklist; Geographical distribution; Ecology/ vertical distribution; Scientific expeditions/ cruises.
- Saldanha, L. 1991. Fauna das profundidades marinhas. *Colóquio/ Ciências*, 3 (7): 26-42.  
Scientific divulgation; Deep-sea research.

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- Saldanha, L. 1992. Marine fishes, habitats and conservation. *The Netherlands Journal of Zoology*, 42 (2-3): 190-199.  
Marine conservation.
- Saldanha, L. 1994. Fishes observed and collected during the *Alvin* dives at the Lucky Strike thermal vent site (Mid-Atlantic Ridge - 1993). *Cybium*, 18 (4): 460-462.  
Deep-sea research/ hydrothermal vents; Checklist; Ecology/ vertical distribution/ feeding; Geographical distribution; Scientific expeditions.
- Saldanha, L. 1995. *Fauna submarina Atlântica - Portugal continental, Açores, Madeira* (2ª edição, revista e aumentada). Publicações Europa-América, Lisboa: 364pp.  
Scientific divulgation/ field guide; Checklist.  
Observations: Second edition (reviewed and enhanced) of Saldanha (1980). The author also cites for the Azores: *Kyphosus* sp.
- Saldanha, L. & M. Biscoito in press a. *Gaidropsarus mauli* a new species of gadid fish from the Lucky Strike hydrothermal vent site (mid- Atlantic Ridge) and the Biscay Slope. *Copeia*, in press.  
Deep-sea research/ hydrothermal vents; Systematics/ diagnosis/ nomenclature/ new species; Ecology/ vertical distribution/ feeding; Geographical distribution; Scientific expeditions.
- Saldanha, L. & M. Biscoito in press b. Fishes from the Lucky Strike and Menez Gwen hydrothermal vent sites (mid- Atlantic ridge). *Boletim do Museu Municipal do Funchal*, in press.  
Deep-sea research/ hydrothermal vents; Systematics/ diagnosis/ nomenclature; Checklist; Ecology/ vertical distribution/ feeding; Geographical distribution; Scientific expeditions.
- Saldanha, L., P. Ré & A. F. Martins (Eds.). 1992. *Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L' Hirondelle*. *Açoreana*, Supl., 345 pp.  
History/ marine research; Scientific expeditions/ cruises.
- Sampaio, A. S. 1904. *Memoria sobre a Ilha Terceira*. Imprensa Municipal, Angra do Heroísmo. ix + 876.  
History/ ethnology/ historical interest; Checklist/ vernacular names.  
Observations: Alfredo da Silva Sampaio was the son of José Augusto da Silva Sampaio, also a medicine doctor, and a prominent amateur naturalist and collector of Terceira Island who died before completion of his work on the History of Terceira Island. The chapter dedicated to the fauna was finished by A. S. Sampaio, following the plan left by his father. This book about Terceira Island cites 70 species of fish, with information about their common name, utilisation and abundance. This reference, despite being introduced in the checklist, is taxonomically very awkward and indeterminate but of historical interest. *Sciaena aquila*, a synonym of *Argyrosomus regius regius* (Clofnam: 137.2.1.) is cited for the Azores. This species, or any other member of the family Sciaenidae, does not occur in the region.
- Sanches, J. G. 1986a. *Peixes de Interesse Comercial (Lista de Nomes Portugueses)*. Lisboa, Instituto Nacional de Investigação das Pescas, Publicações Avulsas No. 8, 67pp.  
Fisheries/ vernacular names; Checklist.
- Sanches, J. G. 1986b. *Nomenclatura e diagnose dos principais peixes marinhos de Portugal (Ciclóstomos, Seláceos e Holocéfalos)*. Lisboa, Instituto Nacional de Investigação das Pescas, Publicações Avulsas No.9, 184pp.

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- Systematics/ diagnosis/ vernacular names; Checklist; Ecology/ vertical distribution; Geographical distribution.
- Santos, R. S. 1984. Contribuição para o estudo da eco-etologia de *Blennius sanguinolentus* Pallas (Pisces: Blenniidae) do litoral rochoso dos Açores. Provas de Acesso à Categoria de Assistente de Investigação: Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, 121 pp.  
Ethology/ behavioural ecology; Biology/ reproduction; Development/ eggs/ larvae and juveniles.  
Observations: MSc thesis; ms/ paper of reduced circulation.
- Santos, R. S. 1985a. Estrutura e função dos territórios em machos parentais de *Blennius sanguinolentus* Pallas (Pisces: Blenniidae). *Memórias do Museu do Mar - Série Zoológica*, 3 (29) 1985: 1 - 46.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Santos, R. S. 1985b. Parentais e satélites: táticas alternativas de acasalamento nos machos de *Blennius sanguinolentus* Pallas (Pisces: Blenniidae). *Arquipélago - Série Ciências da Natureza*, VI (1985): 119-146.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Santos, R. S. 1986. Capacidade de retorno à área vital, padrão de dispersão e organização social em *Blennius sanguinolentus* Pallas (Pisces: Blenniidae) durante a época da reprodução. *Psicologia*, V (1) 1986: 121-131.  
Ethology/ behavioural ecology.
- Santos, R. S. 1987. Aspectos da ecologia e comportamento da fauna litoral dos Açores: I. Observações sobre o comportamento territorial e parental de *Parablennius ruber* (Valenciennes) (Pisces: Blenniidae), com uma pequena nota sobre os embriões. *Açoreana*, VI (4) 1987: 295-317.  
Ethology/ behavioural ecology; Biology/ reproduction; Development/ larvae and juveniles.
- Santos, R. S. 1989. Observações sobre os intervalos de desenvolvimento de *Parablennius sanguinolentus* Pallas (Pisces: Blenniidae). *Arquivos do Museu Bocage*, Nova Série, vol I (19) 1989: 293-310.  
Development/ eggs/ embryology/ larvae and juveniles; Ethology.
- Santos, R. S. 1992a. Behavioural ecology, phenology and ethology of an intertidal blenny, *Parablennius sanguinolentus parvicornis* (Valenciennes in Cuvier & Valenciennes 1836) (Pisces: Blenniidae), from the Azores. PhD Thesis. Department of Environmental and Evolutionary Biology, University of Liverpool: x + 293pp (+ 19 plates, 4 appendices).  
Ethology/ behavioural ecology; Biology/ age/ growth/ reproduction; Development/ larvae and juveniles; Ecology/ feeding/ population dynamic.  
Observations: PhD thesis ms/ paper of reduced circulation.
- Santos, R. S. 1992b. Protecção e conservação do meio marinho nos Açores. Pp. 107-122 in: L. Saldanha, P. Ré & A. F. Martins (Eds.). *Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L' Hirondelle*. *Açoreana* (Suplemento 1992).  
Marine conservation; Scientific divulgation/ lecture.
- Santos, R. S. 1995a. Anatomy and histology of secondary sexual characters, gonads and liver of the rock-pool blenny (*Parablennius sanguinolentus parvicornis*) (Pisces: Blenniidae) of the Azores. *Arquipélago - Life and Marine Sciences*, 13A: 21-38.

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Biology/ reproduction; Anatomy/ histology.

- Santos, R. S. 1995b. Allopaternal care in the redlip blenny (*Ophioblennius atlanticus atlanticus*) (Pisces: Blenniidae). *Journal of Fish Biology*, 47: 350-353.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Santos, R. S. & V. Almada 1988. Intraspecific variations in reproductive tactics in males of the rocky intertidal fish *Blennius sanguinolentus* in Azores. pp. 421-447. In G Chellazzi & M. Vannini (Eds.): *Behavioral Adaptation to Intertidal Life*. Plenum Press, New York.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Santos, R. S. & J. P. Barreiros 1993. The ethogram of *Parablennius sanguinolentus parvicornis* (Pisces: Blenniidae) of the Azores. *Arquipélago*. Life and Marine Sciences 11A: 73-90.  
Ethology.
- Santos, R. S. & R. D. M. Nash 1995. Seasonal changes in sandy beach fish assemblage at Porto Pim, Faial, Azores. *Estuarine, Coastal and Shelf Science*, 41 (5): 579- 591.  
Ecology/ demography/ Population dynamics; Checklist.
- Santos, R. S. & R. D. M. Nash 1996. Seasonal variations in injuries suffered by individuals of the Azorean rock-pool blenny, *Parablennius sanguinolentus parvicornis*. *Copeia*, 1996 (1): 216-219.  
Ethology/ behavioural ecology.
- Santos, R. S., V. Almada & A. I. Santos 1988. Taxonomic status and ecology of the giant race of *Lipophrys pholis* (L.) (Pisces: Blenniidae) of the Azores. *Programme and Abstracts of the Sixth Congress of European Ichthyologists*: 180.  
Systematics; Anatomy/ meristics; Ecology.  
Observations: ms/ paper of reduced circulation.
- Santos, R. S., V. Almada & A. J. F. Santos 1989. Field experiments and observations on homing and territoriality in intertidal fishes. pp. 623-632. In R. J. Blanchard, P. F. Brain, D. C. Blanchard & S. Parmigiani (Eds.) *EthoExperimental Analysis of Behaviour*. Kluwer Academic Press, Dordrecht.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Santos, R. S., H. R. Martins, H. A. Isidro, L. R. Monteiro & S. J. Hawkins 1990a. Alguns aspectos da investigação e conservação no domínio marinho dos Açores. Pp. 4-15. In Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 1: Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Marine conservation; History/ History of marine research.  
Observations: ms/ paper of reduced circulation. Ghost paper of Santos *et al.* (1995c).
- Santos, R. S., F. M. Porteiro, N. Serpa, V. Rosa, O. Amaral & R. A. Patzner 1990b. Peixes (perfis) in: Expedição Açores/89. Ecologia e Taxonomia do Litoral Marinho dos Açores.-Relatório Preliminar. Parte I, Vol. 2: 202-232. Universidade dos Açores, Departamento de Oceanografia e Pescas, Horta, Açores.  
Checklist; Scientific expeditions.  
Observations: ms/ paper of reduced circulation.
- Santos, R. S., R. D. M. Nash & S. J. Hawkins 1994a. Fish assemblages on intertidal shores of the Island of Faial, Azores. *Arquipélago* - Life and Marine Sciences 12A: 87-100.

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Ecology/ demography/ population dynamics; Checklist.

Santos, R. S., L. R. Monteiro, M. Alves, E. J. Isidro, H. R. Martins & S. J. Hawkins 1994b. A Review of Marine Research in Relation to Conservation in the Azores. *Arquivos do DOP, Série Estudos*, 1/1994: 1-58.

Marine conservation; History/ marine research; Oceanography; Biogeography; Fisheries.  
Observations: ms/ paper of reduced circulation. Ghost paper of Santos *et al.* (1995c).

Santos, R. S., J. Gonçalves & E. Isidro 1995a. Marine research: The role of the Department of Oceanography and Fisheries of the University of the Azores. *Higher Education Policy*, 8 (2): 25-28.

Scientific divulgation/ education; History/ marine research.

Santos, R. S., R. D. M. Nash & S. J. Hawkins 1995b. Age, growth and sex ratio of the Azorean rock-pool blenny, *Parablennius sanguinolentus parvicornis*. *Journal of the Marine Biological Association of the United Kingdom*, 75 (3): 751-754.

Biology/ age/ growth/ reproduction; Ethology.

Santos, R. S., S. J. Hawkins, L. R. Monteiro, M. Alves & E. J. Isidro 1995c. Marine research, resources and conservation in the Azores. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 5 (4): 311-354.

Marine conservation; History/ marine research; Oceanography; Biogeography; Fisheries.

Santos, R. S., S. J. Hawkins & R. D. M. Nash 1996. Reproductive phenology of the Azorean rock-pool blenny (*Parablennius sanguinolentus parvicornis*), a fish with alternative mating tactics. *Journal of Fish Biology*, 48 (5): 842-858.

Ethology/ behavioural ecology; Biology/ reproduction.

Sazonov, Yu. I. 1976. Materials on the systematics and distribution of fishes of the family Searsiiidae (Salmoniformes, Alepocephaloidei). *Transactions of the P. P. Sirskov Institut of Oceanology*, 104: 26-72. (in Russian, English summary).

Systematics/ identification key/ diagnosis; Anatomy/ meristics/ morphology; Geographical distribution.

Sazonov, Yu. G. & A. I. Galaktionova 1987. Some data on the morphometrics of the grey triggerfish, *Balistes carolinensis*, of the central-eastern Atlantic. *Voprosy Ikhtiologii*, 2: 340-342.

Anatomy/ morphometry; Geographical distribution.

Schmidt, J. 1918. Argentinidae, Microstomidae, Opisthoproctidae. Mediterranean Odontostomidae *Report of the Dana Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas* Vol. II. Biology, A. 5.: 1-40 (with 23 figures and 4 charts in text).

Systematics; Geographical distribution; Scientific expeditions/ cruises.

Schmidt, J. 1921a. Contributions to the knowledge of the young of the sun-fishes (*Mola* and *Ranzania*). *Meddelelser fra Kommissionen for Havundersø-gelser*, Serie Fiskeri, VI (6): 16pp.

Biology; Geographical distribution.

Schmidt, J. 1921b. New studies of Sun-fishes made during the "Dana" Expedition, 1920. *Nature*, 107 no. 2681: 76-79.

Biology; Geographical distribution, Scientific expeditions/ cruises.

Schmidt, J. 1926 Further studies of Sun-fishes made during the Dana Expedition, 1921-1922. *Nature*, 117 No. 2933: 80-81.

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Geographical distribution; Development/ larvae and juveniles; Scientific expeditions/ cruises.

- Schroeder, W. C. 1940. Some deep sea fishes from the North Atlantic. *Copeia*, 1940 (4): 231-238.  
Systematics; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Schultz, L. P. 1958. *Review of the parrotfishes family Scaridae*. United States National Museum, Bulletin 214, Smithsonian Institution, 143pp.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Checklist; Evolution/ phylogeny; Geographical distribution.
- Schultz, L. P. 1964. Family Sternoptychidae. pp. 241-273 in: H. B. Bigelow (ed.). Fishes of the Western North Atlantic. Number One. Part Four: Order Isospondyli, in part (Argentinoids, Stomiatooids, Esocoids, Bathylaconoids) and Order Giganturoidei. *Memoir - Sears Foundation for Marine Research*, Yale University, New Haven.  
Systematics/ identification keys/ diagnosis; Checklist; Geographical distribution.  
Observations: Based on Roule & Angel (1933), the author refers to the Azores *Argyropelecus affinis*. However, the stations of Roule & Angel (1933) was outside of the area considered to be the Azorean waters.
- Sedberry, G. R. 1995. Aspects of the biology and management of wreckfish, *Polyprion americanus*, in the western north Atlantic. *Relatório da XIII Semana das Pescas dos Açores*, 13 (1994): 105-116.  
Geographical distribution; Biology; Fisheries/ statistics; Fisheries biology; Ecology.  
Observations: ms/ paper of reduced circulation.
- Sedberry, G. R., J. L. Carlin, R. W. Chapman & B. Eleby 1996. Population structure in the pan-oceanic wreckfish, *Polyprion americanus* (Teleostei: Polyprionidae) as indicated by mtDNA variation. *Journal of Fish Biology*, 49 (Supplement A): 318-329.  
Genetics; Geographical distribution; Ecology.
- Serafim, M. P. & H. M. Krug 1995. Age and growth of the red porgy, *Pagrus pagrus* (Linnaeus, 1758) (Pisces: Sparidae) in the Azorean waters. *Arquipélago - Life and Earth Sciences*, 13A: 11-20.  
Biology/ age/ growth; Fisheries biology/ parameters.
- Serpa, J. de 1886. A Industria Piscatoria nas Ilhas Fayal e Pico. *Opusculos Açorianos*, I. Imprensa Academica. Coimbra: 1- 18.  
History/ ethnology.  
Observations: This publication contains small essays about fisheries on Pico and Faial Islands without reference to scientific names of the species.
- Shaboneyev, I. Ye. 1973. Materials on the biology of the horse mackerel *Trachurus picturatus picturatus* (Bowdich) in the eastern part of the central Atlantic. *Trudy*, 93: 91-101 (English translation, mimeo).  
Biology; Geographical distribution.
- Shaboneyev, I. Ye. 1980. Systematics, morpho-ecological characteristics and origin of carangids of the Genus *Trachurus*. *Journal of Ichthyology*, 20 (6): 15-24.  
Systematics; Anatomy/ morphology; Ecology; Evolution/ phylogeny.

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- Shabonev, I. Ye. & A. N. Kotlyar 1979. A comparative morphoecological analysis of the eastern Pacific forms of *Trachurus symmetricus* and the Atlantic Oceanic horse mackerel *Trachurus picturatus picturatus*. *Journal of Ichthyology*, 19 (2): 24-29.  
Anatomy/ morphology; Ecology.
- Shabonev, I. Ye. & Ye. I. Ryazantseva 1977. Population structure of the oceanic horse mackerel (*Trachurus picturatus picturatus*). *Journal of Ichthyology*, 17 (6): 954-958.  
Biology; Ecology/ population dynamics; Geographical distribution.
- Shcherbachev, Y. N., 1981. Preliminary review of the Indian Ocean species of the Chlorophthalmidae (Myctophiformes, Osteichthyes). Pp. 47-67 in: Parin, N. V. (Ed.) 1981. Fishes of the Open Ocean. *Academy of Sciences of the USSR, P. P. Shirshov Institut of Oceanology*, Moscow: 119pp (in Russian, English summary).  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ anatomy; Checklist; Geographical distribution.
- Shcherbachev, Y. N. & N. S. Novikova 1976. Materials on the distribution and systematics of the mesopelagic fishes of the family Stomiidae (Osteichthyes). *Transactions of the P. P. Shirshov Institut of Oceanology*, 104: 92-112. (in Russian, English summary).  
Systematics/ identification key/ diagnosis/ new species; Anatomy/ meristics/ morphometry; Geographical distribution.
- Shcherbachev, Y. N., E.I. Kukuev & V.I. Shlibanov, 1985. Composition of the benthic and demersal ichthyocenoses of the submarine mountains in the southern part of the North Atlantic Range. *Journal of Ichthyology*, 25 (1): 110-125.  
Checklist; Geographical distribution; Ecology/ vertical distribution.
- Shipp, R. L. 1974. The pufferfishes (Tetraodontidae) of the Atlantic ocean. *Publications of the Gulf Coast Research Laboratory Museum*, 4: 1-163.  
Systematics/ identification keys/ diagnosis/ nomenclature; Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution/ feeding; Evolution/ phylogeny.
- Shores, D. L. 1969. Postlarval *Sudis* (Pisces: Paralepididae) in the Atlantic Ocean. *Breviora (Museum of Comparative Zoology)*, 334: 1-14.  
Development/ postlarvae; Anatomy/ meristics/ morphometry; Geographical distribution; Scientific expeditions/cruises.
- Silva, H. M. 1983. Preliminary studies of the exploited stock of kitefin shark, *Scymnorhinus licha* (Bonnaterre, 1788) in the Azores. *International Council for the Exploration of the Sea*, C.M. 1983/G:18: 13pp .  
Fisheries biology/ parameters.  
Observations: ms/ paper of reduced circulation.
- Silva, H. M. 1986a. Crescimento e reprodução da abrótea *Phycis phycis* (Linnaeus, 1766) em mares dos Açores. Provas de Acesso à Categoria de Assistente de Investigação. Departamento de Oceanografia e Pescas, Universidade dos Açores, Horta. 100pp. + 1 anexo.  
Anatomy/ meristics/ morphometry; Biology/ age/ growth/ reproduction; Fisheries biology.  
Observations: MSc thesis; ms/ paper of reduced circulation.
- Silva, H. M. 1986b. Biologia e avaliação das principais espécies demersais dos Açores. *Relatório da VI Semana das Pescas dos Açores*, 6 (1985): 105-113.  
Fisheries; Checklist; Biology/ age/ growth/ reproduction; Fisheries biology/ parameters.

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- Observations: ms/ paper of reduced circulation.
- Silva, H. M. 1987. An assessment of the Azorean stock of kitefin shark, *Dalatias licha* (Bonn, 1788). *International Council for the Exploration of the Sea*, C.M. 1987/G:66: 10pp .  
Fisheries biology/ parameters.  
Observations: ms/ paper of reduced circulation.
- Silva, H. M. 1992. Potencialidades pesqueiras dos Açores. Pp. 199-215 in: L. Saldanha, P. Ré & A. F. Martins (Eds.). *Centenaire de la Dernière Campagne Océanographique du Prince Albert de Monaco aux Açores à bord de L'Hirondelle. Açoreana* (Suplemento 1992).  
Fisheries biology/ parameters; Fisheries/ statistics; Scientific divulgation/ lecture.
- Silva, H. M. 1995. An intensive fishing experiment in the Azores (Study contract 94/028). Interine progress report. *Arquivos do DOP*, Série: Relatórios internos, 1/95: 19pp.  
Fisheries biology/ parameters; Fisheries/ technology.  
Observations: ms/ paper of reduced circulation.
- Silva, H. M. & H. M. Krug 1992. Virtual population analysis of the forkbeard, *Phycis phycis* (Linnaeus, 1766), in the Azores. *Arquipélago - Life and Earth Sciences*, 10: 5-12.  
Fisheries biology/ parameters; Fisheries/ statistics.
- Silva, H. M. & H. M. Krug 1995. Estado de exploração do goraz nos Açores. *Relatório da XIII Semana das Pescas dos Açores*, 13 (1994): 63-72.  
Fisheries biology/ parameters.  
Observations: ms/ paper of reduced circulation.
- Silva, H. M. & G. M. Menezes 1995a. Relatório do cruzeiro demersais realizado durante o inverno de 1993-94 nos Açores (ARQDAÇO-01-I93). *Arquivos do DOP*, Série: Cruzeiros, 3/95: 40pp.  
Fisheries/ cruises/ technology/ checklist; Fisheries biology/ parameters.  
Observations: The author also cite for the Azores: *Deania* spp., *Etmopterus* spp., Macrouridae sp. ms/ paper of reduced circulation.
- Silva, H. M. & G. M. Menezes 1995b. Relatório do cruzeiro demersais realizado durante a primavera de 1994 nos Açores (ARQDAÇO-02-P94) *Arquivos do DOP*, Série: Cruzeiros, 2/95: 42pp.  
Fisheries/ cruises/ technology/ checklist; Fisheries biology/ parameters.  
Observations: The author also cite for the Azores: *Deania* spp., *Etmopterus* spp., *Trigla* spp., Macrouridae sp. ms/ paper of reduced circulation.
- Silva, H. M., H. M. Krug & G. M. Menezes 1994. Bases para a regulamentação da pesca de demersais dos Açores. *Arquivos do DOP*, Série: Estudos, 4/94: 1-41.  
Fisheries/ statistics/ checklist/ fleet; Fisheries biology/ parameters; Ecology/ demography. .  
Observations: ms/ paper of reduced circulation.
- Silva, H. M., J. M. Lorenzo, J. Delgado & G. Menezes 1995. Design optimisation and implementation of demersal survey cruises in the Macaronesian Archipelagos (Study contract 94/034). Interim progress report. *Arquivos do DOP*, Série: Cruzeiros, 2/95: 16 pp. + 3 figures + 14 tables.  
Fisheries biology, fisheries cruises.  
Observations: ms/ paper of reduced circulation.
- Silva, M. E. da 1893. S. Miguel em 1893. Cousas e Pessoas - Cartas reproduzidas do "Diario de Noticias" de Lisboa. *Bibliotheca da Autonomia dos Açores*, Volume I: 1-88.

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- History; Museum collections; Scientific divulgation.  
Observations: This publication contains short notices about the Azores. In page 19 the author refers to the presence of *Lophius piscatorius*, *Syngnathus acus* and *Caeratopterus* sp. (*raia* or *jamanta*) in Museu Carlos Machado (Ponta Delgada). ms/ paper of reduced circulation.
- Simões, P. R. & H. M. Silva 1995. Caracterização da pesca de Espadarte (*Xiphias gladius*) em águas Açoreanas. *Relatório da XIII Semana das Pescas dos Açores*, 13 (1994): 203-222.  
Fisheries/ statistics/ fleet .  
Observations: ms/ paper of reduced circulation.
- Skaramuca, B., D. Mušin, V. Onofri & M. Caric 1989. A contribution to the knowledge on the spawning time of the dusky grouper (*Epinephelus guaza* L.). *Ichthyologia*, 21 (1): 79-85.  
Biology/ reproduction.
- Smale, M. J. 1996. Cephalopods as prey. IV. Fishes. *Philosophical Transactions of the Royal Society of London*, Series B, Vol. 351, No. 1343: 1067-1081.  
Ecology/ feeding.
- Smith, D. G. & P. H. J. Castle 1982. Larvae of the Nettastomatid eels: Systematics and Distribution. *Dana-Report*, No. 90: 1-44.  
Systematics/ identification keys/ diagnosis; Development/ larvae and juveniles; Geographical distribution; Scientific expeditions/ cruises.
- Smith, D. G. & J. G. Nielsen, 1989. Family Nemichthyidae. pp. 441-459 in: E. B. Böhlke (ed.). *Fishes of the Western North Atlantic. Number One, Part Nine, Volume One: Orders Anguilliformes and Saccopharyngiformes. Memoir - Sears Foundation for Marine Research*, Allen Press, Inc., Lawrence, Texas.  
Systematics/ identification keys/ diagnosis; Anatomy/ morphology; Checklist; Geographical distribution.
- Steenstrup, J. & Lütken, Chr. 1898. Spolia Atlantica. Bidrag til Kundskab om Klump-eller Maanefiskene (Molidae). *Kongelige Danske Videnskabernes Selskabs Skrifter*, Kjøbenhavn, Afd IX. 6: 51-54.  
Systematics/ nomenclature; Geographical distribution.
- Stefanescu, C., D. Lloris & J. Rucabado 1991. À propos de la présence de *Lepidion guentheri* (Giglioli, 1880) (Moridae) en Méditerranée occidentale Ibérique. *Cybium*, 15 (2): 139-146.  
Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution.  
Observations: The authors compare the morphometry and the meristic of *L. guentheri* and *L. Lepidion*.
- Stefanescu, C., D. Lloris & J. Rucabado 1994. Revalidation of *Lampanyctus gemmifer* (Goode & Bean, 1879), a junior synonym of *Lampanyctus crocodilus* (Risso, 1810) in the Atlantic Ocean (Myctophidae). *Cybium*, 18 (3): 315-323.  
Systematics; Anatomy/ meristics/ morphometry; Geographic distribution.
- Stehmann, M. 1971. *Raja* (*Leucoraja*) *leucosticta* spec. nov. (Pisces, Batoidei, Rajidae), eine neue Rochenart aus dem Seegebiet des tropischen Westafrika; gleichzeitig zur Frage des Vorkommens von *Raja ackleyi* Garman, 1881 im mittleren Ostatlantik. *Archiv für Fischereiwissenschaft*, 22 (1): 1-16.  
Systematics/ diagnosis; Geographical distribution.

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- Stehmann, E. 1973. Rajidae. Pp. 58-69 in: J. C. Hureau & Th. Monod (eds.). *Check-list of the fishes of the north-eastern Atlantic and of the Mediterranean*. UNESCO, Paris.  
Checklist; Systematics; Geographical distribution.
- Stehmann, M. 1978. *Raja "bathyphila"*, eine doppelart des sub-genus *Rajella*: wieder-beschreibung von *R. bathyphila* Holt & Byrne, 1908 und *Raja bigelowi* sp. nov. (Pisces, Rajiformes, Rajidae). *Archiv für Fishereiwissenschaft*, 29 (1/2): 23-58.  
Systematics/ diagnosis/ new species; Anatomy/ meristics/ morphology; Development/ eggs/ larvae and juveniles; Ecology/ vertical distribution; Biology/ reproduction; Geographical distribution; Scientific expeditions/ cruises.
- Stehmann, M. 1995. First and new records of skates (Chondrichthyes, Rajiformes, Rajidae) from the West African continental slope (Morocco to South Africa), with descriptions of two new species. *Archives of Fishery and Marine Research*, 43 (1): 1-119.  
Systematics/ identification key/ diagnosis/ new species; Anatomy/ meristics/ morphology; Development; Geographical distribution.
- Steindachner, F. 1868a. Ichthyologischer Bericht über eine nach Spanien und Portugal unternommene Reise. Aus dem LVII (IV. Fortsetzung.). *Bände der Sitzungsberichte der kaiserlichen Akademie der Wissenschaften* (Wien): 603-708 (+ 9 plates).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Steindachner, F. 1868b. Ichthyologischer Bericht über eine nach Spanien und Portugal unternommene Reise. Aus dem LVII (V. Fortsetzung.). *Bände der Sitzungsberichte der kaiserlichen Akademie der Wissenschaften* (Wien): 351-422 (+ 6 plates).  
Systematics/ diagnosis; Anatomy/ meristics/ morphometry; Checklist; Geographical distribution.
- Steiner, L. 1995. Rough-toothed dolphin, *Steno bredanensis*: a new species recorded for the Azores, with some notes on behaviour. *Arquipélago - Life and Marine Sciences*, 13A: 125-128.  
Ecology/ feeding.  
Observations: Occurrence of new marine mammals and note on their feeding behaviour.
- Sulak, K. J. 1974. Morphological and ecological observations on Atlantic ipnoid fishes of the genus *Bathytyphlops*. *Copeia*, 1974: 570-573.  
Anatomy/ meristics/ morphometry; Geographical distribution; Ecology/ vertical distribution.
- Sulak, K. J. 1977. The systematics and biology of *Bathypterois* (Pisces: Chlorophthalmidae) with a revised classification of benthic myctophiform fishes. *Galathea Report*, 14: 49-108.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution; Biology/ reproduction; Ecology/ vertical distribution; Evolution/ phylogeny.
- Svetovidov, A. N. 1955. Contribution to the classification of the needlefishes -*Belone belone* (L.)- Pisces: Belonidae-. *Trudy Zoologicheskogo Instituta*. Akademiya Nauk SSSR, 18: 343-345. (in Russian).  
Checklist; Systematics/ identification keys/ diagnosis; Geographical distribution.
- Svetovidov, A. N. 1986. Review of the three-bearded rocklings of the Genus *Gaidropsarus* Rafinesque, 1810 (Gadidae) with new description of a new species. *Journal of Ichthyology*, 26 (1): 114-135.  
Systematics/ identification keys/ diagnosis; Anatomy/ meristics/ morphometry/ comparative morphology; Geographical distribution.

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- Swanberg, N. R. & G. R. Harbison 1980. The ecology of *Collozoum longiforme*, sp. Nov., a new colonial radiolarian from the equatorial Atlantic Ocean. *Deep-Sea Research*, 27A: 715-732.  
Scientific expeditions/ cruises/ stations.
- Taborsky, M. 1994. Sneakers, satellites and helpers: parasitic and cooperative behavior in fish reproduction. *Advances in the Study of Behavior* 23, 1-100.  
Ethology/ behavioural ecology; Biology/ reproduction.
- Tåning, Å. V. 1923. *Lophius*. Report on the Dana Oceanographical Expeditions 1908-1910 to the Mediterranean and Adjacent Seas, Vol. II. Biology, A. 10.: 1-30.  
Systematics/ diagnosis; Geographical distribution; Scientific expeditions/ cruises.
- Tåning, Å. V. 1932a. *Myctophum hygomi*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Tåning, Å. V. 1932b. *Myctophum simile*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Tåning, Å. V. 1932c. *Myctophum humboldti*. In L. Joubin (Ed.) 1929-1938. *Faune Ichthyologique de l'Atlantique Nord*. Conseil Permanent pour l'Exploration de la Mer, Copenhagen. Cahiers 1-18 (cards not numbered).  
Systematics/ diagnosis; Geographical distribution.
- Templeman, W. 1970a. A review of the Morid fish genus *Lepidion* of the North Atlantic with first records of *Lepidion eques* from the Western North Atlantic. *Journal of Fisheries Research Board of Canada*, 27: 457-498.  
Systematics; Anatomy/ meristics/ morphometry; Bibliography; Ecology/ feeding; Parasitology; Geographical distribution.
- Templeman, W. 1970b. Additional tabular details of distributional, meristic and morphometric data for the paper: A review of the Morid fish genus *Lepidion* of the North Atlantic with first records of *Lepidion eques* from the Western North Atlantic. *Technical Report of Fisheries Research Board of Canada*, 160: 30pp.  
Systematics; Anatomy/ meristics/ morphometry; Bibliography; Ecology/ feeding; Parasitology; Geographical distribution.
- Tighe, K. A. 1989. Family Serrivomeridae. pp. 613-627 in: E. B. Böhlke (ed.). Fishes of the Western North Atlantic. Number One, Part Nine, Volume One: Orders Anguilliformes and Saccopharyngiformes. *Memoir - Sears Foundation for Marine Research*, Allen Press, Inc., Lawrence, Texas.  
Systematics/ identification keys/ diagnosis; Anatomy/ morphology; Checklist; Geographical distribution; Ecology; Ethology.
- Tizard, T. H., H. N. Moseley, J. Y. Buchanan & J. Murray 1885. Narrative of the cruise of H. M. S. Challenger with a general account of the scientific results of the expedition. *Report of the Scientific Results of the Voyage of the H. M. S. Challenger During the Years 1873-1876*. Narrative Vol. I, First Part.: liv + 508pp. (+ 19 plates).  
Scientific expeditions/ cruises/ stations; History/ marine research.

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- Topal, S.K., 1987. Osteological characters of six Atlantic lanternfish species (Myctophidae). *Voprosy Ikhtiologii*, No. 1: 30-39.  
Anatomy/ comparative morphology; Ecology/ feeding.
- Tortonese, E. 1954. Zoogeography of the Mediterranean sea perches (Pisces: Serranidae). *Rapport et Procès-Verbaux Réunion CIESM*, 12: 93-103.  
Geographical distribution; Biogeography. .  
Observations: The author also represents in a map the occurrence of *Serranus scriba* for the Azores.
- Tortonese, E & J. C. Hureau 1979. *Clofnam*, supplément 1978, Les Presses de l' UNESCO; *Cybium*, 3e série, 1979 (5): 5 [333] - 66 [394].  
Checklist; Bibliography.
- Trewavas, E. & S. E. Ingham 1972. A key to the species of Mugilidae (Pisces) in the Northeastern Atlantic and Mediterranean, with explanatory notes. *Journal of Zoology of London*, 167: 15-29.  
Systematics/ identification keys/ nomenclature; Geographical distribution.
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