

BULLETIN
OF THE
FLORIDA STATE MUSEUM
BIOLOGICAL SCIENCES

Volume 2

Number 8

A LIST OF FLORIDA FISHES AND THEIR
DISTRIBUTION

John C. Briggs



UNIVERSITY OF FLORIDA
Gainesville
1958

The numbers of THE BULLETIN OF THE FLORIDA STATE MUSEUM, BIOLOGICAL SCIENCES, will be published at irregular intervals. Volumes will contain about 300 pages and will not necessarily be completed in any one calendar year.

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All communications concerning purchase or exchange of the publication should be addressed to the Curator of Biological Sciences, Florida State Museum, Seagle Building, Gainesville, Florida. Manuscripts should be sent to the Editor of the BULLETIN, Flint Hall, University of Florida, Gainesville, Florida.

Published 12 March 1958

Price for this issue \$1.29

A LIST OF FLORIDA FISHES AND THEIR DISTRIBUTION

JOHN C. BRIGGS¹

SYNOPSIS: The fish fauna of Florida is far richer than that of any comparable area in North or Central America. The 1,120 species which occur in Florida waters represent approximately one-fourth the number of species recorded for the entire northern portion of the Western Hemisphere. Seventy-four of these apparently have a worldwide (circumtropical) distribution, while eighty-five have been taken only from Florida waters.

More fish species occupy the marine shore zone than are found in all other habitats combined. This shore fauna has a great deal in common with that of the West Indies, South America, and Bermuda, perhaps more than with the rest of North America. The surprising number of Florida shore species that range to the eastern Atlantic indicates a closer relationship to that area than was previously suspected.

The Florida Keys contain the greatest variety of fishes in the state. The majority of the mainland forms occur in the Keys, and, in addition, approximately 135 species that inhabit the Keys do not occur on the mainland. A distinct difference is present between the Gulf and Atlantic coast faunas with the former being a good deal richer in number of species. There is also a clear indication of a faunal difference between the northeastern and northwestern Gulf of Mexico.

The rich freshwater fish fauna of the other southeastern states has been able to penetrate Florida to but a limited extent; almost all of those species present belong to six families of which the Cyprinodontidae, Centrarchidae, and Ictaluridae have been the most successful invaders.

A systematic list provides information about the range, habitat, and common name of each species. A bibliography includes those references necessary for the identification of Florida freshwater, euryhaline, and marine shore fishes.

"I truly believe that in the sea there is
an abundance of infinitely admirable things,
whereof God alone hath knowledge."

Laurent Vital in *Voyage de
Charles Quint*, 1518.

¹ The author, an Assistant Professor of Biological Sciences, University of Florida, is currently on leave of absence as a Research Associate in the Department of Anatomy, College of Medicine, on this campus. He is also an Associate of the Florida State Museum and a Research Associate of the George Vanderbilt Foundation of Stanford University. Manuscript submitted 19 June 1957.—Ed.

TABLE OF CONTENTS

Introduction	225
Terminology	232
Acknowledgments	232
Classification	233
General distribution	235
Distribution of the shore fishes	237
Local distribution	241
Shore fishes	241
Freshwater fishes	244
Euryhaline fishes	246
Systematic list of Florida fishes	247
Bibliography	302
Major works	302
Other books and papers	304
Literature cited	315
Index to orders and families	317

LIST OF TABLES

Ecological analysis of the Florida fish fauna	226
Florida species with a worldwide (circuntropical) distribution	234
Endemic Florida species	235
Principal families of Florida shore fishes and their distribution in the western Atlantic	239
Marine shore fishes inhabiting the northeastern, but not the northwestern part of the Gulf of Mexico	242

INTRODUCTION

The fish fauna of Florida is far richer than that of any comparable area in North or Central America. The 1,120 species which occur in Florida waters represent approximately one-fourth the number of species recorded for the entire northern portion of the Western Hemisphere. To ichthyologists this has been a rewarding area since the days of Mark Catesby who, in 1743, completed publication of the first scientific treatise dealing with the Florida fauna: "The natural history of Carolina, Florida, and the Bahama Islands; containing the figures of birds, beasts, fishes, serpents, and plants, etc."

One might assume that the 214 years subsequent to Catesby's work would provide sufficient time for the Florida fishes to become relatively well known. However, a glance at the recent ichthyological literature is enough to dispel any doubts about the matter. New and important information along such lines as life history, behavior, morphology, and ecology is constantly being disseminated; distributional records are still being reported; and new species are still being described. For the modern worker, then, Florida waters continue to hold the fascination that is provided by a great wealth of research material. Perhaps another 214 years must pass before the fishes of this area can be said to be "well known."

The most recent work which attempts a listing of all the Florida species is the checklist of the North and Middle American fishes written by Jordan, Evermann, and Clark (1930). In addition to its original faults, this work is now far out of date, for the ensuing 27 years have brought a fair amount of revisionary work plus a veritable rash of minor collection reports and faunal lists.

The purpose of this paper is to present an accurate portrayal of the fish fauna in the Florida area primarily to help clarify the zoogeographic relationship of Florida waters with adjacent areas. A secondary purpose is an examination of the fish distribution on a local scale with an ecological analysis of each family (table 1). Also, the opportunity is taken to present a bibliography which lists those books and papers necessary for the identification of Florida fishes. This is intended particularly for students who are in the process of becoming acquainted with the Florida fauna.

Since this is a distributional list instead of a checklist in the usual sense (where only specimens taken and identified from a certain area could be considered), the inclusion of a name does not necessarily mean that individuals of that species have actually been captured in Florida waters. For example, there are a few cases where apparently

TABLE 1
 ECOLOGICAL ANALYSIS OF THE FLORIDA FISH FAUNA

Family	Shore	Pelagic	Bathypelagic	Benthic	Euryhaline	Freshwater	Total Florida species
1. Branchiostomidae	1	—	—	—	—	—	1
2. Epigonichthyidae	1	1	—	—	—	—	2
3. Myxinidae	—	—	—	1	—	—	1
4. Petromyzonidae	—	—	—	—	1	1	2
5. Hexanchidae	2	—	—	1	—	—	3
6. Carchariidae	1	—	—	—	—	—	1
7. Isuridae	—	2	—	—	—	—	2
8. Alopiidae	—	2	—	—	—	—	2
9. Orectolobidae	1	—	—	—	—	—	1
10. Rhineodontidae	—	1	—	—	—	—	1
11. Scyliorhinidae	—	—	—	3	—	—	3
12. Traikidae	2	—	—	—	—	—	2
13. Carcharhinidae	11	4	1	—	2	—	18
14. Sphyrnidae	4	—	—	—	—	—	4
15. Squalidae	1	1	—	8	—	—	10
16. Squatinidae	1	—	—	—	—	—	1
17. Pristidae	—	—	—	—	2	—	2
18. Rhinobatidae	1	—	—	—	—	—	1
19. Torpedinidae	2	—	—	1	—	—	3
20. Rajidae	6	—	—	6	—	—	12
21. Dasyatidae	4	—	—	—	—	—	4
22. Gymnuridae	2	—	—	—	—	—	2
23. Urolophidae	1	—	—	—	—	—	1
24. Myliobatidae	3	—	—	—	—	—	3
25. Rhinopteridae	1	—	—	—	—	—	1
26. Mobulidae	—	2	—	—	—	—	2
27. Chimaeridae	—	—	1	—	—	—	1
28. Acipenseridae	—	—	—	—	2	—	2
29. Lepisosteidae	—	—	—	—	2	2	4
30. Amiidae	—	—	—	—	—	1	1
31. Elopidae	—	—	—	—	1	—	1
32. Megalopidae	—	—	—	—	1	—	1
33. Albulidae	1	—	—	—	—	—	1
34. Clupeidae	9	—	—	—	12	—	21
35. Engraulidae	6	—	—	—	2	—	8
36. Alepocephalidae	—	—	2	4	—	—	6
37. Argentinidae	—	—	3	—	—	—	3

(continued)

TABLE 1—(Continued)
 ECOLOGICAL ANALYSIS OF THE FLORIDA FISH FAUNA

Family	Shore	Pelagic	Bathypelagic	Benthic	Euryhaline	Freshwater	Total Florida species
38. Astronesthidae	—	—	1	—	—	—	1
39. Stomiatidae	—	—	1	—	—	—	1
40. Melanostomiatidae	—	—	13	—	—	—	13
41. Idiacanthidae	—	—	1	—	—	—	1
42. Malacosteidae	—	—	5	—	—	—	5
43. Chauliodontidae	—	—	2	—	—	—	2
44. Sternoptychidae	—	—	16	—	—	—	16
45. Umbridae	—	—	—	—	—	1	1
46. Esocidae	—	—	—	—	—	2	2
47. Aulopidae	—	1	—	—	—	—	1
48. Chlorophthalmidae	—	—	3	—	—	—	3
49. Synodontidae	7	—	—	—	—	—	7
50. Ipnopidae	—	—	—	1	—	—	1
51. Bathypteroidae	—	—	—	4	—	—	4
52. Myctophidae	—	—	23	—	—	—	23
53. Alepisauridae	—	1	—	—	—	—	1
54. Paralepidae	—	—	4	—	—	—	4
55. Cetomimidae	—	—	1	—	—	—	1
56. Ateleopidae	—	1	—	—	—	—	1
57. Eurypharyngidae	—	—	1	—	—	—	1
58. Ariidae	—	—	—	—	2	—	2
59. Ictaluridae	—	—	—	—	—	8	8
60. Catostomidae	—	—	—	—	—	7	7
61. Cyprinidae	—	—	—	—	—	20	20
62. Anguillidae	—	—	—	—	1	—	1
63. Serrivomeridae	—	—	1	—	—	—	1
64. Nemichthidae	—	—	2	—	—	—	2
65. Synphobranchidae	—	—	—	2	—	—	2
66. Nettastomidae	—	—	—	1	—	—	1
67. Congridae	7	—	—	5	—	—	12
68. Dysommidae	—	—	—	1	—	—	1
69. Muraenidae	7	—	—	—	—	—	7
70. Ophichthidae	17	—	—	—	1	—	18
71. Dysommidae	1	—	—	—	—	—	1
72. Halosauridae	—	—	—	3	—	—	3
73. Notacanthidae	—	—	—	1	—	—	1
74. Belonidae	5	—	—	—	2	—	7

(continued)

TABLE 1—(Continued)

ECOLOGICAL ANALYSIS OF THE FLORIDA FISH FAUNA

Family	Shore	Pelagic	Bathypelagic	Benthic	Euryhaline	Freshwater	Total Florida species
75. Scomberesocidae	—	1	—	—	—	—	1
76. Hemirhamphidae	5	—	—	—	—	—	5
77. Exocoetidae	6	7	—	—	—	—	13
78. Cyprinodontidae	—	—	—	—	10	11	21
79. Poeciliidae	—	—	—	—	5	—	5
80. Aphredoderidae	—	—	—	—	—	1	1
81. Syngnathidae	18	1	—	—	2	—	21
82. Aulostomidae	1	—	—	—	—	—	1
83. Fistulariidae	1	—	—	—	—	—	1
84. Centriscidae	—	2	—	—	—	—	2
85. Macrouiidae	—	—	—	21	—	—	21
86. Moridae	—	—	—	7	—	—	7
87. Bregmacerotidae	2	—	—	—	—	—	2
88. Gadidae	2	—	—	4	—	—	6
89. Lampridae	—	1	—	—	—	—	1
90. Stylephoridae	—	1	—	—	—	—	1
91. Lophotidae	—	2	—	—	—	—	2
92. Trachipteridae	—	3	—	—	—	—	3
93. Regalecidae	—	1	—	—	—	—	1
94. Stephanoberycidae	—	—	—	1	—	—	1
95. Polymixiidae	—	—	—	1	—	—	1
96. Diretmidae	—	—	1	—	—	—	1
97. Trachichthyidae	—	—	1	—	—	—	1
98. Anoplogastridae	—	—	1	—	—	—	1
99. Melamphaidae	—	—	2	—	—	—	2
100. Holocentridae	7	—	—	—	—	—	7
101. Zeidae	—	—	—	3	—	—	3
102. Grammicolepidae	—	1	—	—	—	—	1
103. Antigonidae	—	2	—	—	—	—	2
104. Serranidae	57	—	—	—	1	—	58
105. Centrarchidae	—	—	—	—	—	23	23
106. Percidae	—	—	—	—	—	11	11
107. Priacanthidae	3	—	—	—	—	—	3
108. Apogonidae	12	—	—	5	—	—	17
109. Malacanthidae	5	—	—	—	—	—	5
110. Pomatomidae	—	1	—	—	—	—	1
111. Rachycentridae	1	—	—	—	—	—	1

(continued)

TABLE 1—(Continued)

ECOLOGICAL ANALYSIS OF THE FLORIDA FISH FAUNA

Family	Shore	Pelagic	Bathypelagic	Benthic	Euryhaline	Freshwater	Total Florida species
112. Carangidae	1	26	—	—	—	—	27
113. Coryphaenidae	—	2	—	—	—	—	2
114. Bramidae	—	3	—	—	—	—	3
115. Centropomidae	1	—	—	—	3	—	4
116. Lutjanidae	14	—	—	—	2	—	16
117. Pomadasysidae	14	—	—	—	1	—	15
118. Lobotidae	—	1	—	—	—	—	1
119. Leiognathidae	6	—	—	—	3	—	9
120. Sciaenidae	17	—	—	—	6	—	23
121. Mullidae	4	—	—	—	—	—	4
122. Sparidae	11	—	—	—	3	—	14
123. Pempheridae	1	—	—	—	—	—	1
124. Kyphosidae	2	—	—	—	—	—	2
125. Ehippidae	1	—	—	—	—	—	1
126. Chaetodontidae	13	—	—	—	—	—	13
127. Pomacentridae	14	—	—	—	—	—	14
128. Labridae	14	—	—	—	—	—	14
129. Scaridae	13	—	—	—	—	—	13
130. Percophididae	—	—	—	2	—	—	2
131. Acanthuridae	4	—	—	—	—	—	4
132. Uranoscopidae	4	—	—	—	—	—	4
133. Dactyloscopidae	4	—	—	—	—	—	4
134. Gempylidae	—	1	6	—	—	—	7
135. Trichiuridae	—	1	2	—	—	—	3
136. Scombridae	1	13	—	—	—	—	14
137. Luvaridae	—	1	—	—	—	—	1
138. Xiphiidae	—	1	—	—	—	—	1
139. Istiophoridae	—	4	—	—	—	—	4
140. Eleotridae	4	—	—	—	4	—	8
141. Gobiidae	26	—	—	—	10	—	36
142. Callionymidae	4	—	—	1	—	—	5
143. Opisthognathidae	7	—	—	—	—	—	7
144. Blenniidae	14	—	—	—	—	—	14
145. Clinidae	25	—	—	—	—	—	25
146. Microdesmidae	1	—	—	—	—	—	1
147. Brotulidae	2	—	—	13	—	—	15
148. Ophidiidae	9	—	—	1	—	—	10

(continued)

TABLE 1—(Continued)

ECOLOGICAL ANALYSIS OF THE FLORIDA FISH FAUNA

Family	Shore	Pelagic	Bathypelagic	Benthic	Euryhaline	Freshwater	Total Florida species
149. Carapidae	1	—	—	—	—	—	1
150. Nomeidae	—	4	1	—	—	—	5
151. Stromateidae	—	5	2	—	—	—	7
152. Tetragonuridae	—	1	—	—	—	—	1
153. Sphyracnidae	4	—	—	—	—	—	4
154. Mugilidae	2	—	—	—	4	—	6
155. Atherinidae	3	—	—	—	5	—	8
156. Polynemidae	2	—	—	—	—	—	2
157. Steinegeriidae	—	—	1	—	—	—	1
158. Scorpaenidae	15	—	—	3	—	—	18
159. Peristediidae	4	—	—	5	—	—	9
160. Triglidae	23	—	—	—	—	—	23
161. Dactylopteridae	1	—	—	—	—	—	1
162. Cottidae	1	—	—	—	—	—	1
163. Batrachoididae	5	—	—	—	—	—	5
164. Gobiococidae	2	—	—	—	—	—	2
165. Bothidae	20	—	—	2	5	—	27
166. Pleuronectidae	—	—	—	2	—	—	2
167. Soleidae	7	—	—	—	1	—	8
168. Cynoglossidae	7	—	—	2	1	—	10
169. Echeneidae	—	4	—	—	1	—	5
170. Triacanthidae	1	—	—	—	—	—	1
171. Balistidae	8	—	—	—	—	—	8
172. Aluteridae	11	—	—	—	—	—	11
173. Ostraciidae	4	—	—	—	—	—	4
174. Tetraodontidae	9	—	—	—	—	—	9
175. Canthigasteridae	1	—	—	—	—	—	1
176. Diodontidae	5	—	—	—	—	—	5
177. Molidae	—	3	—	—	—	—	3
178. Lophiidae	1	—	—	—	—	—	1
179. Antennaridae	4	1	—	1	—	—	6
180. Chaunacidae	—	—	—	1	—	—	1
181. Ogcocephalidae	6	—	—	1	—	—	7
182. Melanocetidae	—	—	2	—	—	—	2
183. Oneirodidae	—	—	1	—	—	—	1
184. Ceratiidae	—	—	2	—	—	—	2
TOTALS	603	110	103	118	98	88	1,120

reliable records exist for a species from the mainland north of Florida and also from localities in the West Indies or along the South American coast. Some deep water species have been included which are apparently widespread in the North Atlantic and, in addition, have been taken somewhere in the Gulf of Mexico, but not off the Florida coast. In both cases, the names of such species have been added to the list because of the inference that a continuous population would extend into Florida waters.

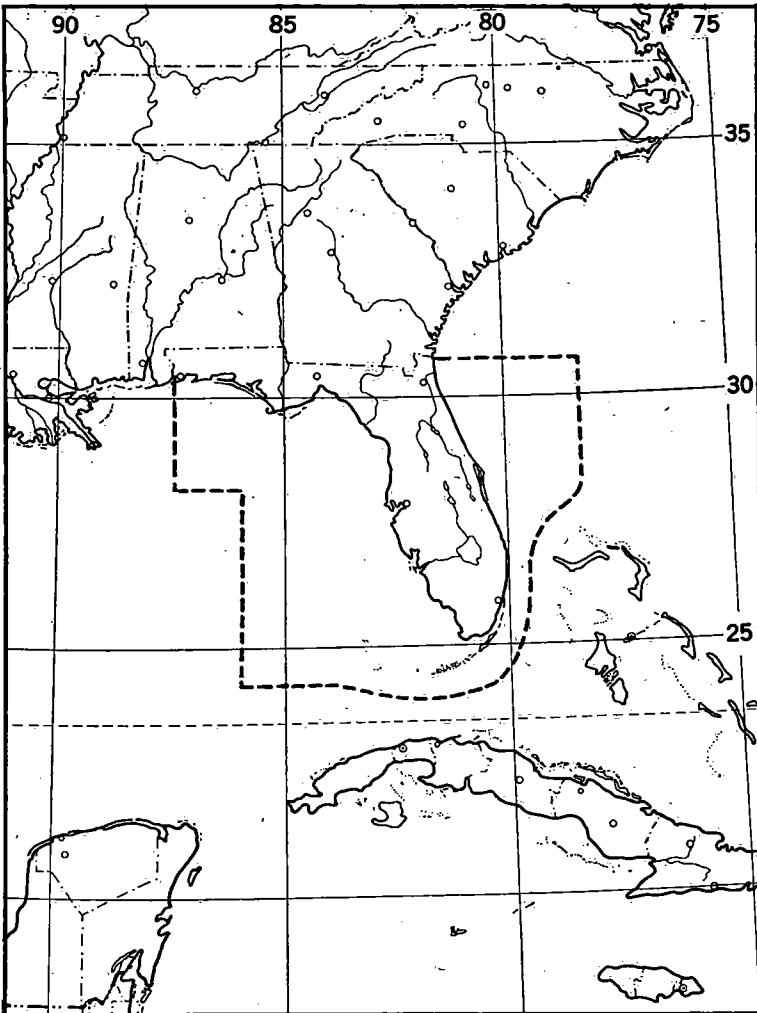


Figure 1.—Florida waters as delimited for use with this work.

Florida waters (fig. 1) have been arbitrarily defined as that area lying east of a line extending from the western boundary of Florida at about $87^{\circ}30'$ longitude due south to 28° latitude; thence east of 86° longitude, south to 24° latitude; thence north of a line extending eastward midway between the Tortugas Islands and Cuba into the Straits of Florida where it curves northward; and thence west of a line extending north halfway between the Florida mainland and the nearest of the Bahama Islands. North of the Little Bahama Bank, the boundary again leads eastward to the 78° longitude line and then due north to a point opposite the northern border of Florida at about latitude $30^{\circ}40'$. Florida fresh waters are all those lying within the political boundaries of the state.

Terminology

In most instances it was possible to place each of the species in the proper habitat category without much difficulty. However, with the extremely rare fishes, or even with some that are considered fairly common but happen to have poorly known life histories, the decision was made with more difficulty. In many such instances the habitat could only be surmised from evidence based upon the occurrence of closely related forms.

The "shore" species are found in those waters that overlie the continental shelf where the depth is less than 200 meters (109 fathoms). "Pelagic" fishes generally inhabit the surface layers of water—depths of less than 200 meters—in the offshore regions usually beyond the limits of the continental shelf. Species inhabiting the offshore waters below 200 meters, but not including the sea bottom, are in the "bathypelagic" zone. The "benthic" forms are bottom fishes found at depths greater than 200 meters. "Euryhaline" fishes are those that exhibit a broad salinity tolerance, usually being found in brackish waters. The "freshwater" category includes species that habitually occupy freshwater even though some may have a certain tolerance for moderate salinities.

Acknowledgments

In order that this list might be made as complete as possible before publication was undertaken, a typed preliminary version was duplicated in October 1956, and distributed to ichthyologists who were working on Florida species or who had a general interest in western North Atlantic fishes. Accompanying this manuscript list was a letter requesting corrections and additions. I was most gratified to have

the benefit of aid from the following: Richard H. Backus, Woods Hole Oceanographic Institution; Frederick H. Berry, U.S. Fish and Wildlife Service; James E. Böhlke, Philadelphia Academy of Natural Sciences; Harvey Bullis and David K. Caldwell, U.S. Fish and Wildlife Service; Eugenie Clark, Cape Haze Marine Laboratory; Charles F. Cole, Cornell University; Wilbur I. Follett, California Academy of Sciences; Marion Grey, Chicago Natural History Museum; Gordon Gunter, Gulf Coast Research Laboratory; Robert R. Harry, Stanford University; Earl S. Herald, California Academy of Sciences; Thomas R. Hellier, University of Florida; Henry H. Hildebrand, Veracruz, Mexico; Giles W. Mead, U.S. Fish and Wildlife Service; Luis R. Rivas, University of Miami; C. Richard Robins, University of Miami; William C. Schroeder, Woods Hole Oceanographic Institution; Leonard P. Schultz, U.S. National Museum; Stewart Springer, U.S. Fish and Wildlife Service; Victor Springer, University of Texas; Donald P. de-Sylva, Cornell University; Gerard W. Teague, Washington, D. C.; Vladimir Walters, American Museum of Natural History; Ralph W. Yerger, Florida State University.

Classification

Due to the wide variation one finds in modern schemes of classification, it seems worthwhile to identify the principal sources of information which led to the adoption of the terminology and sequence presented in this paper. At the present time the monumental series, "Fishes of the western North Atlantic," has covered all the groups of cartilaginous fishes. The classification given by Bigelow and Farnante (1948) and Bigelow and Schroeder (1948, 1954) in their careful work has been followed except for the arrangement of the family Carcharhinidae, which was modified in accordance with the system of Springer (1950).

The activities of the Committee on Fish Classification of the American Society of Ichthyologists and Herpetologists have resulted in the production of two notable, but unpublished, studies of the primitive bony fishes. The Isospondyli were investigated by N. J. Wilimovsky in 1951, and the Iniomi by R. R. Harry in the following year. The thoughtful conclusions of these investigators are generally followed. The limits of the isospondylus families Argentinidae and Sternoptychidae have been expanded to conform with the views of Hubbs (1953).

With the exception of the Apodes, the Anacanthini, and the Plecognathi, the general arrangement of the remainder of the teleost groups is essentially that of Regan (1929). As Myers and Storey (1956)

TABLE 2

FLORIDA SPECIES WITH A WORLDWIDE (CIRCUMTROPICAL) DISTRIBUTION

<i>Hexanchus griseus</i> (Bonnaterre),	<i>Lampris regius</i> (Bonnaterre)
<i>Carcharodon carcharias</i> (Linnaeus)	<i>Stylephorus chordatus</i> Shaw
<i>Alopias vulpinus</i> (Bonnaterre)	<i>Lophotus capellei</i> Temminck and Schlegel
<i>Rhineodon typus</i> Smith	<i>Trachipterus cristatus</i> Bonelli *
<i>Galeocerdo cuvieri</i> (Lesueur)	<i>Trachipterus polystictus</i> Ogilby *
<i>Prionace glauca</i> (Linnaeus)	<i>Regalecus glesne</i> (Ascanius)
<i>Carcharhinus limbatus</i> (Müller and Henle)	<i>Anoplogaster cornuta</i> Valenciennes
<i>Sphyrna tiburo</i> (Linnaeus)	<i>Pomatomus saltatrix</i> (Linnaeus)
<i>Sphyrna zygaena</i> (Linnaeus)	<i>Rachycentron canadus</i> (Linnaeus)
<i>Squalus fernandinus</i> Molina	<i>Elagatis bipinnulatus</i> (Quoy and Gaimard)
<i>Aetobatis narinari</i> Euphrasen	<i>Naukrates ductor</i> (Linnaeus)
<i>Manta birostris</i> (Walbaum)	<i>Selar crumenophthalmus</i> (Bloch)
<i>Albula vulpes</i> (Linnaeus)	<i>Caranx hippos</i> (Linnaeus)
<i>Stomias affinis</i> Günther	<i>Caranx lugubris</i> (Poeey)
<i>Photonectes margarita</i> (Goode and Bean)	<i>Coryphaena hippurus</i> Linnaeus
<i>Idiacanthus fasciola</i> Peters	<i>Coryphaena equisetis</i> Linnaeus
<i>Cyclothone microdon</i> (Günther)	<i>Brama brama</i> (Bonnaterre)
<i>Sternoptyx diaphana</i> Hermann	<i>Ruvettus pretiosus</i> Cocco
<i>Argyropelecus affinis</i> Garman	<i>Gempylus serpens</i> Cuvier
<i>Valenciennellus tripunctulatus</i> (Esmark)	<i>Acanthocybium solanderi</i> (Cuvier)
<i>Maurollicus muelleri</i> (Gmelin)	<i>Auxis thazard</i> (Lacépède)
<i>Eurypharynx pelecyanoides</i> Vaillant	<i>Katsuwonus pelamis</i> (Linnaeus)
<i>Neoscopelus macrolepidotus</i> Johnson	<i>Thunnus obesus</i> Lowe
<i>Diogenichthys laternatus</i> (Garman)	<i>Thunnus alalunga</i> (Gmelin)
<i>Diogenichthys atlanticus</i> (Tåning)	<i>Xiphias gladius</i> Linnaeus
<i>Gonichthys coccoi</i> (Cocco)	<i>Tetragonurus atlanticus</i> Lowe
<i>Centrobranchus nigroocellatus</i> (Günther)	<i>Mugil cephalus</i> Linnaeus
<i>Myctophum affine</i> (Lütken)	<i>Remora remora</i> (Linnaeus)
<i>Notolychnus valdiviae</i> Brauer	<i>Phtheichthys lineatus</i> (Menzies)
<i>Diaphus gemellari</i> (Cocco)	<i>Remoropsis brachyptera</i> (Lowe)
<i>Diaphus rafinesquei</i> (Cocco)	<i>Alutera scripta</i> (Osbeck)
<i>Diaphus dumerili</i> (Bleeker)	<i>Diodon holacanthus</i> Linnaeus
<i>Notoscopelus elongatus</i> (Costa)	<i>Diodon hystrix</i> Linnaeus
<i>Macrorhamphosus scolopax</i> (Linnaeus)	<i>Mola mola</i> (Linnaeus)
<i>Macrorhamphosus gracilis</i> (Lowe)	<i>Melanocetus johnsoni</i> Günther
<i>Gadomus longifilis</i> (Goode and Bean)	<i>Ceratias holboelli</i> Krøyer
<i>Antimora rostrata</i> Günther	<i>Cryptosaras couesi</i> Gill
	TOTAL 74

* New, but as yet unpublished, generic names are in press.

have pointed out, the system of Berg (1940) is to a large extent a recapitulation of Regan's work, though often with different emphasis, nomenclature, and excessive splitting. The conclusions of Gosline (1952), and the suggestions of J. E. Böhlke (personal communication) have been helpful in selecting an arrangement for the order Apodes. The work of Svetovidov (1948) on the Anacanthini has been followed. The relationships of the Plectognathi have been nicely worked out by Breder and Clark (1947) and Clark and Gohar (1953). Their recommendations for this group seem preferable to the less conservative views of Fraser-Brunner (a series of papers in the *Ann. Mag. Nat. Hist.*, 1935-1943).

GENERAL DISTRIBUTION

The range of each species in the list has been carefully investigated so that the completed work could be used to give some idea of the affinities of the Florida fish fauna with that of other areas. It was surprising to find that a total of 74 species (table 2) apparently have a worldwide (circumtropical) distribution. Since only 105 species of fishes in the world are known to be this widespread (I have compiled a manuscript list of these), it can be seen that 70.5 percent of them occur in Florida waters. As would be expected, the great majority are either pelagic or bathypelagic.

In contrast to the fishes that are widely distributed, there are 85 species that, so far, have been taken only from Florida waters (table 3). Of these, the great majority—63 species or 74.2 percent—are shore forms, many of them not well known. The 22 nonshore species occur as follows: seven freshwater, eight benthic, four bathypelagic, and three euryhaline.

TABLE 3

ENDEMIC FLORIDA SPECIES

<i>Paramyxine springeri</i> Bigelow and Schroeder	<i>Verma kendalli</i> Gilbert
<i>Mustelus norrisi</i> Springer	<i>Ophichthus guttifer</i> Bean and Dresel
<i>Raja teevani</i> Bigelow and Schroeder	<i>Ophichthus retropinnis</i> Eigenmann
<i>Harengula pensacolae floridana</i> Rivas	<i>Callechelys muraena</i> Jordan and Evermann
<i>Conocara macdonaldi</i> Goode and Bean	<i>Callechelys perryae</i> Storey
<i>Talismania antillarum</i> Goode and Bean	<i>Gordüchthys irretitus</i> Jordan and Davis
<i>Bathylagus</i> sp.	<i>Gordüchthys springeri</i> Ginsburg
<i>Hybopsis harperi subterranea</i> Hubbs and Crowe	<i>Lucania goodei</i> Jordan

(continued)

TABLE 3—(Continued)

ENDEMIC FLORIDA SPECIES

<i>Fundulus seminolis</i> Girard	<i>Gobulus myersi</i> Ginsburg
<i>Cyprinodon hubbsi</i> Carr	<i>Microgobius carri</i> Fowler
<i>Floridichthys carpio carpio</i> (Günther)	<i>Microgobius microlepis</i> Longley and Hildebrand
<i>Gambusia</i> sp.	<i>Rhinogobius eigenmanni</i> (Garman)
<i>Syngnathus floridae</i> subsp.	<i>Callionymus bairdi</i> Jordan
<i>Syngnathus floridae mackayi</i> (Swain and Meek)	<i>Callionymus calliurus</i> Eigenmann and Eigenmann
<i>Syngnathus</i> sp.	<i>Opisthognathus fasciatum</i> Longley
<i>Oxygadus occa</i> (Goode and Bean)	<i>Acanthemblemaria erythrois</i> (Fowler)
<i>Bregmaceros cayorum</i> Nichols	<i>Emblemaria piratula</i> Ginsburg and Reid
<i>Dermatolepis zancus</i> Evermann and Kendall	<i>Emblemariopsis diaphana</i> Longley
<i>Hypoplectrus gemma</i> Goode and Bean	<i>Hemiemblemaria simulus</i> Longley and Hildebrand
<i>Hypoplectrus puella</i> (Cuvier)	<i>Enneapterygius pectoralis</i> Fowler
<i>Mycteroperca phenax</i> Jordan and Swain	<i>Paraclinus marmoratus</i> (Steindachner)
<i>Mycteroperca xanthosticta</i> (Jordan and Swain)	<i>Microdesmus floridanus</i> (Longley)
<i>Prionodes nigropunctatus</i> Hildebrand	<i>Porogadus catena</i> (Goode and Bean)
<i>Pronotogrammus aureorubens</i> Longley	<i>Lepophidium jeannae</i> Fowler
<i>Pseudogrammus brederi</i> (Hildebrand)	<i>Ophidium beani</i> Jordan and Gilbert
<i>Serranus beta</i> Hildebrand	<i>Membras martinica vagrans</i> (Goode and Bean)
<i>Serranus tortugarum</i> Longley	<i>Menidiella conchorum</i> (Hildebrand and Ginsburg)
<i>Micropterus notius</i> Bailey and Hubbs	<i>Steinegeria rubescens</i> Jordan and Evermann
<i>Micropterus</i> sp.	<i>Scorpaenodes floridae</i> Hildebrand
<i>Micropterus salmoides floridanus</i> (Lesueur)	<i>Scorpaena microlepis</i> Gunter
<i>Apogon planifrons</i> Longley and Hildebrand	<i>Peristedion spiniger</i> Longley and Hildebrand
<i>Apogon quadrisquamatus</i> Longley	<i>Peristedion taeniopterum</i> Fowler
<i>Apogonichthys alutus</i> (Jordan and Gilbert)	<i>Peristedion thompsoni</i> Fowler
<i>Synagrops spinosa</i> Schultz	<i>Peristedion macgintyi</i> Fowler
<i>Vacuoqua sialis</i> (Jordan and Eigenmann)	<i>Prionotus griseus</i> Teague
<i>Holacanthus townsendi</i> (Nichols and Mowbray)	<i>Prionotus salmonicolor</i> Fowler
<i>Acanthurus randalli</i> Briggs and Caldwell	<i>Prionotus vanderbilti</i> Teague
<i>Barbulifer ceuthoecus</i> (Jordan and Gilbert)	<i>Opsanus vandeuseni</i> Fowler
<i>Bathygobius curacao lepidopoma</i> Ginsburg	<i>Opsanus pardus</i> (Goode and Bean)
<i>Bollmannia jeannae</i> Fowler	<i>Achirus comifer</i> Jordan and Gilbert
<i>Gobiosoma longipala</i> Ginsburg	<i>Symphurus parvus</i> Ginsburg
	<i>Fowlerichthys floridanus</i> Barbour
	<i>Ogocephalus macgintyi</i> Fowler
	<i>Ooneirodes bradburyae</i> Grey
	TOTAL 85

Distribution of the Shore Fishes

To the zoogeographer, the littoral or shore region of the tropics is often the most interesting, for here is concentrated the greatest wealth of animal life. This is particularly true of those areas in which coral growth is abundant. Jordan (1901, p. 566) drew attention to such regions in respect to the distribution of fishes:

The coral reefs of the tropics are the centers of fish-life, the cities in fish economy. The fresh waters, the arctic waters, the deep sea and the open sea, represent forms of ichthyic backwoods, regions where change goes on more slowly, and in them we find survivals of archaic or generalized types. For this reason, the study in detail of the distribution of marine fishes of equatorial regions is in the highest degree instructive.

In Florida more fish species occupy the marine shore zone than are found in all the other habitats combined. When the distributions of these 603 shore forms are analyzed according to current knowledge, some interesting information is afforded about faunal affinities: 63 species or 10.4 percent are endemic, 137 or 22.7 percent range along the North American mainland either to the north along the Atlantic coast or to the west along the Gulf coast, 178 or 29.5 percent reach Bermuda, 407 or 67.5 percent extend to the West Indies, 258 or 42.8 percent have been recorded from the South American coast, 97 or 16.1 percent reach the shores of the eastern Atlantic, 20 or 3.3 percent are found in the eastern Pacific, 16 or 2.6 percent extend to the western Pacific, and 10 or 1.7 percent are circumtropical in distribution.

Although other writers have noted the tropical nature of the Florida shore fauna, there has been no previous attempt at any quantitative evaluation of the relationship to other areas. While the figures given as the result of the foregoing analysis will certainly undergo minor changes in future years, they should continue to provide a good basis for some general zoogeographic conclusions. It is obvious that the shore fish fauna has a great deal in common with that of the West Indies, South America, and Bermuda, perhaps more than with that of the United States mainland to the north or west.

The surprising number of Florida shore species (97) that range to the eastern Atlantic indicates a closer relationship to that area than was previously suspected. In comparison there is only a distant affinity to the fauna of the Indian Ocean, and western and eastern Pacific. In this regard it is interesting to note that of the 16 species that reach the western Pacific most of them (10) continue on across this ocean to establish a circumtropical range.

Additional information of value becomes apparent when the distribution of the largest families of shore fishes is considered. The Ser-

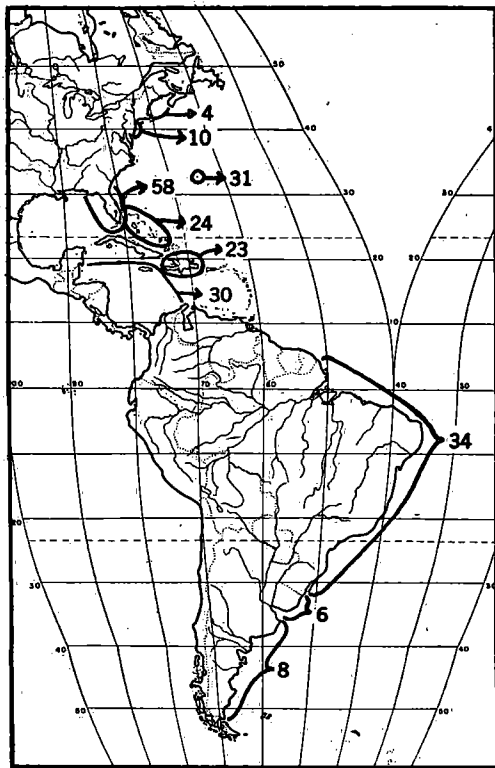


Figure 2.—Distribution of the family Seranidae in the western Atlantic. The figures represent the number of species of this family recorded from the indicated area.

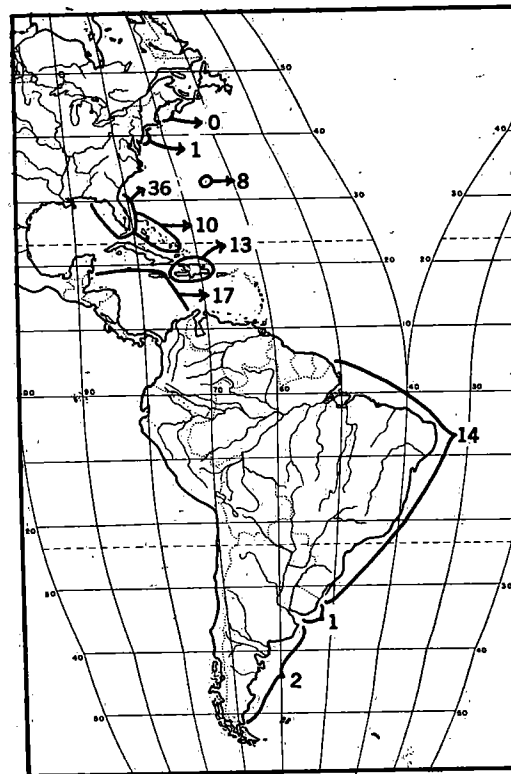


Figure 3.—Distribution of the family Gobiidae in the western Atlantic. The figures represent the number of species of this family recorded from the indicated area.

TABLE 4

PRINCIPAL FAMILIES OF FLORIDA SHORE FISHES AND THEIR DISTRIBUTION IN THE WESTERN ATLANTIC *

Family	Florida	Bermuda	New Jersey	Maine	Bahamas	Hispaniola	W. Caribbean	Colombia	Brazil	Uruguay	Argentina
Serranidae	58	31	10	4	24	23	30	16	34	6	8
Gobiidae	36	8	1	—	10	13	17	3	14	1	2
Bothidae	27	4	9	4	6	6	8	1	18	3	8
Clinidae	25	6	—	—	16	13	14	8	6	—	3
Sciaenidae	23	2	9	4	4	11	21	8	30	11	16
Triglidae	23	—	2	2	—	—	4	—	4	1	1
Clupeidae	21	5	10	8	3	6	11	5	11	5	5
Syngnathidae	21	12	3	2	11	7	7	4	11	2	5
Ophichthidae	18	12	1	1	13	3	6	1	10	—	—
Carcharhinidae	18	6	10	5	3	3	7	4	14	3	—
Scorpaenidae	18	4	9	2	7	5	7	2	4	2	1
Apogonidae	17	5	1	—	11	4	5	1	3	—	—
Lutjanidae	16	9	4	—	14	13	12	10	9	—	—
Pomadasyidae	15	10	1	—	12	14	19	11	23	—	1
Blenniidae	14	4	3	—	2	2	4	1	7	1	1
Sparidae	14	4	5	2	6	5	5	3	9	2	3
Pomacentridae	14	11	—	—	9	10	10	6	6	—	—
Labridae	14	13	2	2	14	10	7	3	13	—	1
Scaridae	13	10	1	—	11	13	16	6	14	—	—
Chaetodontidae	13	7	4	—	7	7	7	5	7	—	—

* All species from each family are included for the designated area; a few are not actually part of the shore fauna.

ranidae (fig. 2) and the Gobiidae (fig. 3) are of particular interest because each of these families is of especial importance in any tropical shore area. It can be seen that these two groups have evidently undergone a greater evolutionary radiation in Florida waters than in the other parts of the western Atlantic. The apparent differences in the amount of speciation in some of the smaller families (table 4) is even more striking. Why should there be 23 species of triglids in Florida waters and not more than 4 recorded for other western Atlantic localities? An almost comparable situation exists in the Scorpaenidae and the Blenniidae with twice as many species represented in the Florida area than for the next most productive locality.

Considering the present incomplete state of our knowledge about the geography of western Atlantic fishes, it is believed that the distributional pattern of many of the families, as listed in table 4, will undergo considerable change. Although these changes may not have much effect upon our present concept of the general relationships of the shore faunas, it is likely that there will be significant alterations of current ideas about the distributional history of certain families and many smaller groups.

Theoretically one would expect the greatest amount of speciation to occur in the area of warmest temperature, provided a sufficient variety of habitats were available. As far as the western Atlantic is concerned, this means that the richest shore fauna should occur along the northeastern South American coast and perhaps up into the Lesser Antilles. In the winter months at least, the surface temperature of the ocean is considerably higher in this area than in the region north of the Caribbean Sea.

The apparent depauperate state of the shore fish fauna of northeastern South America and the Lesser Antilles is undoubtedly a reflection of the minor amount of collecting effort that has been expended in this area. I do not know of a single extensive fish collection from it; no American museum possesses even a moderate number of specimens, so that ichthyologists interested in such fishes must turn to the modest and ancient holdings of two European institutions. It will not be possible to give an adequate portrayal of fish distribution in the western Atlantic until good collections are made in this region. When this is done I believe that the shore fauna will prove to be at least as rich as that found in Florida waters.

LOCAL DISTRIBUTION

Shore Fishes

Due to the scarcity of dependable locality data, it is difficult at this time to give a concise account of the distribution of the shore fishes within Florida waters; many of the references in the older literature simply list "Florida," "southern Florida," or the "Keys." When more collections are analyzed, particularly from the east coast and the southern tip of the mainland, it should be possible to give a more satisfactory description of the dispersal of these species.

As far as shore fishes are concerned, the Florida Keys contain the greatest variety in the state. The majority of the mainland species range to the Keys and, in addition, approximately 135 species inhabiting the Keys do not extend north to the continental mainland. According to present knowledge, the relatively isolated Tortugas archipelago evidently possesses the richest shore fish fauna of any single locality in the New World.

Ichthyologists have long recognized that the Florida peninsula has acted as a barrier to prevent the movement of some temperate-water species between the northern Gulf of Mexico and the Atlantic Ocean. A number of these colder water forms are evidently unable to enter the higher temperatures found in the vicinity of the southern tip of the peninsula. Although Florida was in large part submerged during the interglacial periods of the Pleistocene, and hence did not impede the movement of faunas, the present emergence has been in effect long enough to cause a marked evolutionary divergence in several species in the resulting disjunct populations. Ginsburg has investigated a number of these geminate species and has presented a summary of his findings (1952, p. 99).

In addition to the evidence of the geminate temperate-water species, a faunal difference between the Florida east and west coasts is indicated by a number of other species (about 50) which, so far, have not been taken on the Gulf coast. While some of these are temperate-water forms which reach the southern limit of their range on the Florida east coast, the majority are tropical shore fishes which apparently do not find suitable habitat on the Gulf coast.

The difference between the Gulf and Atlantic coast faunas may be further emphasized by considering the number of Gulf coast species which apparently do not occur on the Florida east coast. At present I have 138 listed in this category, indicating that the Gulf fauna is not only distinct to a considerable degree but that it is also a good deal richer in number of species.

There has been some recent controversy over the relationship of the fish faunas of the northeastern and northwestern Gulf of Mexico. Baughman (1950, p. 118) believes that the western part has an entirely separate faunal complex, cut off from Florida by the "vast and silt-laden flood" of the Mississippi. Ginsburg (1952, p. 101) shows agreement with this view and, in addition, considers a hypothetical peninsular barrier, in some past geological epoch, between Cape San Blas, Florida, and Mobile Bay, Alabama.

In apposition to the foregoing opinions, Hildebrand (1954, p. 343) maintains that some of Ginsburg's evidence is not on a firm basis and also refutes Baughman's claim. In fact, Hildebrand states that no species of fish has been shown convincingly to be endemic to either the eastern or western Gulf and that the main difference in the fish fauna of the two areas is one of the relative abundance of species.

The northeastern Gulf has proved to be interesting because recent collections from the Panama City area (Caldwell and Briggs, 1957) have revealed the presence of a number of tropical species hitherto unrecorded in the Gulf from north of Tortugas. These, as well as

TABLE 5

MARINE SHORE FISHES INHABITING THE NORTHEASTERN, BUT NOT THE NORTHWESTERN PART OF THE GULF OF MEXICO

<i>Heptranchias perlo</i> (Bonnaterre)	<i>Syngnathus floridae</i> subsp.
<i>Eulamia altima</i> Springer	<i>Micrognathus crinigerus</i> (Bean and Dresel)
<i>Carcharhinus maculipinnis</i> (Poey)	<i>Myripristis jacobus</i> Cuvier
<i>Raja eglanteria</i> Bosc	<i>Holocentrus bullisi</i> Woods
<i>Anchoa lamprotaenia</i> Hildebrand	<i>Gonioplectrus hispanus</i> Cuvier
<i>Conger caudilimbatus</i> (Poey)	<i>Chlorististium</i> sp.
<i>Ahlia egmontis</i> (Jordan)	<i>Prionodes notospilus</i> (Longley)
<i>Mystriophis intertinctus</i> (Richardson)	<i>Mycteroperca xanthosticta</i> (Jordan and Swain)
<i>Ophichthus ocellatus</i> (Lesueur)	<i>Ocyanthus martinicensis</i> (Guichenot)
<i>Ophichthus guttifer</i> Bean and Dresel	<i>Paranthias furcifer</i> (Cuvier)
<i>Ophichthus retropinnis</i> Eigenmann	<i>Pronotogrammus aureorubens</i> Longley
<i>Callechelys muraena</i> Jordan and Evermann	<i>Apogon pigmentarius</i> (Poey)
<i>Gordiichthys irretitus</i> Jordan and Davis	<i>Apogon pseudomaculatus</i> Longley
<i>Strongylura raphidoma</i> (Ranzani)	<i>Apogonichthys alutus</i> (Jordan and Gilbert)
<i>Corythoichthys albirostris</i> Heckel	<i>Caulolatilus microps</i> Goode and Bean
<i>Hippocampus zosterae</i> Jordan and Gilbert	<i>Caulolatilus intermedius</i> Howell Rivero
<i>Syngnathus springeri</i> Herald	<i>Brachygenys chrysargyreus</i> (Günther)
<i>Syngnathus</i> sp.	

(continued)

TABLE 5—(Continued)

MARINE SHORE FISHES INHABITING THE NORTHEASTERN, BUT NOT THE NORTH-WESTERN PART OF THE GULF OF MEXICO

<i>Haemulon sciurus</i> (Desmarest)	<i>Hypleurochilus bermudensis</i> Beebe and Tee Van
<i>Haemulon plumieri</i> (Lacépède)	<i>Emblemaria atlantica</i> Jordan and Evermann
<i>Ulaema lefroyi</i> (Goode)	<i>Emblemaria piratula</i> Ginsburg and Reid
<i>Equetus umbrosus</i> (Jordan and Eigenmann)	<i>Paraclinus marmoratus</i> (Steindachner)
<i>Equetus lanceolatus</i> (Linnaeus)	<i>Paraclinus fasciatus</i> (Steindachner)
<i>Pseudupeneus maculatus</i> (Bloch)	<i>Lepophidium cervinum</i> (Goode and Bean)
<i>Calamus arctifrons</i> Goode and Bean	<i>Lepophidium graellsii</i> (Poey)
<i>Calamus proridens</i> Jordan and Gilbert	<i>Ophidion beani</i> Jordan and Gilbert
<i>Chaetodon aya</i> Jordan	<i>Otophidium omostigmum</i> (Jordan and Gilbert)
<i>Chaetodon striatus</i> Linnaeus	<i>Sphraena picudilla</i> Poey
<i>Holacanthus ciliaris</i> (Linnaeus)	<i>Pontinus rathbuni</i> Goode and Bean
<i>Chromis enchrysurus</i> (Jordan and Gilbert)	<i>Pontinus castor</i> Poey
<i>Chromis insolatus</i> (Cuvier)	<i>Scorpaena bergi</i> Evermann and Marsh
<i>Pomacentrus xanthurus</i> Poey	<i>Scorpaena agassizi</i> Goode and Bean
<i>Bodianus rufus</i> (Linnaeus)	<i>Peristedion imberbe</i> (Poey)
<i>Decodon puellaris</i> (Poey)	<i>Prionotus griseus</i> Teague
<i>Halichoeres bivittata</i> (Bloch)	<i>Prionotus beani</i> Goode
<i>Halichoeres radiata</i> (Linnaeus)	<i>Bellator egretta</i> (Goode and Bean)
<i>Lachnolaimus maximus</i> (Walbaum)	<i>Bellator brachychir</i> (Regan)
<i>Xyrichtys psittacus</i> (Linnaeus)	<i>Dactylopterus volitans</i> (Linnaeus)
<i>Nicholsina ustus</i> (Valenciennes)	<i>Opsanus pardus</i> (Goode and Bean)
<i>Acanthurus chirurgus</i> (Bloch)	<i>Bothus ocellatus</i> (Agassiz)
<i>Acanthurus coeruleus</i> Bloch and Schneider	<i>Citharichthys arctifrons</i> Goode
<i>Acanthurus randalli</i> Briggs and Caldwell	<i>Citharichthys rimosus</i> Goode and Bean
<i>Gnathagnus laticeps</i> (Longley and Hildebrand)	<i>Citharichthys microstomus</i> Gill
<i>Gillelus semicinctus</i> Gilbert	<i>Gastropsetta frontalis</i> Bean
<i>Ioglossus calurus</i> Bean	<i>Syacium micrurum</i> Ranzani
<i>Garmannia macrodon</i> (Beebe and Tee-Van)	<i>Gymnachirus williamsoni</i> (Gunter)
<i>Gobionellus stigmaturus</i> (Goode and Bean)	<i>Symphurus minor</i> Ginsburg
<i>Gobionellus stimaticus</i> (Poey)	<i>Symphurus urospilus</i> Ginsburg
<i>Gobulus myersi</i> Ginsburg	<i>Canthidermis maculatus</i> (Bloch)
<i>Callionymus agassizi</i> Goode and Bean	<i>Lagocephalus pachycephalus</i> (Ranzani)
<i>Callionymus bairdi</i> Jordan	<i>Sphaeroides cutaneus</i> (Günther)
<i>Opisthognathus macrognathus</i> Poey	<i>Sphaeroides dorsalis</i> Longley
<i>Opisthognathus lonchurus</i> Jordan and Gilbert	<i>Sphaeroides harperi</i> Nichols
<i>Blennius marmoreus</i> Poey	<i>Canthigaster rostratus</i> (Bloch)
	<i>Ogcocephalus parvus</i> Longley and Hildebrand
	TOTAL 108

other records in the literature, give evidence of a shore fish fauna considerably richer than has been listed so far from the northwestern Gulf. In fact, the total of 108 species (table 5) taken from the northeastern area that have not yet been found to the west gives a clear indication that the faunal difference is real and could not be attributed to merely a variation in the relative abundance of species.

In regard to the opinions of Baughman (1950) and Ginsburg (1952), there is no need to utilize a physical barrier in the northcentral Gulf to explain the faunal peculiarities of the two sides. The work of Hedgpeth (1954, p. 206) on the bottom communities of the Gulf of Mexico shows a virtually continuous association of coral patches and sponges covering the broad continental shelf west of Florida from the Keys north to near the western boundary of the state. To the west of this point the coral-sponge association is abruptly replaced by the shrimp ground community—there are a few scattered coral reefs at the edge of the shelf off the Texas coast, but they are widely separated from the corals of the northeastern and the southwestern Gulf, and there are no sponge grounds.

The above information gives a good ecological basis for the differences apparent in the fish faunas of the two northern Gulf areas. Tropical shore fishes in particular tend to become highly specialized and dependent upon certain types of bottom fauna for food and shelter. It may be noted that a large percentage of the species confined to the northeastern area (table 5) can be considered typical of the coral community (especially the seven serranids, six labrids, five puffers, four scorpaenids, three acanthurids, three pomacentrids, three apogonids, and two chaetodontids). The coral-sponge association of the western Florida shelf offers a broad, continuous migration route north for fishes of this type.

Freshwater Fishes

Almost all of the Florida freshwater fishes (80 species out of 88) belong to six families (Centrarchidae, Cyprinidae, Percidae, Cyprinodontidae, Ictaluridae, and Catostomidae) which have an interesting local distribution in view of the recent geological history of the state. According to Cooke (1945), the present Florida peninsula had its beginning during the Sangamon interglacial stage of the Pleistocene when the Penholoway terrace was formed. This allowed the Wicomico islands to fuse into a long, narrow peninsula, which extended southward to about the Highland-Glades county line. The change from the Wicomico to the Penholoway stage involved a drop in the sea level from the 100 foot to the 70 foot contour and, presumably,

allowed the gradual formation of extensive freshwater areas which proved attractive to the continental freshwater fishes.

It is conceivable that some freshwater fishes could have survived on the Wicomico islands, having reached these areas during the previous emergence of the Florida peninsula. However, these islands were evidently rather limited in size, and the small amount of endemism found in peninsular Florida fishes adds but little weight to this theory. Of the nine species of autochthonous freshwater fishes, five are cyprinodontids, all of which probably have a comparatively broad saltwater tolerance. If any species can trace its history from the Wicomico islands, it is most likely one of this group.

Of the six families of freshwater fishes listed above, five (all except the Cyprinodontidae); according to the classification of Myers (1949), may be considered "Primary Freshwater Groups." Because of their physiological intolerance to saltwater, the invasion of Florida by these families had to be accomplished by means of freshwater migration routes. Although Florida has a rather high rainfall and a large number of lakes and streams, the low topography and generally slow movement of water tends to minimize erosion and stream capture, evidently making migration more difficult than in many areas with a steeper terrain. Also, many of the continental species of freshwater fishes are ecologically better suited to comparatively swift streams with lower temperatures and different types of food organisms. This is particularly true of the species of Percidae, Catostomidae, and to a lesser degree, the Cyprinidae.

Although there are eleven species of Percidae in Florida, eight are confined to the extreme northern or western panhandle area, two reach to midpeninsula, and only one extends to the southern end of the peninsula. Of the seven species of Catostomidae, six are still restricted to extreme northern areas and only one reaches down to near the end of the peninsula. A similar although less restricted pattern is evident for the nineteen native species of the family Cyprinidae; ten are extreme northern, six are found in midpeninsula, and only three have penetrated to southern Florida. The Centrarchidae and Ictaluridae have apparently found more suitable ecological conditions because they have become well dispersed—it is recognized that some of these species may have had considerable human assistance. Of the twenty-three Florida Centrarchidae, only six are confined to the extreme north, nine are found in midpeninsula, and eight extend to the southern tip of the state. There are seven species of Ictaluridae; but only one is restricted to the extreme north, two range to midpeninsula, and five are present at the southern end of the mainland.

The distribution of the sixth family, the Cyprinodontidae, is considered separately because it is a "Secondary" rather than a "Primary" freshwater group (Myers, 1949). The species have a fairly well developed salt tolerance and, in many parts of the world, have been able to colonize areas that could be reached only by crossing a formidable saltwater barrier—such as the West Indies, Seychelles, Madagascar, Celebes, etc. In many instances it is difficult to decide whether a species should be considered freshwater or euryhaline, for little is known about the life histories of the 21 species of Florida cyprinodontids. As matters now stand, eleven are included in the freshwater category while ten are thought to be euryhaline. The present local distribution of the eleven freshwater forms (three in the extreme north, four in midpeninsula, and four in the far south) does not have the same zoogeographic significance as that of the families of "Primary" freshwater fishes.

In summary, it can be said that the freshwater fish fauna of Florida owes its relationship and origin to the fauna of the continental United States. The rich fish fauna of the other southeastern states has so far been able to penetrate Florida only to a limited extent, probably because of difficult migratory routes and generally unsuitable ecological conditions. The members of the families Cyprinodontidae, Centrarchidae, and Ictaluridae have been the most successful invaders. Consequently, the fauna of the southern peninsula is composed chiefly of species belonging to these families plus those euryhaline fishes that tend to prefer prolonged residence in freshwater.

Euryhaline Fishes

In addition to the Cyprinodontidae discussed above, the families containing the largest numbers of euryhaline fishes may be listed as follows: Clupeidae with twelve species; Gobiidae, ten; Sciaenidae, six; Poeciliidae, five; Atherinidae, five; Bothidae, five; Mugilidae, four; and Eleotridae, four. Of the last eight families, only one, the Poeciliidae, has all of its Florida species classified as euryhaline. All of the remaining seven contain marine species, but no freshwater ones. With the exception of the Poeciliidae, which is sometimes considered a "Secondary" freshwater fish family, and the Cyprinodontidae, the euryhaline groups show a marine type of distribution similar to that seen in many of the shore fish families.

SYSTEMATIC LIST OF FLORIDA FISHES

ORDER AMPHIOXI

1. Family Branchiostomidae—Lancelets

Branchiostoma caribaeum Sundevall—Caribbean lancelet. Chesapeake Bay to the West Indies and the northern Gulf of Mexico. Shore.

2. Family Epigonichthyidae—Uneven lancelets

Asymmetron lucayanum Andrews—Southern lancelet. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and the Florida Keys to Pernambuco, Brazil. Shore.

Amphioxides pelagicus (Günther)—Pelagic lancelet. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda, and probably south to Florida and the Bahamas. Pelagic.

ORDER MYXINOIDEA

3. Family Myxinidae—Hagfishes

Paramyxine springeri Bigelow and Schroeder—Springer's hagfish. Northeastern part of the Gulf of Mexico off the Florida coast. Benthic.

ORDER PETROMYZONIDA

4. Family Petromyzonidae—Lampreys

Petromyzon marinus Linnaeus—Sea lamprey. Both sides of the North Atlantic; known in the western Atlantic from Greenland to the St. Johns River system in northern Florida. Euryhaline.

Ichthyomyzon gagei Hubbs and Trautman—Southern brook lamprey. Lower Mississippi Valley including the western Florida panhandle east to the Ochlockonee River. Freshwater.

ORDER SELACHII

5. Family Hexanchidae—Cowsharks

Hexanchus griseus (Bonnaterre)—Sixgill cowshark. Worldwide in tropical and temperate waters; in the western Atlantic from Massachusetts to Cuba. Shore.

Hexanchus sp.—Cowshark. Florida. Shore. Data not yet published.

Heptranchias perlo (Bonnaterre)—Sevengill cowshark. Atlantic and western Pacific Oceans; in the western Atlantic from the northeastern and northcentral Gulf of Mexico to Cuba. Benthic.

6. Family Carchariidae—Sand sharks

Carcharias taurus Rafinesque—Sand shark. Both sides of the Atlantic; in the western Atlantic from Maine to the northern Bahamas. Shore.

7. Family Isuridae—Mackerel sharks

Isurus oxyrinchus Rafinesque—Mako. Both sides of the Atlantic; in the western Atlantic from Cape Cod to Rio de Janeiro and the northern Gulf of Mexico. Pelagic.

Carcharodon carcharias (Linnaeus)—White shark. Worldwide in tropical and temperate waters; in the western Atlantic from Newfoundland to Brazil and the northern Gulf of Mexico. Pelagic.

8. Family Alopiidae—Thresher sharks

Alopias superciliosus (Lowe)—Bigeye thresher. Both sides of the Atlantic; in the western Atlantic from Miami to Cuba and in the eastern Gulf of Mexico. Pelagic.

Alopias vulpinus (Bonnaterre)—Common thresher. Worldwide in tropical and temperate waters; in the western Atlantic from Nova Scotia to northern Argentina and the northern Gulf of Mexico. Pelagic.

9. Family Orectolobidae—Carpet sharks

Ginglymostoma cirratum (Bonnaterre)—Nurse shark. Both sides of the Atlantic; in the western Atlantic from Rhode Island and Bermuda to southern Brazil and the northern Gulf of Mexico. Shore.

10. Family Rhineodontidae—Whale sharks

Rhineodon typus Smith—Whale shark. Worldwide in tropical and temperate waters; in the western Atlantic from New York to Abrolhas Island, Brazil, and in the Gulf of Mexico. Pelagic.

11. Family Scyliorhinidae—Cat sharks

Apristurus atlanticus (Koefoed). Coast of Morocco in the eastern Atlantic to the northern part of the Gulf of Mexico. Benthic.

Galeus arae (Nichols)—Crested shark. Northern part of the Gulf of Mexico, and Miami, to the north coast of Cuba. Benthic.

Scyliorhinus retifer (Garman)—Chain dogfish. Southern New England to the northern part of the Gulf of Mexico. Benthic.

12. Family Triakidae—Smooth dogfishes

Mustelus canis (Mitchill)—Smooth dogfish. Bay of Fundy and Bermuda to Uruguay and the northern Gulf of Mexico. Shore.

Mustelus norrisi Springer—Florida dogfish. Englewood and Naples on the west coast of Florida south to the Keys. Shore.

13. Family Carcharhinidae—Requiem sharks

Galeocerdo cuvieri (Lesueur)—Tiger shark. Worldwide in tropical and temperate waters; in the western Atlantic from Woods Hole, Massachusetts, and Bermuda, to Uruguay and the northern Gulf of Mexico. Shore.

Prionace glauca (Linnaeus)—Great blue shark. Worldwide in tropical and temperate waters; in the western Atlantic from Newfoundland and Bermuda to the Rio de la Plata. Pelagic.

Scoliodon terraenovae (Richardson)—Sharpnose shark. Both sides of the Atlantic; in the western Atlantic from the Bay of Fundy to Uruguay and the northern Gulf of Mexico. Euryhaline.

Aprionodon isodon (Müller and Henle)—Eventooth shark. Both sides of the Atlantic; in the western Atlantic from New York to Cuba and the northern Gulf of Mexico. Shore.

Negaprion brevirostris (Poey)—Lemon shark. Both sides of the Atlantic; in the western Atlantic from New Jersey to northern Brazil and the northern Gulf of Mexico. Shore.

Hypoprion signatus Poey—Night shark. Both sides of the Atlantic; in the western Atlantic from South Carolina to British Guiana. Bathypelagic.

- Carcharhinus acronotus* (Poey)—Blacknose shark. North Carolina to Rio de Janeiro and the northern Gulf of Mexico. Shore.
- Carcharhinus leucas* (Müller and Henle)—Bull shark. New York and Bermuda to southern Brazil and the northern Gulf of Mexico. Euryhaline.
- Carcharhinus limbatus* (Müller and Henle)—Small blacktip shark. Worldwide in tropical and temperate waters; in the western Atlantic from southern New England to southern Brazil and the northern Gulf of Mexico. Pelagic.
- Carcharhinus porosus* Ranzani—Smalltail shark. In both the western Atlantic and eastern Pacific; in the western Atlantic from the northern Gulf of Mexico to central Brazil. Shore.
- Carcharhinus maculipinnis* (Poey)—Large blacktip shark. Jacksonville, Florida, to Puerto Rico and the northeastern and northcentral Gulf of Mexico. Shore.
- Eulamia altima* Springer—Knopp's shark. Cape Canaveral, Florida, and Bimini, to Trinidad and the northeastern Gulf of Mexico. Shore.
- Eulamia falciformis* (Müller and Henle)—Reef shark. Both sides of the Atlantic; in the western Atlantic from Delaware Bay and Bermuda to the West Indies. Shore.
- Eulamia floridana* Bigelow, Schroeder, and Springer—Silky shark. Widespread in the Gulf of Mexico and to the south coast of Cuba. Shore.
- Eulamia milberti* (Müller and Henle)—Sandbar shark. Both sides of the Atlantic; in the western Atlantic from southern New England to southern Brazil and the northern Gulf of Mexico. Shore.
- Eulamia obscura* (Lesueur)—Dusky shark. Both sides of the Atlantic; in the western Atlantic from southern Massachusetts and Bermuda to southern Brazil and the northern part of the Gulf of Mexico. Pelagic.
- Eulamia springeri* (Bigelow and Schroeder)—Springer's shark. Englewood, Florida to the east coast of Yucatán. Shore.
- Pterolamiops longimanus* (Poey)—Whitetip shark. Both sides of the Atlantic, and the western Pacific; in the western Atlantic from New Jersey and Bermuda to Uruguay, and widespread in the Gulf of Mexico. Pelagic.

14. Family Sphyrnidae—Hammerhead sharks

- Sphyrna diplana* Springer—Hammerhead. Both sides of the Atlantic; in the western Atlantic from New Jersey to southern Brazil and in the northern part of the Gulf of Mexico. Shore.
- Sphyrna tiburo* (Linnaeus)—Bonnet shark. Worldwide in tropical and temperate waters; in the western Atlantic from Nantucket Sound to southern Brazil and the northern Gulf of Mexico. Shore.
- Sphyrna mokarran* (Rüppell)—Great hammerhead. Both sides of the Atlantic, and the western Pacific; in the western Atlantic from North Carolina to northern Argentina and the eastern and northwestern Gulf of Mexico. Shore.
- Sphyrna zygaena* (Linnaeus)—Common hammerhead. Worldwide in tropical and temperate waters; in the western Atlantic from Massachusetts Bay and Bermuda to northern Argentina and the northcentral Gulf of Mexico. Shore.

15. Family Squalidae—Dogfishes

- Centrophorus uyato* (Rafinesque). Eastern Atlantic to the northern part of the Gulf of Mexico. Benthic.
- Centrophorus granulosus* (Bloch and Schneider). Eastern Atlantic to the northern part of the Gulf of Mexico. Benthic.

Etmopterus virens Bigelow, Schroeder, and Springer. Northern part of the Gulf of Mexico and close to the Florida coast. Benthic.

Etmopterus schultzi Bigelow, Schroeder, and Springer. Northern part of the Gulf of Mexico and close to the Florida coast. Benthic.

Etmopterus hillianus (Poey). Both sides of the Atlantic; in the western Atlantic from Chesapeake Bay to Cuba. Benthic.

Etmopterus pusillus (Lowe). Eastern Atlantic to the northern part of the Gulf of Mexico. Benthic.

Squalus acanthias Linnaeus—Spiny dogfish. Both sides of the North Atlantic and North Pacific; in the western Atlantic from Nova Scotia to Cuba. Shore.

Squalus fernandinus Molina. Worldwide in tropic and temperate waters; in the western Atlantic from South Carolina to Argentina and the northeastern part of the Gulf of Mexico. Pelagic.

Squalus cubensis Howell Rivero. Northeastern Gulf of Mexico to Rio de Janeiro. Benthic.

Dalatias licha (Bonnaterre). Both sides of the Atlantic; in the western Atlantic from southern New England to the northern part of the Gulf of Mexico. Benthic.

16. Family Squatinidae—Angel sharks

Squatina dumerili (Lesueur)—Angel shark. Massachusetts to Jamaica and the northern Gulf of Mexico. Shore.

ORDER BATOIDEI

17. Family Pristidae—Sawfishes

Pristis pectinatus Latham—Common sawfish. Both sides of the Atlantic; in the western Atlantic from New York and Bermuda to middle Brazil and the northern part of the Gulf of Mexico. Euryhaline.

Pristis perotteti Müller and Henle—Southern sawfish. Both sides of the Atlantic; in the western Atlantic from Salerno, Florida to Santos, Brazil, and to the northern Gulf of Mexico. Euryhaline.

18. Family Rhinobatidae—Guitarfishes

Rhinobatos lentiginosus (Garman)—Spotted guitarfish. North Carolina to Florida and the northwestern Gulf of Mexico. Shore.

19. Family Torpedinidae—Electric rays

Torpedo nobiliana Bonaparte—Electric ray. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to the Florida Keys. Shore.

Narcine brasiliensis (Olfers)—Lesser electric ray. North Carolina to southern Brazil and the northern Gulf of Mexico. Shore.

Benthobatis marcida Bean and Weed—Deepsea electric ray. South Carolina to the north coast of Cuba. Benthic.

20. Family Rajidae—Skates

Raja ackleyi Garman—Ackley's skate. Both sides of the Atlantic; in the western Atlantic from southern Florida to the Yucatán Bank. Shore.

Raja eglanteria Bosc—Brier skate. Massachusetts Bay to Florida and the northeastern part of the Gulf of Mexico. Shore.

Raja garmani Whitley—Rosette skate. Southern New England to the Florida Keys. Shore.

Raja lentiginosa Bigelow and Schroeder. Northern and southwestern Gulf of Mexico. Shore.

Raja olseni Bigelow and Schroeder. Northern Gulf of Mexico. Shore.

Raja teevani Bigelow and Schroeder. Northeastern Gulf of Mexico. Benthic.

Raja texana Chandler—Texas skate. Throughout the Gulf of Mexico. Shore.

Breviraja plutonia (Garman). Northern North Carolina to the Florida Keys. Benthic.

Breviraja sinuvmexicana Bigelow and Schroeder. Northeastern to northcentral Gulf of Mexico. Benthic.

Breviraja spinosa Bigelow and Schroeder. Delaware Bay to the Florida Straits. Benthic.

Cruriraja poeyi Bigelow and Schroeder. St. Augustine, Florida; to the coasts of Cuba. Benthic.

Springeria foliostris Bigelow and Schroeder. Northern and eastern Gulf of Mexico. Benthic.

21. Family Dasyatidae—Sting rays

Dasyatis americana Hildebrand and Schroeder. New Jersey to Rio de Janeiro and the northern Gulf of Mexico. Shore.

Dasyatis centroura (Mitchill). Both sides of the Atlantic; in the western Atlantic from southern New England to the northern part of the Gulf of Mexico. Shore.

Dasyatis sabina (Lesueur). Chesapeake Bay to Florida and the northern part of the Gulf of Mexico. Marine shore, occasionally in freshwater.

Dasyatis sayi (Lesueur). Southern Massachusetts to southern Brazil and the northern part of the Gulf of Mexico. Shore.

22. Family Gymnuridae—Butterfly rays

Gymnura altavela (Linnaeus)—Butterfly ray. Both sides of the Atlantic; in the western Atlantic from southern Massachusetts to the Rio de la Plata. Shore.

Gymnura micrura (Bloch and Schneider)—Lesser butterfly ray. Both sides of the Atlantic; in the western Atlantic from southern New England to Rio de Janeiro and the northern part of the Gulf of Mexico. Shore.

23. Family Urolophidae

Urolophus jamaicensis (Cuvier). North Carolina to Trinidad and the southern part of the Gulf of Mexico. Shore.

24. Family Myliobatidae—Eagle rays

Myliobatis freminwilli Lesueur—Eagle ray. Cape Cod to Rio de Janeiro and the northern part of the Gulf of Mexico. Shore.

Myliobatis goodiei Garman. South Carolina to Uruguay. Shore.

Aetobatis narinari Euphrasen—Spotted duckbill ray. Worldwide in tropical and temperate waters; in the western Atlantic from Chesapeake Bay and Bermuda to Santos, Brazil, and the northern part of the Gulf of Mexico. Shore.

25. Family Rhinopteridae—Cownose rays

Rhinoptera bonasus (Mitchill)—Cownose ray. Cape Cod to Rio de Janeiro and the northern part of the Gulf of Mexico. Shore.

26. Family Mobulidae—Devil rays

Mobula hypostoma (Bancroft)—Lesser devil ray. Both sides of the Atlantic; in the western Atlantic from North Carolina to Santos, Brazil. Pelagic.

Manta birostris (Walbaum)—Giant devil ray. Worldwide in tropical waters; in the western Atlantic from southern New England and Bermuda to Rio de Janeiro and the northern part of the Gulf of Mexico. Pelagic.

ORDER CHIMAERAE

27. Family Chimaeridae—Chimaeras

Hydrolagus alberti Bigelow and Schroeder—Chimaera. Northern Gulf of Mexico. Bathypelagic.

ORDER CHONDROSTEI

28. Family Acipenseridae—Sturgeons

Acipenser oxyrinchus oxyrinchus Mitchill—Northern sea sturgeon. Labrador to Jacksonville, Florida. Euryhaline.

Acipenser oxyrinchus desotoi Vladykov—Southern sea sturgeon. Northern Gulf of Mexico and west coast of Florida to French Guiana. Euryhaline.

ORDER GINGLYMODI

29. Family Lepisosteidae—Gar pikes

Lepisosteus productus Cope—Northern spotted gar. Mississippi Valley and Gulf coast including the Florida panhandle. Freshwater.

Lepisosteus platyrhincus DeKay—Florida spotted gar. Southern Georgia and throughout Florida. Freshwater.

Lepisosteus osseus (Linnaeus)—Longnose gar. Lowlands from Maryland throughout Florida, west to Louisiana and Mississippi, and north into the Great Lakes. Euryhaline.

Lepisosteus spatula Lacépède—Alligator gar. Streams entering the Gulf of Mexico eastward to the Choctawhatchee River, Florida. Euryhaline.

ORDER PROTOSPONDYLI

30. Family Amiidae—Bowfins

Amia calva Linnaeus—Bowfin. United States east of the Great Plains and throughout Florida. Freshwater.

ORDER ISOSPONDYLI

31. Family Elopidae—Tenpounders

Elops saurus Linnaeus—Tenpounder. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and southern New England to Rio de Janeiro and throughout the Gulf of Mexico. Euryhaline.

32. Family Megalopidae—Tarpons

Megalops atlanticus (Valenciennes)—Tarpon. Both sides of the Atlantic; in the western Atlantic from the Gulf of Maine and Bermuda to northern Brazil and throughout the Gulf of Mexico. Euryhaline.

33. Family Albulidae—Ladyfishes

Albula vulpes (Linnaeus)—Bonefish. Worldwide in tropical seas; in the western Atlantic from New York and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

34. Family Clupeidae—Herrings

- Alosa sapidissima* (Wilson)—American shad. Southeastern coast of Newfoundland to the St. Johns River, Florida. Euryhaline.
- Alosa alabamæ* Jordan and Evermann—Alabama shad. Gulf of Mexico coast including western Florida. Euryhaline.
- Alosa pseudoharengus* (Wilson)—Alewife. Northern Newfoundland to the Atlantic coast of Florida. Euryhaline.
- Alosa aestivalis* (Mitchill)—Glut herring. Nova Scotia to northern Florida. Euryhaline.
- Alosa chrysochloris* (Rafinesque)—Skipjack herring. Gulf of Mexico coast including western Florida and northward to the Great Lakes. Euryhaline.
- Alosa mediocris* (Mitchill)—Hickory shad. Bay of Fundy to the Florida east coast. Euryhaline.
- Brevoortia gunteri* Hildebrand—Menhaden. Gulf coast from Cedar Key, Florida, to the Gulf of Campeche. Euryhaline.
- Brevoortia tyrannus* (Latrobe)—Menhaden. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to Indian River City, Florida. Euryhaline.
- Brevoortia patronus* Goode—Large scale Gulf menhaden. From Tampa throughout the northern Gulf of Mexico. Euryhaline.
- Brevoortia smithi* Hildebrand—Bug fish. North Carolina to Indian River City, Florida. Euryhaline.
- Dorosoma petenense* (Günther)—Threadfin shad. Gulf coast of Florida, west and south to British Honduras. Euryhaline.
- Dorosoma lacepedi* (Lesueur)—Gizzard shad. Cape Cod to Florida and throughout the Gulf of Mexico. Euryhaline.
- Opisthonema oglinum* (Lesueur)—Thread herring. Gulf of Maine and Bermuda to Rio de Janeiro and the northern part of the Gulf of Mexico. Shore.
- Etrumeus sadina* (Mitchill)—Round herring. Bay of Fundy to Florida and the northern part of the Gulf of Mexico. Shore.
- Harengula humeralis* (Cuvier)—Sardina. Bermuda and the Florida Keys to Natal, Brazil, and west to Yucatán. Shore.
- Harengula clupeiola* (Cuvier)—Sprat. Florida Keys to Rio de Janeiro and the northern part of the Gulf of Mexico. Shore.
- Harengula pensacolæ pensacolæ* Goode and Bean—Scaled sardine. Cape Canaveral, Florida, to Yucatán and the northern part of the Gulf of Mexico. Shore.
- Harengula pensacolæ floridana* Rivas. Confined to the Florida Keys from Old Rhodes Key to Key West. Shore.
- Jenkinsia lamprotaenia* (Gosse)—Key sardine. Bermuda and the Florida Keys to Venezuela. Shore.
- Sardinella anchovia* Valenciennes—Spanish sardine. New Jersey and Bermuda to Rio de Janeiro and widespread in the Gulf of Mexico. Shore.
- Sardinella brasiliensis* Steindachner. Florida Keys to Rio de Janeiro. Shore.

35. Family Engraulidae—Anchovies

- Anchoa cayorum* (Fowler). Florida Keys to Honduras and the West Indies. Shore.
- Anchoa hepsetus hepsetus* (Linnaeus)—Striped anchovy. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to Montevideo and the northern part of the Gulf of Mexico. Shore.

- Anchoa hepsetus colonensis* Hildebrand. Florida, along the northern Gulf of Mexico south to Panama, and the West Indies. Euryhaline.
- Anchoa lamprotaenia* Hildebrand. Southern Florida to Panama, the West Indies, and the northeastern Gulf of Mexico. Shore.
- Anchoa lyolepis* (Evermann and Marsh). North Carolina to the Gulf of Venezuela and the northern Gulf of Mexico. Shore.
- Anchoa cubana* (Poey). Melbourne Beach, Florida, to Guatemala and the West Indies, also through the northern Gulf of Mexico. Shore.
- Anchoa mitchilli diaphana* Hildebrand—Bay anchovy. South Carolina to Yucatán and through the northern Gulf of Mexico. Euryhaline.
- Anchoviella perfasciata* (Poey). New York to Hispaniola and the northern Gulf of Mexico coast. Shore.

36. Family Alepocephalidae—Slickheads

- Alepocephalus productus* Gill. Both sides of the Atlantic; in the western Atlantic from off New Jersey to the northeastern Gulf of Mexico. Benthic.
- Conocara murrayi* (Koefoed). Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico. Benthic.
- Conocara macdonaldi* Goode and Bean. Off Pensacola, Florida, to the vicinity of Tortugas. Benthic.
- Talismania antillarum* Goode and Bean. Off Pensacola, Florida. Bathypelagic.
- Leptoderma macrops* Vaillant. Both sides of the Atlantic and perhaps to the Indian Ocean; in the western Atlantic from the northeastern Gulf of Mexico. Benthic.
- Xenodermichthys copei* (Gill). Both sides of the Atlantic; in the western Atlantic from off the Virginia coast to Tortugas, and off Pensacola in the Gulf of Mexico. Bathypelagic.

37. Family Argentinidae—Deepsea smelts

- Argentina striata* Goode and Bean. Off Pensacola to Espirito Santo, Brazil and westward throughout the Gulf of Mexico. Bathypelagic.
- Bathylagus benedicti* Goode and Bean. Both sides of the Atlantic; in the western Atlantic from New York to Argentina. Bathypelagic.
- Bathylagus* sp. (not yet described). Off Pensacola, Florida. Bathypelagic.

38. Family Astronesthididae

- Borostomias braueri* Regan. Atlantic and Indian Oceans; in the western Atlantic from the northeastern Gulf of Mexico. Bathypelagic.

39. Family Stomiidae—Scaly dragonfishes

- Stomias affinis* Günther. Worldwide in distribution; in the western Atlantic from off New Jersey to French Guiana and in the southern Gulf of Mexico. Bathypelagic.

40. Family Melanostomiidae—Scaleless dragonflies

- Echiostoma tanneri* Gill. Both sides of the Atlantic; in the western Atlantic from Bermuda and off New Jersey to the Caribbean and the southern Gulf of Mexico. Bathypelagic.
- Echiostoma barbatum* Lowe. Both sides of the Atlantic; in the western Atlantic off Gloucester, Massachusetts to the vicinity of Tortugas. Bathypelagic.

- Eustomias fissibarbis* Pappenheim. Both sides of the Atlantic; in the western Atlantic from Bermuda to the Caribbean and the southern Gulf of Mexico. Bathypelagic.
- Eustomias bigelowi* Welsh. Both sides of the Atlantic; in the western Atlantic from Bermuda and off Cape Hatteras to the Florida Straits. Bathypelagic.
- Eustomias leptobolus* Regan and Trewavas. Strait between Florida and Cuba. Bathypelagic.
- Eustomias brevibarbatus* Parr. Strait between Florida and Cuba to the Lesser Antilles. Bathypelagic.
- Pachystomias atlanticus* Regan and Trewavas. Nova Scotia and Bermuda to the Caribbean. Bathypelagic.
- Leptostomias ramosus* Regan and Trewavas. North Atlantic and the northeastern Gulf of Mexico. Bathypelagic.
- Bathophilus longipinnis* (Pappenheim). Both sides of the Atlantic; in the western Atlantic from Bermuda to the Florida Straits and off the Leeward Islands. Bathypelagic.
- Bathophilus chironema* Regan and Trewavas. Both sides of the Atlantic; in the western Atlantic from near Bermuda to the Florida Straits. Bathypelagic.
- Bathophilus longipes* Regan and Trewavas. Both sides of the Atlantic; in the western Atlantic from the southern Gulf of Mexico and the Caribbean. Bathypelagic.
- Bathophilus nigerrimus* Giglioli. Both sides of Atlantic; in the western Atlantic from the southern Gulf of Mexico and the Caribbean. Bathypelagic.
- Photonectes margarita* (Goode and Bean). Worldwide in tropical waters; in the western Atlantic from Bermuda to northern Brazil and the northeastern Gulf of Mexico. Bathypelagic.

41. Family Idiakanthidae—Blackdragons

- Idiakanthus fasciola* Peters—Blackdragon. Worldwide in tropical waters; in the western Atlantic from New Jersey to the southern Gulf of Mexico. Bathypelagic.

42. Family Malacosteidae—Loosejaws

- Aristostomias polydactylus* Regan and Trewavas. Both sides of the Atlantic; in the western Atlantic from the southern part of the Gulf of Mexico and the Caribbean. Bathypelagic.
- Aristostomias grimaldi* Zugmayer. Both sides of the Atlantic; in the western Atlantic from near Bermuda to French Guiana and the Florida Straits. Bathypelagic.
- Aristostomias tittmanni* Welsh. Both sides of the Atlantic; in the western Atlantic from near Bermuda to the southern Gulf of Mexico and the Caribbean. Bathypelagic.
- Aristostomias xenostoma* Regan and Trewavas. Both sides of the Atlantic; in the western Atlantic from the Florida Straits and the Caribbean. Bathypelagic.
- Photostomias guernei* Collet. Widespread on both sides of the Atlantic; in the southern Gulf of Mexico and the West Indies. Bathypelagic.

43. Family Chauliodontidae—Viperfishes

- Chauliodus sloani sloani* Bloch and Schneider—Viperfish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from New England to French Guiana and widespread in the Gulf of Mexico. Bathypelagic.

Chauliodus danae Regan and Trewavas. Both sides of the Atlantic; in the western Atlantic from off North Carolina to the Lesser Antilles and in the Florida Straits. Bathypelagic.

44. Family Sternoptychidae—Lightfishes

Bonapartia pedaliota Goode and Bean. Both sides of the Atlantic; in the western Atlantic from off Miami. Bathypelagic.

Cyclothone microdon (Günther)—Small tooth bristlemouth. Worldwide in distribution; in the western Atlantic from New Jersey and Bermuda to Tortugas and the eastern Gulf of Mexico. Bathypelagic.

Gonostoma denudatum Rafinesque. Both sides of the Atlantic including the Gulf of Mexico. Bathypelagic.

Gonostoma elongatum (Günther). Atlantic, Indian, and western Pacific Oceans; widespread in the western Atlantic and the eastern and northcentral Gulf of Mexico. Bathypelagic.

Polyipnus spinosus Günther. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from the northeastern part of the Gulf of Mexico. Bathypelagic.

Polyipnus asteroides Schultz. Throughout the Gulf of Mexico south to the vicinity of Puerto Rico. Bathypelagic.

Sternoptyx diaphana Hermann. Worldwide in distribution; in the western Atlantic from New England to the West Indies and throughout the Gulf of Mexico. Bathypelagic.

Argyrolepecus hemigymnus Cocco. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from New Jersey and Bermuda to Argentina. Bathypelagic.

Argyrolepecus amabilis (Ogilby). Atlantic and western Pacific Oceans; in the western Atlantic from southern New England to the Lesser Antilles and the eastern part of the Gulf of Mexico. Bathypelagic.

Argyrolepecus affinis Garman. Worldwide in distribution; in the western Atlantic from the northeastern part of the Gulf of Mexico to the West Indies. Bathypelagic.

Argyrolepecus aculeatus Valenciennes. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Newfoundland to the West Indies and the Gulf of Mexico. Bathypelagic.

Argyrolepecus gigas Norman. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico. Bathypelagic.

Yarella blackfordi Goode and Bean. Both sides of the Atlantic; in the western Atlantic throughout the Gulf of Mexico. Bathypelagic.

Yarella corythaeola Alcock. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from the northeastern and southwestern Gulf of Mexico. Bathypelagic.

Valenciennellus tripunctulatus (Esmark). Worldwide in distribution; in the western Atlantic from Bermuda to the Lesser Antilles and to the northeastern part of the Gulf of Mexico. Bathypelagic.

Maurölicus muelleri (Gmelin). Worldwide in distribution; in the western Atlantic from the Gulf of Maine to Argentina (52°53' S.) and the northeastern part of the Gulf of Mexico. Bathypelagic.

45. Family Umbridae—Mud minnows

Umbra pygmaea (DeKay)—Eastern mudminnow. Long Island to northeastern Florida. Freshwater.

46. Family Esocidae—Pikes

Esox americanus Gmelin—Redfin pickerel. St. Lawrence River to Lake Okeechobee, Florida. Freshwater.

Esox niger Lesueur—Chain pickerel. New Hampshire to the southern tip of Florida and through the Mississippi Valley to Texas. Freshwater.

ORDER INIOMI

47. Family Aulopidae—Threadsaills

Aulopus filamentosus (Bloch)—Threadsaill. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from the northeastern Gulf of Mexico. Pelagic.

48. Family Chlorophthalmidae

Chlorophthalmus agassizi Bonaparte. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from off New Jersey to the Gulf of Mexico, where it is widespread. Bathypelagic.

Chlorophthalmus truculentus Goode and Bean. Throughout the Gulf of Mexico to the vicinity of Barbados. Bathypelagic.

Chlorophthalmus chalybeius (Goode). Off Rhode Island to the vicinity of Tortugas, Florida and the northern Gulf of Mexico. Bathypelagic.

49. Family Synodontidae—Lizardfishes

Saurida brasiliensis Norman. Northern Gulf of Mexico to Cabo Frio, Brazil. Shore.

Saurida normani Longley. Widespread in the Gulf of Mexico. Shore.

Synodus foetens (Linnaeus)—Lizardfish. Cape Cod and Bermuda to Santa Catarina, Brazil, and throughout the Gulf of Mexico. Shore.

Synodus intermedius (Agassiz)—Sand diver. Both sides of the Atlantic; in the western Atlantic from Bermuda and North Carolina to Bahia, Brazil, and widespread in the Gulf of Mexico. Shore.

Synodus poeyi Jordan. Throughout the Gulf of Mexico to Colombia. Shore.

Synodus synodus (Linnaeus). Both sides of the Atlantic; in the western Atlantic from Tortugas, Florida to Bahia, Brazil and the southwestern Gulf of Mexico. Shore.

Trachinocephalus myops (Forster)—Snakefish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from southern New England and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

50. Family Ipnopidae

Ipnops murrayi Günther. Atlantic and western Pacific Oceans; in the western Atlantic from the northeastern Gulf of Mexico to northern Brazil. Benthic.

51. Family Bathypteroidae—Stiltfishes

Bathypterois viridensis (Roule). Both sides of the Atlantic; in the western Atlantic from the northcentral Gulf of Mexico to the vicinity of Tortugas, Florida. Benthic.

Bathypterois longipes Günther. Both sides of the Atlantic; in the western Atlantic from off New Jersey to Uruguay and the Gulf of Mexico. Benthic.

Bathypterois phenae Parr. Off the Bahamas to the northeastern Gulf of Mexico. Benthic.

Benthosaurus grallator Goode and Bean. Both sides of the Atlantic; in the western Atlantic from off New Jersey to the northeastern Gulf of Mexico. Benthic.

52. Family Myctophidae—Lanternfishes

Neoscopelus macrolepidotus Johnson. Worldwide in distribution; in the western Atlantic from the northern Gulf of Mexico to Martinique. Bathypelagic.

Hygophum macrochir (Günther). North Atlantic to the western Gulf of Mexico. Bathypelagic.

Hygophum hygomi (Lütken). Atlantic and Indian Oceans; in the western Atlantic from off New England to the northern Gulf of Mexico. Bathypelagic.

Hygophum benoiti (Cocco). Atlantic and Indian Oceans; in the western Atlantic from New Jersey to the northeastern and central Gulf of Mexico. Bathypelagic.

Diogenichthys laternatus (Garman). Worldwide in tropical waters; in the western Atlantic from New Jersey and Bermuda to Uruguay. Bathypelagic.

Diogenichthys atlanticus (Tåning). Worldwide in distribution; in the western Atlantic from the Florida Straits. Bathypelagic.

Gonichthys coccoi (Cocco). Worldwide in distribution; in the western Atlantic from Newfoundland and Bermuda to southern Brazil and the western Gulf of Mexico. Bathypelagic.

Centrobranchus nigroocellatus (Günther). Worldwide in distribution; in the western Atlantic from North Carolina to Florida and the western Gulf of Mexico. Bathypelagic.

Myctophum affine (Lütken). Worldwide in distribution; in the western Atlantic from the Gulf of Maine to Rio de Janeiro and throughout the Gulf of Mexico. Bathypelagic.

Myctophum asperum Richardson. Atlantic and western Pacific; in the western Atlantic from the western Gulf of Mexico. Bathypelagic.

Myctophum obtusirostris Tåning. North Atlantic to the western Gulf of Mexico. Bathypelagic.

Myctophum rufinum Tåning. North Atlantic to the northcentral and western Gulf of Mexico. Bathypelagic.

Notolychnus valdiviae Brauer. Worldwide in tropical waters; in the western Atlantic from New Jersey and Bermuda to off southern Brazil. Bathypelagic.

Diaphus gemellari (Cocco). Worldwide in tropical waters; in the western Atlantic from New Jersey and Bermuda to the Greater Antilles. Bathypelagic.

Diaphus rafinesquei (Cocco). Worldwide in distribution; in the western Atlantic from New Jersey and Bermuda to off northern Argentina. Bathypelagic.

Diaphus dumerili (Bleeker). Worldwide in distribution; in the western Atlantic from New Jersey to Colombia and the northern Gulf of Mexico. Bathypelagic.

Diaphus intermedius Borodin. North Atlantic to the northern Gulf of Mexico. Bathypelagic.

Lampanyctus guentheri Goode and Bean. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Newfoundland to the northeastern Gulf of Mexico. Bathypelagic.

Lampanyctus macdonaldi (Goode and Bean). Both coasts of America; in the western Atlantic from New Jersey to northeastern Florida. Bathypelagic.

Lampanyctus ater Tåning. North Atlantic to the northeastern Gulf of Mexico. Bathypelagic.

Lampanyctus alatus Goode and Bean. Atlantic to the northeastern Gulf of Mexico. Bathypelagic.

Lampanyctus supralateralis Parr. Bahamas to the northwestern Gulf of Mexico. Bathypelagic.

Notoscopelus elongatus (Costa). Worldwide in distribution; in the western Atlantic from Massachusetts and Bermuda to northern Brazil. Bathypelagic.

53. Family Alepisauridae—Lancetfishes

Alepisaurus ferox Lowe—Lancetfish. Both sides of the Atlantic and the North Pacific; in the western Atlantic from Nova Scotia to Cuba and widespread in the Gulf of Mexico. Pelagic.

54. Family Paralepididae

Paralepis brevis brevis Zugmayer. Both sides of the Atlantic; in the western Atlantic from off North Carolina to the Lesser Antilles and the northeastern Gulf of Mexico. Bathypelagic.

Lestidium intermedium (Poey). Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from off North Carolina to northern Brazil and the northeastern Gulf of Mexico. Bathypelagic.

Lestidium affine (Ege). Both sides of the Atlantic; in the western Atlantic from off New Jersey to northern Brazil and the southern Gulf of Mexico. Bathypelagic.

Lestidium atlanticum Borodin. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from off North Carolina to central Brazil and the southern Gulf of Mexico. Bathypelagic.

ORDER CETUNCULI

55. Family Cetomimidae—Whale fishes

Gyrinomimus simplex Parr. Bermuda to the northwestern Gulf of Mexico. Bathypelagic.

ORDER ATELEOPODES

56. Family Ateleopidae

Ijimaia loppei Roule. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico. Pelagic.

ORDER LYOMERI

57. Family Eurypharyngidae—Gulpers

Eurypharynx pelecyanoides Vaillant—Gulper. Worldwide in tropical and temperate waters; widespread in the North Atlantic, south to the Lesser Antilles on the western side. Bathypelagic.

ORDER OSTARIOPHYSI

58. Family Ariidae—Sea catfishes

Galeichthys felis (Linnaeus)—Sea catfish. Cape Cod to Panama and throughout the Gulf of Mexico. Euryhaline.

Bagre marinus (Mitchill)—Gafftopsail catfish. Cape Cod to the West Indies and throughout the Gulf of Mexico. Euryhaline.

59. Family Ictaluridae—North American catfishes

- Ictalurus punctatus* (Rafinesque)—Channel cat. Streams of the Great Lakes region south to Lake Okeechobee, Florida and tributaries of the Gulf of Mexico. Freshwater.
- Ictalurus catus* (Linnaeus)—White catfish. Streams from Massachusetts south to Lake Okeechobee, Florida and tributaries of the Gulf of Mexico. Freshwater.
- Ictalurus nebulosus* (Lesueur)—Brown bullhead. Southern Canada through the eastern United States to southern Florida. Freshwater.
- Ictalurus platycephalus* (Girard)—Snail cat. North Carolina to central Florida and west to the Chattahoochee River basin. Freshwater.
- Ictalurus natalis* (Lesueur)—Yellow cat. Widespread in the eastern United States and throughout Florida. Freshwater.
- Noturus funebris* Gilbert and Swain—Longfin madtom. Florida panhandle and west along the Gulf coast. Freshwater.
- Noturus leptacanthus* Jordan—Gulf madtom. Streams of the southeastern United States to Lake County, Florida. Freshwater.
- Noturus gyrinus* Mitchill—Tadpole madtom. Widespread in the eastern United States south to Lake Okeechobee, Florida. Freshwater.

60. Family Catostomidae—Suckers

- Carpiodes cyprinus* subsp.—River quillback. Lake Erie through the Mississippi Valley to western Florida. Freshwater.
- Carpiodes velifer* (Rafinesque)—Highfin carpsucker. Escambia River, Florida, through the Mississippi Valley. Freshwater.
- Moxostoma poecilurum* Jordan—Blacktail redhorse. Western Florida from the Choctawhatchee River along the Gulf coast to Texas. Freshwater.
- Minytrema melanops* (Rafinesque)—Spotted sucker. Maryland to northern Florida to the upper Mississippi Valley and west to Texas. Freshwater.
- Erimyzon sucetta* (Lacépède)—Eastern chubsucker. New York to the southern tip of Florida. Freshwater.
- Erimyzon oblongus claviformis* (Girard)—Creek chubsucker. Western Florida to Louisiana. Freshwater.
- Erimyzon tenuis* (Agassiz)—Alabama chubsucker. Western Florida to Louisiana. Freshwater.

61. Family Cyprinidae—Minnows

- Cyprinus carpio* Linnaeus—Carp. Native to Asia, but widely introduced in North America. Found in western Florida. Freshwater.
- Notemigonus crysoleucas* (Mitchill)—Golden shiner. Eastern Canada through the eastern United States to southern Florida. Freshwater.
- Semotilus atromaculatus* (Mitchill)—Creek chub. Eastern Canada and United States to northern Florida and New Mexico. Freshwater.
- Opsopoeodus emiliae* Hay—Pugnose minnow. Great Lakes and Mississippi Valley to southern Florida. Freshwater.
- Hybopsis amblops* (Rafinesque)—Bigeye chub. Choctawhatchee River in western Florida to the Mississippi Valley. Freshwater.
- Hybopsis harperi harperi* (Fowler)—Spring redeye chub. Eastern Alabama and northern Florida south to Lake County, Florida. Freshwater.

- Hybopsis harperi subterranea* Hubbs and Crowe—Cave redeye chub. Alachua County, Florida. Freshwater.
- Notropis roseipinnis* Hay—Rosefin shiner. Gulf coast from western Florida to Louisiana. Freshwater.
- Notropis hypselopterus* (Günther)—Sailfish shiner. Georgia to Hillsborough County, Florida, and to Alabama. Freshwater.
- Notropis signipinnis* Bailey and Suttkus—Flagfin shiner. Chipola River in western Florida along the Gulf coast to Louisiana. Freshwater.
- Notropis roseus* (Jordan)—Weed shiner. Western Florida along the Gulf coast to Texas and widespread in the Mississippi Valley. Freshwater.
- Notropis petersoni* Fowler—Peterson's shiner. North Carolina to Martin County, Florida. Freshwater.
- Notropis chalybaeus* (Cope)—Iron-colored shiner. New York to Brevard County, Florida, west to Texas, and widespread in the Mississippi Valley. Freshwater.
- Notropis cummingsae cummingsae* Myers—Lowland shiner. North Carolina to Marion County, Florida, and west to the Apalachicola River, Florida. Freshwater.
- Notropis venustus* (Girard)—Blacktail shiner. Western Florida to Texas, and widespread in the Mississippi Valley. Freshwater.
- Notropis longirostris* (Hay)—Eastern longnose shiner. Western Florida to Mississippi. Freshwater.
- Notropis maculatus* (Hay)—Red minnow. North Carolina to southern Florida and west to Texas. Freshwater.
- Notropis callitaenia* Bailey and Gibbs—Bluestripe shiner. Gulf drainage streams in Georgia, Alabama, and western Florida. Freshwater.
- Ericymba buccata* Cope—Silverjaw minnow. Upper Mississippi Valley and Potomac River inland to northern Florida. Freshwater.
- Hybognathus hayi* Jordan—Cypress minnow. Lower Mississippi Valley to western Florida. Freshwater.

ORDER APODES

62. Family Anguillidae—True eels

Anguilla rostrata (Lesueur)—American eel. Greenland, Labrador, and Bermuda to the Guianas and throughout the Gulf of Mexico. Euryhaline.

63. Family Serrivomeridae

Serrivomer beani Gill and Ryder—Sawtooth eel. Both sides of the Atlantic; in the western Atlantic from New York to northern Brazil and the southern Gulf of Mexico. Bathypelagic.

64. Family Nemichthidae—Snipe eels

Avocettina infans (Günther)—Snipe eel. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from off New Jersey to northern Brazil. Bathypelagic.

Avocettinops schmidti Roule and Bertin. Atlantic and Indian Oceans; in the western Atlantic from New York and from off the north coast of Cuba. Bathypelagic.

65. Family Synphobranchidae

Synphobranchus kaupi Johnson. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Newfoundland to Bahia, Brazil and the northern Gulf of Mexico. Benthic.

Synphobranchus infernalis Gill. Both sides of the Atlantic; in the western Atlantic from New Jersey to Puerto Rico and the southern Gulf of Mexico. Benthic.

66. Family Nettastomidae

Venefica procera (Goode and Bean). Atlantic and western Pacific Oceans; in the western Atlantic from South Carolina to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.

67. Family Congridae—Conger eels

Conger oceanicus (Mitchill)—Sea eel. Gulf of Maine to Brazil and the north-central Gulf of Mexico. Shore.

Conger caudilimbatus (Poey). Both sides of the Atlantic; in the western Atlantic from the Bahamas and the northeastern Gulf of Mexico to Cuba. Shore.

Congermuraena impressa (Poey). Cape Hatteras to Cuba and the northern Gulf of Mexico. Shore.

Congrina flava (Goode and Bean). Florida to Trinidad and throughout the Gulf of Mexico. Shore.

Congrina gracilior Ginsburg. Northern Gulf of Mexico south to Cuba and Yucatán. Shore.

Congrina macrosoma Ginsburg. Gulf of Mexico from off Florida to Louisiana and the Gulf of Campeche. Shore.

Congrina dubius (Breder). Northern Gulf of Mexico to British Honduras. Benthic.

Hoplunnis macrurus Ginsburg. Northern to southwestern Gulf of Mexico. Shore.

Hoplunnis tenuis Ginsburg. Northern Gulf of Mexico to Cuba. Benthic.

Hoplunnis diomedianus Goode and Bean. Both sides of the Atlantic; in the western Atlantic from off Cape San Blas, Florida. Benthic.

Promyllantor schmitti Hildebrand. Florida Keys and the northwestern Gulf of Mexico. Benthic.

Coloconger raniceps Alcock. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from off Tortugas, Florida. Benthic.

68. Family Dysommidae

Dysommia rugosa Ginsburg. Georgia to Tortugas, Florida. Benthic.

69. Family Muraenidae—Moray eels

Gymnothorax funebris Ranzani—Green moray. New Jersey and Bermuda to Rio de Janeiro and the southwestern Gulf of Mexico. Shore.

Gymnothorax moringa (Cuvier)—Spotted moray. Both sides of the Atlantic; in the western Atlantic from Bermuda and North Carolina to Rio de Janeiro and the northern Gulf of Mexico. Shore.

Gymnothorax saxicola Jordan and Davis. New Jersey and Bermuda to Cuba and throughout the Gulf of Mexico. Shore.

Gymnothorax nigromarginatus (Girard). Northern Florida westward through the Gulf of Mexico. Shore.

Gymnothorax vicinus (Castelnau)—Purplemouth moray. Both sides of the Atlantic; in the western Atlantic from Bermuda and Tortugas, Florida, to Bahia, Brazil. Shore.

Muraena retifera Goode and Bean—Reticulated moray. Southern New England to the northern Gulf of Mexico. Shore.

Echidna catenata (Bloch)—Little banded eel. Bermuda and the Florida Keys to Brazil. Shore.

70. Family Ophichthidae

Myrophis punctatus Lütken—Speckled worm eel. Both sides of the Atlantic; in the western Atlantic from Bermuda and North Carolina to Rio Coyanna, Brazil and the northern Gulf of Mexico. Euryhaline.

Ahlia egmontis (Jordan)—Worm eel. Vicinity of the Florida Keys to Maceió, Brazil and the northeastern Gulf of Mexico. Shore.

Caecula conklini (Eigenmann). Southeast Florida to the Bahamas. Shore.

Myrichthys acuminatus (Gronow)—Sharptail eel. Florida Keys to the Lesser Antilles. Shore.

Verma kendalli Gilbert—Kendall's eel. Miami to Key West, Florida. Shore.

Mystriophis intertinctus (Richardson)—Spoonnose snake eel. North Carolina to Bahia, Brazil and the northeastern Gulf of Mexico. Shore.

Mystriophis mordax (Poey). Northern Gulf coast to the Florida Keys and Cuba. Shore.

Ophichthus ocellatus (Lesueur)—Spotted snake eel. North Carolina to Brazil and the northeastern Gulf of Mexico. Shore.

Ophichthus guttifer Bean and Dresel—Florida snake eel. Snapper Banks near Pensacola, Florida. Shore.

Ophichthus retropinnis Eigenmann. Snapper Banks near Pensacola, Florida. Shore.

Ophichthus gomesi (Castelnau)—Gomes' snake eel. Massachusetts to Rio Grande do Sul, Brazil, and the northern Gulf of Mexico. Shore.

Bascanichthys teres (Goode and Bean). Across the northern Gulf of Mexico and to the Florida Keys and Cuba. Shore.

Bascanichthys scuticaris (Goode and Bean)—Whipsnake eel. North Carolina to Florida and across the northern Gulf of Mexico. Shore.

Callechelys muraena Jordan and Evermann—Blotched snake eel. West coast of Florida from Pensacola to Marco. Shore.

Callechelys perryae Storey. Sanibel Island, Florida. Shore.

Letharchus velifer Goode and Bean. North Carolina to the northern Gulf of Mexico. Shore.

Gordüchthys irretitus Jordan and Davis. Snapper Banks near Pensacola, Florida. Shore.

Gordüchthys springeri Ginsburg. Salerno, Florida. Shore.

71. Family Dysommidae

Dysomma aphododera Ginsburg. Northern and southwestern Gulf of Mexico. Shore.

ORDER HETEROMI

72. Family Halosauridae

Halosaurus guentheri Goode and Bean. Off New Jersey to the northeastern Gulf of Mexico. Benthic.

Aldrovandia pallida Goode and Bean. Southern New England to Florida and the northeastern Gulf of Mexico. Benthic.

Aldrovandia gracilis Goode and Bean. Off Massachusetts to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.

73. Family Notacanthidae

Notacanthus analis Gill. New Jersey to the northern Gulf of Mexico. Benthic.

ORDER SYNENTOGNATHI

74. Family Belonidae—Needlefishes

Ablennes hians hians (Valenciennes)—Flat needlefish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Massachusetts and Bermuda to Bahia, Brazil, and widespread in the Gulf of Mexico. Shore.

Strongylura acus (Lacépède)—Agujon. Both sides of the Atlantic; in the western Atlantic from Massachusetts and Bermuda to the West Indies, and widespread in the Gulf of Mexico. Shore.

Strongylura longleyi Breder. Northern and eastern Gulf of Mexico. Shore.

Strongylura marina (Walbaum)—Northern needlefish. Both sides of the Atlantic; in the western Atlantic from Maine to Florida and the northern Gulf of Mexico. Euryhaline.

Strongylura notata (Poey)—Southern needlefish. Bermuda, the Florida Keys, and throughout the Gulf of Mexico. Shore.

Strongylura raphidomá (Ranzani)—Houndfish. Both sides of the Atlantic; in the western Atlantic from New York and Bermuda to Bahia, Brazil and the northeastern Gulf of Mexico. Shore.

Strongylura timucu (Walbaum)—Timucu. Northern Gulf of Mexico to Rio de Janeiro. Euryhaline.

75. Family Scomberesocidae

Scomberesox saurus (Walbaum). Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Newfoundland and Bermuda to Argentina (35°30' S.). Pelagic.

76. Family Hemiramphidae—Halfbeaks

Chriodorus atherinoides Goode and Bean—Hardhead. Gulf of Mexico from the Florida Keys to Yucatán. Shore.

Euleptorhamphus velox Poey—Flying halfbeak. Massachusetts and Bermuda to Hispaniola, and widespread in the Gulf of Mexico. Shore.

Hemiramphus balao Lesueur—Balao. South Carolina to Colombia, and widespread in the Gulf of Mexico. Shore.

Hemiramphus brasiliensis (Linnaeus)—Redtailed balao. Both sides of the Atlantic; in the western Atlantic from Massachusetts and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

Hyporhamphus unifasciatus (Ranzani)—Halfbeak. Eastern Pacific and both sides of the Atlantic; in the western Atlantic from Maine and Bermuda to Argentina (35°30' S.), and widespread in the Gulf of Mexico. Shore.

77. Family Exocoetidae—Flying fishes

Oxyporhamphus micropterus similis Bruun. Atlantic and eastern Pacific; in the western Atlantic from off northeastern Florida to Colombia, and widespread in the Gulf of Mexico. Pelagic.

Parexocoetus brachypterus hillianus (Cosse). Both sides of the Atlantic; in the western Atlantic from New Jersey to Argentina (35°30' S.), and widespread in the Gulf of Mexico. Shore.

- Parexocoetus brachypterus littoralis* Breder. New Jersey to the Lesser Antilles and the southern Gulf of Mexico. Shore.
- Exocoetus volitans* Linnaeus. Both sides of the Atlantic; in the western Atlantic from New Jersey and Bermuda to Argentina (35°30' S.), and the northeastern and northcentral Gulf of Mexico. Pelagic.
- Exocoetus obtusirostris* Günther. Both sides of the Atlantic; in the western Atlantic from off Delaware and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Pelagic.
- Cypselurus cyanopterus* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from South Carolina to Espirito Santo, Brazil, and widespread in the Gulf of Mexico. Shore.
- Cypselurus exsiliens* (Linnaeus). New Jersey and Bermuda to Rio de Janeiro, and widespread in the Gulf of Mexico. Pelagic.
- Cypselurus heterurus* (Rafinesque)—Atlantic flying fish. Both sides of the Atlantic; in the western Atlantic from the Gulf of Maine and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.
- Cypselurus comatus* (Mitchill). Southeastern Florida to northern Brazil. Shore.
- Cypselurus furcatus* (Mitchill)—Spotfin flying fish. Both sides of the Atlantic; in the western Atlantic from New Jersey and Bermuda to Cabo Frio, Brazil, and throughout the Gulf of Mexico. Pelagic.
- Progonichthys gibbifrons* (Valenciennes)—Bluntnose flying fish. Both sides of the Atlantic; in the western Atlantic from southern New England to Espirito Santo, Brazil, and throughout the Gulf of Mexico. Pelagic.
- Hirundichthys affinis* (Günther)—Fourwing flying fish. Both sides of the Atlantic; in the western Atlantic from Virginia to northern Brazil, and widespread in the Gulf of Mexico. Shore.
- Danichthys rondeleti* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from southern New England and Bermuda to Colombia and throughout the Gulf of Mexico. Pelagic.

ORDER MICROCYPRINI

78. Family Cyprinodontidae—Killifishes

- Lucania parva* (Baird and Girard)—Rainwater killifish. Massachusetts to the southern tip of Florida and west to Mexico. Euryhaline.
- Lucania goodei* Jordan—Redfin killifish. Throughout the Florida peninsula. Freshwater.
- Leptolucania ommata* (Jordan)—Ocellated killifish. Southeastern Alabama and southern Georgia to Osceola County, Florida. Freshwater.
- Adinia xenica* (Jordan and Gilbert)—Diamond killifish. Western Florida along the Gulf coast to Texas. Freshwater.
- Fundulus heteroclitus* (Linnaeus)—Mummichog. From Québec to northeastern Florida and Bermuda. Euryhaline.
- Fundulus grandis* Baird and Girard—Gulf killifish. Northeastern Florida to the north coast of Cuba and west to Mexico. Euryhaline.
- Fundulus confluentus* Goode and Bean—Marsh killifish. Maryland to Key West, Florida, and west to Alabama. Freshwater.
- Fundulus majalis* (Walbaum)—Striped killifish. New Hampshire to northeastern Florida. Euryhaline.

- Fundulus similis* (Baird and Girard)—Longnose killifish. Northeastern Florida to Key West and west to Mexico. Euryhaline.
- Fundulus seminolis* Girard—Seminole killifish. Northern and central Florida. Freshwater.
- Fundulus cingulatus* Valenciennes—Banded topminnow. Southern Georgia to southern Florida and west to Alabama. Freshwater.
- Fundulus chrysotus* (Günther)—Golden topminnow. South Carolina to southern Florida and west to Texas. Freshwater.
- Fundulus notti notti* (Agassiz)—Southern starhead topminnow. Western Florida to Texas, and widespread in the Mississippi Valley. Freshwater.
- Fundulus notti lineolatus* (Agassiz)—Eastern starhead topminnow. North Carolina to Highlands County, Florida. Freshwater.
- Fundulus jenkinsi* (Evermann)—Saltmarsh topminnow. Western Florida along the Gulf coast to Texas. Euryhaline.
- Fundulus olivaceus* (Storer)—Blackspot topminnow. Mississippi Valley to the Choctawhatchee River in western Florida, and to eastern Texas. Freshwater.
- Cyprinodon variegatus* Lacépède—Sheepshead killifish. Cape Cod to the southern tip of Florida and west along the Gulf coast to Mexico. Euryhaline.
- Cyprinodon hubbsi* Carr—Lake Eustis sheepshead killifish. Vicinity of Lake Eustis, Florida. Freshwater.
- Floridichthys carpio carpio* (Günther)—Florida goldspotted killifish. Both coasts of southern Florida. Euryhaline.
- Jordanella floridae* Goode and Bean—Flagfish. Throughout Florida and west along the Gulf coast to Mexico. Euryhaline.
- Rivulus cylindraceus* Poey. Southern Florida to Cuba. Euryhaline.

79. Family Poeciliidae—Topminnows

- Gambusia affinis holbrooki* Girard—Eastern mosquitofish. New Jersey to the southern tip of Florida. Euryhaline.
- Gambusia affinis affinis* (Baird and Girard)—Western mosquitofish. Upper Mississippi Valley to western Florida and Texas. Euryhaline.
- Gambusia* sp. (not yet named)—Mangrove mosquitofish. Extreme southern Florida. Euryhaline.
- Heterandria formosa* Agassiz—Least killifish. South Carolina to the southern tip of Florida and west to Louisiana. Euryhaline.
- Mollienesia latipinna* Lesueur—Sailfin molly. South Carolina to the southern tip of Florida and west along the Gulf coast to Mexico. Euryhaline.

ORDER SALMOPERCAE

80. Family Aphredoderidae—Pirate perches

- Aphredoderus sayanus* (Gilliams)—Pirate perch. New York to the southern tip of Florida and west to Texas, also widespread in the Mississippi Valley. Freshwater.

ORDER SOLENICHTHYES

81. Family Syngnathidae—Pipefishes

- Corythoichthys albirostris* Heckel—Whitenose pipefish. Pensacola, Florida, south to Bahia, Brazil. Shore.
- Corythoichthys brachycephalus* (Poey). Florida Keys to the Lesser Antilles. Shore.

- Hippocampus erectus erectus* Perry—Spotted seahorse. Throughout the Gulf of Mexico to Miami and south to Cuba. Shore.
- Hippocampus erectus hudsonius* DeKay—Northern seahorse. Nova Scotia to Argentina (43°30' S.) and the northern Gulf of Mexico. Shore.
- Hippocampus zosterae* Jordan and Gilbert—Dwarf seahorse. Bermuda to Cuba and the northeastern Gulf of Mexico. Shore.
- Hippocampus regulus* Ginsburg. Northern to southwestern Gulf of Mexico. Shore.
- Syngnathus springeri* Herald—Springer's pipefish. South Carolina to Tortugas and the northeastern Gulf of Mexico. Shore.
- Syngnathus dunckeri* Metzelaar—Düncker's pipefish. Bermuda and North Carolina to the Lesser Antilles. Shore.
- Syngnathus elucens* Poey—Poey's pipefish. Bermuda and Key West to the Lesser Antilles. Shore.
- Syngnathus fuscus* Storer—Northern pipefish. Bay of Fundy to St. Augustine, Florida. Shore.
- Syngnathus scovelli* (Evermann and Kendall)—Scovell's pipefish. Northeastern Florida possibly to Panama and throughout the Gulf of Mexico. Euryhaline.
- Syngnathus floridae floridae* (Jordan and Gilbert)—Florida pipefish. Northern coast of the Gulf of Mexico. Shore.
- Syngnathus floridae mackayi* (Swain and Meek)—McKay's pipefish. Southern Florida and the Keys. Shore.
- Syngnathus floridae* subsp. Eastern Gulf of Mexico along the Florida mainland. Shore.
- Syngnathus louisianae* Günther—Louisiana pipefish. Virginia to Jamaica and throughout the Gulf of Mexico. Shore.
- Syngnathus pelagicus* Linnaeus—Sargassum pipefish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from the Gulf of Maine and Bermuda to Argentina (52° S.) and the western and northcentral Gulf of Mexico. Pelagic.
- Syngnathus* sp.—Hildebrand's pipefish. Eastern Gulf of Mexico along the Florida coast. Shore.
- Micrognathus crinitus* (Jenyns). Tortugas, Florida to Bahia, Brazil. Shore.
- Oostethus lineatus* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from South Carolina to Rio de Janeiro, and widespread in the Gulf of Mexico. Euryhaline.
- Micrognathus crinigerus* (Bean and Dresel). Southern Florida to Albroilhos Reef, Brazil, and to the northeastern Gulf of Mexico. Shore.
- Micrognathus vittatus* (Kaup). Bermuda and Tortugas to Argentina and the western Gulf of Mexico. Shore.

82. Family Aulostomidae—Trumpetfishes

- Aulostomus maculatus* Valenciennes—Trumpetfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and southern Florida to Colombia. Shore.

83. Family Fistulariidae—Cornetfishes

- Fistularia tabacaria* Linnaeus—Cornetfish. Both sides of the Atlantic; in the western Atlantic from the Gulf of Maine and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

84. Family Centriscidae—Snipefishes

Macrorhamphosus scolopax (Linnaeus)—Snipefish. Worldwide in tropical and temperate waters; in the western Atlantic from North Carolina to Argentina. Pelagic.

Macrorhamphosus gracilis (Lowe)—Snipefish. Worldwide in tropical and temperate waters; in the western Atlantic from New Jersey to Ilha Rosa, Brazil, and evidently widespread in the Gulf of Mexico. Pelagic.

ORDER ANACANTHINI

85. Family Macrouridae—Grenadiers

Gadomus arcuatus (Goode and Bean). Both sides of the Atlantic; in the western Atlantic from the northern Gulf of Mexico. Benthic.

Gadomus longifilis (Goode and Bean). Worldwide in distribution; in the western Atlantic from the northern Gulf of Mexico. Benthic.

Bathygadus favosus Goode and Bean. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico to the Lesser Antilles. Benthic.

Bathygadus vaillanti Roule and Angel. Both sides of the Atlantic; in the western Atlantic from Tortugas, Florida to the northern Gulf of Mexico. Benthic.

Bathygadus macrops Goode and Bean. Northern and eastern Gulf of Mexico. Benthic.

Hymenocephalus cavernosus (Goode and Bean). Throughout the Gulf of Mexico. Benthic.

Malacocephalus occidentalis Goode and Bean. Both sides of the Atlantic; in the western Atlantic from Tortugas, Florida to the northern Gulf of Mexico. Benthic.

Steindachneria argentea Goode and Bean. Northern Gulf of Mexico. Benthic.

Ventrifossa atlantica Parr. Widespread in the Gulf of Mexico. Benthic.

Nezumia bairdi (Goode and Bean)—Common grenadier. Both sides of the Atlantic; in the western Atlantic from the Gulf of St. Lawrence to the West Indies and the northeastern Gulf of Mexico. Benthic.

Nezumia hildebrandi Parr. Northern Gulf of Mexico to Cuba. Benthic.

Nematonurus armatus (Hector). Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Cape Cod to Uruguay. Benthic.

Cariburus zaniophorus (Vaillant). Both sides of the Atlantic; in the western Atlantic from the northern Gulf of Mexico. Benthic.

Cariburus mexicanus Parr. Northern Gulf of Mexico. Benthic.

Chalinura simila Goode and Bean. Both sides of the Atlantic; in the western Atlantic from New York to northern Florida. Benthic.

Chalinura murrayi (Günther). Both sides of the Atlantic and the western Pacific; in the western Atlantic from the northeastern Gulf of Mexico. Benthic.

Trachonurus sulcatus (Goode and Bean). Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico to the Lesser Antilles. Benthic.

Coelorhynchus caribbaeus (Goode and Bean). Throughout the Gulf of Mexico to the southern Caribbean. Benthic.

Coelorhynchus carminatus (Goode). Nova Scotia to the Lesser Antilles and throughout the Gulf of Mexico. Benthic.

Oxygadus occa (Goode and Bean). Northern Gulf of Mexico. Benthic.

Squalogadus sp. (not yet named). Northeastern Gulf of Mexico. Benthic.

86. Family Moridae

Melanonus unipennis Beebe. Bermuda to the northeastern Gulf of Mexico. Benthic.

Uraleptus maraldi (Risso). Both sides of the Atlantic; in the western Atlantic from the northern Gulf of Mexico to Tortugas and south to the Lesser Antilles. Benthic.

Physiculus fulvus Bean—Hakeling. New York to the northern Caribbean, and widespread in the Gulf of Mexico. Benthic.

Laemonema barbatulum Goode and Bean. Delaware to Tortugas, Florida, and the northeastern Gulf of Mexico. Benthic.

Laemonema melanurum Goode and Bean. New Jersey to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.

Laemonema yarrelli Lowe. Both sides of the Atlantic; in the western Atlantic from the vicinity of Tortugas, Florida. Benthic.

Antimora rostrata Günther—Blue hake. Worldwide in tropic and temperate waters; in the western Atlantic from Newfoundland to Uruguay. Benthic.

87. Family Bregmacerotidae

Bregmaceros atlanticus Goode and Bean. New Jersey to the Lesser Antilles and the northern Gulf of Mexico. Shore.

Bregmaceros cayorum Nichols. Florida Keys. Shore.

88. Family Gadidae—Codfishes

Phycis chesteri Goode and Bean—Longfin hake. Newfoundland to Tortugas, Florida. Benthic.

Urophycis regius (Walbaum)—Spotted hake. Southern New England to Florida and the northern and eastern Gulf of Mexico. Shore.

Urophycis cirratus Goode and Bean. Northern Gulf of Mexico to Tortugas, Florida. Benthic.

Urophycis floridanus (Bean and Dresel). North Carolina to Florida, and widespread in the northern and eastern Gulf of Mexico. Shore.

Merluccius albidus (Mitchill). New York to Tortugas, Florida. Benthic.

Merluccius magnoculus Ginsburg. Northern Gulf of Mexico. Benthic.

ORDER ALLOTRIOPHAGI

89. Family Lampridae—Opahs

Lampris regius (Bonnaterre)—Opah. Worldwide in distribution; in the western Atlantic from Newfoundland to Florida and the eastern Gulf of Mexico. Pelagic.

90. Family Stylephoridae

Stylephorus chordatus Shaw. Worldwide in distribution; in the western Atlantic from the northeastern Gulf of Mexico to the Lesser Antilles. Pelagic.

91. Family Lophotidae—Crestfishes

Lophotus capellei Temminck and Schlegel—Crestfish. Worldwide in distribution; in the western Atlantic from southern Florida to Rio de Janeiro. Pelagic.

Eumecichthys fiski (Günther)—Longnose crestfish. Atlantic and western Pacific Oceans; in the western Atlantic from southern Florida. Pelagic.

92. Family Trachipteridae—Ribbonfishes

Trachipterus cristatus Bonelli²—Scalloped ribbonfish. Worldwide in distribution; in the western Atlantic from Bermuda and the northeastern Gulf of Mexico to Cuba. Pelagic.

Trachipterus sp.—Western Atlantic ribbonfish. New York to the Straits of Florida off Key West. Pelagic.

Trachipterus polystictus Ogilby²—Polkadotted ribbonfish. Worldwide in distribution; in the western Atlantic from northeastern Florida to Cuba. Pelagic.

93. Family Regalecidae—Oarfishes

Regalecus glesne (Ascanius)—Oarfish. Worldwide in distribution; in the western Atlantic from Bermuda, and from the northeastern to the southeastern Gulf of Mexico. Pelagic.

ORDER BERYCOMORPHI

94. Family Stephanoberycidae

Stephanoberyx monae Gill. Southern New England to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.

95. Family Polymixiidae

Polymixia lowei Günther. Long Island to the Lesser Antilles and throughout the Gulf of Mexico. Benthic.

96. Family Diretmidae

Diretmus argenteus Johnson. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and the northeastern Gulf of Mexico. Bathypelagic.

97. Family Trachichthyidae

Hoplostethus mediterraneus Cuvier. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from New Jersey to the Lesser Antilles and the northeastern Gulf of Mexico. Bathypelagic.

98. Family Anoplogastridae—Fangtooths

Anoplogaster cornuta Valenciennes—Fangtooth. Worldwide in distribution; in the western Atlantic from New Jersey to the northeastern and southeastern parts of the Gulf of Mexico. Bathypelagic.

99. Family Melamphaidae—Big scales

Melamphaes megalops Lütken. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico. Bathypelagic.

Melamphaes anthrax (Osorio). Both sides of the Atlantic; in the western Atlantic from Bermuda and the northeastern Gulf of Mexico. Bathypelagic.

100. Family Holocentridae—Squirrelfishes

Myripristis jacobus Cuvier. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico to Tortugas, Florida, and south to Rio de Janeiro. Shore.

Holocentrus coruscus Poey. Bermuda to the Bahamas, Tortugas, Cuba, and the southwestern Gulf of Mexico. Shore.

²New generic names, as yet unpublished, are in press.

Holocentrus bullisi Woods. Bermuda and North Carolina to the northeastern and southwestern Gulf of Mexico. Shore.

Holocentrus rufus (Walbaum). Bermuda and North Carolina to Colombia and the Lesser Antilles. Shore.

Holocentrus ascensionis (Osbeck)—Squirrelfish. Both side of the Atlantic; in the western Atlantic from Bermuda and Florida to Rio de Janeiro and the northern and western Gulf of Mexico. Shore.

Holocentrus marianus Cuvier. North Carolina to the Lesser Antilles. Shore.

Holocentrus vexillarius Poey. New Jersey and Bermuda to Colombia and the northcentral and southwestern Gulf of Mexico. Shore.

ORDER ZEOMORPHI

101. Family Zeidae—Dories

Cyttopsis roseus (Lowe). Both sides of the Atlantic; in the western Atlantic from the northern and eastern Gulf of Mexico. Benthic.

Zenion hololepis (Goode and Bean). Bahamas to Tortugas, Florida, and throughout the Gulf of Mexico. Benthic.

Zenopsis ocellata (Storer). Nova Scotia to the northern and eastern Gulf of Mexico. Benthic.

102. Family Grammicolepidae

Xenolepidichthys dalgleishi Gilchrist. Atlantic and western Pacific; in the western Atlantic from the northern Gulf of Mexico to the Caribbean. Pelagic.

103. Family Antigoniidae—Boarfishes

Antigonia capros Lowe. Atlantic and western Pacific Oceans; in the western Atlantic from Rhode Island to Rio de Janeiro and the northern Gulf of Mexico. Pelagic.

Antigonia browni Fowler. Atlantic and western Pacific Oceans; in the western Atlantic from New Jersey to southern Florida. Pelagic.

ORDER PERCOMORPHI

104. Family Serranidae—Sea basses

Alphestes afer (Bloch)—Cherna. Bermuda and Tortugas, Florida to Argentina (52° S.) and the Falkland Islands. Shore.

Centropristes philadelphicus (Linnaeus)—Gulf seabass. South Carolina to Tortugas, Florida, and widespread in the Gulf of Mexico. Shore.

Centropristes melanus Ginsburg. Eastern and northern Gulf of Mexico. Shore.

Centropristes striatus (Linnaeus)—Black seabass. Maine to northern Florida. Shore.

Centropristes ocyurus (Jordan and Evermann). North Carolina to Florida and the northern Gulf of Mexico. Shore.

Chlorististium sp. (not yet named). Northeastern Gulf of Mexico. Shore.

Serraniculus pumilio Ginsburg. North Carolina to Florida and the northeastern and southwestern Gulf of Mexico. Shore.

Paracentropristes pomospilus Ginsburg. Throughout the Gulf of Mexico. Shore.

Dermatolepis zanchus Evermann and Kendall—Sicklefin grouper. Southern Florida. Shore.

Dermatolepis inermis (Valenciennes)—Marbled grouper. Bermuda and southern Florida to Fernando de Noronha, Brazil. Shore.

- Diplectrum arcuarium* Ginsburg. Northern to southwestern Gulf of Mexico. Shore.
- Diplectrum radiale* (Quoy and Gaimard). Tortugas, Florida to Uruguay. Shore.
- Diplectrum formosum* (Linnaeus)—Sandperch. North Carolina to Uruguay and throughout the Gulf of Mexico. Shore.
- Serranellus subligarius* (Cope)—Belted sandfish. North Carolina to Tortugas, Florida, and the northern Gulf of Mexico. Shore.
- Cephalopholis taeniops* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from southern Florida to the West Indies. Shore.
- Cephalopholis fulvus* (Linnaeus)—Coney. Bermuda and the Florida Keys to Rio de Janeiro and the western Gulf of Mexico. Shore.
- Epinephelus adscensionis* (Osbeck)—Rock hind. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Bahia, Brazil and the western Gulf of Mexico. Shore.
- Epinephelus drummondhayi* Goode and Bean—Speckled hind. Bermuda and South Carolina to Florida and the northern Gulf of Mexico. Shore.
- Epinephelus guttatus* (Linnaeus)—Red hind. Bermuda and North Carolina to Brazil and the western Gulf of Mexico. Shore.
- Epinephelus morio* (Cuvier)—Red grouper. Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.
- Epinephelus mystacinus* (Poey)—Cherna de lo Alto. Bermuda and Florida to Brazil. Shore.
- Epinephelus niveatus* (Valenciennes)—Snowy grouper. Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.
- Epinephelus striatus* (Bloch)—Nassau grouper. Bermuda and North Carolina to Bahia, Brazil, and the eastern and northwestern Gulf of Mexico. Shore.
- Garrupa nigrita* (Holbrook)—Black jewfish. New Jersey and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Shore.
- Gonioplectrus hispanus* Cuvier—Spanish flag. Northeastern Gulf of Mexico to the Lesser Antilles. Shore.
- Hemianthias vivanus* (Jordan and Swain)—Red barbier. Northern and eastern Gulf of Mexico. Shore.
- Hemianthias leptus* (Ginsburg). Northern Gulf of Mexico. Shore.
- Hypoplectrus gemma* Goode and Bean. Florida Keys. Shore.
- Hypoplectrus puella* (Cuvier). Florida Keys. Shore.
- Hypoplectrus unicolor* (Walbaum)—Butter hamlet. Bermuda and Florida to Panama and the northwestern Gulf of Mexico. Shore.
- Liopropoma aberrans* (Poey). Tortugas, Florida to Cuba. Shore.
- Mycteroperca bonaci* (Poey)—Black grouper. Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.
- Mycteroperca falcata* (Poey)—Scamp. Bermuda to Bahia, Brazil, and widespread in the Gulf of Mexico. Shore.
- Mycteroperca interstitialis* (Poey)—Princess rockfish. Massachusetts to Florida and Cuba. Shore.
- Mycteroperca microlepis* (Goode and Bean)—Gag. Bermuda and Virginia to Rio de Janeiro and the northern Gulf of Mexico. Shore.
- Mycteroperca phenax* Jordan and Swain—Bacalao. Florida Keys. Shore.
- Mycteroperca tigris* (Valenciennes)—Tiger rockfish. Bermuda to Florida and the Lesser Antilles. Shore.

- Mycteroperca venenosa venenosa* (Linnaeus)—Yellowfin grouper. Bermuda and North Carolina to Cuba and the southern Gulf of Mexico. Shore.
- Mycteroperca venenosa apua* (Bloch). Florida Keys to Ilha dos Buzios, Brazil. Shore.
- Mycteroperca xanhosticta* (Jordan and Swain). Vicinity of Pensacola, Florida. Shore.
- Ocyanthias martinicensis* (Guichenot). Northeastern Gulf of Mexico to Tortugas, Florida, and south to the Lesser Antilles. Shore.
- Paranthias furcifer* (Cuvier)—Creole fish. Both coasts of the Atlantic and the eastern Pacific; in the western Atlantic from Bermuda to Ilha Victoria, Brazil, and the northeastern Gulf of Mexico. Shore.
- Petrometopon cruentatus cruentatus* (Lacépède)—Graysby. Bermuda and Florida to Bahia, Brazil, and the southwestern Gulf of Mexico. Shore.
- Petrometopon cruentatus coronatus* (Valenciennes)—Brown hind. Florida Keys to Colombia. Shore.
- Polyprion americanus* (Bloch and Schneider)—Wreckfish. Both sides of the Atlantic; in the western Atlantic from Newfoundland to Argentina (38° S.) and the northwestern Gulf of Mexico. Shore.
- Prionodes baldwini* Evermann and Marsh. Tortugas, Florida to Puerto Rico. Shore.
- Prionodes fuscus* (Poey). Tortugas, Florida to Cuba. Shore.
- Prionodes nigropunctatus* Hildebrand. Tortugas, Florida. Shore.
- Prionodes notospilus* (Longley). Eastern and southwestern Gulf of Mexico. Shore.
- Prionodes phoebe* (Poey)—Tattler. Bermuda and Florida to Cuba and the eastern and northcentral Gulf of Mexico. Shore.
- Promicrops itaiara* (Lichtenstein)—Spotted jewfish. Both coasts of tropical America; in the western Atlantic from Bermuda and Florida to Rio de Janeiro and the northern Gulf of Mexico. Shore.
- Pronotogrammus aureorubens* Longley. Northeastern Gulf of Mexico to the vicinity of Tortugas, Florida. Shore.
- Pseudogrammus brederi* (Hildebrand). Tortugas, Florida. Shore.
- Roccus saxatilis* (Walbaum)—Striped bass. Gulf of St. Lawrence to northern Florida and the northeastern Gulf of Mexico. Euryhaline.
- Rypticus arenatus* Cuvier. Both sides of the Atlantic; in the western Atlantic from the northern and eastern Gulf of Mexico to Bahia, Brazil. Shore.
- Rypticus saponaceus saponaceus* (Bloch and Schneider)—Soapfish. Both sides of the Atlantic; in the western Atlantic from Rhode Island and Bermuda to Bahia, Brazil, and throughout the Gulf of Mexico. Shore.
- Serranus beta* Hildebrand. Tortugas, Florida. Shore.
- Serranus tortugarum* Longley. Tortugas, Florida. Shore.

105. Family Centrarchidae—Sunfishes

- Micropterus notius* Bailey and Hubbs—Suwannee Bass. Suwannee River system, Florida. Freshwater.
- Micropterus punctulatus* (Rafinesque)—Northern spotted bass. Mississippi Valley to the Apalachicola River in western Florida. Freshwater.
- Micropterus* sp.—Chipola bass. Chipola River system, Florida. Freshwater.
- Micropterus salmoides salmoides* Lacépède—Northern largemouth bass. Virginia to northern Florida and westward through the Mississippi Valley. Freshwater.

- Micropterus salmoides floridanus* (Lesueur)—Florida largemouth bass. Florida peninsula. Freshwater.
- Chaenobryttus gulosus* (Cuvier)—Warmouth. Widespread in the eastern and southwestern United States, to the southern tip of Florida. Freshwater.
- Lepomis punctatus punctatus* (Valenciennes)—Stumpknocker. North Carolina to the southern tip of Florida. Freshwater.
- Lepomis punctatus mineatus* (Jordan)—Redspotted sunfish. Mississippi Valley to western Florida. Freshwater.
- Lepomis microlophus* (Günther)—Shellcracker. Georgia to the southern tip of Florida and west to Texas. Freshwater.
- Lepomis auritus* (Linnaeus)—Redbreast. Maine to central Florida. Freshwater.
- Lepomis megalotis* (Rafinesque)—Longear sunfish. Mississippi Valley to western Florida. Freshwater.
- Lepomis macrochirus* Rafinesque—Bluegill. Southern Canada and the Great Lakes region through the Mississippi Valley and southeast to southern Florida. Freshwater.
- Lepomis marginatus* (Holbrook)—Dollar sunfish. South Carolina to central Florida and west to the lower Mississippi Valley and Texas. Freshwater.
- Enneacanthus obesus* (Girard)—Banded sunfish. Southern New Hampshire to central Florida. Freshwater.
- Enneacanthus gloriosus* (Holbrook)—Bluespotted sunfish. New York to southern Florida. Freshwater.
- Enneacanthus chaetodon elizabethae* (Bailey)—Blackbanded sunfish. Southern Georgia to northern Florida. Freshwater.
- Ambloplites rupestris ariommus* Viosca—Southern rockbass. Lower Mississippi Valley and Gulf coast to the Choctawhatchee River in western Florida. Freshwater.
- Acantharchus pomotis* (Baird)—Mudperch. New York to Alachua County, Florida. Freshwater.
- Pomoxis nigromaculatus* (Lesueur)—Speckled perch. Throughout the eastern United States to Texas and southern Florida. Freshwater.
- Centrarchus macropterus* (Lacépède)—Flier. Virginia to central Florida and westward to the Mississippi Valley. Freshwater.
- Elassoma zonatum* Jordan—Banded pygmy sunfish. Mississippi Valley to Texas and to Marion County, Florida. Freshwater.
- Elassoma evergladei* Jordan—Everglade pygmy sunfish. Southern Georgia to southern Florida. Freshwater.
- Elassoma okefenokee* Böhlke. Southern Georgia to central Florida. Freshwater.

106. Family Percidae—Perches

- Percina nigrofasciata nigrofasciata* (Agassiz)—Crawl-a-bottom. South Carolina to Orange County, Florida, and west to Louisiana. Freshwater.
- Percina uranidea* (Jordan and Gilbert)—Stargazing darter. Lower Mississippi Valley to western Florida. Freshwater.
- Percina caprodes carbonaria* (Baird and Girard)—Logperch. Lower Mississippi Valley to Texas and to western Florida. Freshwater.
- Ammocrypta beani* Jordan—Naked sand darter. Mississippi to the Choctawhatchee River in western Florida. Freshwater.
- Boleosoma* sp. Oklawaha River, Florida. Freshwater.

Etheostoma saxatile (Hay)—Speckled darter. Gulf coast to western Florida. Freshwater.

Etheostoma stigmaeum (Jordan)—Snubnose darter. Lower Mississippi Valley to western Florida. Freshwater.

Etheostoma edwini (Hubbs and Cannon)—Brown darter. Southern Georgia and Alabama to northern Florida. Freshwater.

Etheostoma barratti (Holbrook)—Florida swamp darter. South Carolina to Lake Okeechobee and west through the lower Mississippi Valley to Texas. Freshwater.

Etheostoma proeliare (Hay)—Cypress darter. Western Florida to Mississippi. Freshwater.

Etheostoma swaini (Jordan)—Gulf darter. Louisiana to western Florida. Freshwater.

107. Family Priacanthidae—Catalufas

Priacanthus arenatus Cuvier—Catalufa. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Argentina (35° S.), and widespread in the Gulf of Mexico. Shore.

Priacanthus cruentatus (Lacépède)—Bigeye. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from southern Florida to Rio de Janeiro. Shore.

Pristigenys altus (Gill)—Short bigeye. Bermuda and the Gulf of Maine to the West Indies and throughout the Gulf of Mexico. Shore.

108. Family Apogonidae—Cardinal fishes

Apogon americanus Castelnau. Tortugas, Florida to Bahia, Brazil. Shore.

Apogon aurolineatus (Mowbray). Tortugas, Florida to the Lesser Antilles. Shore.

Apogon binotatus (Poey). Bermuda and the Florida Keys to Venezuela. Shore.

Apogon conklini (Silvester). Bahamas and the Florida Keys to Puerto Rico and Panama. Shore.

Apogon imberbis (Linnaeus). Both sides of the Atlantic; in the western Atlantic from Rhode Island to northern Brazil. Shore.

Apogon maculatus (Poey)—Spotted cardinal fish. Bermuda and Massachusetts to Bahia, Brazil, and the eastern Gulf of Mexico. Shore.

Apogon pigmentarius (Poey). Bermuda and Florida to Panama and the northeastern Gulf of Mexico. Shore.

Apogon planifrons Longley and Hildebrand. Tortugas, Florida. Shore.

Apogon pseudomaculatus Longley. Bermuda and Florida to the northeastern and southwestern Gulf of Mexico. Shore.

Apogon quadrisquamatus Longley. Tortugas, Florida. Shore.

Apogonichthys alatus (Jordan and Gilbert)—Pensacola cardinal fish. North Carolina to Puerto Rico and to the northeastern Gulf of Mexico. Shore.

Apogonichthys stellatus (Cope)—Conchfish. Bermuda and the Florida Keys to Colombia and the southwestern Gulf of Mexico. Shore.

Oxyodon sp. Near Tortugas, Florida. Benthic.

Epigonus pandionis (Goode and Bean). Virginia to the northern Gulf of Mexico. Benthic.

Synagrops bella (Goode and Bean). Both sides of the Atlantic; in the western Atlantic from North Carolina to Florida and throughout the Gulf of Mexico. Benthic.

Synagrops spinosa Schultz. Northeastern Gulf of Mexico. Benthic.

Parascombrops sp. Northeastern Gulf of Mexico. Benthic.

109. Family Malacanthidae—Matajuelos

Caulolatilus cyanops Poey. New Jersey to Puerto Rico, and widespread in the Gulf of Mexico. Shore.

Caulolatilus microps Goode and Bean. New Jersey to Florida and the central and northeastern Gulf of Mexico. Shore.

Caulolatilus intermedius Howell Rivero. Northeastern and southwestern Gulf of Mexico to Cuba. Shore.

Lopholatilus chamaeleonticeps Goode and Bean—Tilefish. Nova Scotia to Florida, and widespread in the Gulf of Mexico. Shore.

Malacanthus plumieri (Bloch)—Matajuelo blanco. Bermuda and South Carolina to Bahia, Brazil and the northern and eastern Gulf of Mexico; also to Ascension Island. Shore.

110. Family Pomatomidae—Bluefishes

Pomatomus saltatrix (Linnaeus)—Bluefish. Worldwide in distribution; in the western Atlantic from Nova Scotia and Bermuda to Argentina (40° S.), and widespread in the Gulf of Mexico. Pelagic.

111. Family Rachycentridae—Cobias

Rachycentron canadus (Linnaeus)—Cobia. Worldwide in distribution; in the western Atlantic from Bermuda and Massachusetts to Argentina (35° S.), and widespread in the Gulf of Mexico. Shore.

112. Family Carangidae—Jacks

Seriola falcata (Valenciennes)—Almaco amberjack. Both sides of the Atlantic; in the western Atlantic from Bermuda and North Carolina to Buenos Aires, Argentina and the northern Gulf of Mexico. Pelagic.

Seriola fasciata (Bloch)—Little amberjack. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Cuba and the northeastern and southwestern Gulf of Mexico. Pelagic.

Seriola zonata (Mitchill)—Slender amberjack. Nova Scotia and Bermuda to Santos, Brazil, and throughout the Gulf of Mexico. Pelagic.

Seriola dumerili (Risso)—Great amberjack. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Puerto Rico, and widespread in the Gulf of Mexico. Shore.

Elagatis bipinnulatus (Quoy and Gaimard)—Rainbow runner. Worldwide in tropical waters; in the western Atlantic from Massachusetts to Colombia and the northern Gulf of Mexico. Pelagic.

Trachinotus falcatus (Linnaeus)—Round pompano. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Rio Grande do Sul, Brazil, and widespread in the Gulf of Mexico. Pelagic.

Trachinotus glaucus (Bloch)—Longfin pompano. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Argentina (39° S.), and widespread in the Gulf of Mexico. Pelagic.

Trachinotus carolinus (Linnaeus)—Common pompano. Bermuda and Massachusetts to Santos, Brazil and throughout the Gulf of Mexico. Pelagic.

- Naucrates ductor* (Linnaeus)—Pilot fish. Worldwide in tropical waters; in the western Atlantic from Nova Scotia and Bermuda to Argentina (35° 30' S.) and the northeastern Gulf of Mexico. Pelagic.
- Selar crumenophthalmus* (Bloch)—Bigeye scad. Worldwide in tropical waters; in the western Atlantic from Nova Scotia and Bermuda to Rio de Janeiro and throughout the Gulf of Mexico. Pelagic.
- Decapterus macarellus* (Cuvier)—Mackerel scad. Nova Scotia and Bermuda to Fernando de Noronha, Brazil. Pelagic.
- Decapterus punctatus* (Agassiz)—Round scad. Both sides of the Atlantic; in the western Atlantic from Bermuda and Nova Scotia to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Pelagic.
- Trachurus lathami* Nichols—Rough scad. Maine to Florida and throughout the Gulf of Mexico. Pelagic.
- Caranx latus* Agassiz—Horse-eye jack. New Jersey and Bermuda to Rio de Janeiro, and widespread in the Gulf of Mexico. Pelagic; occasionally in freshwater.
- Caranx bartholomaei* Cuvier—Yellow jack. Massachusetts to Maceió, Brazil, and the northern Gulf of Mexico. Pelagic.
- Caranx crysos* (Mitchill)—Blue runner. Both sides of the Atlantic; in the western Atlantic from Nova Scotia and Bermuda to São Paulo, Brazil, and throughout the Gulf of Mexico. Pelagic.
- Caranx ruber* (Bloch)—Runner. Bermuda and off New Jersey probably to Rio de Janeiro, and widespread in the Gulf of Mexico. Pelagic.
- Caranx hippos* (Linnaeus)—Common jack. Worldwide in tropical and temperate waters; in the western Atlantic from Nova Scotia to Uruguay (35° 30' S.) and throughout the Gulf of Mexico. Pelagic; occasionally in freshwater.
- Caranx lugubris* (Poey)—Tinosá. Worldwide in tropical and temperate waters; in the western Atlantic from Bermuda to Santos, Brazil, and the northeastern Gulf of Mexico. Pelagic.
- Hemicaranx amblyrhynchus* (Cuvier). North Carolina to Santos, Brazil and the northern Gulf of Mexico. Pelagic.
- Uraspis heidi* Fowler. New Jersey to the northeastern Gulf of Mexico. Pelagic.
- Chloroscombrus chrysurus* (Linnaeus)—Bumper. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Uruguay (35° 30' S.) and throughout the Gulf of Mexico. Pelagic.
- Alectis crinitus* (Mitchill)—African pompano. Both coasts of the Atlantic and the eastern Pacific; in the western Atlantic from Massachusetts to Santos, Brazil, and the western and southern Gulf of Mexico. Pelagic.
- Vomer setapinnis* (Mitchill)—Moonfish. Eastern Pacific and both sides of the Atlantic; in the western Atlantic from Nova Scotia to Uruguay and throughout the Gulf of Mexico. Pelagic.
- Vomer dorsalis* Gill (records may be referable to above species). Both sides of the Atlantic; in the western Atlantic from southeastern Florida and the eastern Gulf of Mexico to Yucatán. Pelagic.
- Selene vomer* (Linnaeus)—Lookdown. Eastern Pacific and both sides of the Atlantic; in the western Atlantic from Nova Scotia and Bermuda to Argentina (38° S.), and widespread in the Gulf of Mexico. Pelagic.
- Oligoplites saurus saurus* (Bloch and Schneider)—Leatherjacket. Gulf of Maine to Uruguay and throughout the Gulf of Mexico. Pelagic.

113. Family Coryphaenidae—Dolphins

Coryphaena hippurus Linnaeus—Dorado. Worldwide in tropical waters; in the western Atlantic from Nova Scotia and Bermuda to Brazil and throughout the Gulf of Mexico. Pelagic.

Coryphaena equisetis Linnaeus—Small dolphin. Worldwide in tropical waters; in the western Atlantic from Maryland and Bermuda to Florida and throughout the Gulf of Mexico. Pelagic.

114. Family Bramidae—Pomfrets

Taractes princeps (Johnson)—Freira do alto. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to the northeastern Gulf of Mexico. Pelagic.

Pterycombus goodei (Jordan)—Fan fish. South Carolina to the Cayman Islands and the northeastern Gulf of Mexico. Pelagic.

Brama brama (Bonnatere)—Common pomfret. Worldwide in distribution; in the western Atlantic from Massachusetts and Bermuda to Cuba. Pelagic.

115. Family Centropomidae—Snooks

Centropomus ensiferus Poey—Snook. Both sides of the Atlantic; in the western Atlantic from southern Florida to Rio de Janeiro. Shore.

Centropomus parallelus Poey—Fat snook. Southern Florida to Santos, Brazil. Euryhaline.

Centropomus pectinatus Poey—Cuban snook. Both coasts of tropical America; in the western Atlantic from southern Florida and the east coast of Mexico to Rio de Janeiro. Euryhaline.

Centropomus undecimalis (Bloch)—Thin snook. Both coasts of tropical America; in the western Atlantic from South Carolina to Rio de Janeiro and the northern Gulf of Mexico. Euryhaline.

116. Family Lutjanidae—Snappers

Etelides aquilonaris (Goode and Bean). Carolina coast to Tortugas, Florida. Shore.

Etelis oculatus (Cuvier)—Cachucho. Atlantic and western Pacific Oceans; in the western Atlantic from Bermuda to the Lesser Antilles and the southern Gulf of Mexico. Shore.

Lutjanus analis (Valenciennes)—Muttonfish. Massachusetts to Rio de Janeiro and the northern and eastern Gulf of Mexico. Shore.

Lutjanus aya (Bloch)—Red snapper. Massachusetts to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

Lutjanus buccanella Cuvier—Blackfin snapper. Bermuda and North Carolina to the Lesser Antilles and the southwestern Gulf of Mexico. Shore.

Lutjanus apodus (Walbaum)—Schoolmaster. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Bahia, Brazil, and the northern and eastern Gulf of Mexico. Euryhaline.

Lutjanus griseus (Linnaeus)—Mangrove snapper. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro and throughout the Gulf of Mexico. Euryhaline.

Lutjanus cyanopterus (Valenciennes)—Cubera. Southern Florida to Brazil. Shore.

- Lutjanus jocu* (Bloch and Schneider)—Dog snapper. Massachusetts to Natal, Brazil, and widespread in the Gulf of Mexico. Shore.
- Lutjanus synagris* (Linnaeus)—Spot snapper. Bermuda and North Carolina to Santos, Brazil, and throughout the Gulf of Mexico. Shore.
- Lutjanus vivanus* (Cuvier)—Silk snapper. Bermuda and North Carolina to Colombia, and widespread in the Gulf of Mexico. Shore.
- Lutjanus ambiguus* (Poey)—Cuban snapper. Key West, Florida to Cuba. Shore.
- Lutjanus mahogoni* (Cuvier)—Mahogany snapper. North Carolina to Colombia. Shore.
- Ocyurus chrysurus* (Bloch)—Yellowtail snapper. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.
- Pristipomoides andersoni* Ginsburg. Throughout the Gulf of Mexico. Shore.
- Rhomboplites aurorubens* (Cuvier)—Vermilion snapper. Bermuda and North Carolina to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

117. Family Pomadasysidae—Grunts

- Pomadasys crocro* (Cuvier)—Ticopa. Southern Florida to São João da Barra, Brazil, and the northwestern Gulf of Mexico. Euryhaline.
- Anisotremus surinamensis* (Bloch)—Black margate. Florida to Bahia, Brazil, and the northern Gulf of Mexico. Shore.
- Anisotremus virginicus* (Linnaeus)—Porkfish. Bermuda and southern Florida to Santa Catarina, Brazil, and the eastern and southern Gulf of Mexico. Shore.
- Bathystoma aurolineatum rimator* (Jordan and Swain)—Tomtate. Virginia to the Florida Keys and throughout the Gulf of Mexico. Shore.
- Brachygenys chrysargyreus* (Günther)—Bronze grunt. Northeastern Gulf of Mexico to Fernando de Noronha, Brazil. Shore.
- Haemulon melanurum* (Linnaeus)—French margatefish. Bermuda and the Florida Keys to Bahia, Brazil, and southern Mexico. Shore.
- Haemulon macrostomum* Günther—Spanish grunt. Bermuda and the Florida Keys to Colombia and the eastern and northwestern Gulf of Mexico. Shore.
- Haemulon bonariense* Cuvier—Black grunt. Bermuda and the Florida Keys to Argentina (36° S.). Shore.
- Haemulon album* Cuvier—Margate. Bermuda and the Florida Keys to Brazil and the southwestern Gulf of Mexico. Shore.
- Haemulon carbonarium* Poey—Caesar grunt. Bermuda and the Florida Keys to Bahia, Brazil. Shore.
- Haemulon flavolineatum* (Desmarest)—French grunt. Bermuda and South Carolina to Brazil and the southwestern Gulf of Mexico. Shore.
- Haemulon parra* (Desmarest)—Ronco. Florida Keys to Bahia, Brazil, and the northwestern Gulf of Mexico. Shore.
- Haemulon sciurus* (Shaw)—Yellow grunt. Bermuda and the Florida Keys to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.
- Haemulon plumieri* (Lacépède)—White grunt. Virginia to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.
- Orthopristis chrysopterus* (Linnaeus)—Pigfish. Bermuda and Massachusetts to Florida and throughout the Gulf of Mexico. Shore.

118. Family Lobotidae—Tripletails

Lobotes surinamensis (Bloch)—Tripletail. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and Massachusetts to Argentina (38° S.) and throughout the Gulf of Mexico. Pelagic.

119. Family Leiognathidae—Mojarras

Diapterus olisthostomus (Goode and Bean)—Irish pompano. Northeastern Florida to Bahia, Brazil. Euryhaline.

Eucinostomus argenteus Baird and Girard—Mojarra. Both coasts of tropical America; in the western Atlantic from New Jersey to Rio de Janeiro, and widespread in the Gulf of Mexico. Euryhaline.

Eucinostomus pseudogula Poey. Bermuda and southern Florida to Bahia, Brazil; a questionable record from New York. Shore.

Eucinostomus gula (Quoy and Gaimard)—Silver jenny. Bermuda and Massachusetts to Argentina (38° S.) and throughout the Gulf of Mexico. Shore.

Lepidochir havana (Nichols)—Cuban mojarra. Bermuda and the Florida Keys to Natal, Brazil. Shore.

Ulaema lefroyi (Goode)—Florida mojarra. Bermuda and North Carolina to Natal, Brazil, and the northeastern Gulf of Mexico. Shore.

Eugerres brasilianus (Valenciennes)—Patao. South Carolina to Santos, Brazil, and the northwestern Gulf of Mexico. Shore.

Eugerres plumieri (Cuvier). Southwestern Florida to Bahia, Brazil, and west to Mexico. Shore.

Gerres cinereus (Walbaum)—Gray mojarra. Both coasts of tropical America; in the western Atlantic from Bermuda and the Florida Keys to Rio de Janeiro and the northern and western Gulf of Mexico. Euryhaline.

120. Family Sciaenidae—Croakers

Bairdiella chrysura (Lacépède)—Silver perch. New York to Florida and throughout the Gulf of Mexico. Shore.

Cynoscion nebulosus (Cuvier)—Spotted squeteague. Both sides of the Atlantic; in the western Atlantic from New York to Florida and throughout the Gulf of Mexico. Euryhaline.

Cynoscion nothus (Holbrook)—Silver squeteague. Maryland to Florida and throughout the Gulf of Mexico. Shore.

Cynoscion arenarius Ginsburg—Sand squeteague. Throughout the Gulf of Mexico. Euryhaline.

Cynoscion regalis (Bloch and Schneider)—Weakfish. Nova Scotia to eastern Florida. Shore.

Equetus acuminatus (Bloch and Schneider)—Cubbyu. Bermuda and North Carolina to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

Equetus lanceolatus (Linnaeus)—Equetus. Bermuda and North Carolina to Bahia, Brazil and the northeastern and southern Gulf of Mexico. Shore.

Equetus pulcher (Steindachner)—Striped equetus. Florida Keys to the Lesser Antilles. Shore.

Equetus umbrosus (Jordan and Eigenmann). South Carolina to Florida and the northeastern Gulf of Mexico. Shore.

Equetus punctatus (Bloch and Schneider)—Spotted equetus. Southeastern Florida to Hispaniola. Shore.

- Larimus fasciatus* Holbrook—Banded croaker. Massachusetts to Florida and the northern Gulf of Mexico. Shore.
- Leiostomus xanthurus* Lacépède—Spot. Gulf of Maine to Florida and throughout the Gulf of Mexico. Euryhaline.
- Menticirrhus americanus* (Linnaeus)—Southern king whiting. New York to Argentina (40° S.) and the northern Gulf of Mexico. Shore.
- Menticirrhus littoralis* (Holbrook)—Gulf king whiting. Virginia to Florida and throughout the Gulf of Mexico. Shore.
- Menticirrhus focaliger* Ginsburg—Gulf minkfish. Widespread in the Gulf of Mexico. Shore.
- Menticirrhus saxatilis* (Bloch and Schneider)—King whiting. Maine to Florida. Shore.
- Micropogon undulatus* (Linnaeus)—Atlantic croaker. Massachusetts to Argentina (40° S.) and throughout the Gulf of Mexico. Euryhaline.
- Odontoscion dentex* (Cuvier)—Corvina. Key Largo, Florida to Bahia, Brazil, and probably as far south as the Rio Negro, Argentina. Shore.
- Pogonias cromis* (Linnaeus)—Black drum. Massachusetts to Argentina (40° S.) and the northern and eastern Gulf of Mexico. Euryhaline.
- Sciaenops ocellata* (Linnaeus)—Red drum. Massachusetts to Florida and the northern and eastern Gulf of Mexico. Euryhaline.
- Stellifer lanceolatus* (Holbrook)—Star drum. Virginia to Florida and the northern Gulf of Mexico. Shore.
- Umbrina coroides* Cuvier—Roncador. Virginia to Santos, Brazil, and the southwestern Gulf of Mexico. Shore.
- Vacuqua stalis* (Jordan and Eigenmann)—Vacouca. Florida Keys. Shore.

121. Family Mullidae—Goatfishes

- Mulloidichthys martinicus* (Cuvier)—Yellow goatfish. Bermuda and the Florida Keys to the Lesser Antilles, Panama, and the western Gulf of Mexico. Shore.
- Mullus auratus* Jordan and Gilbert—Northern goatfish. Bermuda and Nova Scotia to the West Indies and throughout the Gulf of Mexico. Shore.
- Pseudupeneus maculatus* (Bloch)—Spotted goatfish. New Jersey and Bermuda to Rio de Janeiro and the southern and northeastern Gulf of Mexico. Shore.
- Upeneus parvus* Poey. Eastern Florida to the Lesser Antilles and throughout the Gulf of Mexico. Shore.

122. Family Sparidae—Porgies

- Archosargus rhomboidalis* (Linnaeus) [= *A. unimaculatus* (Bloch)]—Sea bream. New Jersey to Rio de Janeiro and the eastern Gulf of Mexico, and west to Yucatán. Shore.
- Archosargus probatocephalus* (Walbaum) [= *A. oviceps* Ginsburg]—Sheepshead. Nova Scotia to Florida and throughout the Gulf of Mexico. Euryhaline.
- Calamus arcifrons* Goode and Bean—Grass porgy. Florida to Ilha Grande, Brazil, and the northeastern Gulf of Mexico. Shore.
- Calamus bajonado* (Bloch and Schneider)—Jolthead porgy. Bermuda and Rhode Island to Porto Seguro, Brazil, and the northwestern Gulf of Mexico. Shore.
- Calamus calamus* (Valenciennes)—Saucereye porgy. Bermuda and North Carolina to Bahia, Brazil, and the northwestern Gulf of Mexico. Shore.
- Calamus leucosteus* Jordan and Gilbert—Whitebone porgy. South Carolina to Florida and the northeastern and western Gulf of Mexico. Shore.

- Calamus penna* (Valenciennes)—Littlemouth porgy. Florida to Rio Grande do Sul, Brazil, and the eastern and northwestern Gulf of Mexico. Shore.
- Calamus proridens* Jordan and Gilbert—Littlehead porgy. Florida Keys to Hispaniola and the northeastern and southwestern Gulf of Mexico. Shore.
- Diplodus holbrookii* (Bean)—Spottail pinfish. Chesapeake Bay to Florida and the northeastern Gulf of Mexico. Euryhaline.
- Diplodus argenteus* (Valenciennes)—Sargo. Bermuda and eastern Florida to Argentina (38°30' S.) and Ascension Island. Shore.
- Stenotomus chrysops* (Linnaeus)—Northern porgy. Nova Scotia to eastern Florida. Shore.
- Stenotomus caprinus* Bean—Longspine porgy. North Carolina to Florida and the northern and southwestern Gulf of Mexico. Shore.
- Pagrus sedecim* Ginsburg—Red porgy. New York to Argentina (38° S.) and the northern Gulf of Mexico. Shore.
- Lagodon rhomboides* (Linnaeus)—Pinfish. Bermuda and Massachusetts to Florida and throughout the Gulf of Mexico. Euryhaline.

123. Family Pempheridae—Sweepers

- Pempheris schomburgki* Müller and Troschel—Glassy sweeper. Bermuda and Miami to Brazil and west to Yucatán. Shore.

124. Family Kyphosidae—Rudderfishes

- Kyphosus sectatrix* (Linnaeus)—Rudderfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Brazil and the northwestern Gulf of Mexico. Shore.
- Kyphosus incisor* (Cuvier)—Yellow chub. Both sides of the Atlantic; in the western Atlantic from Tortugas, Florida to Brazil. Shore.

125. Family Ehippididae—Spadefishes

- Chaetodipterus faber* (Broussonet)—Spadefish. Massachusetts to Santos, Brazil, and throughout the Gulf of Mexico. Shore.

126. Family Chaetodontidae—Butterfly fishes

- Centropyge argi* Woods and Kanazawa. Bermuda to the southern Gulf of Mexico. Shore.
- Chaetodon aja* Jordan—Bank butterfly fish. North Carolina to the eastern Gulf of Mexico. Shore.
- Chaetodon capistratus* Linnaeus—Foureye butterfly fish. Massachusetts to the Lesser Antilles and Panama. Shore.
- Chaetodon ocellatus* Bloch—Common butterfly fish. Massachusetts to Manguape, Brazil, and widespread in the Gulf of Mexico. Shore.
- Chaetodon sedentarius* Poey. Eastern and southwestern Gulf of Mexico to Hispaniola. Shore.
- Chaetodon striatus* Linnaeus—Banded butterfly fish. Both sides of the Atlantic; in the western Atlantic from New Jersey to Rio de Janeiro and the northeastern Gulf of Mexico. Shore.
- Holacanthus ciliaris* (Linnaeus)—Queen angelfish. Northeastern and southwestern Gulf of Mexico to Bahia, Brazil. Shore.
- Holacanthus isabelita* (Jordan and Rutter)—Common angelfish. Bermuda and the Florida Keys to the West Indies, and in the eastern and northwestern Gulf of Mexico. Shore.

- Holacanthus townsendi* (Nichols and Mowbray)—Townsend's angelfish. Florida Keys. Shore.
- Holacanthus bermudensis* (Goode)—Angelfish. Bermuda and Florida to the West Indies. Shore.
- Holacanthus tricolor* (Bloch)—Rock beauty. Bermuda and the Florida Keys to Rio de Janeiro. Shore.
- Pomacanthus arcuatus* (Linnaeus)—Grey angelfish. New York to Rio de Janeiro and the southwestern Gulf of Mexico. Shore.
- Pomacanthus paru* (Bloch)—French angelfish. Both sides of the Atlantic; in the western Atlantic from the Florida Keys to Rio de Janeiro. Shore.

127. Family Pomacentridae—Damsel-fishes

- Abudefduf saxatilis saxatilis* (Linnaeus)—Sergeant major. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from Bermuda and Rhode Island to Uruguay and throughout the Gulf of Mexico. Shore.
- Abudefduf analogus* (Gill). Florida Keys to the Lesser Antilles. Shore.
- Abudefduf taurus* (Müller and Troschel). Florida Keys to the Lesser Antilles. Shore.
- Chromis enchrysurus* (Jordan and Gilbert)—Yellowtail reef fish. Eastern and southern Gulf of Mexico. Shore.
- Chromis insolatus* (Cuvier)—Chauffe-soleil. Bermuda and eastern and north-central Gulf of Mexico to the Lesser Antilles and St. Helena Island. Shore.
- Chromis multilineatus* (Guichenot). Tortugas, Florida to Cuba. Shore.
- Nexilarius concolor* (Gill). Both coasts of tropical America; in the western Atlantic from the Florida Keys. Shore.
- Pomacentrus adustus* Troschel. Florida Keys to Hispaniola and west to Mexico. Shore.
- Pomacentrus fuscus* (Cuvier)—Maria molle. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Florida Keys to Rio de Janeiro and the southwestern Gulf of Mexico. Shore.
- Pomacentrus leucostictus* Müller and Troschel—Beaugregory. Both sides of the Atlantic; in the western Atlantic from Maine and Bermuda to Bahia, Brazil, and the eastern and southwestern Gulf of Mexico. Shore.
- Pomacentrus partitus* Poey. Tortugas, Florida to Cuba. Shore.
- Pomacentrus planifrons* Cuvier. Tortugas, Florida to the Lesser Antilles and the southwestern Gulf of Mexico. Shore.
- Pomacentrus xanthurus* Poey. Tortugas, Florida to Cuba and the southwestern and northeastern Gulf of Mexico. Shore.
- Microspathodon chrysurus* (Cuvier)—Yellowtail damselfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Florida Keys to the Lesser Antilles and Panama. Shore.

128. Family Labridae—Wrasses

- Bodianus rufus* (Linnaeus)—Spanish hogfish. Bermuda and Florida to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico; also to St. Helena and Ascension Islands. Shore.
- Decodon puellaris* (Poey)—Cuban hogfish. Northeastern and southwestern Gulf of Mexico to the Lesser Antilles. Shore.
- Doratonotus megalepis* Günther—Dwarf wrasse. Bermuda and the Florida Keys to the Lesser Antilles and Panama. Shore.

Halichoeres bivittata (Bloch)—Slippery dick. Bermuda and North Carolina to Ilha Victoria, Brazil, and the northeastern and southwestern Gulf of Mexico. Shore.

Halichoeres caudalis (Poey)—Painted wrasse. Northern and eastern Gulf of Mexico to Hispaniola. Shore.

Halichoeres garnoti (Valenciennes)—Variegated wrasse. Bermuda and the Florida Keys to Rio de Janeiro and the southwestern Gulf of Mexico. Shore.

Halichoeres maculipinna (Müller and Troschel)—Bandedhead wrasse. Bermuda and North Carolina to the Lesser Antilles and the southwestern Gulf of Mexico. Shore.

Halichoeres poeyi (Steindachner). Tortugas, Florida to Rio de Janeiro. Shore.

Halichoeres radiata (Linnaeus)—Puddingwife. Bermuda and North Carolina to Bahia, Brazil, and the northeastern and southwestern Gulf of Mexico. Shore.

Lachnolaimus maximus (Walbaum)—Hogfish. Bermuda and North Carolina to Colombia and the northeastern and southwestern Gulf of Mexico. Shore.

Thalassoma bifasciatum (Bloch)—Bluehead. Bermuda and the Florida Keys to Colombia and the southwestern Gulf of Mexico. Shore.

Xyrichtys martinicensis (Valenciennes)—Rosy razorfish. Bermuda and the Florida Keys to the Lesser Antilles and west to Yucatán. Shore.

Xyrichtys psittacus (Linnaeus)—Pearly razorfish. South Carolina to Bahia, Brazil, to the northeastern Gulf of Mexico, and west to Yucatán. Shore.

Xyrichtys ventralis Bean. Tortugas, Florida to Yucatán. Shore.

129. Family Scaridae—Parrot fishes

Nicholsina ustus (Valenciennes)—Emerald parrotfish. New Jersey to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.

Cryptotomus roseus Cope—Manytoothed parrotfish. Bermuda and the Florida Keys to Bahia, Brazil. Shore.

Scarus coelestinus Valenciennes—Loro. Florida Keys to Rio de Janeiro. Shore.

Scarus guacamaia Cuvier—Rainbow parrotfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Florida Keys to Argentina and west to Yucatán. Shore.

Scarus coeruleus (Bloch)—Blue parrotfish. Bermuda and Maryland to Rio de Janeiro. Shore.

Scarus croicensis Bloch—Bahama parrotfish. Bermuda and Massachusetts to Maceió, Brazil, and the eastern and southwestern Gulf of Mexico. Shore.

Scarus vetula Bloch and Schneider—Queen parrotfish. Bermuda and the Florida Keys to Colombia and west to Yucatán. Shore.

Sparisoma aurofrenatum (Valenciennes)—Redband parrotfish. Bermuda, and Tortugas, Florida, to Bahia, Brazil. Shore.

Sparisoma chrysopterygum (Bloch and Schneider)—Vieja. Tortugas, Florida, to Bahia, Brazil. Shore.

Sparisoma rubripinne (Valenciennes)—Mud parrotfish. Bermuda and Massachusetts to Rio de Janeiro and west to Yucatán. Shore.

Sparisoma axillaris Steindachner. Tortugas, Florida, to Bahia, Brazil, and west to Panama. Shore.

Sparisoma radians (Valenciennes)—Radiant parrotfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and southern Florida to Bahia, Brazil, and the western Gulf of Mexico. Shore.

Sparisoma viride (Bonnaterre)—Green parrotfish. Bermuda and southern Florida to Bahia, Brazil, and the southwestern Gulf of Mexico. Shore.

130. Family Percophidae—Flatheads

Bembrops gobioides (Goode)—Flathead. New York to Florida and the eastern and northern Gulf of Mexico. Benthic.

Bembrops anatirostris Ginsburg—Spotted flathead. Northern and eastern Gulf of Mexico to Puerto Rico. Benthic.

131. Family Acanthuridae—Surgeon fishes

Acanthurus chirurgus (Bloch)—Tang. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.

Acanthurus coeruleus Bloch and Schneider—Blue tang. Bermuda and New York to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.

Acanthurus bahianus Castelnau—Ocean tang. Bermuda and Massachusetts to Bahia, Brazil, and the southwestern Gulf of Mexico. Shore.

Acanthurus randalli Briggs and Caldwell—Randall's tang. Northeastern Gulf of Mexico. Shore.

132. Family Uranoscopidae—Stargazers

Astroscopus y-graecum (Cuvier)—Southern stargazer. North Carolina to Santos, Brazil, and the northern Gulf of Mexico. Shore.

Execestides egregius Jordan and Thompson. Southeastern and western Gulf of Mexico. Shore.

Gnathagnus laticeps (Longley and Hildebrand). Florida Keys to the northeastern Gulf of Mexico. Shore.

Kathetostoma albigutta (Bean). Throughout the Gulf of Mexico. Shore.

133. Family Dactyloscopidae—Sand stargazers

Dactyloscopus tridigitatus Gill—Surf gazer. Bermuda and eastern Gulf of Mexico to Natal, Brazil. Shore.

Gillellus greyae Kanazawa. Bermuda and Tortugas, Florida to Cuba. Shore.

Gillellus semicinctus Gilbert. Both coasts of tropical America; in the western Atlantic from the northeastern Gulf of Mexico to the Florida Keys. Shore.

Gillellus rubrocinctus Longley. Tortugas, Florida to the Lesser Antilles. Shore.

134. Family Gempylidae—Snake mackerels

Promethichthys prometheus (Cuvier). Atlantic and western Pacific Oceans; in the western Atlantic from Bermuda to the northeastern Gulf of Mexico. Bathypelagic.

Nesiarchus nasutus Johnson. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to southern Florida. Pelagic.

Ruvettus pretiosus Cocco—Escolar. Worldwide in distribution; in the western Atlantic from Newfoundland and Bermuda to Brazil and the northeastern Gulf of Mexico. Bathypelagic.

Nealotus tripes Johnson. Both sides of the Atlantic and the western Pacific; in the western Atlantic from Maryland and Bermuda to the northeastern and western Gulf of Mexico. Bathypelagic.

Gempylus serpens Cuvier—Snake mackerel. Worldwide in tropical waters; in the western Atlantic from New York to Colombia and the northeastern Gulf of Mexico. Bathypelagic.

Epinnula magistralis Poey. Western Atlantic and western Pacific; in the Atlantic from the northern Gulf of Mexico to Cuba and the Caribbean. Bathypelagic.

Epinnula orientalis americana Grey. Northeastern Gulf of Mexico to Cuba. Bathypelagic.

135. Family Trichiuridae—Cutlass fishes

Benthodesmus tenuis (Günther). Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from New Jersey to the northern and eastern Gulf of Mexico. Bathypelagic.

Benthodesmus simonyi (Steindachner). Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from Newfoundland to the northwestern Gulf of Mexico. Bathypelagic.

Trichiurus lepturus Linnaeus—Cutlass fish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Massachusetts to Argentina and throughout the Gulf of Mexico. Pelagic.

136. Family Scombridae—Mackerels

Acanthocybium solandieri (Cuvier)—Wahoo. Worldwide in tropical waters; in the western Atlantic from New Jersey and Bermuda to Colombia and throughout the Gulf of Mexico. Pelagic.

Auxis thazard (Lacépède)—Frigate mackerel. Worldwide in tropical waters; in the western Atlantic from Bermuda and Massachusetts to Colombia and throughout the Gulf of Mexico. Pelagic.

Katsuwonus pelamis (Linnaeus)—Ocean bonito. Worldwide in tropical waters; in the western Atlantic from the Gulf of Maine to Rio de Janeiro and throughout the Gulf of Mexico. Pelagic.

Euthynnus alletteratus (Rafinesque)—Little tuna. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Gulf of Maine to Ilha Victoria, Brazil, and the northern and eastern Gulf of Mexico. Shore.

Thunnus thynnus thynnus (Linnaeus)—Bluefin tuna. Both sides of the Atlantic; in the western Atlantic from Newfoundland and Bermuda to Colombia and the northeastern Gulf of Mexico. Pelagic.

Thunnus obesus Lowe—Bigeye tuna. Worldwide in tropical waters; in the western Atlantic from southern Florida to Hispaniola. Pelagic.

Thunnus alalunga (Gmelin)—Albacore. Worldwide in distribution; in the western Atlantic from New Jersey to the Lesser Antilles. Pelagic.

Thunnus atlanticus (Lesson)—Blackfin tuna. Bermuda and Massachusetts to Brazil and throughout the Gulf of Mexico. Pelagic.

Thunnus albacares subulatus (Poey)—Yellowfin tuna. Bermuda and New York to the West Indies and the northeastern and southwestern Gulf of Mexico. Pelagic.

Scomber colias Gmelin—Chub mackerel. Both sides of the Atlantic; in the western Atlantic from Nova Scotia and Bermuda to Ilha Rosa, Brazil, and the northern Gulf of Mexico. Pelagic.

Scomberomorus maculatus (Mitchill)—Spanish mackerel. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from Maine and Bermuda to Santos, Brazil, and the northern Gulf of Mexico. Pelagic.

Scomberomorus regalis (Bloch)—Cero. Massachusetts to Rio de Janeiro and the western Gulf of Mexico. Pelagic.

Scomberomorus cavalla (Cuvier)—Kingfish. Gulf of Maine to Rio de Janeiro and throughout the Gulf of Mexico. Pelagic.

Sarda sarda (Bloch)—Atlantic bonito. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to Argentina (38° S.) and the western Gulf of Mexico. Pelagic.

137. Family Luvaridae—Louvars

Luvarus imperialis Rafinesque—Louvar. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from Connecticut to the eastern Gulf of Mexico near the Florida Keys. Pelagic.

138. Family Xiphiidae—Swordfishes

Xiphias gladius Linnæus—Swordfish. Worldwide in tropical and temperate waters; in the western Atlantic from Newfoundland and Bermuda to Argentina (38° S.) and the northeastern and western Gulf of Mexico. Pelagic.

139. Family Istiophoridae—Spearfishes

Makaira ampla ampla (Poey)—Atlantic blue marlin. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Uruguay, and widespread in the Gulf of Mexico. Pelagic.

Makaira albida (Poey)—White marlin. Both sides of the Atlantic; in the western Atlantic from Nova Scotia to Brazil, and widespread in the Gulf of Mexico. Pelagic.

Tetrapturus beloni Rafinesque—Spearfish. Both sides of the Atlantic; in the western Atlantic from southern Florida. Pelagic.

Istiophorus americanus (Cuvier)—Atlantic sailfish. Rhode Island to Brazil and throughout the Gulf of Mexico. Pelagic.

140. Family Eleotridae—Sleepers

Dormitator maculatus (Bloch)—Fat sleeper. North Carolina to Rio de Janeiro, and in tributaries on all sides of the Gulf of Mexico. Euryhaline.

Eleotris pisonis (Gmelin)—Slender sleeper. Bermuda and South Carolina to Rio de Janeiro, and in tributaries on all sides of the Gulf of Mexico. Euryhaline.

Eleotris amblyopsis (Cope). South Carolina to Dutch Guiana. Euryhaline.

Eviota personata Jordan and Thompson—Bronzehead goby. Bermuda and the Florida Keys. Shore.

Gobiomorus dormitor Lacépède—Sleeper. Southern Florida to Dutch Guiana and the western Gulf of Mexico. Euryhaline.

Erotelis smaragdus smaragdus (Valenciennes).—Emerald goby. Florida Keys to Natal, Brazil. Shore.

Erotelis smaragdus civitatum Ginsburg. Northern coast of the Gulf of Mexico. Shore.

Ioglossus calliurus Bean—Pensacola goby. North Carolina to the eastern Gulf of Mexico. Shore.

141. Family Gobiidae—Gobies

Barbulifer ceuthoecus (Jordan and Gilbert). Florida Keys. Shore.

Bathygobius curacao curacao (Metzelaar). Tortugas, Florida to the Lesser Antilles and west to Panama. Shore.

- Bathygobius curacao lepidopoma* Ginsburg. Vicinity of Key West, Florida. Shore.
- Bathygobius soporator soporator* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from the Bahamas and the Florida Keys to Santos, Brazil, and west to Yucatán. Shore.
- Bathygobius soporator catulus* (Girard)—Mapo. North Carolina to Florida and the northern Gulf of Mexico. Euryhaline.
- Bollmannia boqueronensis* Evermann and Marsh. Tortugas, Florida to Puerto Rico. Shore.
- Bollmannia jeannae* Fowler. Key West. Shore.
- Awaous taiaica* (Lichtenstein)—River goby. Florida to Bahia, Brazil, and the southwestern Gulf of Mexico. Euryhaline.
- Coryphopterus glaucofraenum* (Gill)—Bridled goby. Bermuda and North Carolina to Natal, Brazil. Shore.
- Evermannichthys metzelaeri* Hubbs—Sponge goby. Western Florida to the Lesser Antilles. Shore.
- Evorthodus lyricus* (Girard)—Lyre goby. Chesapeake Bay to Dutch Guiana and throughout the Gulf of Mexico. Shore.
- Garmannia macrodon* (Beebe and Tee-Van). Southern Florida to the Lesser Antilles and the northeastern Gulf of Mexico. Shore.
- Gnatholepis thompsoni* Jordan. Bermuda and Tortugas, Florida to the West Indies and the southwestern Gulf of Mexico. Shore.
- Gobionellus stigmaturus* (Goode and Bean)—Spottail goby. Bermuda to the northeastern Gulf of Mexico. Shore.
- Gobionellus shufeldti* (Jordan and Evermann)—Freshwater goby. North Carolina to Florida and the northern Gulf of Mexico. Euryhaline.
- Gobionellus stigmaticus* (Poey). Northeastern Gulf of Mexico to Rio de Janeiro. Shore.
- Gobionellus boleosoma* (Jordan and Gilbert)—Darter goby. North Carolina to Natal, Brazil, and the northern Gulf of Mexico. Euryhaline.
- Gobionellus smaragdus* (Valenciennes). South Carolina to Rio de Janeiro. Shore.
- Gobionellus oceanicus* (Pallas). North Carolina to Brazil. Shore.
- Gobionellus gracillimus* Ginsburg. Northeastern Florida to the northern Gulf of Mexico. Euryhaline.
- Gobionellus hastatus* Girard—Sharptail goby. North Carolina to Florida and throughout the Gulf of Mexico. Euryhaline.
- Gobiosoma bosci* (Lacépède)—Naked goby. Massachusetts to Hispaniola and throughout the Gulf of Mexico south to Tampico, Mexico. Euryhaline.
- Gobiosoma horsti* Metzelaar. Tortugas, Florida to the Lesser Antilles. Shore.
- Gobiosoma longum* Nichols. Bermuda, and Key West, Florida to the Lesser Antilles. Shore.
- Gobiosoma oceanops* (Jordan)—Neon goby. Florida Keys to the southwestern Gulf of Mexico. Shore.
- Gobiosoma robustum* Ginsburg—Robust goby. Southeastern Florida to Bahia, Brazil, and across the northern Gulf of Mexico. Euryhaline.
- Gobiosoma longipala* Ginsburg. Boca Grande, Florida. Shore.
- Gobulus myersi* Ginsburg—Myer's goby. Northeastern Gulf of Mexico. Shore.
- Lophogobius cyprinoides* (Pallas)—Crested goby. Bermuda and southern Florida to Hispaniola and west to Panama. Euryhaline.
- Microgobius carri* Fowler—Carr's goby. Southwestern Florida. Shore.

Microgobius gulosus (Girard)—Largemouth goby. Northeastern Florida to the eastern and northern Gulf of Mexico. Euryhaline.

Microgobius microlepis Longley and Hildebrand. Tortugas, Florida. Shore.

Microgobius thalassinus (Jordan and Gilbert)—Green goby. South Carolina to Florida and the northern Gulf of Mexico. Shore.

Rhinogobius eigenmanni (Garman). Vicinity of Key West, Florida. Shore.

Risor ruber (Rosen). Tortugas, Florida to the Lesser Antilles. Shore.

Gobioides broussonneti Lacépède—Barreto. Southeastern Florida to Rio de Janeiro and the northern Gulf of Mexico. Shore.

142. Family Callionymidae—Dragonets

Callionymus agassizi Goode and Bean. Eastern Gulf of Mexico to the northern Caribbean. Shore.

Callionymus himantophorus Goode and Bean. Georgia to the Lesser Antilles and the northern and eastern Gulf of Mexico. Benthic.

Callionymus bairdi Jordan—Baird's dragonet. Eastern Gulf of Mexico. Shore.

Callionymus boekei Metzelaar. Bermuda and southern Florida to the Lesser Antilles. Shore.

Callionymus calliurus. Eigenmann and Eigenmann (includes *C. floridae* Fowler)—Spotted dragonet. Key West, Florida. Shore.

143. Family Opisthognathidae—Jaw fishes

Lonchopisthus micrognathus (Poey). Florida Keys to Cuba and the eastern and southwestern Gulf of Mexico. Shore.

Opisthognathus aurifrons (Jordan and Thompson)—Blue jawfish. Bahamas to the Florida Keys. Shore.

Opisthognathus fasciatum Longley. Tortugas, Florida. Shore.

Opisthognathus macrognathus. Poey. Northeastern and southwestern Gulf of Mexico to Cuba. Shore.

Opisthognathus maxillosus Poey. Bahamas and the Florida Keys to Cuba. Shore.

Opisthognathus whitehursti (Longley). Bahamas to the Florida Keys. Shore.

Opisthognathus lonchurus Jordan and Gilbert. Northeastern Gulf of Mexico to Hispaniola. Shore.

144. Family Blenniidae—Blennies

Blennius cristatus Linnaeus—Molly miller. Both sides of the Atlantic; in the western Atlantic from Bermuda and southern Florida to Pernambuco, Brazil, and throughout the Gulf of Mexico. Shore.

Blennius marmoreus Poey. New York to Venezuela and the northeastern Gulf of Mexico. Shore.

Blennius pilicornis Cuvier—Horned blenny. Tortugas, Florida to Rio de Janeiro. Shore.

Blennius nicholsi Tavolga (includes *Semablennius gallowayi* Fowler). Northeastern to southwestern Florida. Shore.

Chaenopsis ocellata Poey. Southeastern Florida to Cuba. Shore.

Chasmodes bosquianus (Lacépède)—Striped blenny. New York to Florida and the northern Gulf of Mexico. Shore.

Chasmodes saburrae Jordan and Gilbert—Gulf blenny. Northern Gulf of Mexico. Shore.

Chasmodes novemlineatus (Wood)—Lined blenny. South Carolina to Florida. Shore.

- Hypleurochilus bermudensis* Beebe and Tee-Van—Bermuda blenny. Bermuda to Tortugas, Florida, and the northeastern Gulf of Mexico. Shore.
- Hypleurochilus geminatus* (Wood)—Crested blenny. North Carolina to Rio de Janeiro and the northern Gulf of Mexico. Shore.
- Hypsoblennius hentzi* (Lesueur)—Carolina blenny. New Jersey to Florida and throughout the Gulf of Mexico. Shore.
- Hypsoblennius ianthas* (Jordan and Gilbert)—Freckled blenny. South Carolina to Florida and the northern Gulf of Mexico. Shore.
- Rupiscartes atlanticus* (Valenciennes)—Rock skipper. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from southern Florida to Maceió, Brazil, and the northwestern Gulf of Mexico. Shore.
- Salarichthys textilis* (Quoy and Gaimard)—West Indian blenny. Bermuda and southern Florida to Pernambuco, Brazil, Ascension Island, and the southwestern Gulf of Mexico. Shore.

145. Family Clinidae—Klipfishes

- Acanthemblemaria aspera* (Longley). Tortugas, Florida to Haiti. Shore.
- Acanthemblemaria erythrops* (Fowler). American Shoals, Florida. Shore.
- Acanthemblemaria spinosa* Metzelaar. Tortugas, Florida to the Lesser Antilles. Shore.
- Emblemaria atlantica* Jordan and Evermann—Banner blenny. Northeastern Gulf of Mexico to Rio de Janeiro. Shore.
- Emblemaria pandionis* Evermann and Marsh. Tortugas, Florida to Puerto Rico. Shore.
- Emblemaria piratula* Ginsburg and Reid. Northeastern Gulf of Mexico. Shore.
- Emblemariopsis diaphana* Longley. Tortugas, Florida. Shore.
- Hemimblemaria simulus* Longley and Hildebrand. Tortugas, Florida. Shore.
- Stathmonotus stahlii* tekla Nichols. Bahamas and Tortugas, Florida to Nicaragua. Shore.
- Stathmonotus hemphilli* Bean. Southern Florida to the Lesser Antilles. Shore.
- Enneapterygius jordani* (Evermann and Marsh). Tortugas, Florida to Puerto Rico and the southwestern Gulf of Mexico. Shore.
- Enneapterygius pectoralis* Fowler. Southwestern Florida. Shore.
- Labrisomus nigricinctus* Rivero. Tortugas, Florida to the Barbados. Shore.
- Labrisomus haitiensis* Beebe and Tee-Van. Bahamas and Tortugas, Florida to Haiti and the eastern Gulf of Mexico. Shore.
- Labrisomus kalisheræ* (Jordan). Tortugas, Florida to the Lesser Antilles and west to British Honduras. Shore.
- Labrisomus nuchipinnis* (Quoy and Gaimard)—Hairy klipfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and northeastern Florida to Rio de Janeiro and the western Gulf of Mexico. Shore.
- Malacoctenus* sp. Tortugas, Florida to the Lesser Antilles and west to Campeche, Mexico. Shore.
- Malacoctenus macropus* (Poey). Bermuda and the Florida Keys to Puerto Rico and the southwestern Gulf of Mexico. Shore.
- Malacoctenus* sp. Tortugas, Florida to Fernando de Noronha, Brazil, and west to Veracruz, Mexico. Shore.
- Paraclinus marmoratus* (Steindachner)—Marbled klipfish. Eastern Gulf of Mexico. Shore.

- Parachinus nigripinnis* (Steindachner)—Blackfin klipfish. Bermuda and the Florida Keys to Brazil. Shore.
- Parachinus grandicomis* (Rosen)—Crested klipfish. Bahamas and southern Florida to the Lesser Antilles. Shore.
- Parachinus cingulatus* (Evermann and Marsh). Bahamas and Tortugas, Florida to Puerto Rico. Shore.
- Parachinus fasciatus* (Steindachner)—Banded klipfish. Bahamas and northeastern Gulf of Mexico to Venezuela, and west to Guatemala. Shore.
- Starksia ocellatus* (Steindachner). Bahamas and southwestern Florida to Maceió, Brazil. Shore.

146. Family Microdesmidae

Microdesmus floridanus (Longley). Florida Keys. Shore.

147. Family Brotulidae—Brotulas

Aphyonus mollis Goode and Bean. Southeastern Gulf of Mexico off Tortugas, Florida. Benthic.

Barathronus bicolor Goode and Bean. Tortugas, Florida to the Lesser Antilles. Benthic.

Bassozetus compressus (Günther). Atlantic and western Pacific Oceans; in the western Atlantic from the Gulf of Mexico. Benthic.

Bassozetus normalis Gill. New Jersey to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.

Brotula barbata (Bloch and Schneider). Bermuda and the Florida Keys to Jamaica and throughout the Gulf Mexico. Shore.

Dicrolene inronigra Goode and Bean. Both sides of the Atlantic; in the western Atlantic from Massachusetts to the Lesser Antilles and the northern Gulf of Mexico. Benthic.

Dinematicichthys cayorum (Evermann and Kendall)—Brotula. Bermuda and the Florida Keys to Panama. Shore.

Diplacanthopoma brachysoma Günther. Atlantic and Indian Oceans; in the western Atlantic from the northeastern Gulf of Mexico to Pernambuco, Brazil. Benthic.

Neobythites gilli Goode and Bean. Northeastern and southwestern Gulf of Mexico to Pernambuco, Brazil. Benthic.

Neobythites marginatus Goode and Bean. Atlantic and Indian Oceans; in the western Atlantic from near Tortugas, Florida to the Lesser Antilles and the northwestern Gulf of Mexico. Benthic.

Mixonus pectoralis (Goode and Bean). Northeastern Gulf of Mexico to Dominica. Benthic.

Monomitopus agassizi (Goode and Bean). Northern Gulf of Mexico to the Lesser Antilles. Benthic.

Porogadus subarmatus Vaillant. Both sides of the Atlantic; in the western Atlantic from the northeastern Gulf of Mexico. Benthic.

Porogadus catena (Goode and Bean). Northeastern Gulf of Mexico. Benthic.

Porogadus milesi Goode and Bean. Both sides of the Atlantic; in the western Atlantic from off Delaware to the northeastern Gulf of Mexico. Benthic.

148. Family Ophidiidae—Cuskeels

Lepophidium brevibarbe (Cuvier). Throughout the Gulf of Mexico south to Brazil. Shore.

Lepophidium cervinum (Goode and Bean). Massachusetts to Florida and the northeastern Gulf of Mexico. Shore.

Lepophidium jeannae Fowler. Key West, Florida. Shore.

Lepophidium profundorum (Gill). Eastern Gulf of Mexico. Benthic.

Lepophidium graellsii (Poey). Northeastern Gulf of Mexico to Cuba. Shore.

Ophidion beani Jordan and Gilbert. Northeastern Gulf of Mexico. Shore.

Otophidium holbrookii (Putnam). Northern and eastern Gulf of Mexico. Shore.

Otophidium omostigmum (Jordan and Gilbert). Georgia to Florida and the northeastern and southwestern Gulf of Mexico. Shore.

Otophidium welschi Nichols and Breder. New Jersey to Florida and the northern Gulf of Mexico. Shore.

Otophidium marginatum (DeKay). New York to Florida and the northern Gulf of Mexico. Shore.

149. Family Carapidae—Fierasfers

Carapus bermudensis (Jones)—Fierasfer. Bermuda and the Florida Keys to the Lesser Antilles. Shore.

150. Family Nomeidae—Man-of-war fishes

Psenes maculatus Lütken. Both sides of the Atlantic; in the western Atlantic from New Jersey to the Greater Antilles. Pelagic.

Psenes cyanophrys Cuvier. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Massachusetts to the Lesser Antilles, and widespread in the Gulf of Mexico. Pelagic.

Psenes pellucidus Lütken. Atlantic and western Pacific Oceans; in the western Atlantic from New Jersey to the northeastern and southwestern Gulf of Mexico. Bathypelagic.

Psenes regulus Poey. New Jersey to Cuba. Pelagic.

Nomeus gronowi (Gmelin). Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and Massachusetts to Brazil and throughout the Gulf of Mexico. Pelagic.

151. Family Stromateidae—Harvest fishes

Poronotus triacanthus (Peck)—Butterfish. Newfoundland to Florida and throughout the Gulf of Mexico. Pelagic.

Peprilus alepidotus (Linnaeus)—Harvest fish. Maine to Florida and the northeastern Gulf of Mexico. Pelagic.

Peprilus paru (Linnaeus)—Poppyfish. New Jersey to Argentina (38°30' S.) and the northern Gulf of Mexico. Pelagic.

Cubiceps melanus Ginsburg. North Carolina to Florida and the northeastern Gulf of Mexico. Bathypelagic.

Cubiceps nigriargenteus Ginsburg. Massachusetts to Florida and the northeastern Gulf of Mexico. Bathypelagic.

Palinurichthys bythites Ginsburg. Northeastern Gulf of Mexico. Pelagic.

Palinurichthys perciformis (Mitchill). Both sides of the Atlantic; in the western Atlantic from Nova Scotia to the Florida Keys. Pelagic.

152. Family Tetragonuridae—Squaretails

Tetragonurus atlanticus Lowe—Squaretail. Worldwide in tropical waters; in the western Atlantic from New York to Panama and the eastern Gulf of Mexico. Pelagic.

153. Family Sphyraenidae—Barracudas

- Sphyraena barracuda* (Walbaum)—Great barracuda. Both sides of the Atlantic and the western Pacific; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.
- Sphyraena borealis* DeKay—Northern barracuda. Bermuda and Massachusetts to Panama and the northcentral Gulf of Mexico. Shore.
- Sphyraena guachancho* Cuvier—Senet. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Colombia and throughout the Gulf of Mexico. Shore.
- Sphyraena picudilla* Poey—Picudilla. Bermuda and Tortugas, Florida to Argentina (38° S.) and the northeastern Gulf of Mexico. Shore.

154. Family Mugilidae—Mulletts

- Mugil curema* Valenciennes—White mullet. Both sides of the Atlantic and the eastern Pacific; in the western Atlantic from Bermuda and Massachusetts to Santos, Brazil, and widespread in the Gulf of Mexico. Euryhaline.
- Mugil liza* Valenciennes—Liza. Bermuda and southern Florida to Argentina. Shore.
- Mugil cephalus* Linnaeus—Striped mullet. Worldwide in tropical waters; in the western Atlantic from Nova Scotia and Bermuda to Santos, Brazil, and throughout the Gulf of Mexico. Euryhaline.
- Mugil gaimardianus* (Desmarest)—Redeye mullet. Florida Keys to Cuba. Shore.
- Mugil trichodon* (Poey)—Fantail mullet. Bermuda and southern Florida to Natal, Brazil, and the northeastern Gulf of Mexico. Euryhaline.
- Agonostomus monticola* (Bancroft)—Mountain mullet. Both coasts of tropical America; in the western Atlantic from eastern Florida to Colombia and the northcentral and eastern Gulf of Mexico. Euryhaline.

155. Family Atherinidae—Silversides

- Membras martinica laciniata* (Swain)—Rough silverside. New York to eastern Florida. Euryhaline.
- Membras martinica vagrans* (Goode and Bean). Gulf coast from northwestern Florida to Tampico. Euryhaline.
- Allanetta harringtonensis araea* (Jordan and Gilbert). Florida Keys to Colombia and the southwestern Gulf of Mexico. Shore.
- Atherinomorus stipes* (Müller and Troschel). Southeastern Florida to Brazil and the southwestern Gulf of Mexico. Shore.
- Labidesthes sicculus* (Cope)—Brook silverside. Great Lakes region and New York to the southern tip of Florida and westward to Oklahoma and Texas. Euryhaline.
- Menidia menidia menidia* (Linnaeus). South Carolina to south of Daytona Beach, Florida. Euryhaline.
- Menidia beryllina* (Cope)—Tidewater silverside. Massachusetts to the southern tip of Florida and west to Veracruz, Mexico. Euryhaline.
- Menidiella conchorum* (Hildebrand and Ginsburg). Key West, Florida. Shore.

156. Family Polynemidae—Threadfins

- Polydactylus virginicus* (Linnaeus)—Barbu. New Jersey and Bermuda to Uruguay and the southwestern Gulf of Mexico. Shore.
- Polydactylus octonemus* (Girard)—Threadfin. Massachusetts to Florida and throughout the Gulf of Mexico. Shore.

157. Family Steinegeriidae

Steinegeria rubescens Jordan and Evermann. Northeastern Gulf of Mexico. Bathypelagic.

ORDER SCLEROPAREI

158. Family Scorpaenidae—Rockfishes

- Helicolenus dactylopterus thelmae* Fowler. Massachusetts to Florida and the northeastern Gulf of Mexico. Benthic.
- Scorpaenodes floridae* Hildebrand. Tortugas, Florida. Shore.
- Pontinus castor* Poey. Bermuda to Cuba and the northeastern Gulf of Mexico. Shore.
- Pontinus longispinis* Goode and Bean. Georgia to Florida and the northern Gulf of Mexico. Shore.
- Pontinus rathbuni* Goode and Bean. New Jersey to Florida and the northeastern Gulf of Mexico. Shore.
- Neomerinthe pollux* (Poey). New Jersey to Cuba and the northern Gulf of Mexico. Shore.
- Trachyscorpia cristulata* (Goode and Bean). Massachusetts to Florida and the northeastern Gulf of Mexico. Benthic.
- Scorpaena inermis* Cuvier. New Jersey to the Lesser Antilles. Shore.
- Scorpaena calcarata* Goode and Bean. Chesapeake Bay to the Lesser Antilles and the coast of Colombia, and throughout the Gulf of Mexico. Shore.
- Scorpaena agassizi* Goode and Bean. Bermuda and North Carolina to Florida and the northeastern and southwestern Gulf of Mexico. Shore.
- Scorpaena brasiliensis* Cuvier—Brazilian scorpionfish. New Jersey to Rio de Janeiro and throughout the Gulf of Mexico. Shore.
- Scorpaena grandicornis* Cuvier—Lionfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Florida Keys to Bahia, Brazil. Shore.
- Scorpaena bergi* Evermann and Marsh. New York to Puerto Rico and Panama and the northeastern Gulf of Mexico. Shore.
- Scorpaena albifimbria* Evermann and Marsh. Southeastern Florida to Puerto Rico. Shore.
- Scorpaena dispar* Longley and Hildebrand. Widespread in the Gulf of Mexico. Shore.
- Scorpaena plumieri plumieri* Bloch—West Indian scorpionfish. Bermuda and Massachusetts to Rio de Janeiro and the northwestern Gulf of Mexico. Shore.
- Scorpaena microlepis* Gunter. Southwestern Florida. Shore.
- Setarches parmatum* Goode. New York to the Lesser Antilles and throughout the Gulf of Mexico. Benthic.

159. Family Peristediidae—Armored searobins

- Peristedion gracile* Goode and Bean. New Jersey to Puerto Rico and the northern Gulf of Mexico. Benthic.
- Peristedion imberbe* (Poey). Northeastern Gulf of Mexico to Cuba. Shore.
- Peristedion longispinum* (Goode and Bean). Northern Gulf of Mexico to the Lesser Antilles. Benthic.
- Peristedion miniatum* Goode. New Jersey to Florida and the northern Gulf of Mexico. Benthic.
- Peristedion platycephalum* (Goode and Bean). Northeastern Gulf of Mexico to the Lesser Antilles. Benthic.

- Peristedion spiniger* Longley and Hildebrand. Florida Keys. Benthic.
Peristedion taeniopterum Fowler. Florida Keys. Shore.
Peristedion thompsoni Fowler. Florida Keys. Shore.
Peristedion macgintyi Fowler. Florida Keys. Shore.

160. Family Triglidae—Searobins

- Prionotus stearnsi* Jordan and Swain—Stearn's searobin. Throughout the Gulf of Mexico. Shore.
Prionotus evólans (Linnaeus)—Striped searobin. Massachusetts to Florida. Shore.
Prionotus carolinus (Linnaeus)—Carolina searobin. Nova Scotia to Venezuela. Shore.
Prionotus scitulus scitulus Jordan and Gilbert. North Carolina to Venezuela. Shore.
Prionotus scitulus latifrons Ginsburg. Widespread in the Gulf of Mexico. Shore.
Prionotus martis Ginsburg. Widespread in the Gulf of Mexico. Shore.
Prionotus roseus Jordan and Evermann—Rosy searobin. North Carolina to Puerto Rico, and widespread in the Gulf of Mexico. Shore.
Prionotus microlepis Longley and Hildebrand. East coast of Florida to Venezuela. Shore.
Prionotus ophryas Jordan and Swain. Widespread in the Gulf of Mexico. Shore.
Prionotus grisescens Teague. East coast of Florida to the northeastern Gulf of Mexico. Shore.
Prionotus rubio Jordan. Widespread in the Gulf of Mexico and south to Cuba. Shore.
Prionotus punctatus (Bloch). Georgia to Argentina (38° S.) and the northern Gulf of Mexico. Shore.
Prionotus pectoralis Nichols and Breder. North Carolina to Florida and throughout the Gulf of Mexico. Shore.
Prionotus tribulus tribulus Cuvier—Southern searobin. North Carolina to Florida; a questionable record from New York. Shore.
Prionotus tribulus crassiceps Ginsburg. Throughout the Gulf of Mexico. Shore.
Prionotus beani Goode—Bean's searobin. Northeastern Gulf of Mexico to Rio de Janeiro. Shore.
Prionotus paralatus Ginsburg. Widespread in the Gulf of Mexico. Shore.
Prionotus alatus Goode and Bean. North Carolina to Florida and throughout the Gulf of Mexico. Shore.
Prionotus salmonicolor Fowler. Southern Florida. Shore.
Prionotus vanderbilti Teague. Southeastern Florida. Shore.
Bellator egretta (Goode and Bean). North Carolina to the Lesser Antilles and to the northeastern and southwestern Gulf of Mexico. Shore.
Bellator brachyichir (Regan). South Carolina to Cabo Frio, Brazil, and the northeastern Gulf of Mexico. Shore.
Bellator militaris (Goode and Bean). North Carolina to Florida and throughout the Gulf of Mexico. Shore.

161. Family Dactylopteridae—Flying gurnards

- Dactylopterus volitans* (Linnaeus)—Flying gurnard. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Argentina (42°30' S.) and the northeastern and southwestern Gulf of Mexico. Shore.

162. Family Cottidae—Sculpins

Hemitripteris americanus (Gmelin)—Sea ravin. Labrador to Tortugas, Florida. Shore.

ORDER HAPLODOCI

163. Family Batrachoididae—Toadfishes

Opsanus vandeuseni Fowler. Sand Key, Florida. Shore.

Opsanus tau (Linnaeus). Maine to Florida. Shore.

Opsanus beta (Goode and Bean)—Gulf toadfish. Florida to the West Indies and throughout the Gulf of Mexico. Shore.

Opsanus pardus (Goode and Bean). Northeastern to the northcentral Gulf of Mexico. Shore.

Nautopaedium porosissimum (Valenciennes)—Midshipman. Virginia to Argentina (39° S.) and throughout the Gulf of Mexico. Shore.

ORDER XENOPTERYGII

164. Family Gobiesocidae—Clingfishes

Gobiesox strumosus Cope—Clingfish. Bermuda and New Jersey to Santos, Brazil, and throughout the Gulf of Mexico. Shore.

Acyrtops beryllinus (Hildebrand and Ginsburg)—Clingfish. Southeastern Florida to Cuba. Shore.

ORDER HETEROSOMATA

165. Family Bothidae—Lefteye flounders

Ancylosetta dilecta (Goode and Bean). South Carolina to Florida and the northern Gulf of Mexico. Shore.

Ancylosetta quadrocellata Gill—Foureyeye flounder. South Carolina to Florida and throughout the Gulf of Mexico. Shore.

Bothus lunatus (Linnaeus)—Peacock flounder. Bermuda and the Florida Keys to Fernando de Noronha, Brazil, and west to Yucatán. Shore.

Bothus ocellatus (Agassiz). Bermuda and New York to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.

Citharichthys arctifrons Goode. Massachusetts to Florida and the northeastern Gulf of Mexico. Shore.

Citharichthys rimosus Goode and Bean. South Carolina to Florida and the northeastern Gulf of Mexico. Shore.

Citharichthys microstomus Gill. Massachusetts to Argentina (36°43' S.) and the northeastern and northcentral Gulf of Mexico. Shore.

Citharichthys atlanticus Parr. Chesapeake Bay to the West Indies and throughout the Gulf of Mexico. Shore.

Citharichthys cornutus (Günther). New England to Brazil and throughout the Gulf of Mexico. Shore.

Citharichthys macrops Dresel. Throughout the Gulf of Mexico. Euryhaline.

Citharichthys spilopterus Günther. New Jersey to Santos, Brazil, and throughout the Gulf of Mexico. Euryhaline.

Cyclosetta chittendeni Bean. Northern and southwestern Gulf of Mexico to the Lesser Antilles. Shore.

Cyclosetta fimbriata (Goode and Bean). Throughout the Gulf of Mexico. Shore.

Engyophrys sentus Ginsburg. Throughout the Gulf of Mexico. Shore.

Gastropsetta frontalis Bean. Eastern and southwestern Gulf of Mexico. Shore.

- Monolene antillarum* Norman. Northeastern and northcentral Gulf of Mexico to the Lesser Antilles. Benthic.
- Monolene sessilicauda* Goode. New Jersey to the Lesser Antilles and the northeastern Gulf of Mexico. Benthic.
- Paralichthys albigutta* Jordan and Gilbert—Sand flounder. North Carolina to Florida and the northern Gulf of Mexico. Euryhaline.
- Paralichthys dentatus* (Linnaeus)—Summer flounder. Massachusetts to Florida and the northern Gulf of Mexico. Euryhaline.
- Paralichthys lethostigmus* Jordan and Gilbert—Southern large flounder. North Carolina to Florida and the northern Gulf of Mexico. Euryhaline.
- Paralichthys squamilentus* Jordan and Gilbert—Broad flounder. Northern and eastern Gulf of Mexico. Shore.
- Hippoglossina oblonga* (Mitchill)—Fourspot flounder. Massachusetts to Tortugas, Florida. Shore.
- Scophthalmus aquosus* (Mitchill). Nova Scotia to Florida and the northwestern Gulf of Mexico. Shore.
- Syacium gunteri* Ginsburg. Throughout the Gulf of Mexico. Shore.
- Syacium papillosum* (Linnaeus). Bermuda and South Carolina to Rio de Janeiro and Ascension Island, and throughout the Gulf of Mexico. Shore.
- Syacium micrurum* Ranzani. Both sides of the Atlantic; in the western Atlantic from Bermuda and the Florida Keys to Rio de Janeiro and the northeastern and southwestern Gulf of Mexico. Shore.
- Trichopsetta ventralis* (Goode and Bean). Throughout the Gulf of Mexico. Shore.

166. Family Pleuronectidae—Righteyed flounders

- Poecilopsetta beani* (Goode). New England to Florida and throughout the Gulf of Mexico. Benthic.
- Poecilopsetta inermis* (Breder). Vicinity of Tortugas, Florida to British Honduras. Benthic.

167. Family Soleidae—Soles

- Achirus achirus* (Linnaeus). Northern and eastern Gulf of Mexico to Rio Grande do Sul, Brazil. Shore.
- Achirus comifer* Jordan and Gilbert. Key West, Florida. Shore.
- Achirus inscriptus* Gosse. Florida Keys to Hispaniola and Jamaica. Shore.
- Achirus lineatus* (Linnaeus). Florida to Uruguay, and widespread in the Gulf of Mexico. Shore.
- Gymnachirus williamsoni* (Gunter). Georgia to Florida and the northeastern and southwestern Gulf of Mexico. Shore.
- Gymnachirus fasciatus* Günther. Florida Keys to the West Indies. Shore.
- Gymnachirus nudus* Kaup. Massachusetts to Bahia, Brazil. Shore.
- Trinectes maculatus fasciatus* (Lacépède)—Hogchoker. North Carolina to Panama and the northern Gulf of Mexico. Euryhaline.

168. Family Cynoglossidae—Tongue soles

- Symphurus civitatus* Ginsburg. North Carolina to Florida, and widespread in the Gulf of Mexico. Shore.
- Symphurus diomedianus* (Goode and Bean). North Carolina to Brazil, and widespread in the Gulf of Mexico. Shore.
- Symphurus marginatus* (Goode and Bean). New Jersey to the Lesser Antilles and the northern Gulf of Mexico. Benthic.

- Symphurus minor* Ginsburg. Nova Scotia to Florida and the northeastern Gulf of Mexico. Shore.
- Symphurus parvus* Ginsburg. Southern Florida. Shore.
- Symphurus piger* (Goode and Bean). Northern and eastern Gulf of Mexico to the Lesser Antilles. Shore.
- Symphurus pelicanus* Ginsburg. Northern and southwestern Gulf of Mexico to Trinidad. Shore.
- Symphurus plagiusa* (Linnaeus). New York to Argentina (40° S.) and the northern Gulf of Mexico. Euryhaline.
- Symphurus uropilus* Ginsburg. Georgia to Florida and the northeastern and southwestern Gulf of Mexico. Shore.
- Symphurus nebulosus* (Goode and Bean). New York to northeastern Florida. Benthic.

ORDER DISCOCEPHALI

169. Family Echeneidae—Remoras

- Echeneis naucrates* Linnaeus—Shark sucker. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Nova Scotia and Bermuda to Maceió, Brazil, and throughout the Gulf of Mexico. Euryhaline.
- Remora remora* (Linnaeus)—Remora. Worldwide in tropical waters; in the western Atlantic from Bermuda and Massachusetts to Argentina (38° S.), and widespread in the Gulf of Mexico. Pelagic.
- Phtheiroichthys lineatus* (Menziés). Worldwide in tropical waters; in the western Atlantic from South Carolina to Colombia and the northeastern, northcentral, and southwestern Gulf of Mexico. Pelagic.
- Remoropsis brachyptera* (Lowe)—Swordfish sucker. Worldwide in tropical waters; in the western Atlantic from Maine to Brazil. Pelagic.
- Rhombochirus osteochir* (Cuvier)—Spearfish remora. Both sides of tropical America; in the western Atlantic from Massachusetts to Cuba and the northern Gulf of Mexico. Pelagic.

ORDER PLECTOGNATHI

170. Family Triacanthidae

- Parahollardia lineatus* (Longley). Virginia to the northern and eastern Gulf of Mexico. Shore.

171. Family Balistidae—Triggerfishes

- Balistes caprisicus* Gmelin—Triggerfish. Both sides of the Atlantic; in the western Atlantic from Nova Scotia and Bermuda to Argentina (35°30' S.) and throughout the Gulf of Mexico. Shore.
- Balistes vetula* Linnaeus—Queen triggerfish. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Santos, Brazil, and the northern and eastern Gulf of Mexico. Shore.
- Nemotobalistes forcipatus* (Gmelin)—Spotted triggerfish. Both sides of the Atlantic; in the western Atlantic from Rhode Island to Brazil. Shore.
- Canthidermis sufflamen* (Mitchill). Georgia to the Bahamas and Cuba. Shore.
- Canthidermis sobaco* (Poey)—Ocean triggerfish. Massachusetts to the Lesser Antilles and the northcentral and western Gulf of Mexico. Shore.
- Canthidermis maculatus* (Bloch). Atlantic and western Pacific Oceans; in the western Atlantic from Bermuda and northeastern Florida to Panama and the northeastern Gulf of Mexico. Shore.

Melichthys radula (Solander)—Black triggerfish. Atlantic, Indian, and western Pacific Oceans, and certain offshore islands of the eastern Pacific; in the western Atlantic from the Florida Keys to Fernando de Noronha, Brazil. Shore.

Xanthichthys ringens (Linnaeus)—Redtail triggerfish. Both sides of the Atlantic, and the Indian Ocean; in the western Atlantic from South Carolina and Bermuda to the Lesser Antilles. Shore.

172. Family Aluteridae—Filefishes

Alutera monoceros (Osbeck)—Unicorn filefish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Bermuda and Massachusetts to Ilha Grande, Brazil. Shore.

Alutera guentheriana Poey. Massachusetts to Colombia. Shore.

Alutera schoepfi (Walbaum)—Orange filefish. Nova Scotia and Bermuda to Bahia, Brazil, and throughout the Gulf of Mexico. Shore.

Alutera scripta (Osbeck)—Longtail filefish. Worldwide in tropical waters; in the western Atlantic from Massachusetts to Brazil and the northern Gulf of Mexico. Shore.

Alutera ventralis Longley. Southern Gulf of Mexico. Shore.

Catherines pullus (Ranzani)—Orangespotted filefish. Both sides of the Atlantic; in the western Atlantic from Bermuda and southern Florida to Rio de Janeiro and the northern Gulf of Mexico. Shore.

Monacanthus ciliatus (Mitchill)—Leather fish. Both sides of the Atlantic; in the western Atlantic from Newfoundland and Bermuda to Argentina, and widespread in the Gulf of Mexico. Shore.

Monacanthus tuckeri Bean. Bermuda, and Tortugas, Florida to Hispaniola. Shore.

Stephanolepis hispidus (Linnaeus)—Common filefish. Both sides of the Atlantic; in the western Atlantic from Nova Scotia and Bermuda to Santos, Brazil, and throughout the Gulf of Mexico. Shore.

Stephanolepis spilonotus (Cope). Southeastern Gulf of Mexico near Tortugas, Florida. Shore.

Stephanolepis setifer (Bennett). North Carolina to the Lesser Antilles. Shore.

173. Family Ostraciidae—Trunkfishes

Acanthostracion quadricornis (Linnaeus)—Cowfish. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Shore.

Lactophrys trigonus (Linnaeus)—Trunkfish. Bermuda and Massachusetts to Bahia, Brazil, and the northern Gulf of Mexico. Shore.

Rhinesomus bicaudalis (Linnaeus)—Spotted trunkfish. Florida Keys to Para, Brazil, Ascension Island, and the southwestern Gulf of Mexico. Shore.

Rhinesomus triquetter (Linnaeus)—Smooth trunkfish. Bermuda and Massachusetts to Rio de Janeiro and the northern Gulf of Mexico. Shore.

174. Family Tetraodontidae—Puffers

Lagocephalus laevigatus (Linnaeus)—Smooth puffer. Both sides of the Atlantic; in the western Atlantic from Massachusetts to Argentina (38° S.) and throughout the Gulf of Mexico. Shore.

Lagocephalus pachycephalus (Ranzani)—Elongate puffer. Bermuda and Massachusetts to Brazil and the northeastern Gulf of Mexico. Shore.

Sphaeroides cutaneus (Günther)—Smooth puffer. Both sides of the Atlantic; in the western Atlantic from New Jersey to the northeastern Gulf of Mexico. Shore.

Sphaeroides dorsalis Longley. Eastern and southwestern Gulf of Mexico. Shore.

Sphaeroides harperi Nichols. Northeastern Gulf of Mexico to the Lesser Antilles. Shore.

Sphaeroides maculatus (Bloch and Schneider)—Northern puffer. Nova Scotia to Florida and the northern Gulf of Mexico. Shore.

Sphaeroides nephelus (Goode and Bean)—Florida puffer. Southeastern Florida and throughout the Gulf of Mexico. Shore.

Sphaeroides spengleri (Bloch)—Southern puffer. Both sides of the Atlantic; in the western Atlantic from Bermuda and Massachusetts to Santos, Brazil, and widespread in the Gulf of Mexico. Shore.

Sphaeroides testudineus (Linnaeus)—Tambor. Rhode Island to São Francisco do Sul, Brazil, and widespread in the Gulf of Mexico. Shore.

175. Family Canthigasteridae—Sharppnose puffers

Canthigaster rostratus (Bloch)—Sharppnose puffer. Both sides of the Atlantic; in the western Atlantic from Bermuda and the eastern and southwestern Gulf of Mexico to Colombia. Shore.

176. Family Diodontidae—Porcupine fishes

Chilomycterus atinga (Linnaeus)—Atinga. Both sides of the Atlantic; in the western Atlantic from New Jersey and Bermuda to Rio de Janeiro and the southwestern Gulf of Mexico. Shore.

Chilomycterus schoepfi (Walbaum)—Spiny boxfish. Massachusetts to Rio de Janeiro and throughout the Gulf of Mexico. Shore.

Chilomycterus spinosus (Linnaeus). Northern and eastern Gulf of Mexico to Argentina (35° S.). Shore.

Diodon holacanthus Linnaeus—Balloon fish. Worldwide in tropical waters; in the western Atlantic from the Florida Keys to Brazil, and west to Yucatán. Shore.

Diodon hystrix Linnaeus—Porcupine fish. Worldwide in tropical waters; in the western Atlantic from Massachusetts to Santos, Brazil, and the northern Gulf of Mexico. Shore.

177. Family Molidae—Headfishes

Mola mola (Linnaeus)—Headfish. Worldwide in tropical and temperate waters; in the western Atlantic from Newfoundland to Argentina (42° S.) and the northern Gulf of Mexico. Pelagic.

Masturus lanceolatus (Liénard)—Sharptail headfish. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from Massachusetts to Ceará, Brazil, and the northeastern Gulf of Mexico. Pelagic.

Masturus oxyropterus (Bleeker). Atlantic and western Pacific Oceans; in the western Atlantic from North Carolina to Florida. Pelagic.

ORDER PEDICULATI

178. Family Lophiidae—Frog fishes

Lophius piscatorius Linnaeus—Frog fish. Both sides of the Atlantic; in the western Atlantic from Newfoundland to Brazil and the northern and eastern Gulf of Mexico. Shore.

179. Family Antennariidae—Anglers

- Fowlerichthys floridanus* Barbour. Southern Florida. Benthic.
- Antennarius ocellatus* (Bloch and Schneider). Both sides of the Atlantic; in the western Atlantic from South Carolina to Puerto Rico and throughout the Gulf of Mexico. Shore.
- Antennarius radiosus* Garman. Bermuda to Florida, and widespread in the Gulf of Mexico. Shore.
- Antennarius multiocellatus* (Valenciennes). Both sides of the Atlantic; in the western Atlantic from Bermuda and southwestern Florida to the Lesser Antilles. Shore.
- Antennarius scaber* (Cuvier). New Jersey to Rio de Janeiro and the southeastern and western Gulf of Mexico. Shore.
- Histrio histrio* (Linnaeus)—Sargassum fish. Atlantic and western Pacific Oceans; in the western Atlantic from Bermuda and Massachusetts to Rio de Janeiro, and widespread in the Gulf of Mexico. Pelagic.

180. Family Chaunacidae

- Chaunax pictus* Lowe. Both sides of the Atlantic; in the western Atlantic from Rhode Island to the Florida Keys and throughout the Gulf of Mexico. Benthic.

181. Family Ogocephalidae—Batfishes

- Dibranchius atlanticus* Peters. Both sides of the Atlantic; in the western Atlantic from Rhode Island to the Lesser Antilles and the northern and eastern Gulf of Mexico. Benthic.
- Haliutichthys aculeatus* (Mitchill). North Carolina to the Lesser Antilles and throughout the Gulf of Mexico. Shore.
- Ogocephalus nasutus* (Valenciennes). Throughout the Gulf of Mexico south to Bahia, Brazil. Shore.
- Ogocephalus parvus* Longley and Hildebrand. Eastern and southwestern Gulf of Mexico. Shore.
- Ogocephalus radiatus* (Mitchill). North Carolina to Santos, Brazil, and the northern and eastern Gulf of Mexico. Shore.
- Ogocephalus vespertilio* (Linnaeus). New York to Hispaniola, and widespread in the Gulf of Mexico. Shore.
- Ogocephalus macgintyi* Fowler. Southeastern Florida. Shore.

182. Family Melanocetidae—Black anglers

- Melanocetus murrayi* Günther. Atlantic, Indian, and western Pacific Oceans; in the western Atlantic from New York and Bermuda to the Caribbean and the northeastern Gulf of Mexico. Bathypelagic.
- Melanocetus johnsoni* Günther. Worldwide in tropical waters; widespread in the western Atlantic to the southern Gulf of Mexico. Bathypelagic.

183. Family Oneirodidae

- Oneirodes bradburyae* Grey—Bradbury's angler. Northeastern Gulf of Mexico. Bathypelagic.

184. Family Ceratiidae—Deepsea anglers

- Ceratias holboelli* Kröyer. Worldwide in tropical waters; in the western Atlantic from Nova Scotia to northern South America. Bathypelagic.
- Cryptopsaras couesi* Gill. Worldwide in tropical waters; in the western Atlantic from New Jersey to the southern Gulf of Mexico. Bathypelagic.

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Thanks to the production of a definitive work by Carr and Goin in 1955, the problem of freshwater fish identification has become greatly simplified. Ordinarily, one need only consult this book plus the few papers which have been published since that time. Therefore, no papers are listed dealing strictly with Florida freshwater fishes which were published before 1955.

Since this bibliography is intended primarily to help solve identification problems for students, works on the systematics of genera and higher categories, checklists, and papers on distribution are generally not included. Also, with the exception of Goode and Bean's 1895 treatise on oceanic ichthyology, none of the references antedate Jordan and Evermann's 1896-1900, "The fishes of North and middle America."

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INDEX TO ORDERS AND FAMILIES

- Acanthuridae, 285
 Acipenseridae, 252
 Albulidae, 252
 Alepisauridae, 259
 Alepocephalidae, 254
 Allotriognathi, 269
 Alopiidae, 248
 Aluteridae, 299
 Amiidae, 252
 Amphioxii, 247
 Anacanthini, 268
 Anguillidae, 261
 Anoplogastridae, 270
 Antennariidae, 301
 Antigonidae, 271
 Aphredoderidae, 266
 Apodes, 261
 Apogonidae, 275
 Argentinidae, 254
 Ariidae, 259
 Astronesthidae, 254
 Ateleopidae, 259
 Ateleopodes, 259
 Atherinidae, 293
 Aulopidae, 257
 Aulostomidae, 267
 Balistidae, 298
 Bathypteroidae, 257
 Batoidei, 250
 Batrachoididae, 296
 Belonidae, 264
 Berycomorphi, 270
 Blenniidae, 289
 Bothidae, 296
 Bramidae, 278
 Branchiostomidae, 247
 Bregmacerotidae, 269
 Brotulidae, 291
 Callionymidae, 289
 Canthigasteridae, 300
 Carangidae, 276
 Carapidae, 292
 Carcharhinidae, 248
 Carchariidae, 247
 Catostomidae, 260
 Centrarchidae, 273
 Centriscidae, 268
 Centropomidae, 278
 Ceratiidae, 301
 Cetomimidae, 259
 Cetunculi, 259
 Chaetodontidae, 282
 Chauliodontidae, 255
 Chaunacidae, 301
 Chimaerae, 252
 Chimaeridae, 252
 Chlorophthalmidae, 257
 Chondrostei, 252
 Clinidae, 290
 Clupeidae, 253
 Congridae, 262
 Coryphaenidae, 278
 Cottidae, 296
 Cynoglossidae, 297
 Cyprinidae, 260
 Cyprinodontidae, 265
 Dactylopteridae, 295
 Dactyloscopidae, 285
 Dasyatidae, 251
 Diodontidae, 300
 Diretmidae, 270
 Discocephali, 298
 Dysommidae, 263
 Dysommidae, 262
 Echeneidae, 298
 Eleotridae, 287
 Elopidae, 252
 Engraulidae, 253
 Ephippidae, 282
 Epigonichthyidae, 247
 Esocidae, 257
 Eurypharyngidae, 259
 Exocoetidae, 264
 Fistulariidae, 267
 Gadidae, 269
 Gempylidae, 285
 Ginglymodi, 252
 Gobiesocidae, 296
 Gobiidae, 287
 Grammicolepidae, 271
 Gymnuridae, 251
 Halosauridae, 263
 Haplodoci, 296
 Hemiramphidae, 264
 Heteromi, 263
 Heterosomata, 296
 Hexanchidae, 247
 Holocentridae, 270
 Ictaluridae, 260
 Idiacanthidae, 255
 Iniomi, 257
 Ipnopidae, 257
 Isospondyli, 252
 Istiophoridae, 287
 Isuridae, 247
 Kyphosidae, 282
 Labridae, 283
 Lampridae, 269
 Leiognathidae, 280
 Lepisosteidae, 252
 Lobotidae, 280
 Lophidae, 300
 Lophotidae, 269
 Lutjanidae, 278
 Luvaridae, 287
 Lyomeri, 259
 Macrouridae, 268
 Malacanthidae, 276
 Malacosteidae, 255
 Megalopidae, 252
 Melamphaidae, 270
 Melanocetidae, 301
 Melanostomiidae, 254
 Microcyprini, 265
 Microdesmidae, 291
 Mobulidae, 251
 Molidae, 300
 Moridae, 269
 Mugilidae, 293
 Mullidae, 281
 Muraenidae, 262
 Myctophidae, 258
 Myliobatidae, 251
 Myxinidae, 247
 Myxinoidea, 247
 Nemichthidae, 261
 Nettastomidae, 262
 Nomeidae, 292
 Notacanthidae, 264
 Ogcocephalidae, 301
 Oneirodidae, 301

- Ophichthidae, 263
Ophidiidae, 291
Opisthognathidae, 289
Orectolobidae, 248
Ostariophysi, 259
Ostraciidae, 299
Paralepidae, 259
Pediculati, 300
Pempheridae, 282
Percidae, 274
Percomorphi, 271
Percophidae, 285
Peristediidae, 294
Petromyzonida, 247
Petromyzonidae, 247
Plectognathi, 298
Pleuronectidae, 297
Poeciliidae, 266
Polymixiidae, 270
Polynemidae, 293
Pomacentridae, 283
Pomadasyidae, 279
Pomatomidae, 276
Priacanthidae, 275
Pristidae, 250
Protospondyli, 252
Rachycentridae, 276
Rajidae, 250
Regalecidae, 270
Rhineodontidae, 248
Rhinobatidae, 250
Rhinopteridae, 251
Salmopercae, 266
Scaridae, 284
Sciaenidae, 280
Scleroparei, 294
Scomberesocidae, 264
Scombridae, 286
Scorpaenidae, 294
Scyliorhinidae, 248
Selachii, 247
Serranidae, 271
Serrivomeridae, 261
Soleidae, 297
Solenichthyes, 266
Sparidae, 281
Sphyracidae, 293
Sphyrnidae, 249
Squalidae, 249
Squatinae, 250
Steinegeriidae, 294
Stephanoberycidae, 270
Sternoptychidae, 256
Stomiidae, 254
Stromateidae, 292
Stylophoridae, 269
Synaphobranchidae, 261
Synentognathi, 264
Syngnathidae, 266
Synodontidae, 257
Tetraodonidae, 292
Tetraodontidae, 299
Torpedinidae, 250
Trachichthyidae, 270
Trachipteridae, 270
Triacanthidae, 298
Triakidae, 248
Trichiuridae, 286
Triglidae, 295
Umbridae, 257
Uranoscopidae, 285
Urolophidae, 251
Xenopterygii, 296
Xiphiidae, 287
Zeidae, 271
Zeomorphi, 271

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